Ministry for Primary Industries
Manatū Ahu Matua

Situation and Outlook for Primary Industries

June 2021

New Zealand Government

Contents

Acknowledgements

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Notes

Annual figures are for the year ended June, unless otherwise noted. Currency figures are in New Zealand dollars, unless otherwise noted. Some totals may not add due to rounding.

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Minister's foreword

It is my pleasure to present the latest update of the *Situation and Outlook for Primary Industries* (SOPI). I continue to be impressed by the strong performance of our food and fibre sector, the driving force behind New Zealand's economic recovery.

As this SOPI shows, export revenue for our food and fibre exports is forecast to hit a record high of $49.1 billion in the year to June 2022, driven mostly by strong demand for our dairy, forestry, and horticulture products. Sustained growth is forecast year on year, hitting a further record of $53.1 billion for the year to June 2025.

Overall export revenue for the current 2020-21 year continues to be strong, with only a slight dip of 1.1 percent forecast. This has been helped by strong farmgate milk prices, bumper avocado and kiwifruit crops, and increased Chinese demand for our logs. This is a remarkable result in the context of the challenges presented by COVID-19, and a testament to the sector's ongoing resilience.

To boost our exports, a key priority for the Government is expanding New Zealand's market opportunities and providing a level playing field for our exporters by securing high-quality, comprehensive, and inclusive free trade agreements (FTAs).

In January 2021, we successfully signed our FTA upgrade with China, which included eliminating tariffs for 99 percent of New Zealand's nearly $3.3 billion wood and paper trade to China. We are also making solid progress in respective FTA negotiations with the European Union and the United Kingdom.

To drive New Zealand's recovery from COVID-19, we launched the *Fit for a Better World – Accelerating our Economic Potential* roadmap last year to boost productivity, sustainability, and jobs.

We brought forward almost $96 million to kickstart delivery of the roadmap, including $84 million to upscale Sustainable Food & Fibre Futures (SFF Futures) to further boost innovation efforts, on top of the $40 million already available each year.

Since SFF Futures launched in mid-2018, more than $111 million has been committed to approved new projects of a total investment of almost $250 million.

Partnerships like *He Waka Eke Noa*, our Primary Sector Climate Action Partnership, are working with farmers and growers on practical solutions to reduce emissions and build resilience to climate change.

And initiatives like our *Opportunity Grows Here* campaign and website continue to attract New Zealanders to food and fibre sector jobs.

Through Budget 2021, the Government committed almost $62 million to back initiatives to help reduce costs for farmers and growers, boost returns, and achieve lower on-farm emissions.

These will all strengthen the environmental credentials of our food and fibre products and drive further value growth.

This SOPI is clear proof of the success of these efforts and the commitment of our food and fibre sector to keep their people safe, and exports flowing.

Our farmers, growers, fishers, and foresters should be immensely proud of their efforts, and the Government is committed to working with them to drive New Zealand's economic recovery and ongoing prosperity.

Hon Damien O'Connor
Minister of Agriculture

Director-General's introduction

While the past 18 months have been challenging as we navigate through and out of the COVID-19 pandemic, it has highlighted the strength and resilience of the food and fibre sector. I'm pleased to see that strength reflected in this latest *Situation and Outlook for Primary Industries* (SOPI).

The June report is a comprehensive analysis developed by our Ministry for Primary Industries Economic Intelligence Unit, which offers a thorough overview of performance across the sector as well as the opportunities and challenges ahead.

I am pleased to report that this current edition reflects the sector's agility and ability to bounce back. While a small decrease of about one percent is forecast for this year, there are strong increases across the majority of the sectors forecast for 2021-22 and beyond.

Highlights in this latest SOPI include forestry exports, with revenue forecast to reach $6.3 billion in 2020-21, an increase of 12.8 percent, due to higher export volumes and prices. This is particularly heartening following a recent refresh of our focus on forestry. In late April we renamed our forestry arm Te Uru Rākau – New Zealand Forest Service, and announced its operational headquarters will be in Rotorua.

Forecast horticulture export figures also remain strong.

MPI is committed to helping the sector navigate these challenges with initiatives such as our Opportunity Grows Here campaign, which encourages Kiwis into jobs in the food and fibre sector. Job options so far have included citrus picking, kiwifruit packing, seafood processing, planting trees, and pruning vines.

Demand for New Zealand products – particularly honey, kiwifruit and avocados – is expected to remain strong, with sustained demand for health-focused options. This demonstrates the strength of the New Zealand brand and the trust consumers – both here and overseas – have in our products.

Building on that trust is a cornerstone of *Fit for a Better World – Accelerating our Economic Potential* roadmap, launched in 2020, which sets out actions to bring together opportunities to boost productivity, sustainability, and jobs in the food and fibre sector, to deliver more value for all New Zealanders.

I know challenges remain ahead as the world emerges from the pandemic, but having had the opportunity to meet with sector leaders over the past few months and hearing how they've navigated issues as they've arisen, I'm confident the future looks bright and prosperous.

Ray Smith
Director-General, Ministry for Primary Industries

Overall summary

The food and fibre sector has performed strongly despite the challenges presented by COVID-19. Export revenue for the year ending June 2021 is forecast to fall 1.1 percent to $47.5 billion. For the year ending June 2022, export revenue is forecast to rebound and reach a record $49.1 billion as demand begins to recover for our main export market products and destination markets.

Dairy

Dairy export revenue is forecast to decrease 5.4 percent to $19.0 billion in the year ending June 2021, due to COVID-19 related disruptions, and an appreciation of the New Zealand dollar (NZD). In the first half of the year, dairy revenue was down substantially due to global supply chain and market disruptions, and low prices for key commodities. Global dairy prices lifted significantly in the second half of the year. Milk production for the 2020-21 season is forecast to increase 1.9 percent, supported by favourable weather conditions and a strong farmgate milk price.

Meat and Wool

Meat and wool export revenue is forecast to fall 2.8 percent to $10.4 billion in the year ending June 2021. Forecast revenue has been revised up due to higher stock slaughter and export volumes. Beef, mutton, lamb, and venison export volumes are all forecast to increase this year. Prices have been negatively impacted by COVID-19 related food service closures, freight issues, and a stronger NZD, but African Swine Fever (ASF) impacts in China continue to drive underlying demand for this sector.

Forestry

Forestry export revenue is forecast to reach $6.3 billion in the year ending June 2021, an increase of 12.8 percent from 2019-20 when the forestry sector was prevented from operating during Level 4 lockdowns. Harvest volumes are set to reach 36.5 million cubic metres in 2020-21, up 14.5 percent from last year. Log export volumes are expected to increase 21.4 percent, reflecting increased demand for export logs.

Horticulture

Horticulture revenue is forecast to rise 2.3 percent in the year ending June 2021 to $6.6 billion, due to larger crops and export volumes of kiwifruit and avocados. Demand for New Zealand fresh fruit and wine from overseas markets has remained strong despite COVID-19 related disruptions, and this is expected to continue. Industry responses to the seasonal labour supply and freight 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 technologies where practical.

Seafood

Seafood export revenue is forecast to fall 4.1 percent to $1.8 billion in the year ending June 2021, due to a decrease in wild capture volumes and weaker aquaculture export prices. COVID-19 related lockdowns offshore have negatively impacted the ability to sell product through the food service sector. New Zealand's future export growth in the seafood sector is expected to be characterised by limited change in wild capture production and a growing aquaculture sector.

Arable

Arable export revenue is forecast to fall to $270 million in the year ending June 2021, down 6.8 percent from 2019-20, which was a record high. Most crop yields in 2020-21 are in line with long run trends, but down from last year, as seasonal conditions were not as favourable. COVID-19 has helped stimulate demand for some seeds, but it has created freight issues for exports. In the longer-term, gradual export revenue growth is forecast for all categories except other grain and seeds.

Other primary sector exports

Export revenue from processed foods and other products is expected to reach $3.1 billion in the year ending June 2021, up 2.5 percent from 2019-20. The key contributors to this growth are increases in live animals (74 percent) and honey (12 percent). Honey export volumes have increased markedly this year, driven by increased demand for products with health benefits, and beekeepers continuing to clear stocks.

Overview

Overall, the food and fibre sector has performed remarkably well over the past year, despite a series of challenges arising from the COVID-19 pandemic. These challenges, such as supply chain and food service disruptions and the tight labour market, have been unevenly felt across the sectors. This contrasts strongly with the relative tranquillity of 2017-18 and 2018-19, which saw broad-based growth across virtually every sector.

Food and fibre sector export revenue is forecast to fall 1.1 percent in the year ending June 2021 to $47.5 billion, as some sectors saw overseas demand limited by COVID-19 related restrictions and a stronger NZD.

The gains in dairy commodity prices in recent months arrived after the peak of the 2020-21 milk season. This is too late to have a material impact on the tail-end of the 2021 year but is a promising signal for the coming season. Milksolid production is expected to increase by 1.9 percent in the 2020-21 season, despite slightly lower dairy cow numbers.

Meat and wool export prices have fallen over the past year, especially for products typically consumed in restaurants. This has been offset by the highest red meat production volume since 2008. Over the next year or two, red meat prices are expected to recover strongly, supported by the reopening of global food service and strong demand from China.

The forestry sector made a quick recovery over the past year, after being perhaps the hardest-hit sector during New Zealand's lockdown. China was quick to resume infrastructure investment over the past year, leading to strong Chinese demand for logs, which is expected to continue into the medium term.

Consumer demand for fruit and wine has strengthened since the pandemic began, but production-related headwinds are limiting available export volumes for some products.

Poor weather in the top of the South Island and Central Otago during the growing season has dented wine, apple, and cherry production this year, as has the shortage of seasonal labour. On the positive side, kiwifruit production continues to expand at a rapid rate thanks to higher yield, and export revenue is now forecast to exceed $3 billion by the year ending June 2023.

For the year ending June 2022, export revenue is forecast to rebound and reach $49.1 billion as demand begins to recover for New Zealand's main export products and destination markets. In addition, the labour supply situation is expected to improve as more skilled and seasonal food and fibre sector workers enter New Zealand, or recruited from within New Zealand in the future, and COVID-19 supply chain disruptions are eventually resolved.

Climate outlook

NIWA data show rainfall for most of the North Island and the northern half of the South Island was below normal over summer, resulting in low soil moisture levels. Warm conditions have continued, with April being the country's warmest since 2014, and May starting with severe soil moisture deficit in the East of both islands (Figure 1). Continued warming of ocean temperatures in the Pacific saw the La Niña weather pattern that began in spring transition to neutral El Niño-Southern Oscillation (ENSO) in April.

Pasture growth was, however, strong in most dairy regions through spring and summer, and most of autumn. While most of summer was characterised by warm dry weather, individual weather events played a significant role across sectors and regions. Lambing was down due to both drought in the north and snow in the south. For horticulture, arable and honey, the timing of seasonal events also impacted production, with cool cloudy conditions in spring/early summer affecting flowering. A severe hail event on Boxing day around Motueka caused significant damage to apples, kiwifruit and hops. However,

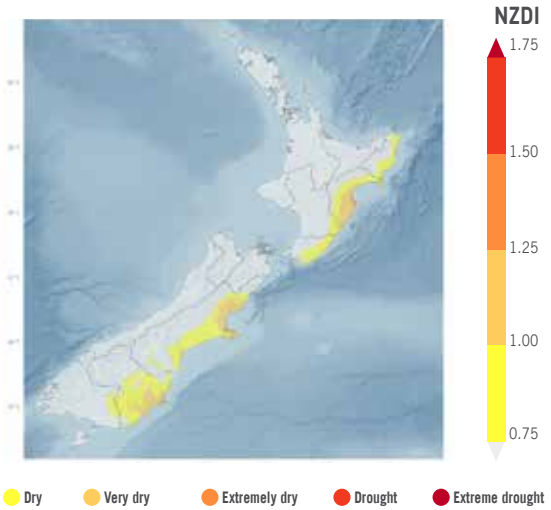
Table 1: Food and fibre sector export revenue 2017-25 (NZ$ million)

	Actual				Forecast				
Year to 30 June	2017	2018	2019	2020	2021	2022	2023	2024	2025
Dairy	14,638	16,655	18,107	20,135	19,050	20,420	20,730	21,400	22,020
Meat & wool	8,355	9,542	10,176	10,678	10,380	10,420	10,660	10,910	11,170
Forestry	5,482	6,382	6,883	5,539	6,250	6,430	6,520	6,620	6,760
Horticulture	5,165	5,392	6,134	6,500	6,650	6,780	7,260	7,620	8,020
Seafood	1,744	1,777	1,963	1,855	1,780	1,730	1,830	1,880	1,920
Arable	197	243	236	290	270	280	290	295	300
Processed food and other*	2,639	2,709	2,854	3,004	3,080	3,000	3,000	2,850	2,910
Total exports	38,220	42,700	46,355	48,001	47,460	49,060	50,290	51,575	53,100
% Change	+2.4%	+11.7%	+8.6%	+3.6%	–1.1%	+3.4%	+2.5%	+2.6%	+3.0%

Source: Stats NZ and MPI.

* Processed food and other includes live animals, honey, and processed food.

Figure 1: New Zealand Drought Index (NZDI), Date: 29 May 2021



Source: National Institute of Water & Atmospheric Research (NIWA).

settled autumn weather in the North Island helped kiwifruit yields and apple harvest activities.

NIWA expects that over the May to July period, rainfall will be below normal or near normal for most of the country. While soil moisture is likely to be below normal in the east of the South Island, rainfall events over most of the country may be further apart than normal, potentially resulting in lower groundwater and dam level recharge.

Persistent heavy rain at the end of May/start of June 2021 caused flooding in Canterbury and road closures, which disrupted milk collection and vegetable harvest. Flood waters also forced movement of stock and evacuation of some rural properties, and damaged winter feed.

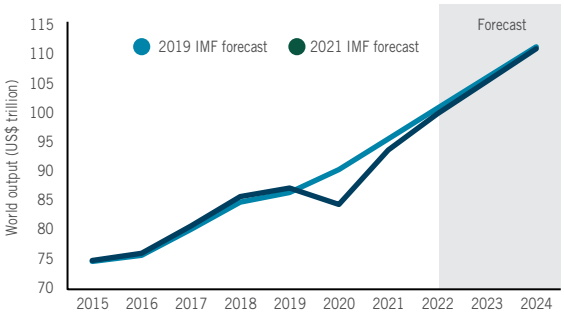
Global economic recovery differs across countries

More than a year after COVID-19 was declared a worldwide pandemic, scientists have gained a greater understanding of how COVID-19 spreads and have developed tools to test for and manage the virus. Vaccination campaigns have started in many countries, with nearly 1.5 billion doses of the vaccine already administered.

In this context, the International Monetary Fund (IMF) has revised up its projections for the global economic recovery in 2021 and 2022 (as at April 2021). World GDP growth is now expected to be 6.0 percent in 2021 and 4.4 percent in 2022, reflecting hopes that vaccination campaigns will ramp up during 2021 and supported by new stimulus package expectations in a few large economies, such as the US (Figure 2).

Controlling the pandemic will depend on overcoming a few key challenges. The global death toll is still rising with repeated delays faced by many countries in vaccination rollouts and new variants of the virus. Additionally, Brazil, India, and some European countries are facing second and third infection waves, which have led to renewed restrictions and lockdown measures. Differences in COVID-19 mitigation strategies, policy support and economic stimulus, have led to diverging

Figure 2: World GDP 2015-24



Source: IMF, World Economic Outlook.

economic recovery rates across countries. In turn, this is likely to impact demand for New Zealand's food and fibre sector exports.

Global trade volume is expected to increase

After a 5.3 percent drop in 2020, the volume of world merchandise trade is expected to increase by 8 percent in 2021, continuing its recovery from the pandemic-induced collapse in the second quarter of last year.[1]

However, the relatively positive short-term outlook for global trade is strained by regional disparities, continued weakness in services trade, and lagging vaccination timetables, particularly in developing countries. COVID-19 still represents the greatest threat to the outlook for trade, as new waves of infection could easily undermine any hoped-for recovery.

Additionally, trade restrictions and supply chain issues make ramping up the production of vaccines more difficult, as it requires the use of components from a variety of countries.

Supply chains remain constrained

Ongoing disruptions caused by COVID-19 around the world are influencing the movement of goods across borders for both air and sea freight. Port congestion and shipping delays due to reduced freight capacity and a critical shortage of containers continue to be an issue, both here and abroad. For New Zealand, this translates to increased risk of perishable products spoiling before they reach customers, or reduced shelf life for some of our products.

Given the strong global demand for shipping containers and limited shipping capacity, major trans-shipment ports are experiencing delays. In New Zealand, the Ports of Auckland have been heavily congested since December quarter 2020 and shipping lines have been deploying additional vessels to move empty containers to other regions.

In addition, increasing shipment costs, shipping delays, and a container shortage are all putting upward pressure on import prices for key primary sector inputs, such as machinery, fertilisers, and feed. As a result, farmers, growers, and processors are facing higher production costs.

The Government set aside $600 million for an aviation relief package as part of the $12.1 billion COVID-19 support package in March 2020. This resulted in $372 million

1 World Trade Organisation, 2021

allocated to the airfreight connectivity scheme. The Government has extended support to the aviation sector through to the end of October 2021 to help keep New Zealand connected with trade partners and maintain international passenger services.

New Zealand exports have benefited from global price increases for primary commodities

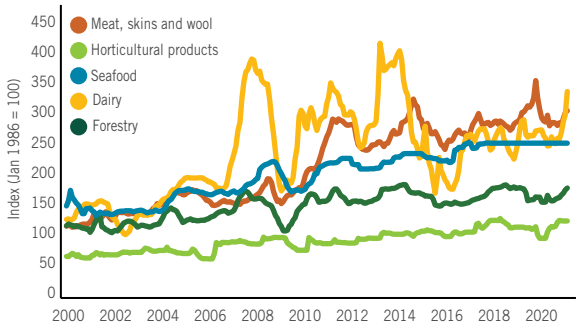
Commodity and food prices have been trending up over the last few months, with world prices higher than their five-year averages in all major product groups (Figure 3). Markets are expecting increased economic activity in 2021. This optimism has sparked a global stock market rally, which has also affected commodity markets.

This upward trend in commodity prices has been supporting New Zealand's export revenues, a welcome indicator when tourism and hospitality sectors are currently struggling with the lack of international visitors.

On the import side, international oil prices have been trending up since last year, mostly driven by increased global demand for oil as economies recover from COVID-19. Higher oil prices, combined with freight costs on the rise, are likely to reduce gains in New Zealand's terms of trade over the remainder of 2021.

While the current trend in commodity and food prices represents a source of support for the New Zealand economy, uncertainties remain as to whether this upward trend in prices is signaling a new price cycle or is just a short-term movement.

Figure 3: World commodity price indices 2000-20

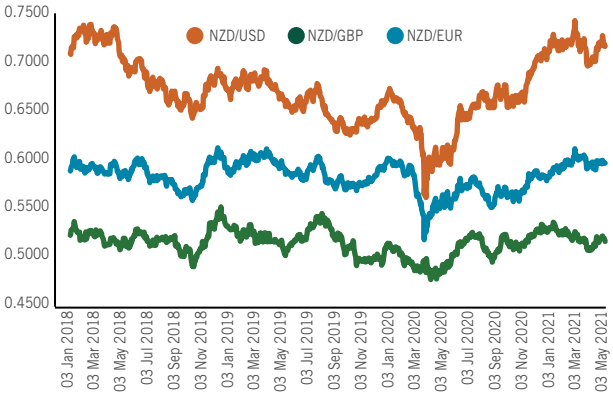


Source: ANZ.

New Zealand dollar appreciation weakens export values

The NZD has continued to appreciate against currencies of its main trading partners over the last few months, decreasing export revenues in NZD terms (Figure 4).

Figure 4: Selected NZD exchange rates 2018-21



Source: RBNZ.

The Treasury is expecting the NZD to remain strong over the coming year, and to ease over 2022. However, the attractiveness of the NZD might be reduced as the economic outlook for other major economies improves with vaccination programmes ramping up in most countries. The strength of the NZD also hinges on other factors such as any changes in our monetary policy over the coming months, as well as on the level of fiscal and monetary policy stimulus across our key trading partners.

New Zealand export performance hinges on the recovery of its main trading partners

New Zealand's export growth will continue to depend on the economic recovery trajectory of its main trading partners.

China's GDP growth outperformed the rest of the world during the COVID-19 pandemic. China's annual real GDP increased by nearly 2.3 percent in 2020, following a 10 percent drop in the March quarter 2020 due to COVID-19 restrictions. China's GDP rose by 18.3 percent year-on-year in the March quarter 2021. China's fast recovery from the pandemic and strong consumer demand have provided significant support to New Zealand's goods exports and economy (Figure 5).

Australia and the US, our other main trading partners, are continuing their economic recoveries. Over the December 2020 quarter, Australia's GDP rose 3.1 percent, which is higher than the 2.5 percent projected. Australia's GDP is forecast to grow further, supported by the Government's AUD 311 billion COVID-19 stimulus package. Economic activity in the US is expected to have the fastest recovery amongst G7 countries, with the the IMF forecasting US GDP will exceed its pre-COVID-19 level by the end of the year.

Figure 5: Export revenue of primary goods by destination 2011-21

Source: Stats NZ.

Australia's GDP is forecast to grow further, supported by the Government's AUD 311 billion COVID-19 stimulus package.

The UK and the European Union (EU) were hit by new waves of COVID-19 earlier this year. The tightening of restrictions to slow the spread of the virus had an impact on Eurozone's output, which fell for the second quarter in a row, plunging it into another recession. However, economic growth and domestic demand are expected to pick up during the June and September quarters in 2021, with restrictions being gradually lifted, vaccination rollouts, extended fiscal stimulus, and a significant amount of household savings build-up.

New Zealand's recovery could be strengthened with enhanced relationships with key trading partners

New Zealand's Free Trade Agreement (FTA) negotiations with the United Kingdom are progressing well, with both countries recently announcing their intentions to accelerate the process. An NZ-UK FTA would improve market access for New Zealand's key goods exports to the UK (e.g. meat, dairy, fruit and other perishable foods), as well as strengthening relations between the two countries.

The UK submitted their formal request to join the Comprehensive and Progressive Trans-Pacific Partnership (CPTPP) Agreement earlier this year. On 2 June 2021 New Zealand and other CPTPP nations agreed that the UK's accession process can begin. If the UK does successfully join the CPTPP, it would become the second largest participating economy after Japan. Their membership would raise the group's total GDP and geographical coverage. There are various other countries informally considering joining CPTPP, indicating a growing interest in the plurilateral agreement.

Useful progress has also been made in the NZ-EU FTA negotiations with ten rounds having taken place over nearly three years. New Zealand negotiators will continue pushing for agriculture market access that would allow New Zealand exporters to compete fairly with traders from other countries in the EU market.

New Zealand and China have concluded negotiations on the NZ-China FTA upgrade, which has been signed on 26 January 2021. This upgrade modernises our FTA with China to ensure it reflects current trade realities. Key primary sector outcomes include tariff elimination over a ten-year period on 12 forestry products. China is New Zealand's biggest goods export partner, accounting for nearly 30 percent of our total goods exports in volume.

Trans-Tasman bubble could increase competition in a tight primary sector labour market

The Trans-Tasman bubble opened on 19 April 2021, and the Government is hoping it will support the visitor economy in areas such as Northland, Auckland, Rotorua, Queenstown and the West Coast. The Trans-Tasman bubble is also expected to increase airline capacity, which would lower the cost of air freight between New Zealand and Australia.

Uncertainties remain as to how much benefit this travel bubble will bring to the New Zealand economy, especially given that travel between New Zealand and parts of Australia have paused a few times since 19 April 2021. The number of international passengers also remains well below pre-COVID-19 levels. Daily arrivals were averaging 3,050 for the period of 1 May up to 24 May 2021, compared to average daily arrivals of 14,892 in May 2019. Furthermore, the Trans-Tasman bubble could increase competition in an already tight labour market in both countries. Some agricultural labour recruiters in Australia are offering incentives such as free airfares, accommodation and food, competitive wages, and cash bonuses to attract workers from New Zealand.

Economic growth is likely to be modest in 2021 and gradually pick up in 2022

While the New Zealand economy has proven to be more resilient than expected, economic growth is likely to remain modest for the year ending December 2021. This is mostly due to borders remaining closed to most countries and global supply chain issues.

The vaccine rollout to the wider population in New Zealand is scheduled to begin in late July this year, with the Government aiming at reaching sufficient population immunity by the end of 2021, which would be a step towards reopening borders to foreign tourists and seasonal workers.

With borders reopening progressively, New Zealand's GDP growth is projected to gradually reach 3.8 percent in 2022.[2] However, with the virus still so prevalent worldwide, it will likely be a long time before it is eradicated, if even possible. As a result, we expect the New Zealand economy won't fully recover to pre-COVID levels until at least 2022.

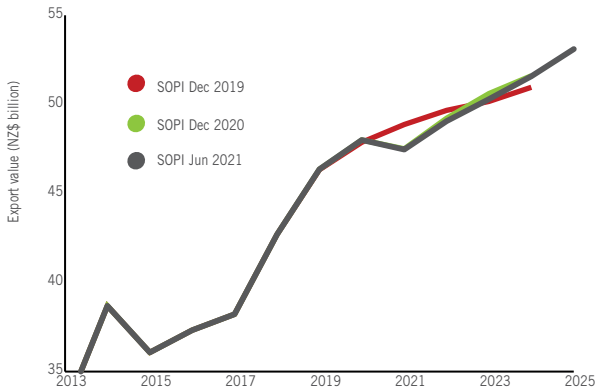
2 OECD, New Zealand Economic Outlook May 2021.

Forecast tracking

Export revenue for the year ending June 2021 has been revised very slightly downwards compared to our forecast in December 2020 (Figure 6). A stronger NZD contributed most to this result. While there is little change in the overall forecast, there were several changes within each sector:

- Slight reduction for dairy due to supply chain disruptions but recent prices signal an upbeat outlook.
- More optimistic outlook for meat due to higher livestock slaughter and export volumes.
- More positive outlook for forestry due to increased export volumes driven by robust demand for logs.
- Downward revision for horticulture due mostly to adverse weather conditions impacting fruit and wine grape yields.
- Slower recovery in seafood exports due to a decrease in wild capture volumes and COVID-19 lockdowns affecting the food service industry.
- Slight reduction for arable due to unfavourable climatic conditions and COVID-19 induced freight challenges.

Figure 6: MPI export revenue forecasts 2013-25



Source: Stats NZ and MPI.

