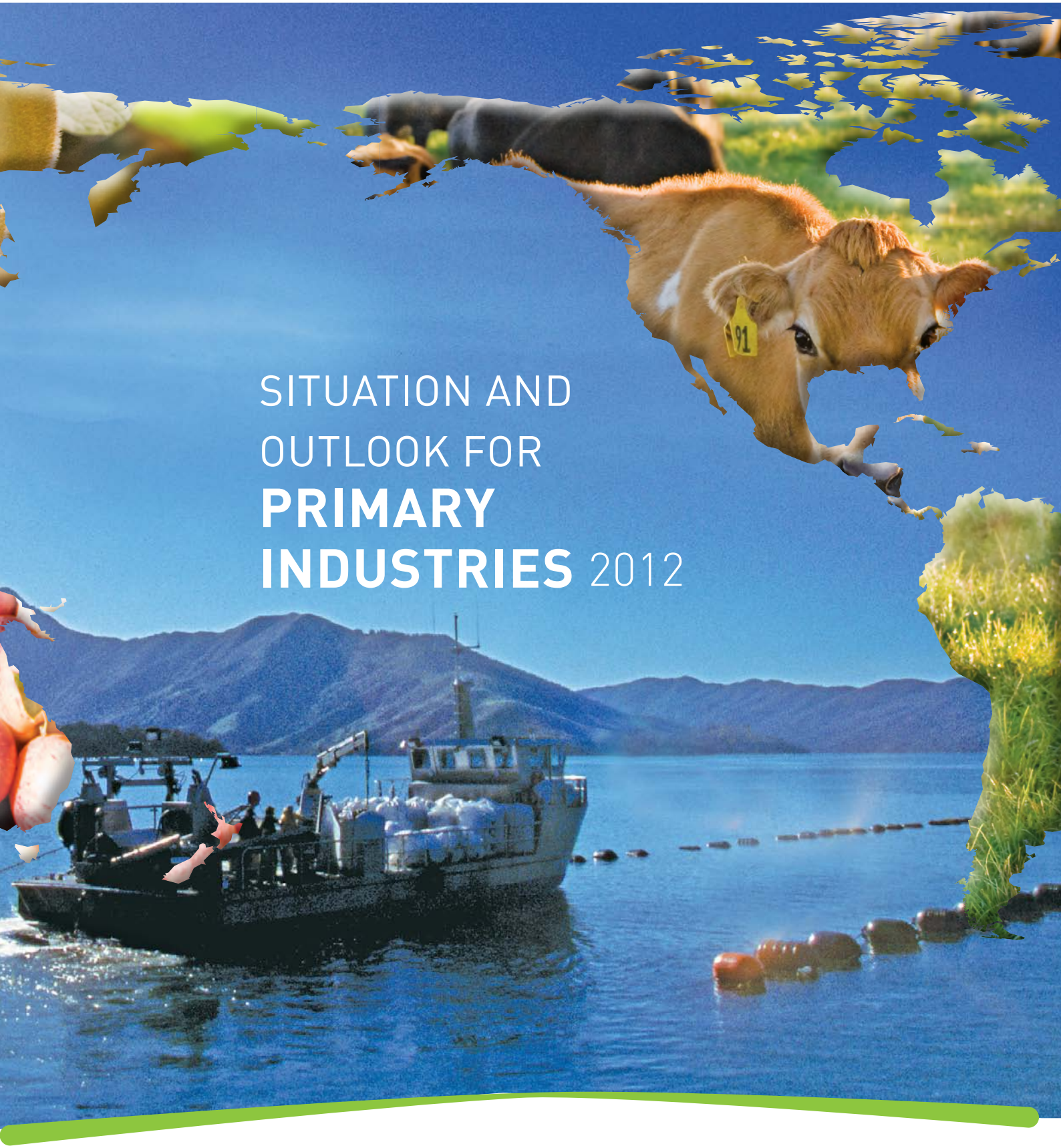
Ministry for Primary Industries
Manatū Ahu Matua



SITUATION AND OUTLOOK FOR **PRIMARY INDUSTRIES** 2012

New Zealand Government

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FOREWORD

Welcome to the *Situation and Outlook for Primary Industries* (formerly known as the *Situation and Outlook for New Zealand Agriculture and Forestry*, or SONZAF) for 2012.

The new title reflects the Ministry's new name – the Ministry for Primary Industries (MPI) – formed from the merger of the Ministry of Agriculture and Forestry, the Ministry of Fisheries and the New Zealand Food Safety Authority. It also reflects the Ministry's broader scope, now encapsulating the whole primary sector and including seafood for the first time.

The Ministry's vision is **GROWING AND PROTECTING NEW ZEALAND**.