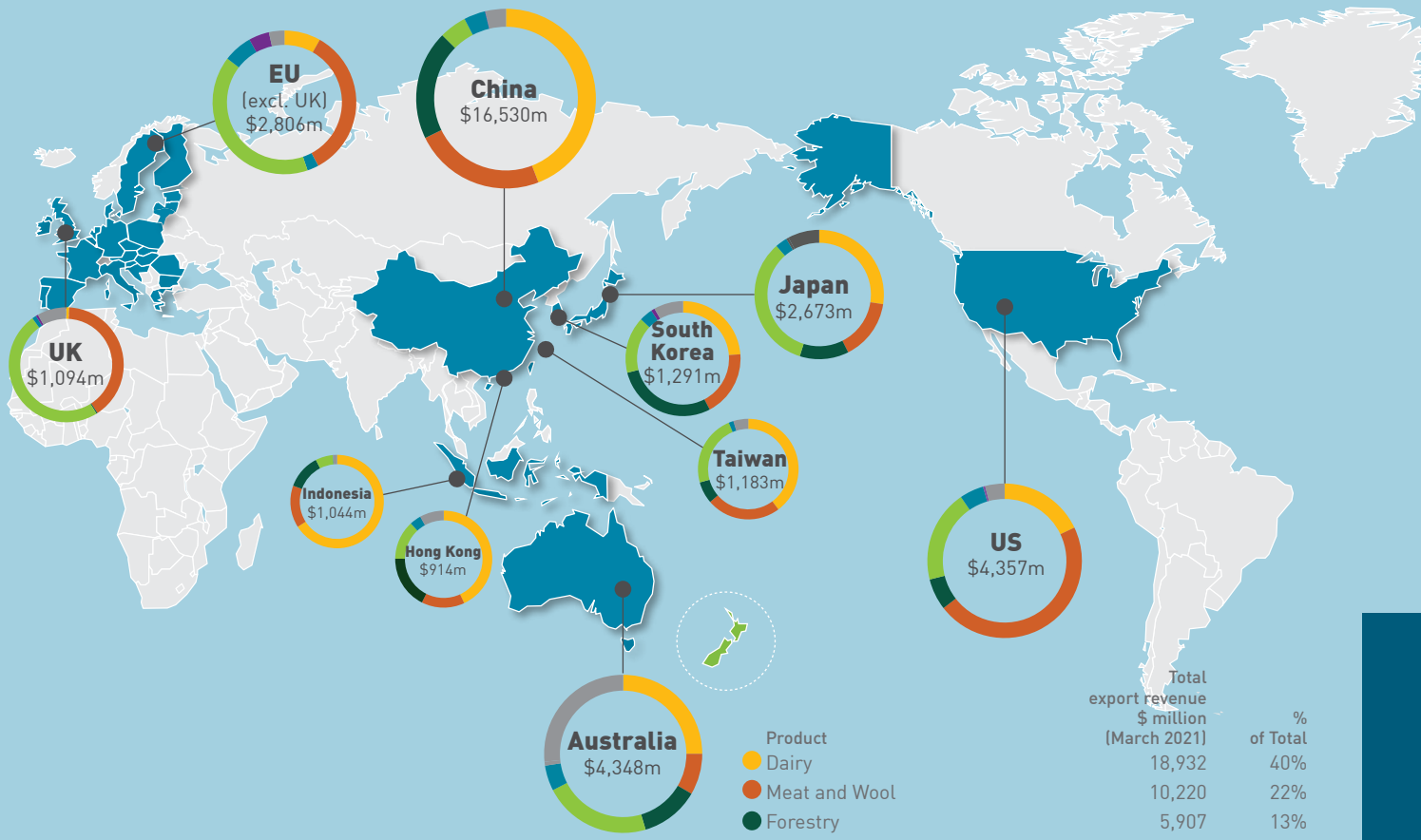
Table 2: Export forecast comparison 2017-25 (NZ$ million)

	Year to 30 June	Actual				Forecast				
	Forecast round	2017	2018	2019	2020	2021	2022	2023	2024	2025
Dairy	Jun 2021	14,638	16,655	18,107	20,135	19,050	20,420	20,730	21,400	22,020
	Dec 2020	14,638	16,655	18,107	20,135	19,210	20,140	20,610	20,900	21,090
	Difference	–	–	–	–	–160	+280	+120	+500	+930
Meat & wool	Jun 2021	8,355	9,542	10,176	10,678	10,380	10,420	10,660	10,910	11,170
	Dec 2020	8,355	9,542	10,176	10,678	9,800	10,090	10,400	10,690	11,020
	Difference	–	–	–	–	+580	+330	+260	+220	+150
Forestry	Jun 2021	5,482	6,382	6,883	5,539	6,250	6,430	6,520	6,620	6,760
	Dec 2020	5,482	6,382	6,883	5,539	5,990	6,150	6,270	6,250	6,340
	Difference	–	–	–	–	+260	+280	+250	+370	+420
Horticulture	Jun 2021	5,165	5,392	6,134	6,500	6,650	6,780	7,260	7,620	8,020
	Dec 2020	5,165	5,392	6,134	6,501	7,090	7,200	7,520	7,840	8,220
	Difference	–	–	–	–1	–440	–420	–260	–220	–200
Seafood	Jun 2021	1,744	1,777	1,963	1,855	1,780	1,730	1,830	1,880	1,920
	Dec 2020	1,744	1,777	1,963	1,855	1,830	2,020	2,110	2,180	2,210
	Difference	–	–	–	–	–50	–290	–280	–300	–290
Arable	Jun 2021	197	243	236	290	270	280	290	295	300
	Dec 2020	197	243	236	290	305	310	315	310	310
	Difference	–	–	–	–	–35	–30	–25	–15	–10
Processed food and other	Jun 2021	2,639	2,709	2,854	3,004	3,080	3,000	3,000	2,850	2,910
	Dec 2020	2,639	2,709	2,854	3,003	3,280	3,310	3,380	3,430	3,510
	Difference	–	–	–	–	–200	–310	–380	–580	–600
Total exports	Jun 2021	38,220	42,700	46,355	48,001	47,460	49,060	50,290	51,575	53,100
	Dec 2020	38,220	42,700	46,355	48,001	47,505	49,220	50,605	51,600	52,700
	Difference	–	–	–	–	–45	–160	–315	–25	+400

Source: Stats NZ and MPI.

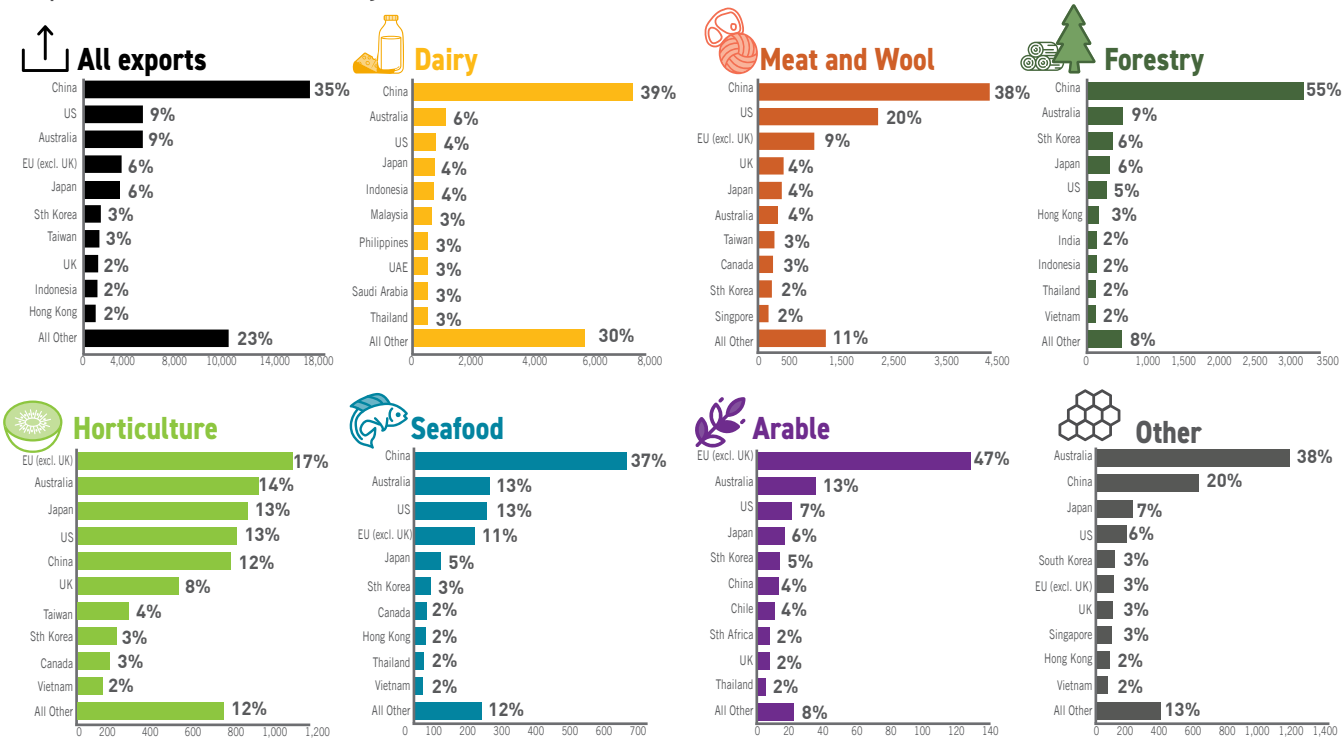
Top 10 export destinations

Year to March 2021



Product	Total export revenue $ million (March 2021)	% of Total
Dairy	18,932	40%
Meat and Wool	10,220	22%
Forestry	5,907	13%
Horticulture	6,735	14%
Seafood	1,726	4%
Arable	277	1%
Other primary sector	3,051	7%
Total primary industries	46,848	100%

Top markets (NZ$ million, year to March 2021)



Agritech

– future proofing the agri-food system

The New Zealand agritech sector is responding to opportunities, challenges and broader sustainability issues faced by the food and fibre sector by combining ingenuity and respect for the land with advanced technology.

New Zealand agritech is embedded in a community of farmers, entrepreneurs, researchers, and technologists.

Agritech offers an opportunity to not only build on New Zealand's historic strengths, but also to meet the demands of an evolving global market.

A changing agri-food sector landscape

The agri-food sector landscape is changing globally, influenced by a need for increased productivity, growing environmental challenges and changing consumer behaviour. Enabled by technology, New Zealand is well positioned to operate in this changing landscape.

Growers are looking at better agronomic practices that will allow them to produce more food from less land with optimal use of increasingly scarce resources, while processors are focusing on reduced post-harvest loss through improved packaging, storage, and transportation.

The sector overall is striving to address growing consumer and marketer demands for increased sustainability, fewer chemical inputs, and managing the health of the productive environment.

Key New Zealand Agritech Stats:

NZ$ 1.4 billion
Agritech revenue in 2019-20

950
Estimated Agritech companies

Top export markets

Australia USA

Source: AgritechNZ.

Better uptake of agritech across New Zealand could potentially be worth to the New Zealand economy.

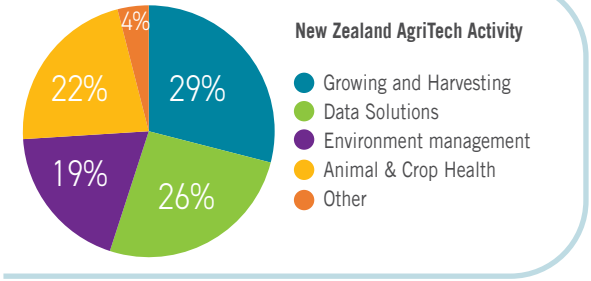
$10 billion

Surveying the New Zealand agritech landscape

New Zealand agritech companies support many of aspects of the country's agricultural sector.

Though agritech firms in New Zealand are focused on creating novel products, services, and value chain solutions for the entire food and fibre sector, most are aligned with the horticulture and dairy sectors. Consequently, some regions have a niche – Waikato, Manawatu, and Canterbury firms are focused on pastoral farming, and horticulture firms are mostly prevalent in Bay of Plenty.

In terms of distribution of agritech firms based on their activity, the majority of firms are focused on growing and harvesting technologies, data solutions, animal and crop health, and environment management. Forty-two percent of these companies are in the start-up and early stages, followed by 20 percent in the growth stage, indicating good interest amongst new entrants.



New Zealand Technological advances in Agritech

Innovations such as the electric fence, the milk meter, improved grass cultivars, and selective breeding techniques and understanding of genetics have been important to increasing productivity, and have enabled the food and fibre sector to be a major part of New Zealand's economy.

Going forward, with traditional drivers of growth in New Zealand's agricultural sector waning and natural resource constraints increasing, future growth will depend on innovation more than ever before. These new innovations can increase productivity gains to maximise profitability, competitiveness, and sustainability for the food and fibre sector, and generate benefits for all New Zealanders.

Pastoral technologies

Pastoral farmers have been increasingly adopting technologies that are data and analytics driven. We expect to see innovation continuing to change the sector.

For example, behavioral and motion data devices have been developed to track animal movement patterns to determine whether there is something concerning with an animal and then remotely notify the farmer. Such devices facilitate faster identification of unwell stock, enabling earlier treatment and limiting production losses.

Firms are also using geospatial data to set virtual fencing. This technology uses sound and vibration to teach the animal where designated grazing areas are, or direct cattle to the milking shed. This reduces the time it takes to rotate stock between paddocks, exclude them from sensitive land areas, and move them to the milk shed.

Other areas of technological innovation in the New Zealand pastoral space are detailed on the right.

Soil Nutrients

Driven by sensor based technologies, precision low rate fertiliser spreading is a more advanced application of fertiliser, improving pasture and better for the environment.

Virtual Fencing

Enables farmers to shift their herd remotely, set up virtual fences and monitor the health of their herd.

Livestock Intelligence

Provides farmers with tools that turn animal identification, monitoring and tissue sampling data into actionable information, presented in intuitive dashboards designed for specific applications.

Genomics

Has been enhancing New Zealand's dairy herd's efficiency and enabling farmers to breed cows that are more productive and environment friendly.

Irrigation

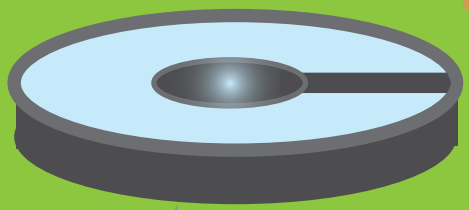
Variable rate irrigation systems compensate for irrigation variation, by measuring soil moisture needs at a small scale, and irrigating at that scale accordingly.

Data Aggregation

Combining the most important farm data in one place, viewed in a real-time dashboard, and enabling farmers to make it available to those that need it – results in better and more timely decision making.

Effluent Treatment

Innovative effluent treatment systems recycle water and increase effluent storage capability while reducing environmental impacts.



Horticulture technologies

While technology has always been an important element of the New Zealand horticulture industry, it is increasingly a key driver for growth and productivity. Better agronomic practices will allow growers to produce more food from less land with optimal use of increasingly scarce water resources. Improved storage and transportation will reduce the amount of produce lost post-harvest.

There are several drivers to where technology will take the horticultural industry over the coming years, however the key immediate driver is labour scarcity particularly for the kiwifruit, apple and grape sectors. On-farm and on-orchard automation to help address this issue is expected to increase rapidly, providing New Zealand agritech with a significant commercial opportunity.

A few of the innovative technologies being applied across the horticulture value chain are presented below, with robotics and automation, being the two most important.

Robotic Harvestors	Robotic harvesters are being developed that can work night or day without the provisions that traditional labour requires.
Drones	Unmanned aerial vehicles (UAVs)/drones are being used to collect data, identify pests and disease, monitor crop conditions, study the impact of droughts or floods, and to assess requirements for fertilisation and irrigation.
Mapping & GIS	Map-based software delivers predictive analytics on crop yield and health, and helps farmers make smarter decisions regarding farm and environmental outcomes. It also enables precision farming.
Robotic Packing & Stacking	Robots are being used to place fruit precisely in trays, providing an alternative to a labour-intensive exercise.The stacking or assembly of trays onto pallets is also increasingly being automated and done with minimal human involvement.
Automated Cold Storage	Cool storage facilities are being designed to enable the use of autonomous vehicles, without humans or forklifts entering the store. By minimising variance and ensuring stability of critical parameters such as temperature and humidity, it ultimately enhances the shelf-life of the fruit.
Sensors	The use of sensors to monitor temperature is enabling technicians to make vital decisions on storage and transportation of fruit.

The Agritech Industry Transformation Plan

The Government's ambition is to grow the agritech sector as an economic driver, so it is better equipped to service both domestic and international markets. This Government strategy, the Agritech Industry Transformation Plan (ITP), was developed in collaboration with an all-of government agritech taskforce, encompassing seven Government agencies, and a specially formed industry group, Agritech New Zealand.

The ITP was launched in 2020, including an action plan and initiatives to grow the agritech ecosystem, and address several challenges that the New Zealand agritech sector faces. These include, increasing access to capital, expanding the breadth of activities, ensuring effective commercialisation, reducing barriers to farmer adoption, enabling greater collaboration, facilitating greater openness and inter-operability for technology and data, and improving the supply of a skilled workforce. Solving these challenges is critical to building a globally competitive agritech ecosystem, that promotes the growth of value-adding companies in New Zealand, and helps address New Zealand and the world's sustainability problems.

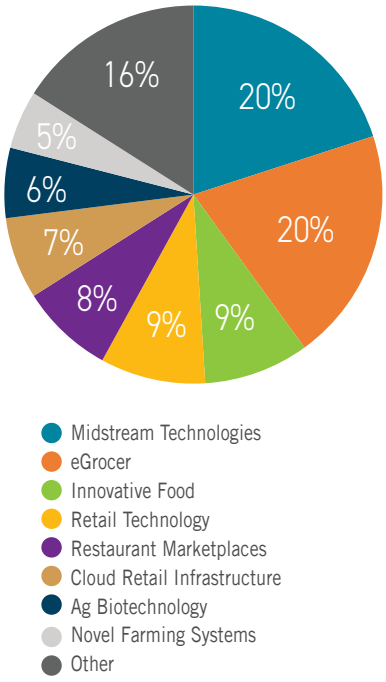
Global Agri-food tech landscape – Quantum growth since 2015

The global agri-food tech sector, which also includes innovative food technologies and downstream services such as e-commerce and food delivery, has grown rapidly in the last five years. This growth has been driven by the commercial maturity of new digital technologies, such as the cloud, mobility, and big data analytics. Moreover, emerging technologies such as autonomous vehicles, drones, blockchain and connectivity between technological devices have also shown potential for agritech application.

Agri-food tech start-ups attracted an estimated $322 million of investment globally in 2010. Since then, investment in agri-food technology has increased significantly to $30.5 billion in 2020, a 34.5 percent increase from 2019. The US has a relatively mature agri-food tech ecosystem, which received the most investment in 2020, followed by China, India, the UK and France.

Midstream technologies and eGrocery categories received the highest investments in 2020. Midstream technologies include technologies in the fields of food safety, traceability, logistics, and processing. The eGrocery category includes online stores and marketplaces for sale and delivery of food products to consumer. These trends indicate that significant global opportunity exists, especially in the midstream category, and given New Zealand's strong capability in food innovation and food safety.

Percentage of investment recieved by AgriTech category in 2020



Key areas of global investment

Ecommerce, Food Delivery and Innovative Foods

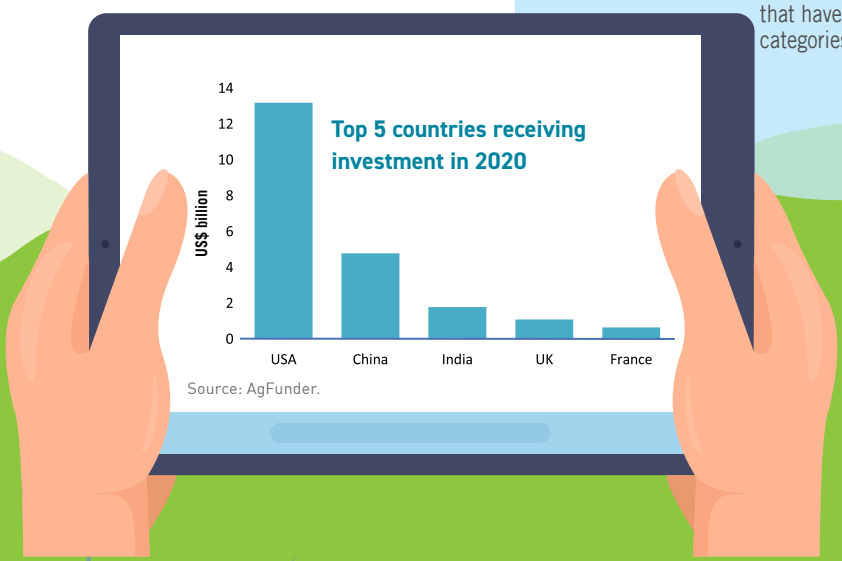
The top ten investments in 2020 were dominated by eCommerce and food delivery. The massive increase in online grocery shopping has fuelled investments in tech and support infrastructure, and this in turn will drive further adoption. Interestingly, the plant-based meat company, Impossible Foods, also featured in the top ten. Driven by rising consumer demand in plant-based meat and dairy, the alternative protein sector is expected to grow rapidly. Although this presents some risk to New Zealand's meat and dairy sectors, it also presents an opportunity to leverage New Zealands strong capability in areas such as food engineering.

Digital Farming

On the farming side, growth is being driven by farmers increasingly using digitisation and agriculture marketplaces to boost profits and reach more customers, thereby adding stability to their business margins. These include agrifinance tools that help growers sustain operations through unexpected market volatility, biotech solutions that can improve yields and resiliency, farm management software that can help growers improve operations and enable more adaptability to changing conditions, and an emerging focus on data-driven Artificial Intelligence and Machine Learning that can help automate decision-making. The emerging trends in this area provide opportunities to both farmers and agritech firms in New Zealand. For farmers, this means an expanded and increasing pipeline of agritech solutions, while for agritech firms this presents a significant export opportunity.

Indoor Farming

The novel farming sector also demonstrated robust growth, with investments in indoor farming in particular, increasing by 168 percent from 2019 to 2020. Indoor agriculture is likely to see the highest growth in environments such as the Middle East where indoor farming's weaknesses are minimised, and benefits maximised. Insect farming also saw significant gains in 2020, driven by increasing applications for insect derived ingredients in animal feed and pet food. Although there are New Zealand firms that have ventured into the indoor farming and insect ingredients categories, the pace has been very slow.



Dairy

Dairy export revenues are forecast to decrease 5.4 percent to $19 billion in the year ending June 2021, due to COVID-19 related disruptions, a stronger NZD, and dampened global prices during the first half of the season.

Despite global supply chain and market disruptions and price volatility for key commodities, global dairy prices lifted substantially in the second half of the season, compensating for some of the early season lows.

Milk production for the 2020-21 season is forecast to increase 1.9 percent and reach a record high of 1,933 million kilograms of milksolids, driven by favorable weather conditions and a strong farmgate milk price.

The all-company average farmgate pay-out forecast lifted to $7.63 for 2020-21, as commodity prices surged in the second half of the season, enhancing on-farm profitability.

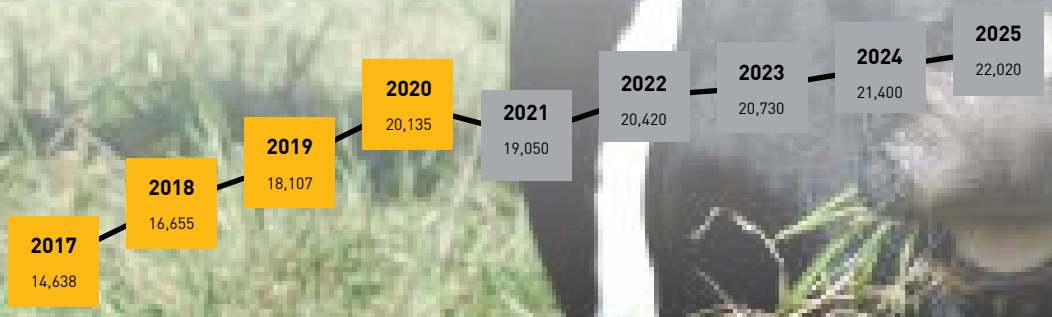


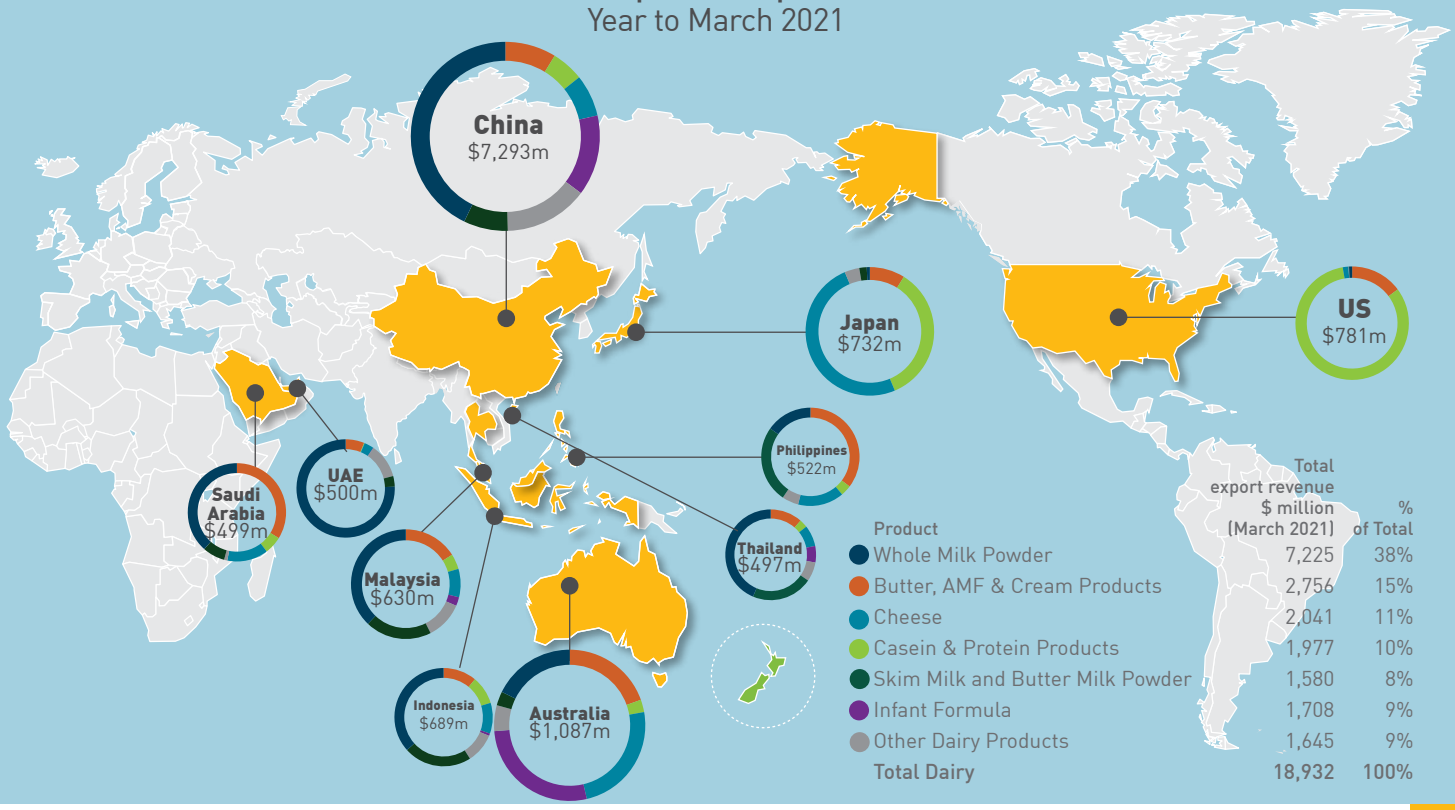
Table 3: Dairy export revenue 2017-25 (NZ$ million)

	Actual				Forecast				
Year to 30 June	2017	2018	2019	2020	2021	2022	2023	2024	2025
Whole milk powder	5,271	5,818	6,675	7,565	7,390	8,250	8,080	8,170	8,290
Butter, AMF, and cream	2,794	3,812	3,612	3,365	2,840	3,030	2,930	2,930	2,960
Skim milk & butter milk powder	1,385	1,228	1,323	1,792	1,580	1,800	1,820	1,850	1,900
Casein & protein products	1,735	1,601	1,574	1,997	1,930	1,850	1,890	1,920	1,960
Cheese	1,830	1,905	1,965	2,074	2,060	1,910	1,970	2,040	2,100
Infant formula	778	1,240	1,641	1,851	1,600	1,870	2,300	2,560	2,780
Other dairy products*	845	1,050	1,318	1,492	1,640	1,700	1,750	1,930	2,030
Total	14,638	16,655	18,107	20,135	19,050	20,420	20,730	21,400	22,020
% Change	+10.1%	+13.8%	+8.7%	+11.2%	-5.4%	+7.2%	+1.5%	+3.2%	+2.9%

Source: Stats NZ and MPI.
* Other dairy products include: liquid milk and cream, ultra-high temperature milk, yoghurt, and ice cream.

Top 10 export destinations

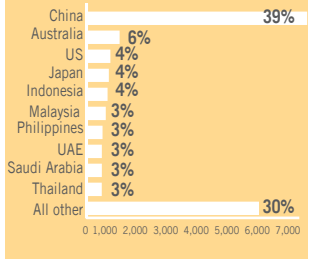
Year to March 2021



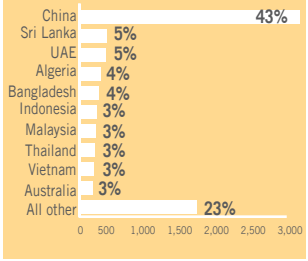
Product	Total export revenue $ million (March 2021)	% of Total
Whole Milk Powder	7,225	38%
Butter, AMF & Cream Products	2,756	15%
Cheese	2,041	11%
Casein & Protein Products	1,977	10%
Skim Milk and Butter Milk Powder	1,580	8%
Infant Formula	1,708	9%
Other Dairy Products	1,645	9%
Total Dairy	18,932	100%

Top markets (NZ$ million, year to March 2021)

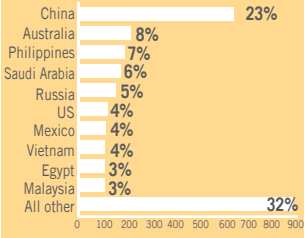
Total dairy products



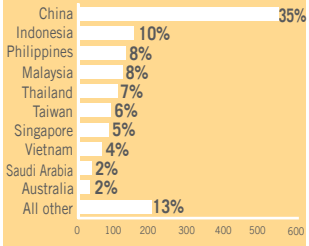
Whole milk powder



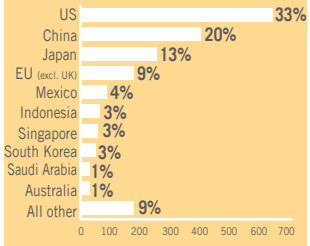
Butter, AMF & cream



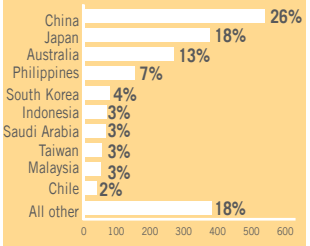
Skim & butter milk powder



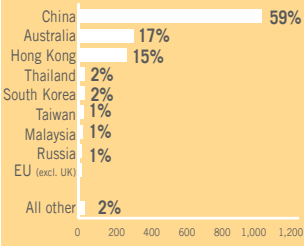
Casein & protein products



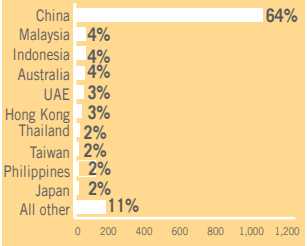
Cheese



Infant formula



Other dairy products



Source: Stats NZ and MPI.

Strong production and late export price recovery offset the impact of COVID-19 on revenues

New Zealand's dairy export revenue is forecast to decrease to $19.0 billion for the year ending June 2021, down $1.1 billion (5.4 percent) from the previous year's record. Despite the fall, this is still expected to be the second highest year in terms of export revenue, almost $1 billion higher than export values in 2018-19.

This is a commendable performance, especially given how challenging the year has been due to COVID-19. Apart from the dairy fats, butter, anhydrous milk fat and cream, all dairy product categories are forecast to outperform their five-year average in terms of export earnings (Figure 7). Supporting this export revenue forecast is increased export volumes driven by robust domestic milk production, and good price support obtained from sustained demand out of China.

On the downside, a strong NZD, supply chain disruptions, and considerable global commodity price volatility over the year, have affected returns across dairy products. Despite these, a recovery in global prices, which began in late 2020, and good management of supply chain challenges by the New Zealand dairy industry, will see export revenue growth continue into 2021, supporting relatively strong farmgate milk pay-outs over the medium-term.

Driven primarily by increased milk production and led by whole milk powder (WMP), export volumes of dairy are forecast to increase by 5.1 percent for the year ending June 2021.

On the value side, we expect export revenues for most dairy product categories to fall for the year ending June 2021. This is primarily driven by low GDT prices during the first half of this dairy season due to COVID-19 related uncertainty and market fears . In addition, supply chain disruptions, and shocks to distribution channels for certain high-value dairy categories such as infant formula have also contributed to the decline in export revenues. Strong demand for liquid milk and cream products, highlighting the strengthening performance of the value-added category, partially offset the wider revenue falls.

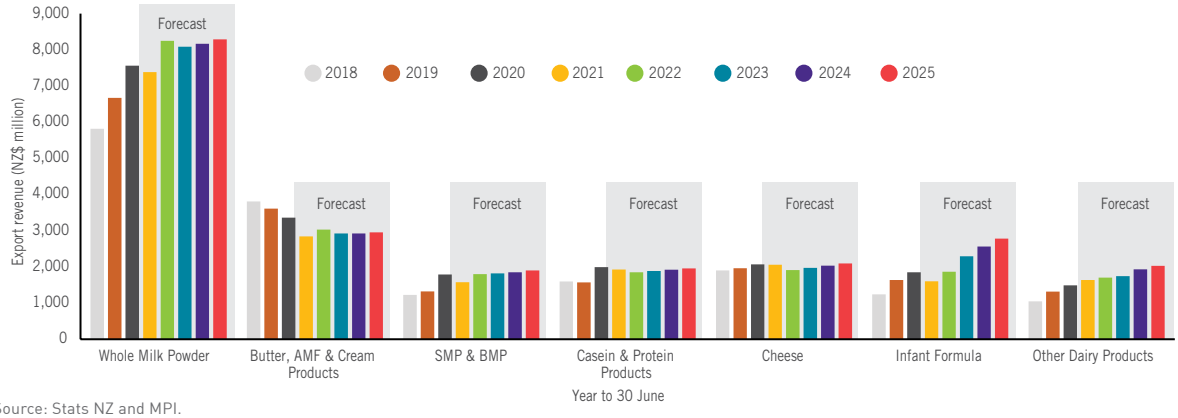
New Zealand milk production forecast to reach record high levels

Enabled by favorable weather conditions and a strong milk price, the 2020-21 season has been a record year for New Zealand milk production (Figure 8). Total milksolids production for the season ending May 2021 is expected to increase 1.9 percent on the previous year. Following a great previous season in 2019-20, early season production was supported by increased winter milking in June and July (up 5 percent on the previous year). Good weather conditions continued through spring, summer, and most of autumn, driving strong pasture growth across the major dairy regions. As a result, except for November, there was a month on month increase in milk production each month over the previous season.

Unlike the pattern of typical years, favourable weather conditions, good levels of conserved feed supplements on-farm and a strong milk price have driven late season milk production above the long-term average. February production was up 2.8 percent and March up 8.7 percent over the previous year. Moreover, with the milk price further strengthening and a positive weather outlook at the tail-end of the season across New Zealand's major dairying regions, many farmers are likely to delay drying off their herds to extend lactation by a few days. Consequently, total milksolids production for the season ending May 2021 is forecast to be 1,933 million kilograms milksolids.

These results are impressive, given declining cow numbers. As at June 2020, dairy cows in milk or in calf were 0.8 percent lower than the previous year, at 4.83 million. We expect this slight downward trend in the national dairy herd to continue over the next few years, with dairy farmers continuing to focus on optimising herd size to get the most efficient balance between cow numbers and feed supply.

Figure 7: Dairy export revenue by product 2018-25 (NZ$ million)



Source: Stats NZ and MPI.

As the industry aligns with increasing pressures to reduce the environmental impacts of dairy farming (primarily on water quality and greenhouse gas emissions), a slight decline in the national dairy land use area is forecast over the medium-term as well. Some farms on the margins of cities have converted from dairy to urban or lifestyle blocks. In addition, a small number of dairy farms (in Northland and the Bay of Plenty regions) have been converted to growing kiwifruit or avocados.

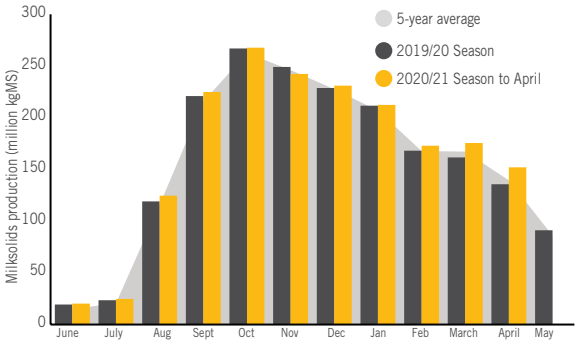
There have been next to no conversions to dairying over the last two years to offset this loss of area, resulting in a small decrease in land area under dairy farming. Despite these trends, we are forecasting milksolids production for the 2021-22 season to rise slightly to 1,939 million kilograms due to improvements in dairy cow genetics, advances in farm management practices and development of new technology improving on-farm productivity in the medium to long-term.

Farmgate pay-out forecast to rise significantly from early season predictions

For New Zealand dairy farmers, the steep increase in export prices of reference dairy commodities from late last year have resulted in the near certainty of a strong farmgate milk price for the 2020-21 season. In March, Fonterra revised its 2020-21 forecast farmgate milk price range up to $7.30 – $7.90 per kilogram of milksolids (kgMS). This is a significant revision from the opening forecast of $5.40 – $6.90 per kgMS. We have adjusted our forecast all company average farmgate milk price for the 2020-21 season upwards to $7.63 per kgMS (including dividend). The combined effect of a strong pay-out coupled with an increase in milk production will significantly enhance on-farm profitability levels for the current season.

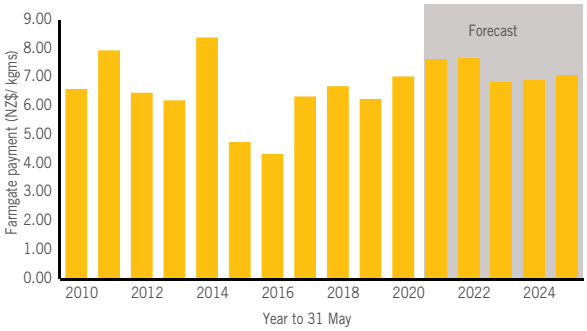
Supply and demand dynamics indicate that the elevated commodity prices that we are currently observing are likely to hold steady for the early months of the 2021-22 season. With economic growth improving around the globe and food service channels beginning to reopen, world markets are likely to remain supportive of strong dairy demand in the near term. Moreover, on the supply side, high feed grain prices are constraining dairy producers' margins globally, especially the total mixed ration based intensive milk production systems of the USA and the EU, and are helping to keep global milk production growth in check. As a result, and despite a headwind from a relatively strong NZD, the outlook for the farmgate milk price next season is promising. We forecast the all company average milk price pay-out for next season to be in the range of NZ$ 7.20 to 8.10 per kgMS (Figure 9).

Figure 8: New Zealand milksolids production 2020-21



Source: Dairy NZ.

Figure 9: New Zealand all company average farmgate milksolids payment (including dividend) 2010-25



Source: Stats NZ and MPI.

Global dairy commodity prices begin low before considerably lifting in the latter half of the 2020-2021 season

Global dairy prices were subdued and volatile for the first few months (June to November) of the 2020-21 dairy season. This is mainly attributable to the complexity, uncertainty, and fear in global dairy markets introduced by COVID-19 and its related challenges. However, since early November, global dairy commodity prices have increased substantially, with weighted average GDT prices reaching as high as USD 4,231 per tonne in the auction held on 2 March 2021, up from USD 3,096 per tonne in early November 2020. Prices have corrected slightly since this peak but remain high (Figure 10). Despite the substantial lift in GDT prices starting in November, low prices in the first few months of the dairy season and the low base for the price climb pulls the average for the season down to USD 3,415 per tonne. Importantly, despite this dampening effect, the higher weighted average GDT price for the 2020-21 dairy season compared to the 2019-20 season has resulted in higher farmgate milk prices than the previous season.

Whole milk powder (WMP) prices have risen 37.8 percent from November 2020. Other commodities are also on a similar course, with skim milk powder (SMP) prices increasing by 26.1 percent over the same period, and reaching highs not observed since 2014. Dairy fat prices have also recovered strongly, with butter lifting over 31.7 percent and anhydrous milk fat lifting by 43.1 percent since November 2020. Driving these price gains are a complex mix of issues emerging from the fall-out of COVID-19, with the principal one being robust Chinese demand for New Zealand dairy, and New Zealand dairy industries' ability to overcome challenges presented by supply chain disruptions and move product to its markets efficiently. Moreover, vaccination rollouts are beginning to lift consumer confidence, and early signs indicate that the foodservice sector, an important customer for dairy, is beginning to make a recovery. On the downside, the strengthening NZD has acted as a headwind and taken some of the shine off export revenues.

High milk price pay-out contradicts dropping export revenues

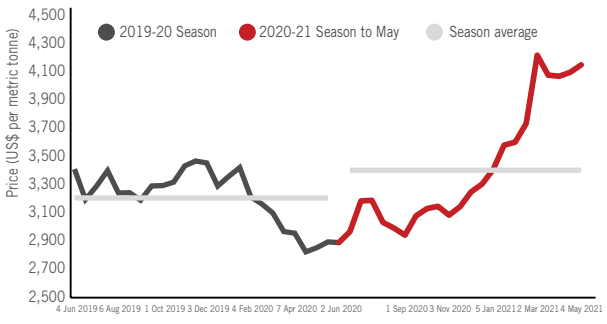
The 2020-21 season demonstrates a unique phenomenon where export revenues are expected to fall relative to the previous season, while the farmgate milk price is forecast to increase. This is a result of a combination of factors, the first being an issue of timing (Figure 11). The farmgate milk price is informed by the prices set on the bi-monthly GDT auctions. However, there is a lag between when the prices are struck on the auction and the product is exported and reflected in export revenues. This has typically been around two and a half to three months and varies depending on product. As a result, the impact of high GDT prices flows through to farmgate milk prices for a milk production season but not to export revenues.

For the current season, the high GDT prices from April onwards will not come through in export revenues for the year ending June 2021 but will influence and drive farmgate milk prices up for the dairy season ended May 2021. In contrast, the low GDT prices from the later part of the previous season (2019-20) will be reflected in export revenues for the current year ending June 2021 but will not influence the 2020-21 season's milk price.

The second factor is related to the reference commodities that influence the farmgate milk price. Fonterra's farmgate milk price calculation is entirely weighted towards the prices of set reference commodities achieved via the global dairy trade platform. However, there are dairy products outside the reference commodities basket, which impact export revenues but not farmgate milk price. One example is infant formula, which has seen a significant drop in export revenues this year. In contrast, whole milk powder, an important reference commodity, has performed well this year and has been significant in driving the farmgate milk price up.

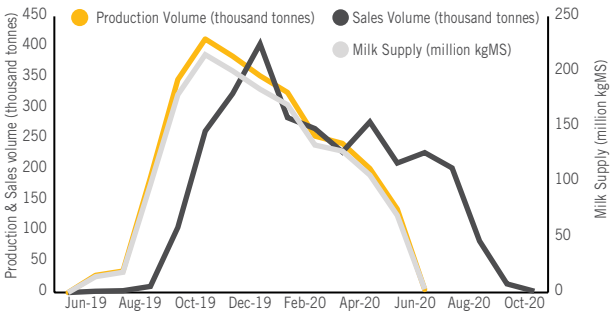
The third reason relates to exchange rates and hedging. Global dairy prices are set using USDs, whereas export revenues are reported in NZDs. The strengthening NZD over 2020-21 is likely to have shaved off some of the dairy price gains achieved in USD, and this will be reflected in export revenues. However, it is very likely that the hedging strategies employed by New Zealand dairy companies, specifically Fonterra, have dampened the impact of the stronger NZD on farmgate milk prices.

Figure 10: Weighted Average Global Dairy Trade auction price (all products), June 2019 to May 2021



Source: Global Dairy Trade.

Figure 11: Monthly milk supply, production and sales 2019-20 – Fonterra



Source: Fonterra and MPI.

North Asian demand has been the key driver of export revenues and New Zealand farmgate milk price

Strong demand growth from North Asia (primarily China) has been the most significant driver of export revenue and New Zealand farmgate milk price forecasts (Figure 12). China continues to remain the primary destination for New Zealand dairy products, receiving close to 40 percent of total dairy shipments in the year ended March 2021. Moreover, as North Asia buys the vast majority of the products offered on GDT, it significantly influences the benchmark (Fonterra's) farmgate milk price calculation. Therefore, the strength of Chinese import demand is currently the most critical factor informing the forecast farmgate milk price for the new season.

Increased demand from China is being propelled by a combination of factors. Firstly, the rapid recovery from COVID-19 by China and heightened consumer concerns around health has increased demand for dairy products, specifically fresh milk products. The strong demand for fresh milk has led to a shrinking of supply of milk for manufacturing of products, and this in turn is pushing processors to import more dairy ingredients.

Secondly, feed prices in China are at very high levels due to increased demand for grain from the domestic swine industry because of a ban on feeding food waste to pigs. Additionally, supply chain disruptions, higher freight costs, and a decline in domestic production of corn have further fuelled feed price increases. High feed prices have driven up farmgate milk prices in China, making imports more attractive than domestic supply. Overall, the supply shortfalls and high domestic milk price is likely to strongly support the import of New Zealand dairy products over the short to medium-term.

In the medium to long-term, the significant up-swing in milk prices is likely to further enhance the rate of dairy herd expansion in China. In addition, at a strategic level, the dairy herd expansion is well aligned with the Chinese Government's focus on self-sufficiency and food security. The resulting additional production capacity could reduce China's import requirements for New Zealand dairy in the medium to long-term. However, as domestic production in China becomes increasingly constrained by limitations in resource availability, demand for New Zealand dairy products are expected to increase once again.

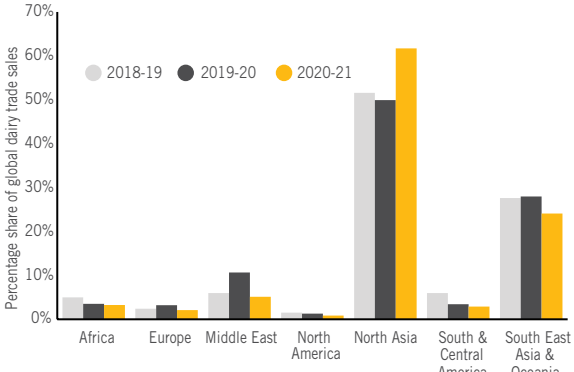
Global milk production and dairy trade increases slightly in 2020 – reports food and agriculture organisation (FAO)

Global milk production reached nearly 906 million tonnes (on a milk equivalent basis) in the year ended December 2020, up 2.0 percent from 2019, driven by output increases in all geographical regions, except Africa.[1] Milk volume increases were highest in Asia (up 379 million tonnes), followed by Europe, the Americas, Oceania and Central America (Figure 13). There was almost no change in the regional distribution of milk production since 2019, with Asia continuing to account for 42 percent of world milk production, followed by the EU at 26 percent. This feature is not expected to change in the long-term. In China in particular, milk production is estimated to have grown by 7 percent to 35.9 million tonnes in 2020, driven by increased output from large-scale dairy farms that tend to be more efficient, and robust domestic demand.

International dairy trade increased by 1.2 percent to nearly 79 million tonnes (on a milk equivalent basis) in 2020. However, global trade as a proportion of milk production continues to be fairly insignificant at 8.7 percent. This reflects the typical position of the global dairy industry which is strongly characterised by most of the milk produced being consumed locally and only a small proportion entering international trade. This important feature of the global dairy industry is not expected to change in the medium to long-term. The slight increase in trade in 2020 is attributed to increased imports by China, Algeria, Saudi Arabia and Brazil. By contrast, some of the traditional dairy importing countries, such as Mexico, the United Arab Emirates, Philippines, Bangladesh, Japan and Indonesia reduced milk imports, due to COVID-19 related market lockdowns, transport blockages and economic downturns. The marginal increase in international dairy trade was reflected in increased export volumes of WMP (1.9 percent) and cheese (4.1 percent). These increases compensated for the reductions in exports of SMP (-2.3 percent) and butter (-6.0 percent).

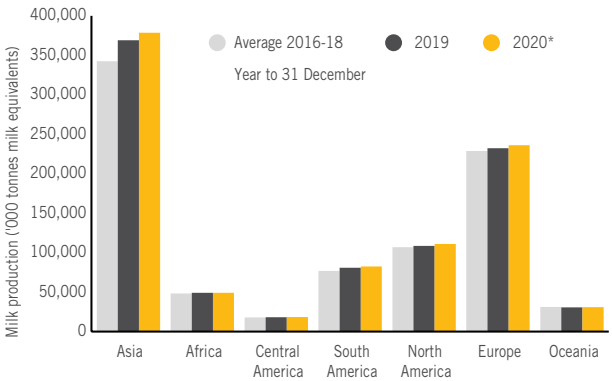
1 as estimated by the Food and Agriculture Organization of the United Nations (FAO).

Figure 12: percentage share of global dairy trade sales by region 2019-21



Source: Global Dairy Trade.

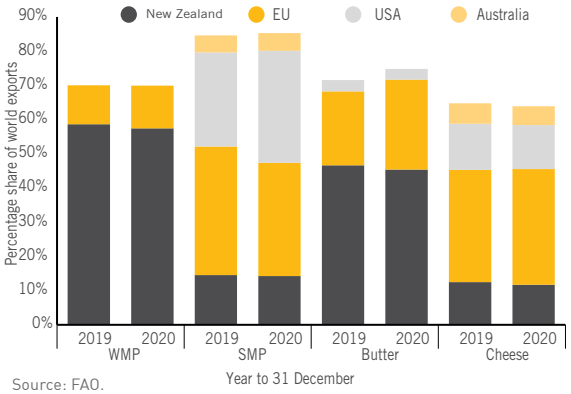
Figure 13: World milk production 2016-20



Source: Food and Agriculture Organisation (FAO).
* estimate.

On the whole, despite international trade representing only a small proportion of world milk production, global exports of dairy products continue to be highly concentrated. The top three dairy exporters (NZ, USA and EU) accounted for 75 percent of WMP exports, 80 percent of SMP exports, 81 percent of butter exports and 58 percent of cheese exports (Figure 14). New Zealand retained its position as the largest exporter of WMP and butter in 2020, accounting for 57 percent and 45 percent of international trade respectively. This dominance of New Zealand in global WMP and butter trade is expected to continue in 2021 and the medium to long-term, due to the significant efficiency and cost leadership developed over time, and the strong demand from New Zealand's traditional export markets. New Zealand retained its third place in global SMP and cheese trade in 2020, accounting for 14 percent and 13 percent of international trade, respectively. The EU remains a powerhouse in both SMP and cheese, accounting for 33 percent and 37 percent of international trade, respectively. The USA further strengthened its position in SMP trade, accounting for 33 percent, and held onto its share of cheese trade of 14 percent. It is expected that global exports of dairy products will remain highly concentrated in the medium to long-term, with the three largest exporters – NZ, EU and USA – continuing to dominate.

Figure 14: Percentage share of world dairy commodity exports 2019 and 2020



Source: FAO.

Table 4: Dairy farm production, milk prices and exports 2017-25

	Actual				Forecast				
Year to 30 June	2017	2018	2019	2020	2021	2022	2023	2024	2025
Cows and heifers in calf or in milk (million)	5.04	5.01	4.95	4.92	4.90	4.88	4.86	4.84	4.83
Milksolids production (million kg)	1,851	1,840	1,884	1,896	1,933	1,942	1,951	1,961	1,971
Milksolids per cow (kg of milksolids)	356	376	367	383	393	396	400	403	407
Milk price (cents per kg of milksolids)	640	672	628	706	763	770	685	690	710
Total export value ($ million)	14,638	16,655	18,107	20,135	19,050	20,420	20,730	21,400	22,020
Total export volume (thousand tonnes)	3,279	3,238	3,524	3,462	3,638	3,646	3,680	3,753	3,812
Average export price ($ per kg)	4.46	5.14	5.14	5.82	5.24	5.60	5.63	5.70	5.78

Source: MPI, Stats NZ, and DairyNZ.

Mycoplasma Bovis update

The *Mycoplasma bovis* (*M. bovis*) Programme continues to make steady progress, and we maintain confidence in reaching the goal of eradication.

As at 10 June 2021, 266 properties have been confirmed with *M. bovis*. Of these farms, 259 have subsequently been depopulated, cleaned and disinfected, and have now had their restrictions lifted. During 2020, the number of Active Confirmed properties reduced to one, the lowest number since the beginning of the Programme. A small cluster in the Canterbury region was discovered through our Bulk Tank Milk surveillance stream in spring of 2020. This brings the current total to seven active properties. We always expected more properties remaining to be found and cleared, and this underpins our confidence in the value of national surveillance across the dairy herd. We continue to actively trace cattle from this cluster, and are confident it is contained to the region.

A further 28 farming properties currently have restrictions in place on the movement of animals and risk goods off farm (due to the likelihood they have received a transfer of cattle from an infected farm). This is in comparison to 121 properties at the same time last year.

To date, 171,393 animals have been culled from the national herd, with $204.9 million paid in compensation. Compensation processes and timeframes have been improved to ensure that most farmers are paid quickly to reduce the impact on their businesses. The average time to process a claim has reduced to 21 working days, down from 47 two years ago.