We do this by maximising export opportunities for the primary industries; improving sector productivity; increasing sustainable resource use; and protecting New Zealand from biological risk.

The *Situation and Outlook* report assists this by providing good information about the performance of New Zealand's primary sector and independent forecasts of future prospects. Given the significant impact of exchange rate movements on future prices, this year we present an alternative exchange rate scenario and consider the impact on export revenues for dairy, meat and wool, and forestry.

I hope that everyone with an economic, social or environmental interest in New Zealand's primary industries will use the *Situation and Outlook* report to broaden their understanding of the issues, challenges and opportunities faced by the sector. Through informed discussion and debate, we can collectively work to grow and protect New Zealand.

Paul Stocks
Deputy Director-General
Ministry for Primary Industries

1 OVERVIEW

The primary industries have been one of the brighter areas in the New Zealand economy, but prices are now falling. Strong revenues over the past year have been driven by historically high prices, good production in pastoral agriculture, record harvest from New Zealand forests and further expansion of aquaculture production.

The sustained strength of the New Zealand dollar is a concern for exporters. The impact of the strong dollar has been mitigated by strong product prices offshore for most primary industries. However, weaker demand in the main overseas markets has meant that horticulture and wood processing sectors are feeling the effects of this.

Looking forward, MPI expects export revenues from the primary industries to fall in the year to 30 June 2013 due to falling product prices and beyond then to increase with gradually rising prices for many products. These forecasts were finalised on 18 May 2012, during a period of heightened uncertainty in Greece and the wider world economy.

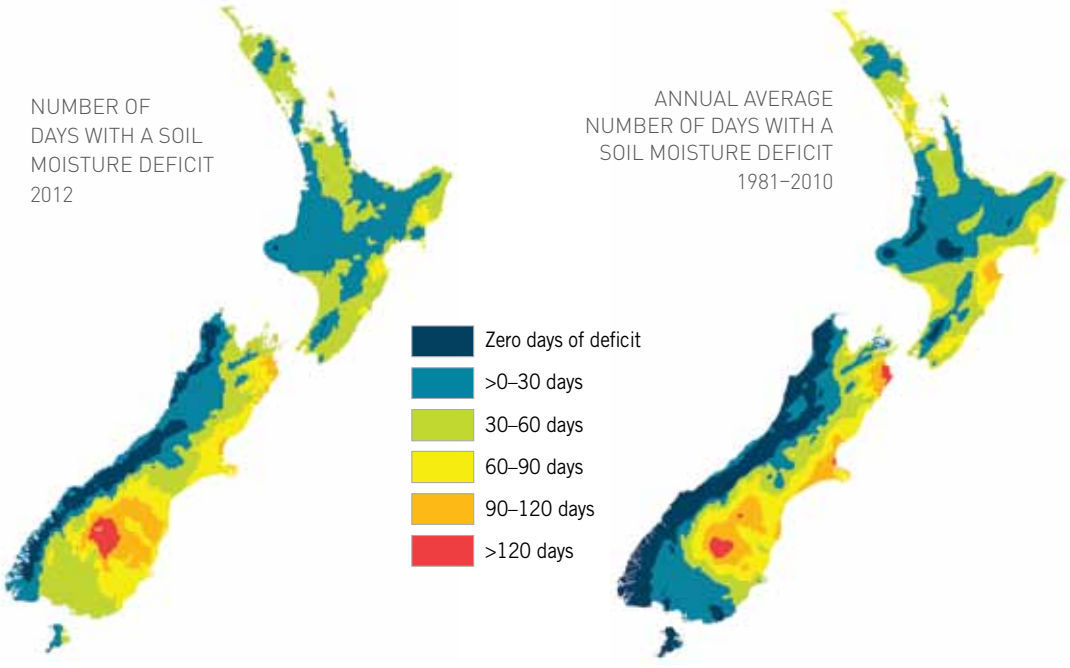
New Zealand climatic conditions

The 2011/12 season has delivered the most favourable pastoral conditions in a decade. Rains arrived regularly throughout the spring and summer, spurring grass growth. Warm temperatures in autumn 2012 further helped grass growth. This contrasts with the six previous pastoral seasons, all of which were drier than historic averages.

The main exceptions were the Southland and Otago regions, which were dry through spring and summer.

Yields of fruit crops were lower because of cool and wet conditions.

FIGURE 1.1: DAYS OF SOIL MOISTURE DEFICIT, YEAR ENDED 30 APRIL 2012, AND HISTORIC AVERAGE



SOURCES National Institute of Water and Atmospheric Research (NIWA) and MPI.