The national herd is closely monitored for *M. bovis* through two background surveillance programmes: Bulk Tank Milk, and Beef and Drystock surveillance. These surveillance streams provide confidence that the disease presence is being reduced. To date, 403,260 animals have been sampled through Beef and Drystock surveillance, and results indicate that the disease is not widespread in the beef industry.

The *M. bovis* programme is currently still in the delimitation phase (finding all infected animals within the network of infected properties). Planning is underway to move from this phase into long-term surveillance (continuing to run background screening across dairy and beef herds, to provide assurance of absence of the disease). Before we can transition to this phase and finish delimiting, the main activities to complete include:

- resolving the Canterbury cluster of infected properties;
- addressing any residual risk remaining from historic infected properties; and
- clearing the Five Star Beef feedlot of infection.

Meat and Wool

New Zealand's meat and wool export revenue is forecast to fall 2.8 percent to $10.4 billion for the year ending June 2021, revised up from the previous forecast due to higher stock slaughter and export volumes.

Prices have been negatively impacted by COVID-19 related food service closures and freight issues, and a stronger NZD, but African Swine Fever (ASF) continues to provide underlying demand for this sector.

Beef, mutton, lamb, and venison export volumes are all forecast to increase in the 2020-21 year.

Average farm profit before tax for the 2020-21 season on all classes of sheep and beef farms is forecast to be $124,200 per farm (down 20.4 percent) according to Beef + Lamb New Zealand.

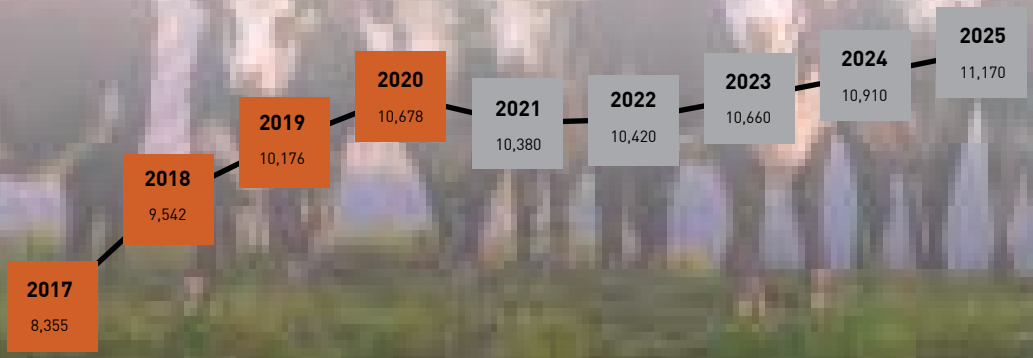


Table 5: Meat and wool export revenue 2017-25 (NZ$ million)

	Actual				Forecast				
Year to 30 June	2017	2018	2019	2020	2021	2022	2023	2024	2025
Beef & veal	2,706	2,943	3,324	3,811	3,630	3,590	3,610	3,650	3,690
Lamb	2,441	3,018	3,227	3,331	3,110	3,100	3,160	3,220	3,290
Mutton	417	575	576	643	680	640	640	640	650
Wool	522	543	549	432	400	420	440	450	470
Venison	162	196	186	152	140	150	160	160	170
Other meat*	513	543	610	593	610	640	650	670	690
Hides & skins	416	396	354	240	200	210	210	210	210
Animal by–products	587	700	729	803	840	860	870	890	900
Animal fats & oils	156	147	115	140	180	180	180	190	190
Animal products for feed	273	332	376	430	480	550	630	720	820
Carpets & other wool products	163	148	130	102	100	100	100	90	90
Total	8,355	9,542	10,176	10,678	10,380	10,420	10,660	10,910	11,170
% Change	–9.2%	+14.2%	+6.6%	+4.9%	–2.8%	+0.4%	+2.3%	+2.3%	+2.4%

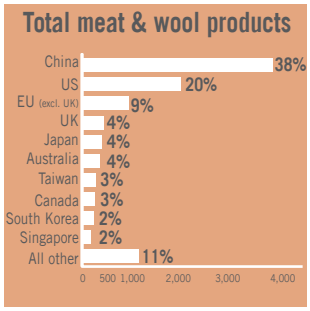
Source: Stats NZ and MPI.
* Other meat includes: edible offal, processed meat, and poultry.

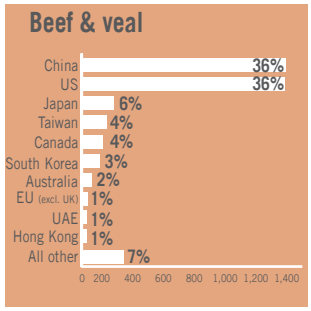
Top 10 export destinations

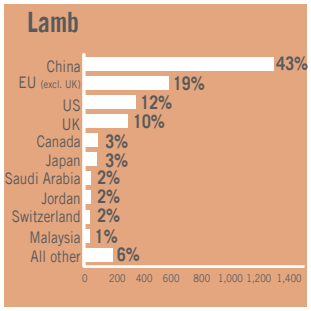
Year to March 2021

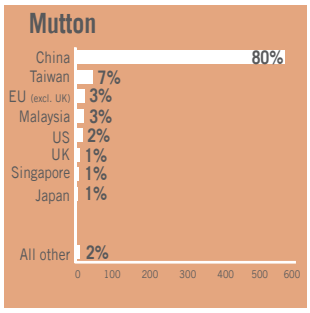
Product	Total export revenue $ million (March 2021)	% of Total
Beef and Veal	3,612	35%
Lamb	3,063	30%
Mutton	703	7%
Venison	138	1%
Other Meat	588	6%
Wool	355	3%
Other meat and wool products	1,761	17%
Total meat and wool	**10,220**	**100%**

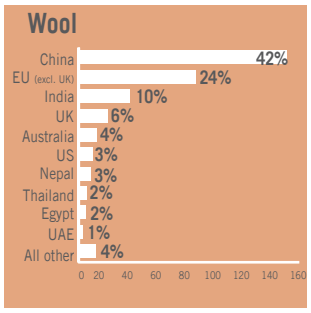
Top markets (NZ$ million, year to March 2021)

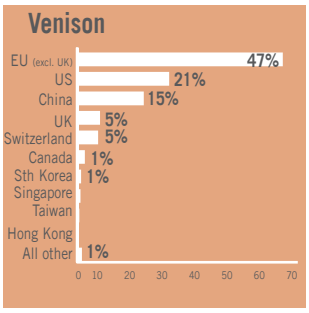


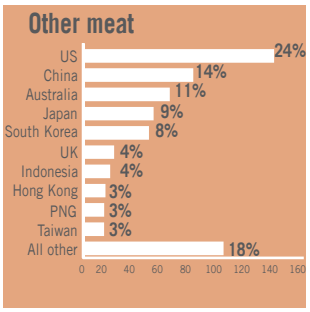


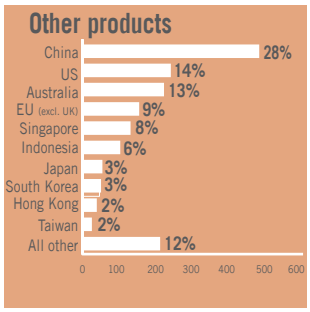












Source: Stats NZ and MPI.

New Zealand's meat and wool export revenue is forecast to decrease 2.8 percent to $10.4 billion in the year ending June 2021. A combination of COVID-19's impact on freight (availability, timing, and cost), global food service restrictions, and a stronger NZD are putting downward pressure on meat prices.

COVID-19 vaccination rollout will continue to be a key determinant of the timing of the gradual food service recovery, supporting prices of high value cuts as patronage in dine-in restaurants increases. In addition, global protein demand will be supported by an estimated 6 percent growth in the global economy in 2021, and 4 percent growth in 2022 (as forecast by the IMF). Freight issues are likely to have an ongoing impact into the beginning of the 2021-22 year. Chilled shipping container shortages and related timing issues have created disparity between export prices and in-market (imported) meat prices, eroding export and farmgate returns.

China's ongoing African Swine Fever (ASF) induced protein shortage, as well as growing demand for high quality protein from developing countries, is expected to continue to provide strong underlying demand for meat products in the year to June 2021. This demand will partly offset the negative impacts from freight and food service restrictions. ASF is forecast to continue as a key driver of meat demand in 2021 and into the medium-term. Since August 2018, global supply and demand has shifted in response to the ASF outbreak, with China's beef and veal import volumes doubling in the three years to 2021. Over this period, ASF-induced demand has put significant upwards pressure on meat prices. ASF recovery forecasts are continually changing in response to further outbreaks, leading to uncertainty regarding China's meat demand over the medium-term. More recently, Argentina's 30-day ban on beef exports is expected to provide an additional boost to meat prices in the short-term.

Prices for all meat categories are forecast to decrease this year, with venison experiencing the largest fall (23.5 percent) and mutton experiencing the smallest fall (3.6 percent).

Higher value meat has been more impacted by food service restrictions, leading to larger declines in prices this year. In addition, the pandemic has further subdued already reduced demand for wool, with prices forecast to decrease 26.6 percent this year.

Export volumes are forecast to increase for all meat categories this year, with venison (22.8 percent) seeing the largest increase, followed by mutton (9.9 percent). Meat production in the 2020-21 season has been boosted by a number of stock carried over from last season to get them to slaughter weight, a high number of dairy-beef animals sent for slaughter, dry conditions on the East Coast, high mutton prices enticing farmers to send more adult sheep for slaughter, and environmental regulations limiting stockholding capacity.

Meat and wool export revenue is forecast to increase 0.4 percent in the year ending June 2022, with the main contributor being improved wool, venison, other meat, and animal products for feed prices. Export volumes for all major categories are forecast to decline next year.

Profitability and livestock numbers

Following strong sheep and beef farm profitability in 2018-19 and 2019-20 seasons, average farm profit before tax on all classes of sheep and beef farms for the 2020-21 season is forecast to be $124,200 per farm (down 20.4 percent) according to Beef + Lamb New Zealand. There is uncertainty in this forecast relating to weather, feed, and exchange rates. Revenue from sheep is forecast to decrease 12.3 percent and revenue from cattle is forecast to decrease 4.2 percent due to lower farmgate prices. Wool revenue is forecast to decrease 24.5 percent.

Livestock numbers are forecast to continue falling through to 2025 (Table 6). The main drivers behind the forecast fall are environmental regulations in relation to freshwater and greenhouse gases, competition for farmland for afforestation and urbanisation, and productivity improvements in the ewe breeding flock.

Table 6: Livestock numbers 2017-25 (millions)

	Actual				Forecast				
As at 30 June	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total cattle	10.1	10.1	10.2	10.1	10.0	9.9	9.9	9.8	9.7
Beef cattle	3.6	3.7	3.9	3.9	3.8	3.8	3.8	3.7	3.7
Dairy cattle	6.5	6.4	6.3	6.2	6.1	6.1	6.1	6.1	6.1
Total sheep	27.5	27.3	26.8	26.0	25.4	25.3	25.3	24.9	24.6
Breeding ewes	17.8	17.2	16.8	16.6	16.3	16.3	16.1	15.9	16.1
Lambs marked and/or tailed	24.1	24.7	23.8	23.2	22.9	22.2	22.1	21.9	21.8
Total deer	0.8	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8

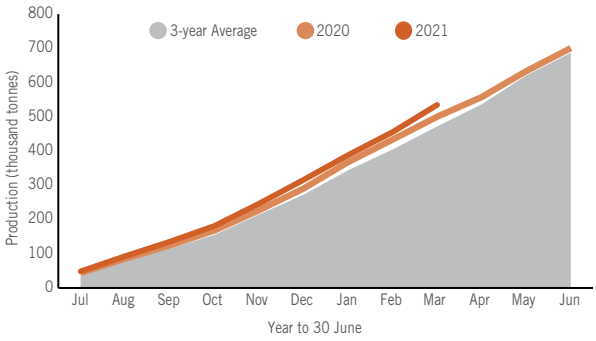
Source: Stats NZ and MPI.

Beef and veal

Beef and veal export revenue is forecast to decrease to $3.6 billion for the year ending June 2021, a 4.6 percent fall. This decrease is driven by an 11.3 percent fall in beef and veal prices. COVID-19 freight issues, food service restrictions, subdued market sentiment, increasing competition from Brazil and the US, and a stronger NZD are putting downward pressure on export prices. For 2021-22, export revenue is forecast to decrease 1.4 percent, due to lower production and exports.

Domestically, it has been a record year for beef production, with beef cow numbers recovering from the 2020 drought, more cattle carried over winter to improve slaughter weights, an increase in dairy-beef cattle slaughter, and slaughter weights slightly higher (1.4 percent) than the previous season (Figure 15). 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. Limited processing due to cold storage shortages is a downside risk to the fourth quarter of the 2020-21 season.

Figure 15: Cumulative beef and veal production 2020-21



Source: Stats NZ.

Global demand solid but competition increasing

Export prices have been subdued this year, reflecting freight issues, food service closures, an appreciation of the NZD, and lower demand from China for New Zealand beef. China's demand for beef continues to grow because of its ASF-induced protein shortage, rising incomes and migration to urban areas, but this demand is increasingly being met by South American competitors.

In the nine months to March 2021, beef and veal exports to China decreased $260 million, down 23 percent on the previous year, reflecting greater competition in the Chinese beef market. Reduced demand from China, combined with higher US demand for lean trimmings into the fast-food trade as a result of COVID-19, has led beef exports to the US to increase 18 percent in the nine months to March 2021. The US accounted for 24 percent of New Zealand beef exports in this period.

Beef and veal export prices are forecast to decline from $8.28 to $7.35 per kilogram in 2020-21, down 11.3 percent from the previous year, but equal to the five-year average. The previous price high in 2019-20 was driven by increasing demand for ground beef from China, which caused strong competition between China and the US. Since 2019-20, an increased supply of lower priced beef from South America has reduced export prices. Brazil has emerged as a major competitor in the global beef market, with an expanded herd, opportunity for greater genetic gain, and agricultural land expansion. On the other hand, Argentina's recently announced 30-day beef export ban provides upside to forecast beef prices in 2021, as Argentina is China's second largest beef supplier.

Australia has also seen reductions in its market share of beef into China. Meat & Livestock Australia (MLA) expects Australia's beef herd to grow 5 percent in the 2020-21 season as it continues to rebuild herds following a sustained period of severe drought in 2018 and 2019. MLA forecasts Australian beef production to increase 8 percent between 2021 and 2023, returning to pre-drought levels. With Australian beef exports coming back online in the medium-term, New Zealand could see increased competition and further downwards pressure on export prices.

Table 7: Beef cattle numbers, beef prices, export volumes and values 2017-25

	Actual				Forecast				
Year to 30 June	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total beef cattle (opening stocks in millions)	3.53	3.62	3.72	3.89	3.88	3.85	3.80	3.76	3.71
Schedule prime beef price (cents/kg)	541	545	545	550	500	545	560	565	565
Production ('000 tonnes)	640	677	685	700	740	700	685	680	675
Export volume ('000 tonnes CWE)*	563	593	650	655	705	650	635	625	625
Export volume ('000 tonnes PW)**	395	417	455	460	495	455	445	440	440
Export price (NZ$/kg PW)	6.85	7.06	7.30	8.30	7.35	7.90	8.10	8.30	8.40
Export value (NZ$ million)	2706	2943	3320	3810	3630	3590	3610	3650	3690

Source: Stats NZ, B+LNZ, and MPI.

* Carcass-weight equivalent of shipped product weight.

** Product weight as shipped.

Lamb and mutton

Lamb export revenue is forecast to decline 6.8 percent to $3.1 billion for the year ending June 2021. This decline is driven by lower lamb export prices (down 10.6 percent) due to COVID-19 related freight disruptions, food service restrictions, and an appreciation in the NZD. Increased retail demand partially offset this fall in export prices.

Mutton export revenue is forecast to reach $681 million, a 6.0 percent increase for the year ending June 2021. The rise in mutton export revenue is driven by a significant increase in export volumes (9.9 percent), with farmers making the most of strong farmgate prices. Mutton export prices are forecast to decline 3.6 percent this year. Export prices for mutton have been impacted less than for lamb due to strong increases in demand for mutton from China.

For the 2020-21 season, lamb production is forecast to be 364,000 tonnes, slightly down from the previous season. Mutton production is forecast to be 98,000 tonnes, up 6.1 percent on the previous year. Higher adult sheep slaughter has been driven by good farmgate prices in response to strong export demand. Breeding ewes and overall sheep numbers are forecast to continue to fall over the outlook period (Table 8). The 2020 drought, higher mutton schedules in mid-to-late 2020-21 season, and very low crossbred wool prices are accelerating the long-term decline in ewe numbers.

Despite the 2020 drought in the Eastern North Island, reasonable lambing rates and higher adult sheep slaughter weights are expected in the 2020-21 season. The lambing percentage in the 2020-21 season is estimated to be 130.3 percent, down 0.7 percent compared to the previous year. The lambing percentage was negatively impacted by the extreme weather events including drought and the South Island snowstorm.

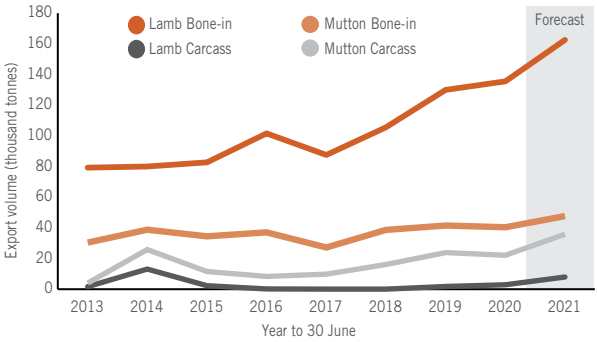
China continues to drive lamb and mutton exports

China's demand for lamb and mutton has continued to increase in 2020-21, with China accounting for 52.3 percent of lamb exports and 85.3 percent of mutton exports by volume in the nine months to March 2021. Revenue growth in the 2020-21 year to date has been limited by COVID-19 restrictions as food service is the main sales channel for New Zealand lamb and mutton. Demand for lamb and mutton has been underpinned by China's economic recovery, ASF-driven protein deficit, and increasing disposable incomes.

Demand for lower priced cuts has remained strong throughout the pandemic, but higher priced lamb cuts were impacted by food service restrictions in key markets. In the nine months to March 2021, China's volume of sheepmeat carcass imports from New Zealand has increased, with mutton carcass volumes increasing 62 percent to 27,900 tonnes, and lamb carcass volumes increasing 170 percent to 5,200 tonnes (Figure 16). Carcasses and bone-in cuts are particularly popular in Asian markets because it promotes flexibility for the purchaser and lowers manufacturing costs for the seller.

China's demand for mutton has increased, considerably reducing the price differential between mutton and lamb. On a per head basis, ewes and lambs are now approximately equal in value. This relatively high price for adult sheep has sped up the contraction of New Zealand's sheep flock. Chinese cooking methods and preference for stronger tasting meat means mutton is just as sought after as lamb.

Figure 16: Sheepmeat exports to China 2013-21



Source: Stats NZ.

Table 8: Sheep numbers, lamb prices, export volumes and values 2017-25

	Actual				Forecast				
Year to 30 June	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total sheep (opening stocks in millions)	27.58	27.53	27.30	26.82	26.03	25.38	25.31	25.25	24.94
Schedule lamb price (cents/kg)	560	713	750	755	670	705	720	730	745
Production ('000 tonnes)	357	367	360	365	365	355	355	350	350
Export volume ('000 tonnes CWE)*	364	380	385	375	395	375	375	375	370
Export volume ('000 tonnes PW)**	292	304	310	300	315	300	300	300	295
Export price (NZ$/kg PW)	8.37	9.92	10.40	11.10	9.85	10.35	10.55	10.75	11.15
Export value (NZ$ million)	2441	3018	3230	3330	3110	3100	3160	3220	3290

Source: Stats NZ, B+LNZ, and MPI.

* Carcass-weight equivalent of shipped product weight.

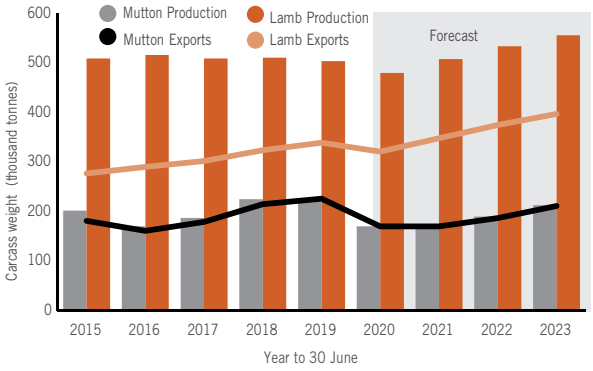
** Product weight as shipped.

Lamb export prices and schedule prices are forecast to rise in 2021-22 but remain lower than 2019-20. Prices are set to begin their post-COVID-19 recovery in 2021-22, but are expected to be hampered by ongoing freight issues, Australia's flock recovery and ensuing export increases meeting demand from China, and China's gradual ASF recovery (which will reduce its protein demand).

Australia's flock recovering

New Zealand and Australia account for over 70 percent of worldwide sheepmeat export revenue, as most production in other countries is consumed in the country of origin. Global export supplies remain constrained by falling breeding ewe numbers in New Zealand and significant 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). Competition from Australia is set to increase in the coming years, with MLA projecting lamb and mutton exports rising 25 percent between 2020 and 2023 (Figure 17), which will apply downward pressure on prices as supply increases.

Figure 17: Australian lamb and mutton production and exports 2015-23



Source: MLA.

Wool

Wool exports are forecast to decrease to $400 million in 2020-21, a 7.2 percent decrease from the previous year (Table 9). The decrease in export revenue is due to a fall in the price received for all micron categories (Figure 18). This is expected to more than offset a 26.5 percent increase in volumes, reflecting a rebound from lower levels of wool exported in the previous year due to the COVID-19 lockdown. Higher wool inventories mean that wool prices are likely to take longer to recover as wool is brought out of storage. The pandemic caused wool demand to become further depressed, driven by lockdowns and lower consumer sentiment. Fine wool prices have partially recovered, but only account for around 8 percent of New Zealand's export volumes.

Strong and mid-micron wool prices struggling

At the farmgate, coarse crossbred auction prices plummeted 42 percent to $1.82 per kilogram (clean) in the nine months to September 2020 due to lower demand for wool in China where wool processing volumes were significantly reduced (a flow-on effect of reduced consumer demand). Auction prices for strong wool have partially recovered but are in tumultuous territory and have some way to climb before they fully recover, achieving only $2.42 per kilogram (clean) in late May 2021. Higher wool inventories and lower quality wool are further depressing prices. At this stage, there are no clear signs of a coarse wool price recovery.

Low wool prices mean shearing is nearly a net cost

Beef + Lamb New Zealand estimates that in the 2020-21 season, shearing expenses will account for 99 percent of wool revenue for the average farmer (Figure 19), compared to 35.7 percent in 2016-17 (before the downturn in strong wool demand and prices). While wool revenue has been declining, shearing costs have been increasing. Most farmers have no option but to continue shearing their sheep for animal health welfare reasons.

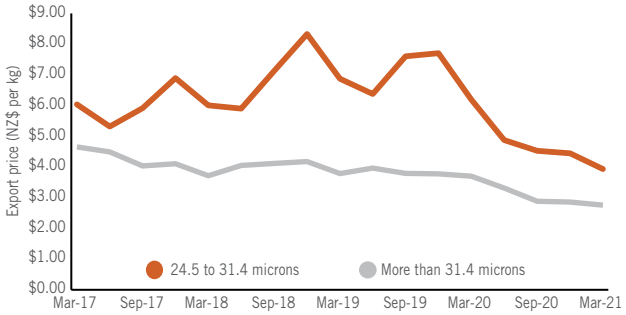
Table 9: Wool production, prices, export volumes and values 2017-25

	Actual				Forecast				
Year to 30 June	2017	2018	2019	2020	2021	2022	2023	2024	2025
Average sale price (cents/kg clean)	512	509	520	470	385	400	440	475	495
Production (000 tonnes clean basis)	107	105	105	100	100	95	95	95	95
Export volume (000 tonnes clean basis)	85	102	95	80	95	90	90	85	85
Export volume (000 tonnes PW)*	93	112	105	85	105	100	100	95	95
Export price (NZ$/kg PW)	5.60	4.86	5.25	5.05	3.80	4.20	4.40	4.75	4.95
Export value (NZ$ million)	522	543	550	430	400	420	440	450	470

Source: Stats NZ, B+LNZ, and MPI.
* Product weight as shipped.

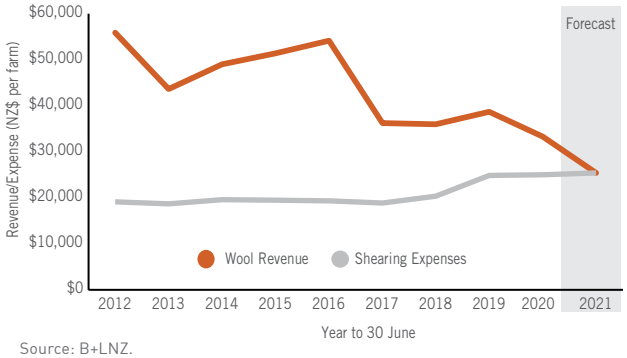
Strong wool (31.4 microns or greater) constitutes 73 percent of New Zealand's wool exports. Research and trials into alternative uses for strong wool currently present upside opportunity for this forecast. New higher value uses and shifting consumer demand for natural fibres could give the strong wool industry the boost it needs.

Figure 18: Quarterly wool export prices by micron 2017-21



Source: Stats NZ.

Figure 19: Wool revenue versus shearing expenses 2012-21



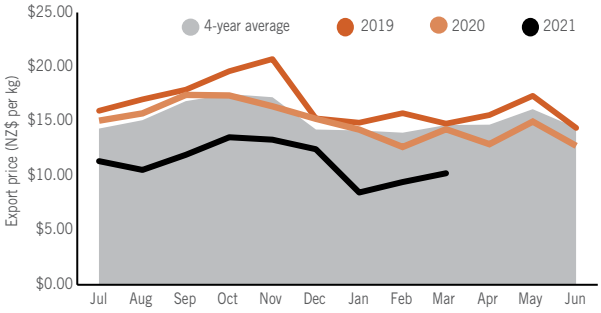
Source: B+LNZ.

Photo: Kieren Scott – Minaret Station

Venison and velvet

Lower export prices are expected to drive a 6.0 percent fall in venison export revenue in the year ending June 2021, to $140 million. On a price per kilogram basis, venison has been most heavily impacted of all meat categories in 2020-21, due to heavy reliance on food service channels. In the nine months to March 2021, export prices have been very low, 25.6 percent lower than the same period in the previous year (Figure 20). Higher export volumes (up 19.5 percent) have partially offset the decrease in prices. Export volumes are up due to environmental regulations, a shift towards velvet production (more hinds slaughtered), low venison prices, higher reproductive efficiency, and higher fawn survival rates. Looking to the year ending June 2022, export volumes are forecast to fall, and prices are expected to trend upwards as they begin to recover from COVID-19.

Figure 20: Monthly venison export prices 2019-21



Source: Stats NZ.

Farmgate venison prices are the lowest they have been since 2006-07 and are forecast to begin recovering by the middle of the 2021-22 season. The prime venison schedule is significantly deflated, sitting at average of $5.86 per kilogram for the ten months to April 2021, compared to $10.26 in 2018-19. Venison export and farmgate price recovery is highly dependent on food service recovery in key export markets. Significant frozen venison stocks in Europe are likely to put downward pressure on prices for at least the remaining part of 2020-21.

Uncertainty among importers about when food service will reopen has led to a higher proportion of venison being exported as frozen. Frozen venison volumes have risen 29.2 percent in the nine months to March 2021, whereas chilled venison volumes have fallen 19.8 percent.

In the nine months to March 2021, exports to the US accounted for 21.2 percent of venison export revenue, followed by Germany (17.8 percent), China (17.5 percent), and Netherlands (14.3 percent). Demand from China continues to grow, up from 10.6 percent in 2019-20, reflecting the relative strength of its economy and ASF-induced protein shortage.

Velvet

Velvet is performing well for the twelfth consecutive year, with export revenue up 14.8 percent in the nine months to March 2021. Export prices are high due to strong demand from China, making up for lower demand from South Korea in 2020-21. The majority of New Zealand's velvet is exported to China, accounting for two-thirds of export value. Demand from China is expected to remain strong, and demand from South Korea is expected to recover, supporting export prices. Perceived health benefits from velvet remain relevant in the global pandemic context, as consumers seek immune enhancing products. In response to growing demand, velvet production is increasing by 10 percent per year and is forecast to continue to increase over the outlook period. Increasing demand for velvet paired with lower demand for venison is shifting gender ratios towards stags, with the number of hinds slaughtered up 21.7 percent in the nine months to March 2021.

Poultry

New Zealand poultry production was steadily growing prior to the infectious bursal disease virus type 1 (IBDV-1) being detected in New Zealand in late 2019. The loss of New Zealand's "IBDV-1 free" certification caused poultry meat export revenue to drop from $91.8 million in 2017-18 to $51.0 million in 2019-20, with a further 17.3 percent drop forecast in 2020-21 to $42.2 million (Figure 21). Prices dropped nine percent in the two years to June 2020 and have receded further in 2020-21 to an average export price of $3.21 per kilogram.

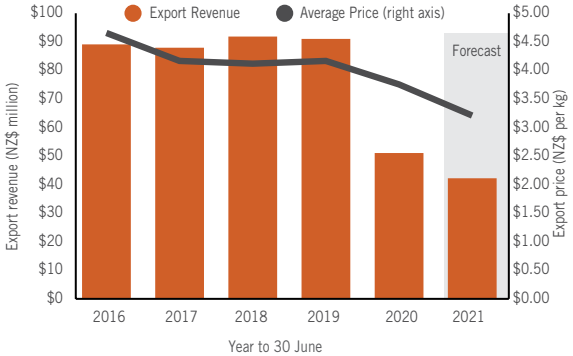
Without "IBDV-1 free" certification, poultry meat must be heat treated before it is exported to Australia, which reduces the range of products available to export. Australia is New Zealand's largest poultry market, comprising 54 percent of New Zealand's poultry export revenue in 2017-18 before IBDV was detected. New Zealand and Australia have agreed on alternative IBDV measures, which enable exports from a MPI-approved secure supply chain. Exports are expected to resume in June 2021.

Continued growth in pet food category

Pet food revenue has grown rapidly, and now accounts for 61.5 percent of animal product for feed category revenue. Growing global demand for pet food has been driven by increasing pet ownership and appetite for premium products (including treats), which New Zealand specialises in. COVID-19 has further accelerated the growth in this industry, as more people seek companion animals. Continued strong pet food demand from China, Australia, the US, Japan, and Taiwan provides a positive outlook for animal products for feed, with prices forecast to increase over the forecast period (Figure 22). Strong demand for premium pet food is evident in year to date export prices, which are currently 19.9 percent above the previous year.

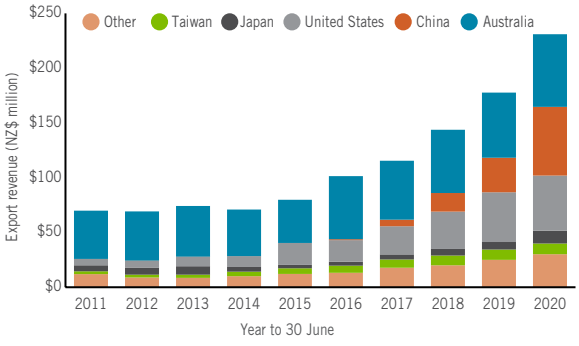
The overall animal products for feed category (including pet food and livestock feed) is forecast to contribute $480 million to New Zealand's exports in the year ending June 2021. The meat and bone meal component of the animal products for feed category has performed better than last year, but just under the four-year average, with revenue increasing 6.9 percent in the nine months to March 2021.

Figure 21: Poultry export revenue and price 2016-21



Source: Stats NZ.

Figure 22: Pet food export revenue by country 2011-20



Source: Stats NZ.

Forestry

New Zealand's forestry export revenue is forecast to reach $6.3 billion for the year ending June 2021, up 12.8 percent from the previous year when forestry activity was restricted during Level 4 lockdowns.

Harvest volumes are set to reach 36.5 million cubic metres in the year ending June 2021, up 14.5 percent from last year.

Log export volumes are expected to increase 21.4 percent, while domestic processed volumes are anticipated to increase 4.4 percent in the year to June 2021, reflecting increased demand for export logs. Chinese log demand has pushed export A-grade prices to $164 per cubic metre in the March 2021 quarter, near the record levels from two years ago.

New Zealand's timber exports to the US are currently at their highest level since 2008 due to a combination of strong residential construction activity and constrained timber supply in the US. Timber demand has also been strong domestically, mainly driven by increased residential construction.

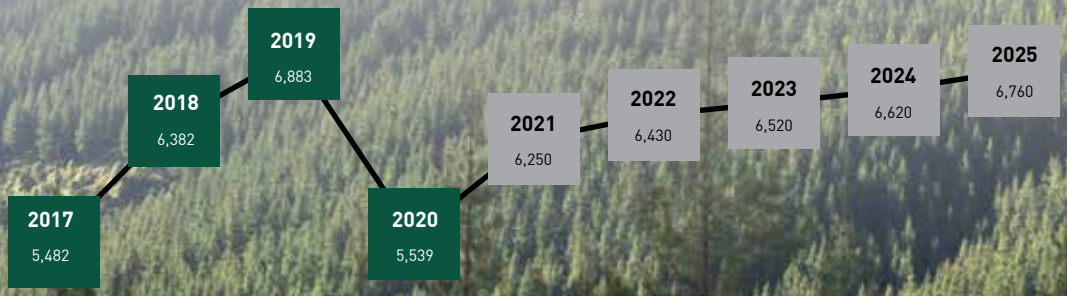
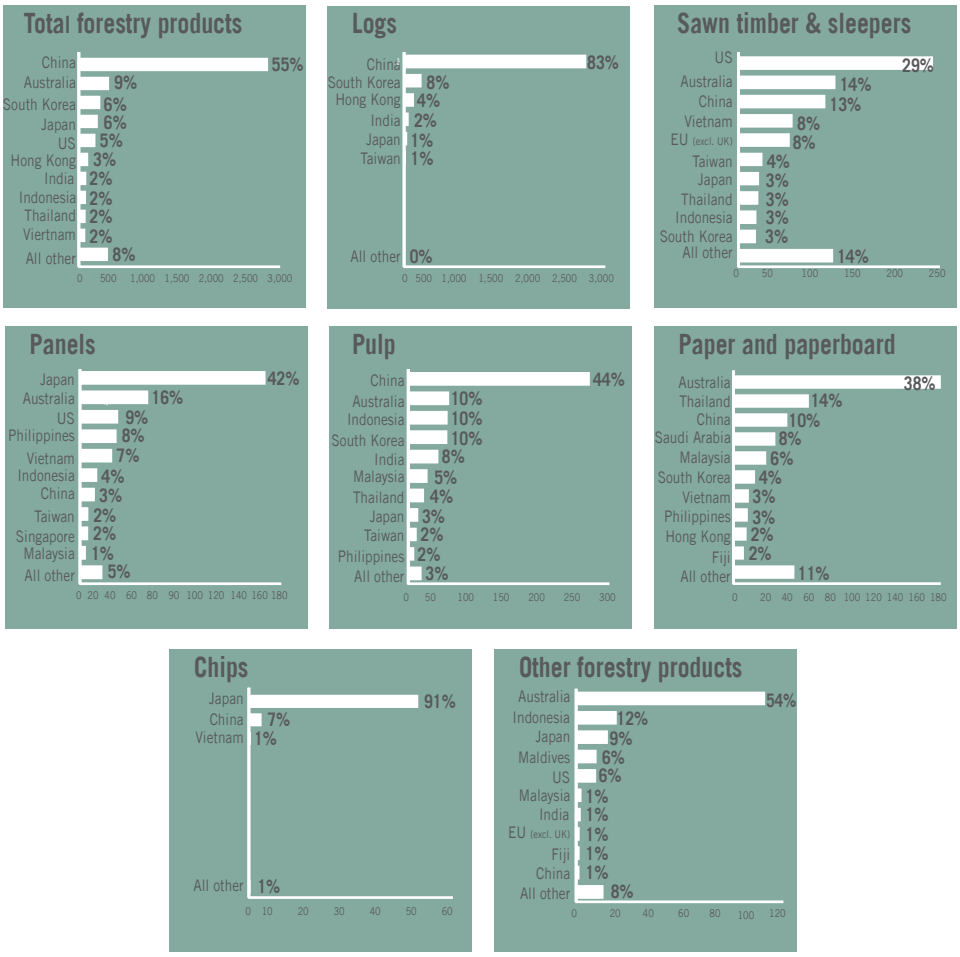


Table 10: Forestry export revenue 2017-25 (NZ$ million)

	Actual				Forecast				
Year to 30 June	2017	2018	2019	2020	2021	2022	2023	2024	2025
Logs	2,687	3,337	3,806	2,877	3,610	3,790	3,860	3,950	4,060
Sawn timber & sleepers	830	890	936	809	910	920	930	940	950
Pulp	651	828	812	646	660	690	690	710	730
Paper & paperboard	488	491	491	492	420	400	380	370	350
Panels	476	501	514	438	380	360	370	370	370
Chips	59	56	67	56	60	60	60	70	70
Other forestry products*	290	281	257	222	210	210	220	220	230
Total	5,482	6,382	6,883	5,539	6,250	6,430	6,520	6,620	6,760
% Change	+6.7%	+16.4%	+7.9%	–19.5%	+12.8%	+2.9%	+1.4%	+1.5%	+2.1%

Source: Stats NZ and MPI.
* Other forest products include: structural or moulded wood, furniture, and prefabricated buildings.

Top markets (NZ$ million, year to March 2021)



Source: Stats NZ and MPI.

Strong harvest volumes driven by high prices

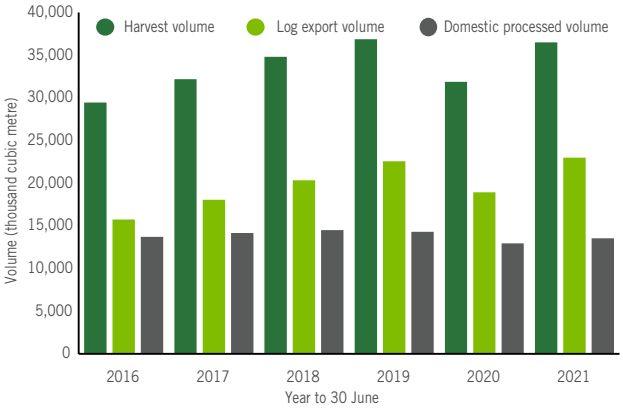
New Zealand's forestry export revenue is forecast to reach $6.3 billion in the year ending June 2021. This is an increase of 12.8 percent from 2019-20 as the forestry sector resumed normal operations this year following Level 4 lockdowns that prevented harvesting, processing, and export activity in the tail end of the previous year. Harvest volumes are set to reach 36.5 million cubic metres in the year ending June 2021, up 14.5 percent compared to last year (Table 11). As a result, log export volumes are expected to increase by 21.4 percent while domestic processed volumes are forecast to increase by 4.4 percent, reflecting increased demand for export logs (Figure 23).

The forestry sector has continued to benefit from rising global demand for our key forestry products, as well as strong domestic demand. Internationally, rising demand for New Zealand's logs and sawn timber, especially from China and the US, is putting upward pressure on export prices. Domestically, there has been strong demand for construction materials due to a robust housing market.

Forestry export revenue is forecast to rise to $6.4 billion in the year ending June 2022, as prices are expected to continue to rise. As China's economy continues to gain momentum, rising wages and Government infrastructure spending are expected to drive construction activities and demand for logs. In addition, as the US economy continues to recover from the pandemic, low mortgage rates and a range of Government stimulus packages are expected to support housing construction and demand for sawn timber. However, we expect domestic demand in New Zealand to soften although the exclusion of new builds from loan to value restrictions on mortgage applications will potentially provide upside risk to an overall weakening domestic demand.

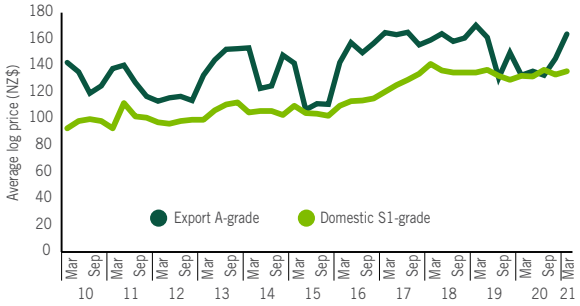
Over the medium-term, forestry export revenue is forecast to increase between 1.4 to 2.1 percent annually to $6.8 billion by the year ending June 2025.

Figure 23: Harvest, export, and processed volumes 2016-21



Source: MPI and Stats NZ.

Figure 24: Average export prices of A-grade logs 2010-21



Source: MPI.

Table 11: Forestry production and exports 2016-21 (thousand cubic metres roundwood equivalent)

Year to 30 June	2016	2017	2018	2019	2020	2021
Harvest volume	29,451	32,191	34,821	36,872	31,879	36,500
Log export volume	15,740	18,040	20,330	22,570	18,930	22,980
Domestic processed volume	13,711	14,151	14,491	14,302	12,949	13,520
Estimated processed exported volume	4,754	4,678	4,826	4,735	4,272	4,357
Estimated domestic processed consumption	8,957	9,473	9,665	9,567	8,677	9,163
Average log export price (A Grade, NZ$)	141	149	164	169	152	157

Source: Stats NZ and MPI.

Strong outlook for log exports

Log exports are forecast to reach $3.6 billion in the year ending June 2021, led by demand from China raising prices and incentivising harvesting. This is an increase of 25.5 percent compared to the previous year following four consecutive quarters of growth. This strong demand has pushed log export prices near the record levels observed in 2018-19 (Figure 24).

Chinese demand for logs remains strong, driven by increased construction activity and further supported by supply constraints such as the ban on Australian logs, and a reduction in global shipping capacity (although log shipping from New Zealand appears to have remained relatively unscathed). New Zealand remains the largest supplier of softwood logs to China followed by Germany, Russia, the US, Uruguay, and the Czech Republic. China's log imports from most countries have been growing, including New Zealand, and accounted for 83.3 percent of New Zealand's total volume of log exports in the year ended March 2021.

Log export revenue is forecast to reach $3.8 billion in the year ending June 2022, on the back of continued strong demand as China ramps up infrastructure projects. The outlook for log prices is expected to decline slightly due to increased supply from other countries. European and South American foresters anticipate increased log shipments to China, which is likely to put downward pressure on New Zealand log prices. It's not clear whether Russia's proposed log export ban in early 2022 will be a complete or phased-in ban, but nevertheless, the ban is expected to partly offset the impact of increased supply into China and support New Zealand log demand and prices in the medium-term.

South Korea is New Zealand's second largest log export market and accounts for 8.0 percent of total log exports. Demand for logs slowed over the past few years as economic growth has weakened. In addition, importers are forced to compete on price with Chinese importers, so while volumes have decreased, the value of exports has remained relatively steady, as rising Chinese demand has lifted prices. Export volumes to South Korea are expected to remain low as Australian logs are being rerouted following China's ban on them, placing further downward pressure on demand for New Zealand logs.

India's demand for New Zealand logs dived due to the COVID-19 pandemic and is yet to rebound. Export volumes are down 69.5 percent in the year ended March 2021 compared to last year. India now accounts for only 2.0 percent of total log exports. Demand from India is expected to remain subdued for the rest of the calendar year, as COVID-19 cases remain high. In addition, Australian logs have been redirected to India after China banned them, putting pressure on this market. Over the medium-term, demand from India is expected to increase as the pandemic wanes and conditions improve.

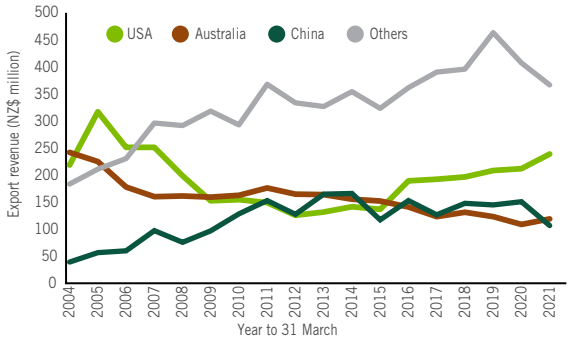
Sawn timber outlook is positive

Sawn timber export revenue is forecast to reach $910 million in the year ending June 2021, up 12.5 percent compared to last year. Timber export prices are strong due to a combination of strong international and domestic demand as well as a greater proportion of higher value appearance grade products driving up average prices to an all-time high of $550 per cubic metre in March 2021.

Timber production decreased slightly despite increased harvest volumes and is most likely due to bottlenecks caused by capacity expansion projects in some mills. In addition, domestic timber consumption has risen at the expense of export volumes due to high levels of domestic residential construction.

Timber export revenue is forecast to increase further to $920 million in the year ending June 2022, due to continued strong demand. However, prices are expected to decline slightly, as supplies increase.

Figure 25: Sawn timber export revenue 2004-21



Source: MPI and Stats NZ.

Demand from the US remains strong due to intensifying demand for new homes and is expected to remain elevated over the medium-term. Demand from Australia is strong due to increases in residential construction and shortage of domestic supplies on the back of devastating bushfires. Demand is projected to remain robust over the forecast horizon.

Demand from China for New Zealand's lower value timber slowed considerably (Figure 25) in line with a total reduction in Chinese timber imports. China might be substituting timber imports for logs and processing logs into timber domestically to reduce cost since timber prices have increased at a greater rate than log prices. In the medium to long-term, Chinese demand for New Zealand's timber is set to remain subdued as Russia becomes more competitive in the Chinese market.

Pulp outlook looks more upbeat

Pulp export revenues are expected to reach $660 million in the year ending June 2021, 2.0 percent higher than last year. Pulp production remains subdued even though export volumes are relatively steady. China's importance in the global pulp market has continued to increase in recent years. China remains New Zealand's largest export market and contributes 44.3 percent of overall export revenue.

Export prices are strong due to increased demand for hygiene products and COVID-19-induced mill closures that reduced pulp production. Prices are forecast to increase in the medium-term, with pulp export revenue forecast to increase to $690 million in 2021-22 due to robust demand.

Rising disposable income and living standards of the urban population in Asia is expected to increase demand for personal hygiene products. This, in turn, is anticipated to drive up demand for pulp. Increased regulations on plastic products and rising demand for corrugated packaging are also expected to contribute to growing demand for pulp.

The main threat to New Zealand's pulp export sector is competition from South America, which has grown steadily, and whose abundant resources, large scale production facilities, and low-cost base make it a strong competitor.

Paper outlook remains pessimistic

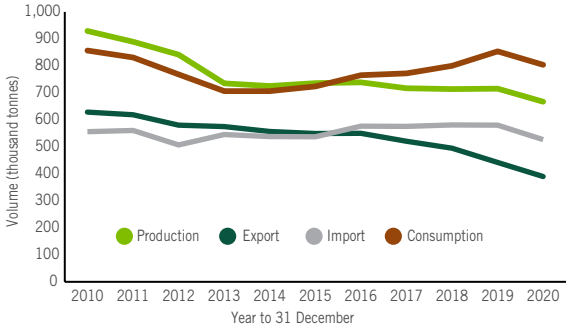
The value of paper and paperboard exports is forecast to fall to $420 million in the year ending June 2021, down 14.6 percent from the previous year due to mill closures. Australia remains our main export market comprising over 38.2 percent of total value of exports. Export prices are relatively strong due to increased demand for packaging solutions.

Since 2016, New Zealand has consumed more paper and paperboard than it produces (Figure 26). In the year ended March 2021, the value of imports stood at $1 billion, which is more than double the value of exports. Paper and paperboard companies have faced increasing domestic market competition from imports.

Total newsprint export volumes have almost ceased and exports of printing and writing papers are also negligible (Figure 27). New Zealand's paperboard sector is export focused. Despite the export focus, import demand has grown at an average rate of 2.0 percent per annum in the last decade and totaled 420,000 tonnes in the year to December 2020. The increasing use of packaging paper (primarily for export related purposes) is the main reason New Zealand's apparent consumption of total paper and paperboard is on the rise.

Total paper export values are forecast to decrease to $410 million in 2021-22 as production continues to decline. Prices are likely to remain relatively stable over the medium-term due to the growth of e-commerce and the growing demand for packaging.

Figure 26: Apparent consumption of paper and paperboard 2010-20



Source: Stats NZ and MPI.

Panel outlook remains subdued

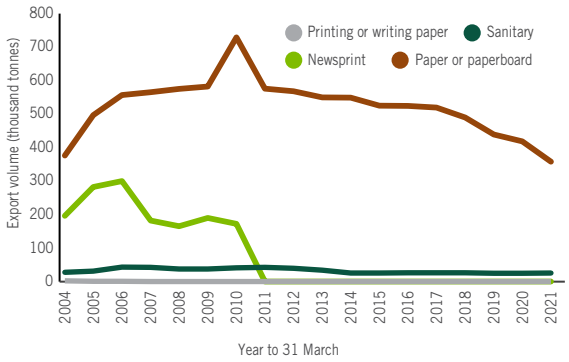
Panel export revenue is expected to decrease to $380 million in the year ending June 2021, down 13.2 percent from last year. Panel production remains subdued and average export prices have fallen 14.6 percent to $515 per cubic metre since March last year and are now at their lowest level since 2014. This is largely due to subdued demand from Australia and Japan (Figure 28).

Panel exports are linked to the strength of the housing and construction industry in our major export markets. The Japanese construction industry is struggling, dragged down by a slowing residential building sector due to the COVID-19 pandemic. Demand is expected to rise as the pandemic subsides. Government efforts to revitalise the economy by focusing on infrastructure development are expected to provide momentum to construction industry growth. In addition, the Japanese economy is expected to recover this year, with projected real GDP growth of 3.1 percent.

Australia's construction industry has experienced a strong rebound led by the residential building sector yet demand for New Zealand panels is weak. Demand from Australia has been decreasing over the past few years even though total imports into Australia have increased which partly reflects New Zealand's declining ability to compete against other imports in the Australia market.

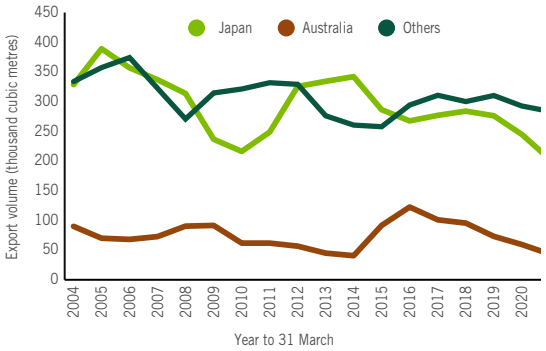
Panel export revenue is forecast to further decrease to $360 million in the year ending June 2022, as production continues to fall.

Figure 27: Paper and paperboard export volumes 2004-21



Source: Stats NZ and MPI.

Figure 28: Panel export volumes 2004-21



Source: Stats NZ and MPI.

Horticulture

Horticulture export revenue for the year ending June 2021 is forecast to increase 2.3 percent to $6.7 billion, driven by larger crops of kiwifruit and avocados.

Horticulture export revenue forecasts for the years ending June 2021 and 2022 have been revised down due to adverse climatic conditions between September and December 2020 impacting yields of fruit and wine grape crops in the South Island in 2021, a stronger NZD impacting export prices, and the expectation that seasonal labour supply concerns and logistics constraints will continue into 2022.

Industry responses to the seasonal labour supply and freight 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 technologies where practical.

Consumer demand for New Zealand fresh fruit and wine from overseas markets has remained strong despite COVID-19 related disruptions, and this is expected to continue.

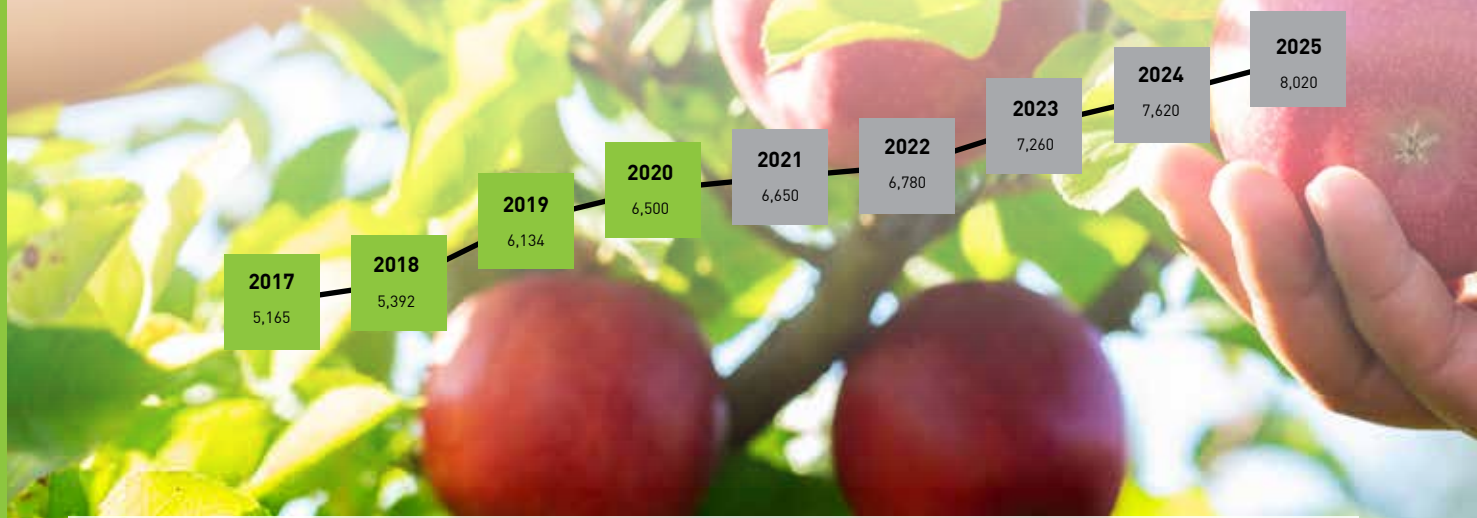


Table 12: Horticulture export revenue 2017-25 (NZ$ million)

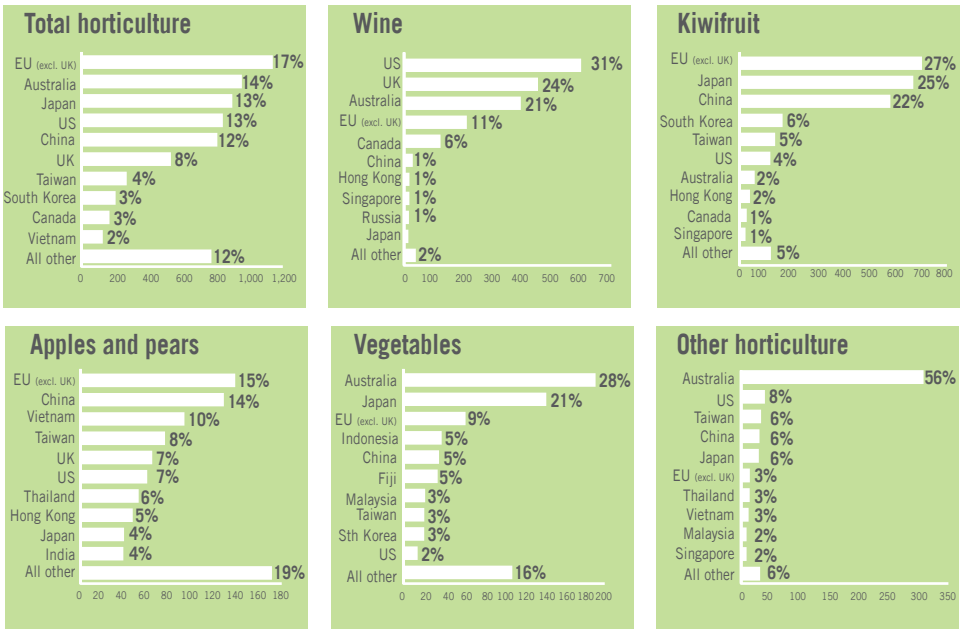
	Actual				Forecast				
Year to 30 June	2017	2018	2019	2020	2021	2022	2023	2024	2025
Kiwifruit	1,664	1,861	2,302	2,534	2,680	2,870	3,050	3,230	3,490
Wine	1,661	1,694	1,807	1,909	1,920	1,720	1,910	1,940	1,980
Apples & pears	701	745	839	885	830	890	960	1,030	1,100
Fresh & processed vegetables*	614	622	696	704	650	680	690	720	730
Other horticulture**	525	471	489	468	560	620	660	700	710
Total	5,165	5,392	6,134	6,500	6,650	6,780	7,260	7,620	8,020
% Change	+3.3%	+4.4%	+13.8%	+6.0%	+2.3%	+2.0%	+7.1%	+5.0%	+5.2%

Source: Stats NZ and MPI.

* Fresh vegetable exports include onions, squash, capsicum, potatoes and other fresh vegetables. Processed vegetable exports include frozen vegetables (including frozen potatoes, peas, sweetcorn, etc.), dried vegetables, dry legumes, prepared and/or preserved vegetables, and vegetable juices.

** Other horticulture exports include: other fresh fruit (including avocados, cherries, blueberries, etc.), frozen and processed fruit, fruit juices, nuts and ornamentals.

Top markets (NZ$ million, year to March 2021)



Source: Stats NZ and MPI.

Apples and Pears

The 2020-21 season has been challenging for New Zealand apple and pear growers and exporters who have dealt with a significant hailstorm, COVID-19 induced freight disruptions, and labour shortages arising from border restrictions.

Apple and pear production and export volumes for the 2021 crop are significantly lower than the previous year, mainly due to hail damage in the Nelson-Tasman region, with some uncertainty around final crop volumes. Export revenue for the year ending December 2021 is expected to be in the range of $750 to $800 million, down from $916 million in the previous year.

Some growers are likely to consolidate their plantings to the most profitable orchard blocks and varieties to manage the risk of constraints in seasonal labour supply 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 down but will rebound

Production of the 2021 apple and pear crop is expected to be 5 to 10 percent lower than the 2020 crop, despite an increase in planted area due to:

- a significant hail event in the Nelson-Tasman region on 26 December 2020 that caused moderate to severe damage to around 1,000 hectares of orchards (9 percent of New Zealand's apple and pear planted area);
- smaller average fruit size for some apple varieties; and
- a shortage of labour for harvest, particularly in the main growing region of Hawke's Bay.

The final production volume will depend on how much fruit was harvested for processing, including hail damaged fruit, and fruit that was by-passed during the main harvest period because of constraints in labour supply.

Harvest of the 2021 apple crop started around one week earlier than 2020 in the Hawke's Bay region (65 percent of New Zealand's apple and pear orchard area). Favourable weather conditions during ripening and harvest in all growing regions led to good fruit colour and little interruption to harvest activities, helping with harvest productivity.

The reduction in average fruit size for some varieties is likely due to periods of cooler weather and cloudy conditions in late spring/early summer. Crop management factors, such as the efficacy of fruit thinners, and delayed hand thinning because of labour constraints may also be contributing factors on some orchards.

Pre-harvest estimates reported by New Zealand Apples & Pears Inc. indicate that production of varieties such as Braeburn and Royal Gala are expected to be lower than last year, mainly due to hail damage. Volumes of Envy™, Dazzle™ and Rockit™ apples are expected to be higher as new and recent plantings increase their production.

Several growers invested in mobile platforms in 2021 to assist with harvesting. Such platforms allow apple pickers to work at different heights and pick onto conveyors or directly into fruit bins, rather than using ladders and picking bags. These platforms are suited to specific orchard planting systems where row and tree width are kept narrow or 2-D, rather than some older orchards that have large trees with branches that encroach the space between tree rows.

Low domestic unemployment forecasts, higher wage rates, and the likelihood that shipping disruptions and international travel and border restrictions due to COVID-19 will continue into 2022, will play a role in growers' current and future orchard expansion plans. In the short-term, we expect that some growers will remove poorer performing orchard blocks and varieties, and not renew lease blocks. Trees already on order are likely to be planted as new growing systems such as 2-D trellis are more suited to labour-saving technologies and robotics. In addition, demand from Asia for high-quality fruit remains strong. Based on these assumptions, no increase in the total planted area of apples and pears is forecast over the next two years. However, production will increase driven by recent plantings maturing, and productivity gains from high density plantings.

Future export growth underpinned by new apple varieties

An export volume between 342,000 and 351,000 tonnes is estimated for the 2021 crop, down by 13 to 15 percent on the previous year. Annual export volumes are expected to increase steadily over the forecast period in line with increasing production.

Table 13: Apple and pear production and trade 2017-25

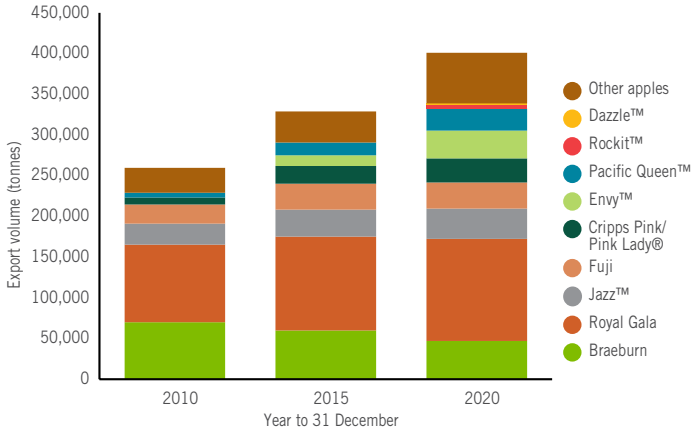
	Actual				Forecast				
Year to 31 December	2017	2018	2019	2020	2021	2022	2023	2024	2025
Planted area (hectares)*	9,907	10,218	10,615	10,838	11,000	11,000	11,000	11,200	11,400
Total production (tonnes)	517,500	585,000	570,000	590,000	540,000	610,000	625,000	640,000	660,000
Export volume (tonnes)	348,566	373,953	394,729	403,588	346,500	396,000	414,000	441,000	468,000
Export volume (million cartons)**	19.36	20.78	21.93	22.42	19.25	22.00	23.00	24.50	26.00
Export price ($/carton)	36.06	37.30	39.67	40.87	40.00	42.00	42.00	43.00	43.00
Export revenue ($ million)	**698**	**775**	**870**	**916**	**770**	**924**	**966**	**1,054**	**1,118**

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

* Planted area includes producing and non-producing orchards.

** A carton is equivalent to 18 kilograms.

Figure 29: New Zealand apple exports by variety 2010, 2015 and 2020



Source: Stats NZ and MPI.

New Zealand's apple exports have diversified over the past decade to include new apple varieties better aligned with market and consumer preferences such as Envy™, Dazzle™, Pacific Queen™, Rockit™ and high colour strains of Royal Gala, Fuji and Cripps Pink/Pink Lady® (Figure 29). Over 50 percent of the apple planted area is in Intellectual Property protected varieties.

Market conditions looking positive for 2021 despite shipping issues

Market conditions for the 2021 exporting season are generally positive, with expectations of a similar weighted average export price to the prior season. This is influenced by:

- a higher proportion of high-value varieties in the 2021 export crop, including Envy™, Dazzle™ and Rockit™ apples;
- reduced apple stocks in the US, but higher stocks in Europe compared with the previous year;
- a lower New Zealand apple and pear crop; and
- a higher NZD against the USD compared with the previous year.

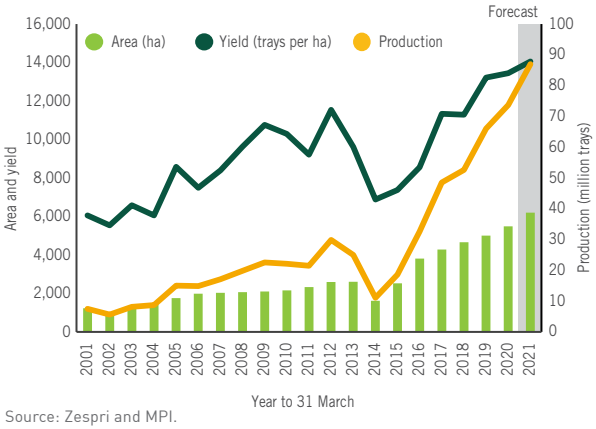
Good early demand is being reported for New Zealand apples from Asia, including China, Vietnam, and Japan. Exports of varieties mainly exported to Europe, such as Braeburn and Jazz™ will be lower this season due to reduced volumes from hail damage.

Apple and pear exporters, like all New Zealand exporters, are managing COVID-19 related freight challenges. Industry is confident that all available fruit will get to export markets this season.

Kiwifruit

Kiwifruit export revenue rose to $2.7 billion for the year ending March 2021. This is the third consecutive year of export revenue growth, driven by higher year-on-year yields and increasing planted area for the higher priced Gold3 variety (Figure 30). Consumer demand for kiwifruit has remained strong in major export markets despite COVID-19 impacts, resulting in a 6.3 percent price rise over the previous year. This was assisted by kiwifruit being sold through supermarkets, which have remained open throughout lockdowns, in addition to kiwifruit's recognised health benefits. The supply chain issues seen in many sectors resulting from lack of shipping containers have largely been mitigated by shifting to the use of more chartered reefer vessels that transport pallets of trays in chilled holds rather than containers, although this has incurred greater expense. Combined with two previous good seasons, this gives an 18 percent average annual increase in revenue since the March 2018 year.

Figure 30: Gold3 kiwifruit area, yield and production 2001-21



Source: Zespri and MPI.

Estimates for the current season, which is near the end of picking, show the industry is on track for a record crop volume of both Gold3 and green kiwifruit varieties, despite new Gold3 grafting onto cutover green orchards driving a decline in green producing area. The North Island harvest has progressed well despite wet weather causing early delays to the Bay of Plenty harvest. Although the crop has been picked, a general shortage of labour resulted in an extended harvest, which has implications for higher fruit loss percentage where fruit has not been picked in prime condition. Additionally, orchards in the Tasman region were badly impacted by the hail event on 26 December 2020.

Early season prices have dropped back from their peak last year, as the effects of the stronger NZD are felt, but are expected to remain solid over the forecast period.

The excellent 2021 harvest brings the forecast for the year to June 2021 to $2.7 billion and the remainder of the crop exported over the second half of the year sees forecasts to June 2022 rise to $2.9 billion, assuming production and market trends continue in the 2022-23 season.

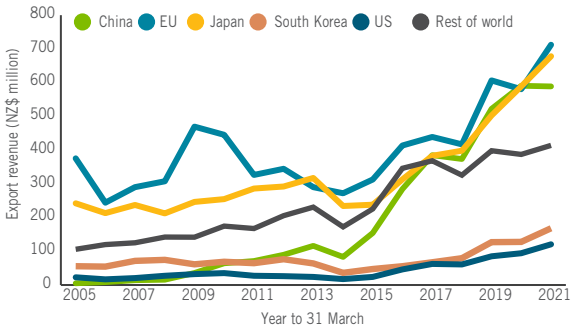
The recently commercialised Red19 variety will begin to play a more significant part in forecasts further out, and performance in overseas markets will be closely monitored. Consumer reception in test markets in New Zealand, Singapore, Japan, and China so far indicates this has the potential to add significantly to revenue as production increases. Licences for 150 hectares have already been released last year, and more are signalled for release in coming years. However, the planted area will remain low in the foreseeable future compared with the approximately 6,200 hectares of Gold3 currently planted.

Orchard gate returns (OGR) for Gold3 in the 2020-21 season are forecast by Zespri to rise to $175,000 per hectare, an 8 percent increase over the previous season. Green kiwifruit OGR are also expected to rise 10 percent to $74,000 per hectare. Forecasts for the current season expect returns in a similar range. As a result of the widening gap in OGR, orchardists are expected to continue switching away from green to new licences of gold and red varieties, as they are released by Zespri. OGR will, however, need to be balanced against high up-front costs of establishing new plantings, with increasing land value and auction prices for licences.

Growers vote in June 2021 to decide whether to accept Zespri's proposal to work with growers of unlicenced Gold3 kiwifruit planted in China, marketing up to 200,000 trays on the local market. Illegal plantings are estimated at around 5,400 hectares, compared with 8,050 hectares in New Zealand, illustrating a growing risk to New Zealand's horticultural intellectual property where plant variety rights are owned here.

Over recent years, mainly due to the popularity of Gold3, China has grown to be roughly equal to the two other largest export destinations, with approximately a quarter of total revenue in the year ended March 2020 (Figure 31). However, in 2021 flat prices and a slight dip in volumes saw China revenue remain flat, while the EU and Japan had growth of 23 and 15 percent, respectively. Growth to the EU has been driven by growth in volume and prices of Gold3, where volumes of green kiwifruit levelled off in 2005, and green prices have remained flat over the last three seasons. South Korea and the US have also seen the largest growth out of the smaller markets, with 31 and 28 percent, respectively.

Figure 31: Kiwifruit export revenue, top five destinations 2005-21



Source: Stats NZ and MPI.

Table 14: Kiwifruit production, price and revenue 2017-26

	Actual					Forecast				
Year to 31 March	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Export volume (million trays)										
Green kiwifruit	94	72	84	73	73	76	74	69	64	62
Gold kiwifruit	48	54	68	78	88	98	106	117	128	145
Total	**143**	**125**	**152**	**151**	**161**	**175**	**180**	**186**	**192**	**207**
Export price (NZ$/tray)										
Green kiwifruit	9.68	10.50	11.61	11.95	12.37	11.42	11.66	11.82	11.92	11.98
Gold kiwifruit	15.98	16.56	18.46	19.18	20.18	19.41	19.61	19.81	19.93	20.08
Total	**11.82**	**13.09**	**14.67**	**15.67**	**16.65**	**15.93**	**16.34**	**16.85**	**17.26**	**17.65**
Export revenue (NZ$ million)										
Green kiwifruit	914	753	976	876	901	870	864	812	763	746
Gold kiwifruit	771	887	1,256	1,487	1,775	1,912	2,081	2,320	2,552	2,908
Total	**1,685**	**1,639**	**2,232**	**2,363**	**2,676**	**2,781**	**2,945**	**3,132**	**3,315**	**3,654**
Total production (million trays)	158	134	185	163	183	196	205	208	217	233
Total producing area (thousand hectares)	12.6	12.7	12.7	12.9	13.3	13.1	13.2	13.3	13.6	14.5

Source: Stats NZ, MP and Zespri.
*A tray is equivalent to 3.6 kilograms.

Wine

New Zealand's wine industry has benefitted from surprisingly strong demand despite the pandemic. Export revenue for the year ending June 2021 is forecast to reach $1.9 billion, up 0.6 percent from the previous year. However, poor weather for the 2021 vintage just harvested will lead to a significant contraction over the next year, with export revenue forecast to fall 10.4 percent to $1.7 billion for the year ending June 2022 (Figure 32).

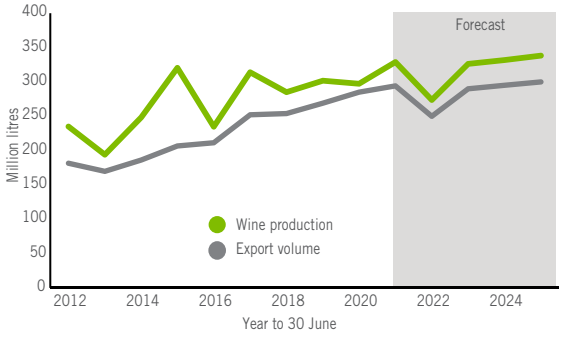
Frosts in September and October were followed by low temperatures during flowering in Marlborough and some of the other South Island wine regions. As a result, the vintage is provisionally estimated to be 380,000 tonnes, a 17 percent drop from 2020's record vintage of 457,000 tonnes.

Over the longer-term, the wine industry is likely to continue expanding, albeit at a lower rate than the past decade with limited availability of suitable land in Marlborough.

Demand in the top four export markets (US, UK, Australia, and the EU), which collectively account for 87 percent of New Zealand's wine exports, has increased despite the impacts of the pandemic. In many markets, New Zealand wine tends to be sold in off-license premises rather than in restaurants, so marketing channels were not disrupted as much as they could have been. Most of the export growth over the past year is attributed to Australia, New Zealand's third largest export market.

On the local market, domestic wine consumption has increased as well, up nearly 5 percent in the year ended December 2020 over the previous year, with approximately half of this consumption being New Zealand wine.

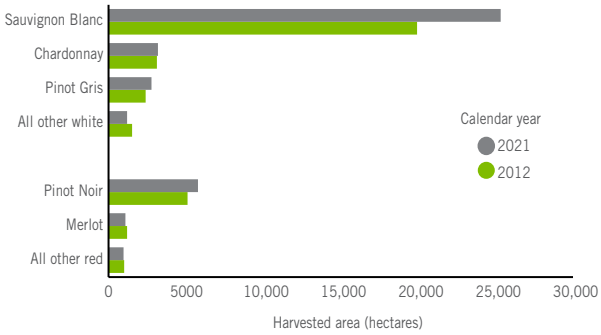
Figure 32: Wine production and export volume 2012-25



Source: New Zealand Winegrowers and MPI.

Supported by this strong demand and last year's large vintage, export volumes for the year ending June 2021 are on track to reach a record 294 million litres, up 3.2 percent from the previous year. Most of this additional growth has been in bulk wine rather than bottled, so this year over 45 percent of all exports are likely to be in bulk format. This doesn't appear to be a result of the pandemic, but rather the result of a large export crop and the continuation of a multi-year trend for wine to be bottled closer to the point of sale rather than the point of manufacture, at least for major markets.

Figure 33: Wine grape area by variety 2012 and 2021



Source: New Zealand Winegrowers Vineyard Register Reports.

Table 15: Wine production and trade 2017-25

	Actual				Forecast				
Year to 30 June	2017	2018	2019	2020	2021	2022	2023	2024	2025
Area harvested (hectares)	36,943	38,073	39,061	39,935	40,500	41,200	41,900	42,700	43,500
Grape production (metric tonnes)	396,000	419,000	413,000	457,000	380,000	453,000	461,000	470,000	479,000
Wine production (million litres)	285.1	301.7	297.4	329.0	275.0	325.0	330.0	340.0	345.0
Export volume (million litres)	252.2	253.9	269.0	285.1	294.2	250.0	290.0	295.0	300.0
Export price (NZ$ per litre)	6.59	6.67	6.72	6.70	6.55	6.90	6.60	6.60	6.60
Export revenue (NZ$ million)	1,661	1,694	1,807	1,909	1,920	1,720	1,910	1,940	1,980

Source: MPI, New Zealand Winegrowers, Stats NZ.

Over the next year, the smaller 2021 vintage is expected to push export volumes 15 percent lower for the year ended June 2022. In recent years, the main reason prices fluctuate with production is through the percentage of wine sold in bulk format rather than bottled. After controlling for this shift in product mix, prices don't typically rise much when there is a small crop. As a result, average export prices are expected to rise in the next year, but price changes at retail will be less noticeable.

A shortage of labour has been a consistent concern over the past year, in both vineyards and wineries. The smaller crop eased some of the labour demand at harvest in early 2021, and the concern has now shifted to winter pruning. The Government's recent increase in RSE workers will help, and vineyards have started pruning earlier and running longer than usual to spread out the workload. However, this will still be a challenge for growers to manage, and there is some concern that next year's yields could be impacted if vines are pruned outside the optimal timeframes.

Beyond this year's small crop, the wine industry is expected to recover and resume growing, with export revenue forecast to approach $2 billion by 2025. Land use constraints, especially in Marlborough, will dampen the pace of growth to below historical trends. Sauvignon blanc is expected to continue leading the New Zealand wine industry, with 63 percent of planted area, 74 percent of production, and 86 percent of export volume currently (Figure 33).

Avocados

Avocado export revenue is higher than previously forecast, due to a strong production season supported by robust export prices and demand from Australia, New Zealand's largest market (Figure 34). Export revenue has increased from nearly $113 million last season to over $201 million for the 2020-21 season.

The next avocado season is expected to be the fourth consecutive year of consistent production volumes. Over the last few seasons, growers have put in a lot of work pruning avocado trees to avoid over cropping and improve volume consistency from one season to another.

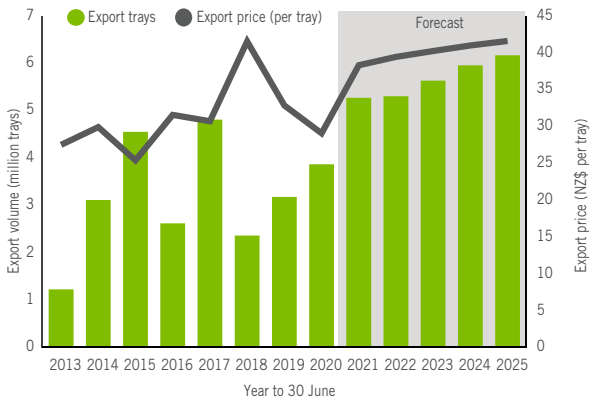
Export revenue for the 2021-22 season is forecast to increase a further 3.6 percent to $209 million, as both prices and volumes are expected to increase slightly.

Avocado growers in New Zealand are already expanding their exports to Asia, as Australian-grown avocado supply, and supply from other nations into Australia (Chile, Peru and Mexico), is likely to increase over the next five years. Over the last three seasons, exports of New Zealand-grown avocados into Asia has been growing, from 443,000 trays in 2017 to 849,000 trays in 2019. Export volumes of avocados to Asia have reduced to around 550,000 trays in the latest year due to COVID-19 induced freight disruptions.

While freight issues are likely to remain, the outlook for the export season ahead is more positive than last season and avocado exporters are expecting a significant shift in export market allocation to 2025 in the Asia-Pacific region. For the 2020-21 season, about 85 percent of avocados were exported to Australia while the 15 percent left were exported to Asia. By 2025, avocado exports are forecast to be split equally between Australia and Asia.

Labour shortages are less of an issue for the avocado industry compared to the rest of the horticulture industry. One reason is that the avocado season is longer, and as a result, avocado growers can be more flexible about when they harvest, and they can also share workers with berry and kiwifruit growers.

Figure 34: Avocado export volumes and prices 2013-25



Source: Stats NZ and MPI.

Cherries

Cherry export volumes rose to 2,500 tonnes for the 2020-21 season, up 16.8 percent from the previous season, which was the lowest in six years due to wet weather and COVID-19 disruptions to supply chains. Falling cherry prices partly offset the large volume increase, resulting in a forecast 8.0 percent increase in export value, to $55 million for the year ending June 2021 (Figure 35).

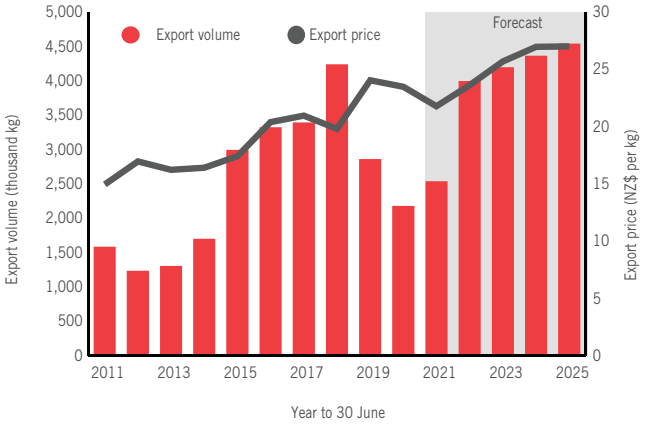
Cherries' full export potential has not been achieved for the 2020-21 season. An estimated $50 million of export revenue has been lost following heavy rain that has affected both the volume and quality of the fruit. Additionally, cherry demand from China and Taiwan, which is usually strong prior to the New Year celebrations, was down 24 percent compared to 2019-20 season. Cherry exporters are forecasting that the demand from China and Taiwan will pick up in the season ahead.

A shortage of workers would have likely prevented the full potential of cherry production from being harvested this year were it not for the reduced cherry crop volume and an early picking season. Labour shortages are likely to persist in future seasons and represent a constraint on the future growth and productivity of cherries and several other fruit crops.

With international flights still limited relative to pre-COVID-19 numbers, airfreight capacity has been reduced, resulting in higher transport costs. This is reducing growers' profits as most cherry exports are airfreighted to customers to ensure freshness and quality. Airfreight capacity will most likely remain an issue for the cherry industry, as well as the rest of the horticulture sector, in coming seasons.

Despite supply chain and labour issues, cherry exports are expected to continue the strong volume growth trend seen since 2014 over the medium-term, supported by 80 hectares of new planting in Central Otago, with the first cherry fruits expected to be harvested in the summer of 2021-22. Early indications for the season ahead point to a likely record season with an estimated 4,000 metric tonnes of cherry produced.

Figure 35: Cherry export volumes and prices 2011-25



Source: Stats NZ and MPI.

Fresh and Processed Vegetables

Total fresh and processed vegetable export revenue is forecast to fall 8 percent to $650 million for the year ending June 2021, due to lower export volumes of onions, squash, and frozen and processed potatoes, and reduced export prices for some products.

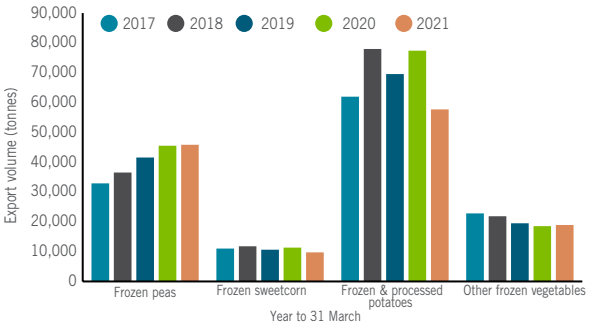
We expect vegetable growers to continue to exercise caution regarding their planting programmes throughout 2021-22 as the COVID-19 recovery progresses domestically and internationally. It is likely that export volumes of some main vegetable products, such as onions and frozen potatoes, may not return to pre-COVID-19 levels until 2022-23.

Fresh vegetables

Growers of fresh vegetables for the domestic market have reported reduced overall demand because of COVID-19 impacts on the domestic hospitality and tourism sectors. While most growers had adjusted their spring/summer planting programmes in anticipation of lower demand, there were instances of oversupply of some fresh produce lines, and subsequent downward pressure on prices. The availability of fresh tomatoes at low retail prices in February/March 2021 was the result of limited export opportunities to Australia and the Pacific Islands over summer attributed to high freight costs, freight shortages and reduced demand in these markets.

The planted areas of onions and buttercup squash, the two largest fresh vegetable export crops, were reduced for the 2020-21 season. Onion exporters have reported missing some market windows due to inadequate shipping space and a shortage of containers. Hence the export volume of onions from the 2021 crop is forecast at around 175,000 tonnes, down 15 percent on 2020 despite the good yields and quality of the crop this year.

Figure 36: New Zealand exports of frozen vegetables 2017-21



Source: Stats NZ and MPI.

Table 16: Vegetable export volumes and values 2017-25

	Actual				Forecast				
Year to 30 June	2017	2018	2019	2020	2021	2022	2023	2024	2025
Fresh vegetables*									
Export volume (000 tonnes)	297	277	307	325	315	315	320	335	350
Export value (NZ$ million)	250	225	303	283	270	270	275	300	310
Processed vegetables**									
Export volume (000 tonnes)	197	213	210	221	195	210	215	215	215
Export value (NZ$ million)	364	396	393	421	380	405	415	420	420
Total fresh and processed vegetables									
Export value (NZ$ million)	**614**	**622**	**696**	**704**	**650**	**675**	**690**	**720**	**730**

Sources: Stats NZ and MPI.

* Fresh vegetable exports include onions, squash, capsicum, potatoes and other fresh vegetables.

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

Statistics New Zealand data on export volume and value for buttercup squash from the 2020 crop was adjusted by MPI based on information from the New Zealand Buttercup Squash Council.

Processed vegetables

Exports of frozen and processed potatoes in the year to March 2021 were down 20 percent on the average of the previous four years at 58,000 tonnes (Figure 36), while the equivalent change in import volumes was a drop of 5 percent to 17,000 tonnes.

The Ministry of Business, Innovation and Employment (MBIE) has completed its investigation of the dumping of frozen potato fries and wedges from Belgium and the Netherlands, following a formal application by Potatoes New Zealand Inc. on behalf of the New Zealand potato industry. The final MBIE report concludes that while evidence was found for dumping of some relevant products into New Zealand, there are no grounds to conclude that there is a material threat to the New Zealand domestic potato industry as a result. Industry continues to be vigilant and is monitoring this matter.

New Zealand exports of frozen peas have grown steadily in recent years with increases in exports to China whilst exports to Australia have been maintained.

Seafood

Seafood exports are forecast to fall to $1.8 billion for the year ending June 2021 as they are reliant on the food service sector and COVID-19 related lockdowns have negatively impacted the ability to sell product.

New Zealand's future export growth in the seafood sector will be characterised by limited change in wild capture production and a growing aquaculture sector.

New Zealand rock lobster reached record prices in January this year due to Australia's absence in the Chinese market.

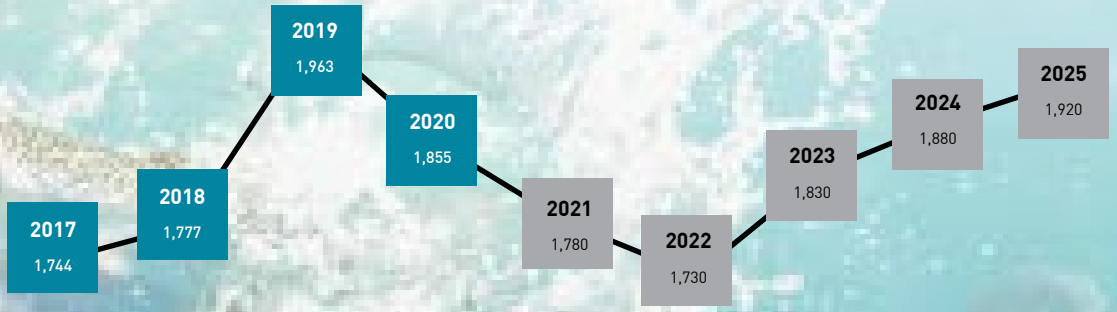
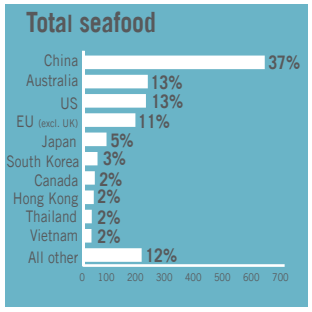


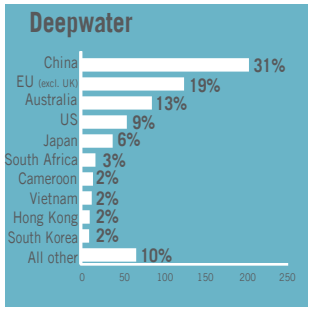
Table 17: Seafood export revenue 2017-25

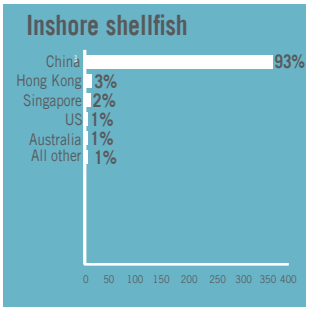
	Actual				Forecast				
Year to 30 June	2017	2018	2019	2020	2021	2022	2023	2024	2025
Wild capture									
Export volume (tonnes)	244,402	239,512	238,864	232,267	220,000	215,700	217,000	217,000	217,000
Average export price (NZ$/kg)	5.47	5.73	6.32	6.01	6.15	5.90	6.20	6.30	6.40
Export revenue (NZ$ million)	1,338	1,372	1,509	1,397	1,350	1,280	1,340	1,370	1,390
Aquaculture									
Export volume (tonnes)	40,794	39,462	38,767	36,188	39,100	41,200	43,300	43,700	44,200
Average export price (NZ$/kg)	9.95	10.28	11.70	12.67	11.05	11.00	11.35	11.60	11.95
Export revenue (NZ$ million)	406	406	454	459	430	450	490	510	530
Seafood									
Export volume (tonnes)	285,196	278,974	277,631	268,455	259,100	256,900	260,300	260,700	261,200
Average export price (NZ$/kg)	6.11	6.37	7.07	6.91	6.87	6.73	7.03	7.21	7.35
Export revenue (NZ$ million)	1,744	1,777	1,963	1,855	1,780	1,730	1,830	1,880	1,920
Y/Y % change	–1.4%	+1.9%	+10.4%	–5.5%	–4.1%	–2.8%	+5.8%	+2.7%	+2.1%

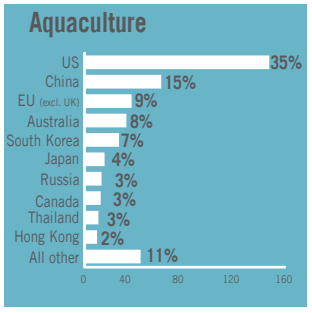
Source: Stats NZ and MPI.

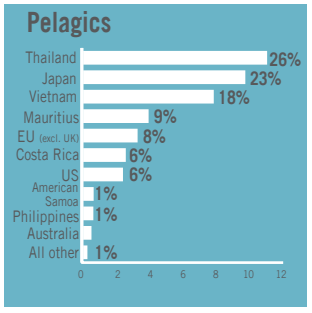
Top markets (NZ$ million, year to March 2021)

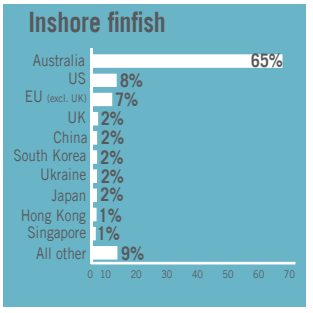


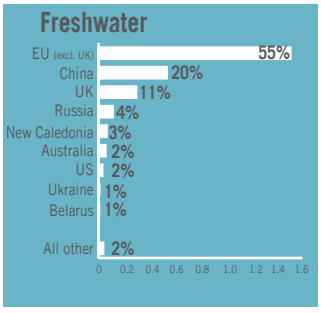


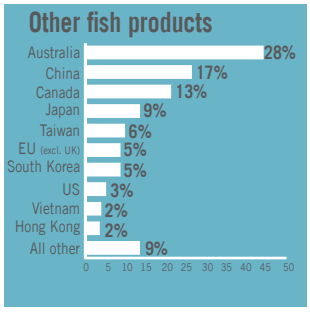












Source: Stats NZ and MPI.

Seafood export revenue is forecast to fall 4.1 percent to $1.8 billion for the year ending June 2021. This is made up of a 5.7 percent fall in aquaculture revenue and a 3.4 percent fall in wild capture revenue. Weaker prices and restricted demand due to COVID-19 impacts are driving the fall across both sectors.

Seafood export revenue is forecast to begin recovering in 2022, as the food service industry starts to reopen, though it will take a number of years to return to previous highs. Recovering prices and demand in both wild capture and aquaculture are likely to be dampened by a stronger NZD in the short to medium-term.

Over the medium to long-term, seafood export revenue is forecast to grow, with rising prices and mostly stable production. Wild capture production volumes are forecast to remain relatively flat due to sustainability constraints. Future dynamics of wild capture will likely translate into small volume increases and decreases as stock limits for wild capture fluctuate.

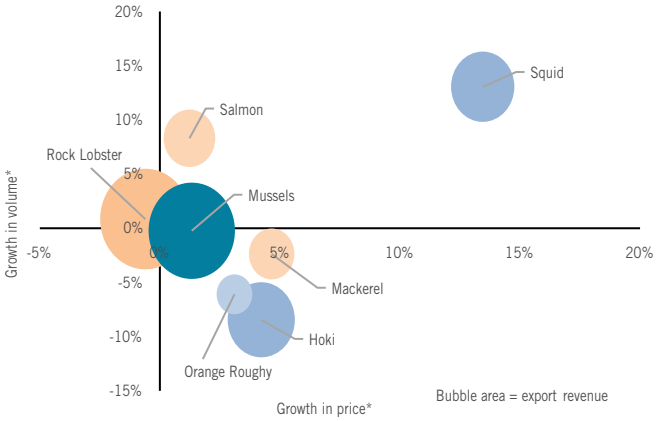
While aquaculture volumes are forecast to increase, the rate of growth will most likely be influenced by both the ability to obtain approvals for new farms and by environmental conditions, allowing existing farms to maintain production rates. The ability to breed for desirable product traits will be critical in developing market demand, growing prices, and creating consistent product quality.

Figure 37 highlights the growth in prices and volume by key species, comparing the year ended March 2021 to the same period five years prior. Total export value each is shown by the size of the bubble.

Aquaculture

Aquaculture exports are forecast to fall to $430 million, a 6.3 percent decrease, for the year ending June 2021. This fall is driven by weaker prices, which have fallen 12.8 percent compared to the previous year. Higher quantities being exported partially offset the fall in prices. New Zealand's main aquaculture species are mussels, salmon, and oysters.

Figure 37: Key seafood export products 2016-21



Source: Stats NZ and MPI.
*Compounded annual growth rate.

Mussel

For the year ended March 2021, mussel export revenues have fallen 15.5 percent to $293 million. This is a result of an 11.3 percent fall in export quantity. Historically, New Zealand's mussel growers have relied on catching wild spat (baby mussels) around our coastline. This approach, however, can result in the quality and quantity of spat varying over time. Thanks to recent innovation from SPATnz, a hatchery has been built to breed consistent quality and quantity spat, while searching for the most profitable attributes in the mussel. If successful, this could enable mussel attributes to be focused to meet specific markets preferences.

Salmon

Salmon exports have been hindered by difficulties in getting chilled product to market, because of global supply chain problems posed by COVID-19. To compensate for the decline in chilled trade supply, the salmon industry has increased its manufacturing capacity to produce and export more smoked salmon.

Wild Capture

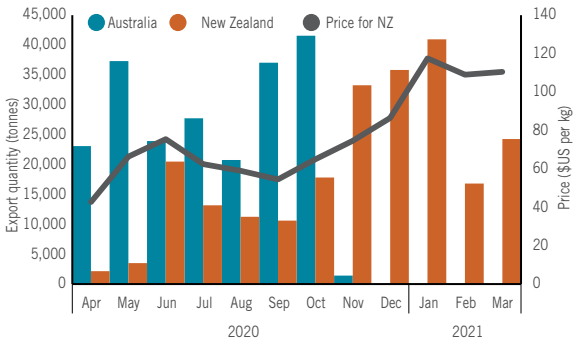
Wild capture exports are forecast to fall to $1.4 billion for the year ending June 2021, down 3.4 percent from the previous year. This is being driven by decreasing levels of Total Available Commercial Catch (TACC) and difficulties in getting products to market and into restaurants as a result of COVID-19. Future wild capture export revenue will most likely be driven by prices as stock levels will be closely monitored to ensure fish stock health.

Rock lobster

Rock lobster is the most valuable individual export species for New Zealand's seafood industry. For the year ended March 2021, rock lobster exports were $321 million, equivalent to 18.6 percent of total seafood export revenue. Though rock lobster saw significant reductions in both price and volume between February and April in 2020 from lockdowns in China and later New Zealand, export volumes and prices recovered quickly when the market reopened. Export volumes for this year have remained at similar levels to the prior year.

Because of China's recent ban on Australian rock lobster, there has been excessive demand for New Zealand rock lobster, pushing lobster prices to new highs (Figure 38). Since the rock lobster species *Jasus edwardsii* is only found in Australian and

Figure 38: Impacts of Australian ban on New Zealand Rock Lobster to China 2020-21



Source: Global Trade Atlas.

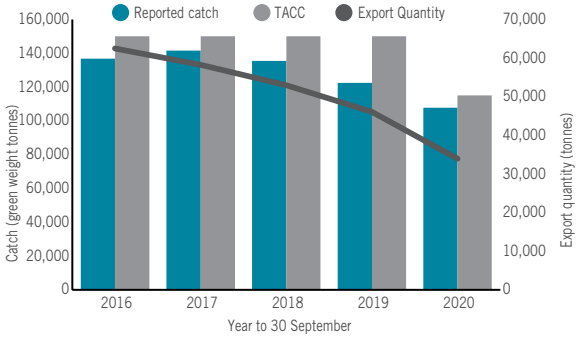
New Zealand waters, prices and demand are expected to remain high if the Australian ban remains.

This species is highly valued in the Chinese market due to its red shell, which distinguishes it from other lobster species found around the world. China accounted for 99.7 percent of total New Zealand rock lobster exports in the year ended March 2021.

Hoki

Hoki is New Zealand's third largest fishery export species. For the year ended March 2021, hoki exports reached $178 million. This represents a $62 million decrease in export sales, mostly due to TACC level reductions. According to scientific studies undertaken by MPI, hoki stocks had completely rebuilt to target levels by 2009 and could sustainably accommodate increased catches. Several increases to the hoki catch limits were made between 2009 and 2015 based on this information, raising them from 90,000 to 150,000 tonnes. In recent years, research indicated the hoki population may be declining. As a result, the catch limit was reduced to 115,000 tonnes in 2019 to ensure the stock remains sustainable (Figure 39).

Figure 39: Hoki volumes and catch limits 2016-20



Source: : Stats NZ and MPI.

Squid

Squid is another key deepwater catch species, with the majority of squid fishing activity taking place from January through to May. Squid is a high-volume fishery and frequently appears among the top five exports by value due to the volume of squid that is caught. Because of the natural variability in catch volumes, export revenues can be unpredictable and vary significantly between years. This can be seen in Figure 40, highlighting the volatility in exports.

As a result of fluctuation, for the year ended March 2021, squid export revenue dropped to $157 million, a 35.9 percent decrease, mainly driven by a 24.9 percent fall in export quantity from a smaller catch. Export prices have recently been strong due to a global shortage of squid and octopus in recent years.

Figure 40: Fluctuations in squid prices and export quantity 2012-21

Source: : Stats NZ and MPI.

Tuna

Demand for fresh fish, especially for bluefin tuna, has slumped as the pandemic wiped out demand in the key Japanese market, which accounts for 92.8 percent of exports revenue in the year ended March 2021.

The impact of COVID-19 is not just limiting demand for restaurant trade but has reduced access to the market. Southern bluefin tuna has historically been landed and flown to Japan the following day to ensure quality and freshness for maximum return. Due to fewer flights, reduced airfreight capacity has negatively affected the profitability of the industry.

Two other key species of tuna are albacore and skipjack tuna. These species are often associated with canned food and are exported to Thailand and Vietnam for processing – with these two countries comprising 62.5 percent of exports in the year ended March 2021. Overall, for the year ended March 2021, total tuna exports fell by $13 million to $41 million, as a result of lower volumes and prices.

Arable

Most crop yields in 2020-21 were in line with long run trends, but down from last year's result as climatic conditions were not as favourable.

Arable export revenue for the March 2021 quarter was down 25.2 percent compared to the same quarter a year ago.

Export revenue for the year ending June 2021 is expected to be down 6.9 percent on the June 2020 year, which was a record high.

COVID-19 has helped stimulate demand for some seeds but, as experienced by most sectors, it has created freight issues for exports.

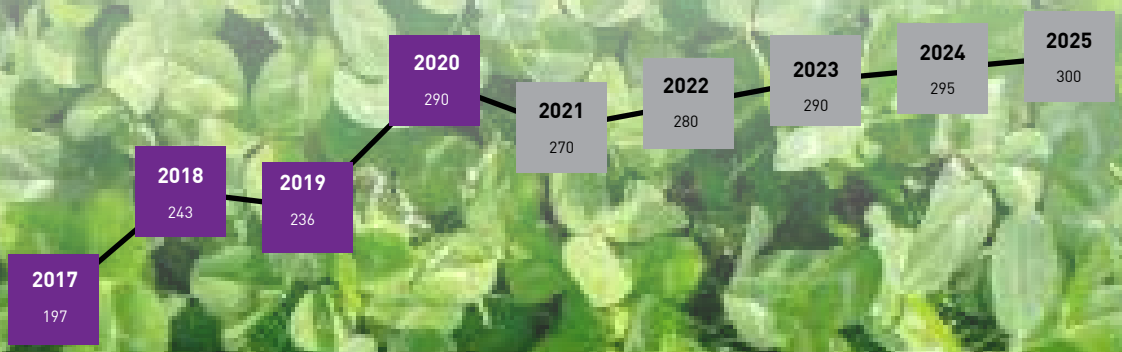


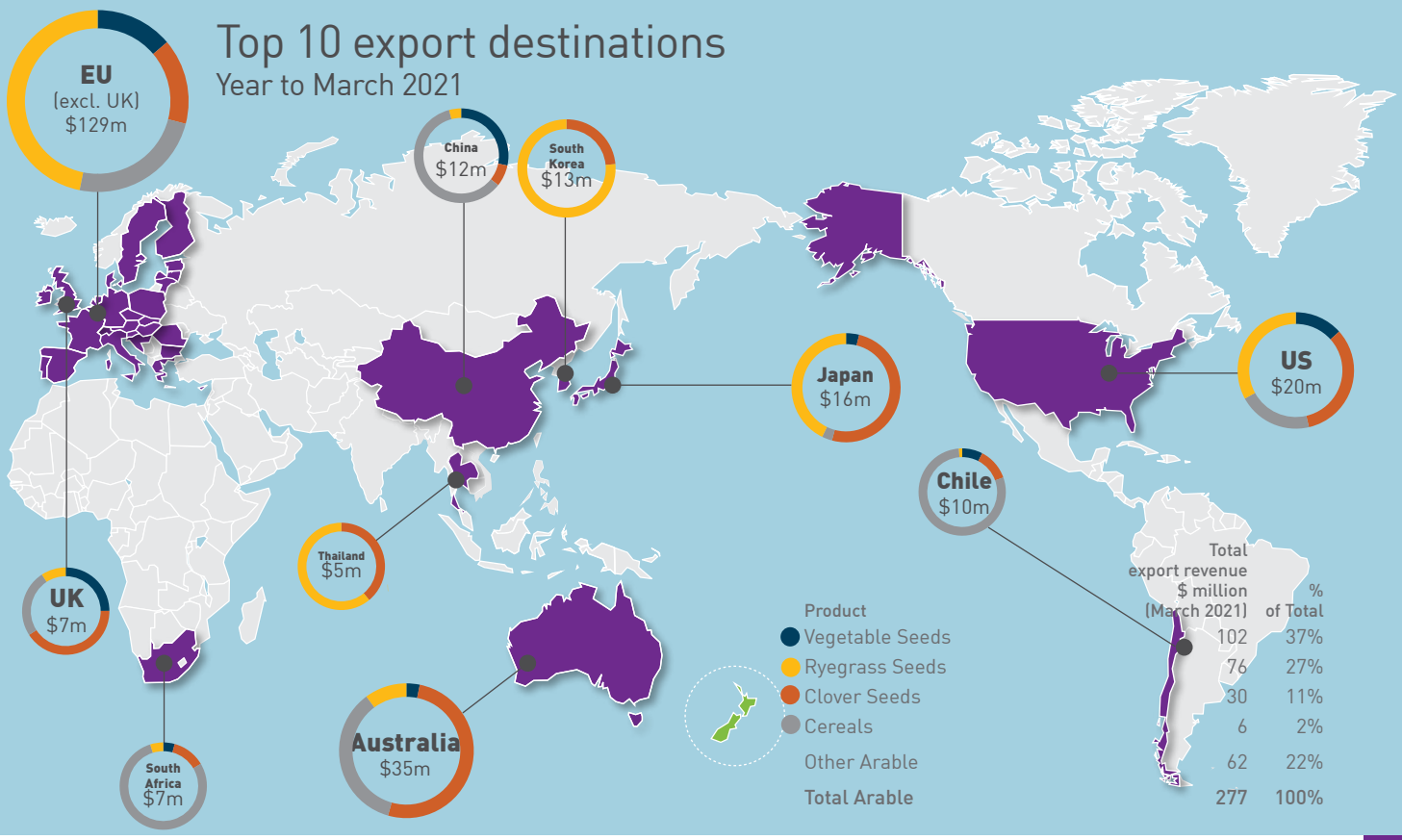
Table 18: Arable export revenue 2017-25 (NZ$ million)

	Actual				Forecast				
Year to 30 June	2017	2018	2019	2020	2021	2022	2023	2024	2025
Vegetable seed	64	92	87	112	100	105	110	115	120
Ryegrass seed	46	55	60	73	75	80	80	80	85
Clover/legume seed	23	28	20	31	25	25	25	30	30
Other grains and seeds*	63	68	69	74	70	70	70	70	70
Total	197	243	236	290	270	280	290	295	300
% Change	–6.0%	+23.2%	–2.7%	+22.6%	–6.8%	+3.7%	+3.6%	+1.7%	+1.7%

Source: Stats NZ and MPI.
* Other arable products include: maize, other grains, and oilseeds.

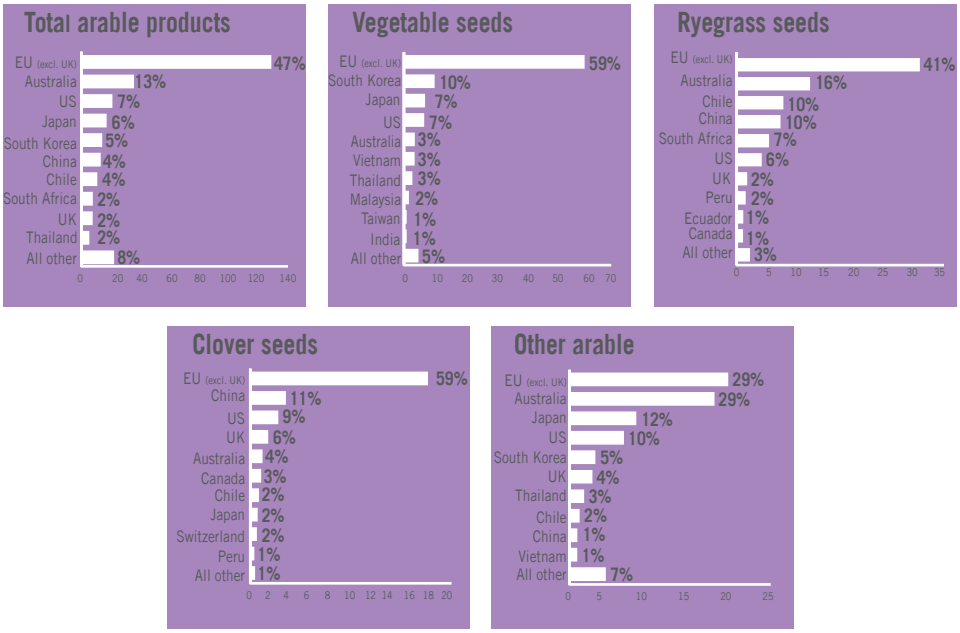
Top 10 export destinations

Year to March 2021



Total export revenue $ million (March 2021)	% of Total
102	37%
76	27%
30	11%
6	2%
62	22%
277	100%

Top markets (NZ$ million, year to March 2021)



Source: Stats NZ and MPI.

Arable export revenue for the March 2021 quarter was $37.4 million, down 25.2 percent on the March 2020 quarter. Lower yields for most crops compared to last year's bumper season, a stronger NZD, and delays in getting exports offshore contributed to the fall. These factors are expected to lead to a $21 million fall in export revenue for the year ending June 2021 (Figure 41).

A range of climatic conditions affected the 2020-21 harvest. While the season was predominantly dry, not enough heat before December and a wet period over late December/early January affected many of the seed crops and delayed the harvest. Vegetable seed yields were lower than 2019-20 with wet weather affecting flowering. Asian brassica seeds had variable results with some yielding poorly. Clover and ryegrass seed yields were affected by the dry weather in some regions. Across all crops seed quality was reported to be good. The expected ongoing dry conditions and prevalence of grass grub are a concern for next season's production but recently planted crops are reported to have established.

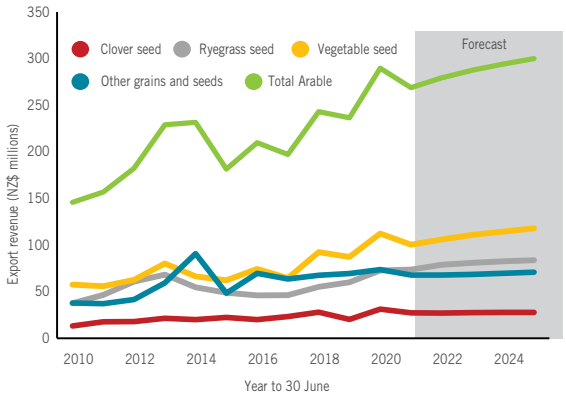
Vegetable seed sales remain steady with the planted area for the 2021-22 harvest similar to 2020-21. Northern Hemisphere demand remains strong for forage seeds but this may level off next year with a good harvest expected in Europe. The Chinese market for forage grass seeds continues to grow on the back of a significant forage planting project and lower availability of seed from the US.

In Europe and the US, a spring drought and COVID-19 lockdowns giving people more time in their gardens have driven an increase in private consumer orders for turf seeds. Chinese demand is driven by continuing urbanisation, with turf seed used for parks and roadsides. An issue for New Zealand seed companies is finding enough farmers to grow turf seeds to meet the demand due to its lack of forage yield in the winter. This limits the ability for farmers to finish lambs, and with no greater margin, they would prefer to grow forage grasses.

Growers are continually looking for higher value options to plant. However continued growth in seed exports is constrained by the high cost of production in New Zealand compared to other countries. Global seed companies tend to spread their risk, sourcing some of what they need in New Zealand in addition to countries with other climates, often at a different price point helping to lower the overall cost.

COVID-19 has caused difficulties for exporters with issues around shipping space, container availability, irregular shipping services coupled with freight rates almost doubling. Seed exporters have a limited window to get seed to market in time to meet sowing dates. If the deadline is missed inventories are built up overseas reducing demand the following year. COVID-19 is also disrupting plant breeding programmes with overseas seed breeders unable to enter New Zealand to inspect field trials.

Figure 41: Arable export revenue 2010-25



Source: Stats NZ and MPI.

Domestic Cereals

The 2020-21 cereal harvest[1] is estimated to be 48,000 tonnes lower (down 6 percent) than the 2019-20 harvest (Table 19). This was due to lower yields for most cereals due to the variable growing season and a reduced planted area of about 3,100 hectares (3 percent). Quality was reported to be variable. A 30,200 tonnes fall in feed wheat was the main contributor to the overall decline.

The harvest got off to a slow start and crops were slow to mature. Warm summer days helped dry crops, but the smattering of overcast and cooler, wetter days slowed the harvest at times.

Carry-over stocks from 2019-20 were low and as at 1 April 2021, 71 percent of the 2020-21 harvest was reported to have been sold. Unsold stocks of feed wheat (27 percent) and feed barley (39 percent) were 26 percent and 24 percent lower than the same time last year.

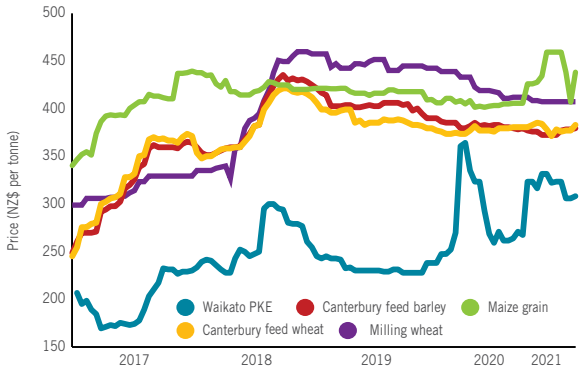
Dry conditions delayed autumn sowing and total autumn/winter sowings are estimated to be 4,400 hectares less than 2020. The main declines are in malting barley, down 60 percent and milling wheat, down 21 percent.

There has been little movement in domestic prices for feed wheat and feed barley over the last year. Maize prices have been very volatile over the last six months; and milling wheat prices are down $22 per tonne. A procurement change in the milling wheat market where it is now dominated by one buyer, is causing uncertainty for farmers and associated industries.

The Australian harvest resulted in record wheat production and the second highest result for barley production. Currently wheat and barley prices are about 20 percent lower than last year. Feed wheat can be landed in Auckland for $492[2] per tonne and feed barley for $415 per tonne making it very competitive with New Zealand grain from the South Island. Elsewhere in the world grain prices are increasing, driven by strong demand from China for food security and livestock feed as it rebuilds its pig numbers.

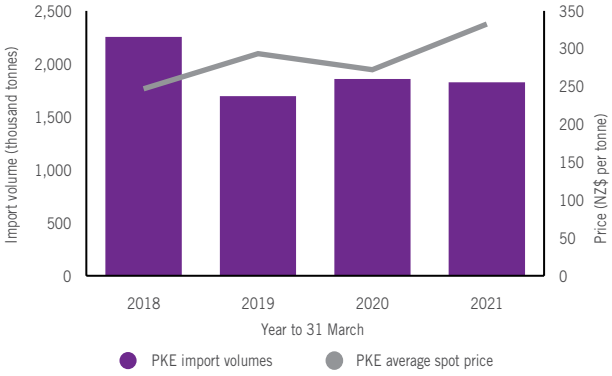
1 Source: Foundation for Arable Research AIMI New Zealand Survey of Cereal Areas and Volumes April 1, 2021
2 Pricing at 1 May 2021

Figure 42: Spot prices for domestic grains and PKE 2017-21



Source: NZX Grain and Feed Insight.

Figure 43: PKE imports and domestic prices 2018-21



Source: Stats NZ, NZX Grain and Feed Insight.

COVID-19 related labour issues on palm oil plantations in Malaysia and Indonesia, crushers temporarily closed at Malaysian ports and rising freight costs pushed palm kernel expeller (PKE) prices up over the last two years (Figure 42). However, it continues to remain a cheaper supplementary feed than New Zealand grains. The fluctuating price has not impacted import volumes which have remained steady over the last two years (Figure 43) with demand created by the continued drought, and COVID-19 related delays at meat processing plants, which meant many farmers have carried stock longer than planned.

Table 19: Estimated national cereal harvest 2018-21

Year to 30 June		Milling wheat	Feed wheat	Malting barley	Feed barley	Milling oats	Feed oats	Total
Estimated total tonnes								
2021 harvest	tonnes	100,629	316,560	59,606	246,297	17,470	17,402	757,964
2020 harvest	tonnes	101,347	346,753	75,090	258,510	13,310	10,890	805,900
2019 harvest	tonnes	84,674	313,426	73,551	310,149	18,641	8,183	808,624
2018 harvest	tonnes	67,360	303,640	69,823	309,877	18,515	5,771	774,986
Estimated total hectares								
2021 harvest	ha	12,008	32,861	7,407	33,754	2,717	3,470	92,217
2020 harvest	ha	11,110	33,990	11,242	34,558	2,320	2,080	95,300
2019 harvest	ha	9,812	35,188	10,347	45,153	3,113	1,581	105,194
2018 harvest	ha	8,208	33,192	10,303	45,997	3,330	1,002	102,032
Comparison of yields (t/ha) between last three harvests								
2021	t/ha	8.4	9.6	8.0	7.3	6.4	5.0	
2020	t/ha	9.0	10.2	6.7	7.5	5.7	5.2	
2019	t/ha	8.9	8.6	7.3	7.2	6.3	5.7	

Source: Foundation for Arable Research AIMI Survey of Cereal Areas and Volumes 1 April 2021.

Processed foods and other products

Processed food and other product exports are expected to be up 2.5 percent for the year ending June 2021 compared with the previous year, and to drop by 2.6 percent in 2021-22.

Honey exports are expected to reach $480 million for 2020-21, mainly due to an increase in export volumes, before dropping from 2021-22 onwards as international demand falls away.

Exports of innovative foods are expected to be 16 percent lower in 2020-21, likely due to the logistical difficulties that are affecting freight movements worldwide. Exports are expected to stay subdued for much of the next year until logistics issues are resolved.

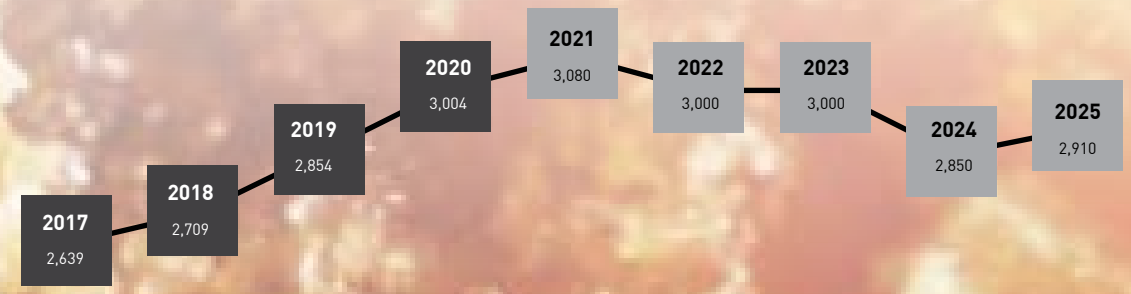


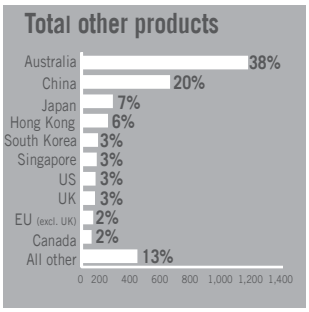
Table 20: Processed food and other export revenue 2017-25 (NZ$ million)

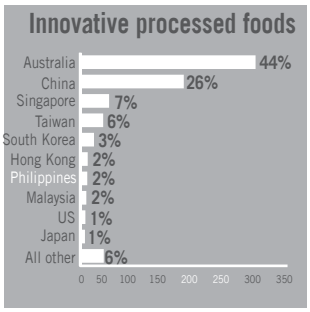
	Actual				Forecast				
Year to 30 June	2017	2018	2019	2020	2021	2022	2023	2024	2025
Innovative processed foods	664	759	788	785	660	640	700	750	770
Honey	329	348	355	425	480	430	420	400	400
Sugar & confectionery	305	263	225	250	280	280	280	290	290
Cereal products	285	306	306	291	280	280	290	290	290
Live animals*	274	241	239	290	500	510	420	210	210
Soup & condiments	186	184	196	198	180	170	170	180	180
Other products**	595	609	746	765	690	680	710	740	770
Total	2,639	2,709	2,854	3,004	3,080	3,000	3,000	2,850	2,910
% Change	-2.8%	+2.7%	+5.4%	+5.2%	+2.5%	-2.6%	+0.0%	-5.0%	+2.1%

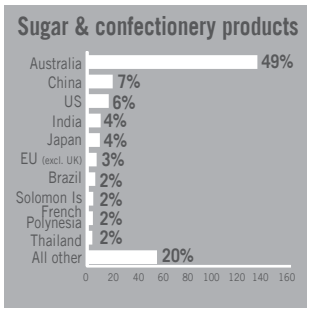
Source: Stats NZ and MPI.
* Live animals includes horses, cattle, poultry, goats and other animals.
** Other products include: beverages, vegetable-based dyes, and spices.

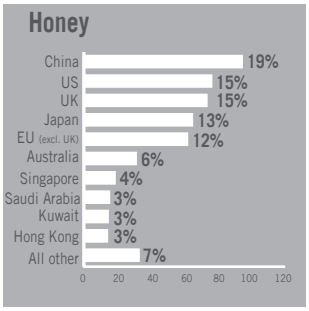
Product	Total export revenue $ million (March 2021)	% of Total
Innovative Processed Foods	679	22%
Honey	507	17%
Cereal Products	280	9%
Sugar and Confectionery Products	283	9%
Live Animals	411	13%
Soups and Condiments	183	6%
Other Products	708	23%
Total other primary sector	3,051	100%

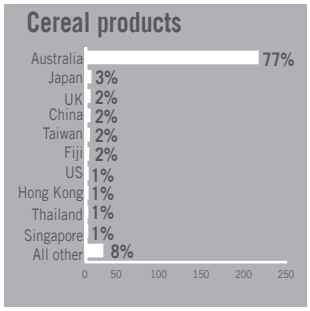
Top markets (NZ$ million, year to March 2021)

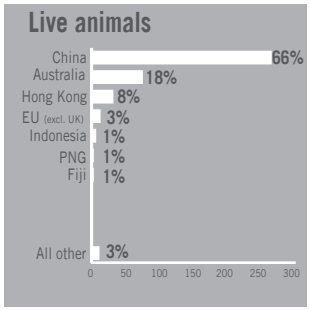


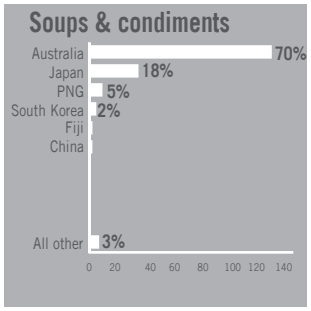












Source: Stats NZ and MPI.

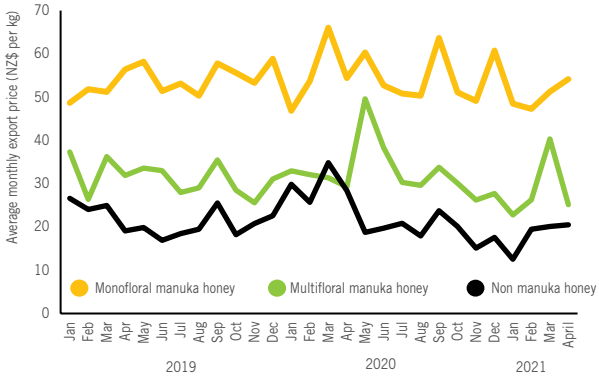
The processed foods and other products sector is very diverse. It includes processed foods, live animals, and honey. Processed foods include items such as biscuits, tomato sauce, soft drinks, and beer.

Export revenue for this sector is forecast to reach $3.1 billion for the year ending June 2021, up 2.5 percent from the previous year. The key contributors to this growth are increases in live animals and honey. Overall growth has been moderated by an 8 percent reduction in exports of processed food, particularly for innovative foods.

Honey exports to grow in 2021 and start to drop in 2022

Honey exports are forecast to reach $480 million for the year ending June 2021, up 13 percent on 2019-20. Export volumes are expected to exceed 12,500 tonnes for the year ending June 2021, up from the 10,287 tonnes exported in 2019-20. Exports of monofloral mānuka honey reached 4,950 tonnes in the first nine months of 2021, while exports of multifloral and non-mānuka honey have reached 4,739 tonnes in the same period. Exports for the year to June 2022 are expected to drop back to around 11,500 tonnes as international demand starts to drop back from current very high levels.

Figure 44: Honey average monthly export price by floral type 2019-21



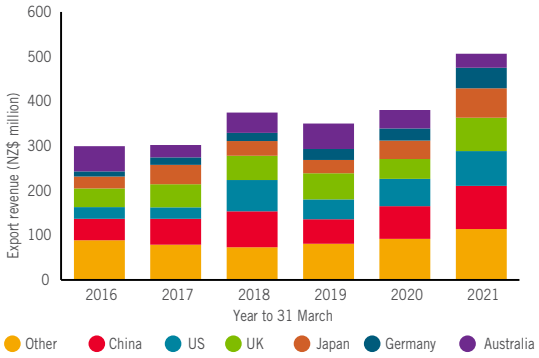
Source: Stats NZ.

Table 21: Honey exports and production 2016-20

Year to 30 June	2016	2017	2018	2019	2020
Honey production (tonnes)	19,885	14,855	20,000	23,000	27,000
Export volume (tonnes)	8,831	8,450	8,692	8,065	10,288
Average export price (NZ$/kg)	35.62	38.92	40.04	44.02	41.28
Export revenue (NZ$ thousands)	314,512	328,818	348,009	355,060	424,694

Source: Stats NZ and MPI.

Figure 45: Honey export value by country 2016-21



Source: Stats NZ.

Average monthly export prices for multifloral and non-mānuka honey are continuing the downward track they have been on since early 2020. The average monthly export price for non-mānuka honey has fallen below $20 per kilogram regularly in recent months (Figure 44), while the average monthly export price for multifloral mānuka honey has dropped to $26 per kilogram in recent months. Average prices for bulk honey have dropped significantly, with average monthly prices per kilogram to Australia and the United States falling below $5 per kilogram in some recent months.

Exports of honey to all our main markets have increased markedly in 2021. Exports to China, the United States, and the United Kingdom are well ahead of previous years, driven by increased demand for products with health benefits (such as honey) during the COVID-19 pandemic, and beekeepers continuing to drop prices to clear stocks (Figure 45). Another driver of export volumes is the decision by importers to store more stock in market than normal due to disruptions to international trade such as obtaining sufficient container space for exports. While exports could drop in coming months, especially in markets where stocks are high, ongoing trade disruptions may also mean that high stocks could continue to be maintained in overseas markets. Exports for 2021-22 are forecast to drop, but remain higher than in 2019-20, as it is likely that the current high level of stocks of honey within New Zealand will continue to be cleared.

The honey harvest for the June 2021 year is expected to be below the record harvest of 27,000 tonnes in 2019-20, as many beekeepers are reporting lower production than last season due to cool and changeable weather conditions during the flowering season. Stocks of honey within New Zealand remain high despite recent increases in export volumes.

Live animal exports increase as more live cattle are exported to China

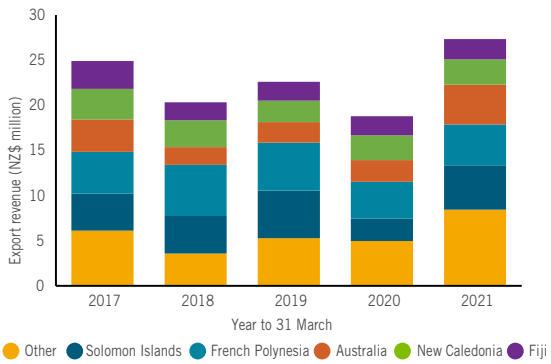
Live animal export revenue for the year ending June 2021 is expected to increase to $500 million, up from $290 million in the previous year. This rise in exports is due to a large increase in the number of live cattle exported to China over the period. In 2019-20, 56,373 cattle were exported, while during 2020-21, over 97,000 cattle have been exported in the first three quarters. Another 50,000 are expected to be exported in the June 2021 quarter. In April 2021, the Government announced that the export of livestock by sea will cease

following a transition period of up to two years. The exact length of the transition period has not yet been determined, but for the purposes of this forecast, live cattle exports by sea are expected to cease at the beginning of April 2023. Exports of horses, sheep, goats and poultry via air freight are expected to continue at their usual levels in coming years.

Sugar and confectionery products growing

The value of sugar and confectionery exports is expected to grow 12 percent to reach $280 million for the year ending June 2021. Exports of processed sugar (predominantly white sugar) is leading this growth, with exports for the nine months to March 2021 up 48 percent on the same period last year, and exports of sugar confectionery up 33 percent in the same period. New Zealand predominantly exports processed sugar to French Polynesia, New Caledonia and Australia. Exports to these markets have grown in the past year (Figure 46) and are also starting to increase to Asian markets such as China, Singapore, and India. Exports of sugar confectionery are also growing, particularly to Australia and the United States. This growth in exports to Australia may not continue in the future, as Nestle is considering closing its Wiri factory towards the end of 2021. This factory mostly manufactures sugar confectionery for the Australian market.

Figure 46: Processed sugar export value 2017-21



Source: Stats NZ.

Innovative food exports fall significantly in 2021

After a strong start in the September 2020 quarter, the growth in innovative food exports has slowed considerably in recent months. The value of exports for the year ending June 2021 are expected to be 16 percent lower than 2019-20 (Figure 47). The main reason for this decline is likely to be the logistical difficulties affecting freight movements worldwide. In particular, the value of exports to Australia declined by 20 percent for the nine months to March 2021, compared with the same period last year, while the value of exports to China declined 15 percent in the same period.

Other products down almost ten percent

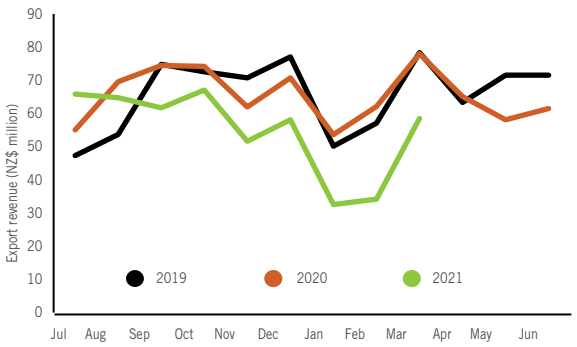
The value of the 'other products' category is forecast to drop 10 percent for the year ending June 2021, to $690 million. While beverage exports are holding steady, exports of dairy blends have dropped significantly. Dairy blends are mixes of milkfat or butter and vegetable oil, lecithin or salt and premixes of food ingredients. Our key markets for dairy blends are Japan and South Korea. Exports to both these markets have declined in the year to June 2021, particularly since January 2021. This decline is likely due to the logistical difficulties affecting worldwide freight movements. Exports of dairy blends are likely to remain low for much of the next year, before recovering once logistics issues improve. Exports of beverages and the other products in this category are expected to remain at similar levels in coming years.

Exports of beverages in 2020-21 have stayed at similar levels to 2019-20 so far, as drops in beer and water exports have been balanced by increases in spirits exports. Soft drinks are our largest beverage export, reaching $144 million in the year to June 2020. While Australia is our largest market for beverage exports ($189 million in 2019-20), China and the United States are our key markets for bottled water exports ($33 million and $20 million respectively in 2019-20).

Cereal products, and soups and condiments decreasing

The value of cereal product exports for the year to June 2021 is expected to reach $280 million, down 3.8 percent on 2019-20. Our key market for cereal products is Australia, with the main products being biscuits and doughs and mixes. Exports of soups and condiments are also expected to decrease in 2020-21 to $180 million, down 10.0 percent on the previous year. Exports are expected to continue at similar levels for the next few years. Our chief markets for these products are Australia and Japan. The main products exported to Australia are sauces and vegetable soups, while seasonings are mostly exported to Japan.

Figure 47: Innovative food export value by month 2019-21



Source: Stats NZ.

Food and fibre sector in the New Zealand economy

83%

of trade

The food and fibre sector accounted for 82.7 percent of New Zealand's merchandise exports in the year ended March 2021. This ratio has increased steadily over the past decade, with primary industry export growth exceeding that of non-primary industries for the past nine years.

14%

of employment

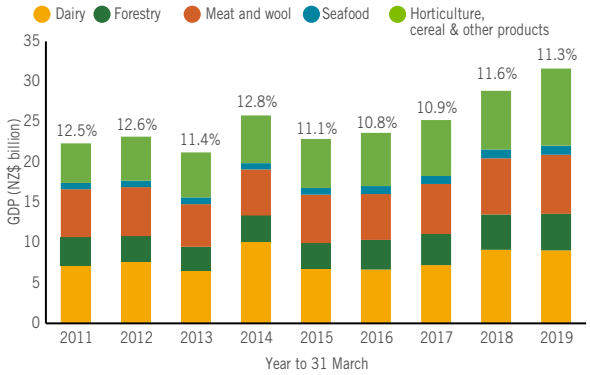
356,000 people are employed in New Zealand's food and fibre sector as of 2017[1], representing 14.1 percent of the total workforce. Primary production employment is distributed across the country, but processing and commercialisation activities are concentrated in Auckland and other major population centres.

11%

of GDP

The food and fibre sector accounted for 11.3 percent of New Zealand's GDP in the year ended March 2019. This figure includes both the production of primary products, such as Dairy Cattle Farming and the subsequent processing and commercialisation industries such as Dairy Product Manufacturing.

Figure 48: Food and fibres contribution to GDP by sector 2011-19



Source: Stats NZ and MPI.

Note: percentage is of total GDP from all industries.

1.Most recently available data. Human Capability in the Primary Industries - 2002-2017 Overview (MPI).

Table 22: Gross agricultural revenue and expenditure 2017-25 (NZ$ million)

	Estimate				Forecast				
Year to 31 March	2017	2018	2019	2020	2021	2022	2023	2024	2025
Dairy	10,990	12,424	12,468	13,730	15,250	15,330	14,210	14,140	14,560
Cattle	2,919	3,172	3,218	3,790	3,630	3,580	3,650	3,640	3,700
Sheepmeat	2,204	2,860	3,308	3,380	3,210	3,150	3,230	3,270	3,330
Wool	470	548	600	570	390	440	490	490	520
Deer	187	215	214	190	160	160	180	190	190
Pigs	172	161	164	170	170	170	170	170	170
Poultry/eggs	210	212	221	200	200	200	210	220	220
Other farming	207	258	267	290	280	280	280	280	290
Sales of live animals	1,052	1,010	1,007	1,110	1,060	1,040	1,060	1,070	1,090
Value of livestock change	168	72	-179	60	20	10	-40	-10	10
Fruit	3,538	3,373	3,987	4,270	4,630	4,600	4,890	5,150	5,400
Vegetables	1,089	1,156	1,156	1,250	1,200	1,190	1,220	1,260	1,290
Other horticulture	451	580	560	610	580	580	590	610	630
Crops and seeds	655	674	734	940	940	930	960	990	1,010
Agricultural services	218	224	232	260	270	260	260	260	270
Non-farm income	460	459	444	490	510	510	500	500	520
Total gross revenue	24,990	27,398	28,401	31,300	32,480	32,430	31,860	32,240	33,180
Intermediate consumption	13,881	14,728	15,453	16,460	17,320	17,850	18,080	18,300	18,620
Contribution to GDP	11,109	12,670	12,948	14,850	15,160	14,580	13,770	13,940	14,560
Wages	2,458	2,627	2,756	2,860	2,970	3,060	3,140	3,220	3,320
Depreciation	3,553	3,618	3,735	3,810	3,880	3,960	4,030	4,110	4,190
Net indirect taxes*	877	918	968	1,120	1,140	1,100	1,040	1,050	1,100
Operating surplus	4,221	5,507	5,489	7,050	7,170	6,460	5,560	5,560	5,960
Interest paid	2,556	2,549	2,605	2,400	2,010	2,510	2,570	2,600	2,680
Interest received	430	443	385	260	60	60	60	60	90
Agriculture sector income	2,095	3,401	3,269	4,910	5,220	4,010	3,050	3,010	3,370

Source: Stats NZ and MPI.

* Net indirect taxes are indirect taxes less subsidies.

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.

New Zealand Government