NEW ZEALAND LINKED INTO EMERGING MARKET GROWTH

With the world economy operating at two speeds, New Zealand's primary industries have benefited from their increasing trade links with emerging markets in Asia. Figure 1.2 shows economic growth forecasts around the world for 2012.

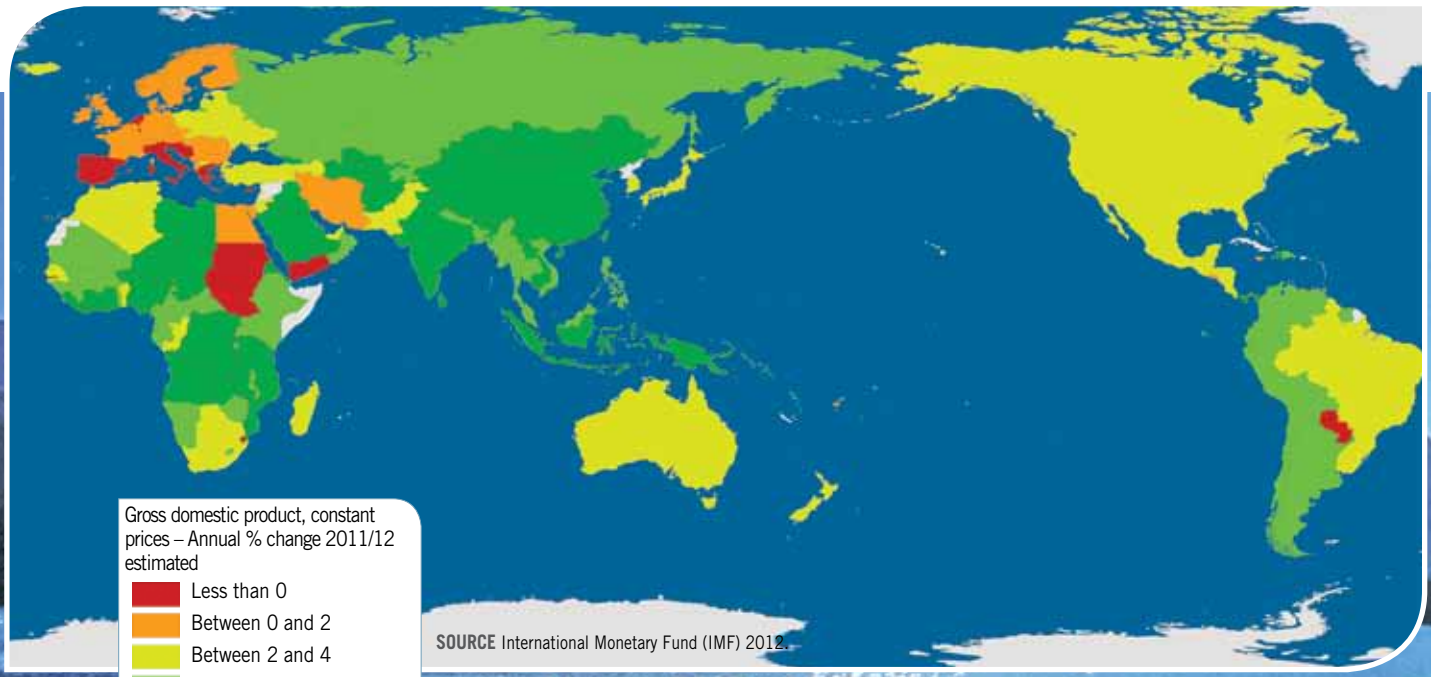
The sovereign debt crisis in the European Union (EU) intensified during 2011, resulting in reduced economic growth and rising unemployment in many European countries. The situation improved somewhat in the first months of 2012, with liquidity from the European Central Bank boosting market confidence. Nevertheless, this liquidity does not resolve the underlying structural problems in Europe, and the risk of further deterioration in economic conditions remains.

New Zealand's primary sector export earnings in the European market have generally receded as a result of the global financial crisis, resulting in a longer term shift for many towards Asian markets.

The United States (US) economy is slowly recovering, with jobs being generated and unemployment rates falling. Even so, the US housing market remains very weak, with no increase in new home construction expected. This is particularly pertinent for the New Zealand timber industry.

In contrast, Chinese investment and private consumption remained strong because of China's solid corporate profits and rising household income. However, concerns about deteriorating loan quality in China are driving a policy response to slow bank loan growth. The outlook for New Zealand's dairy and forestry exports depends to a large extent on the Chinese economy maintaining its momentum.

FIGURE 1.2: 2012 ECONOMIC GROWTH FORECASTS



SOURCE International Monetary Fund (IMF) 2012.

South East Asian countries, especially Indonesia, are also experiencing strong growth. This is despite the International Monetary Fund adjusting down India's expected gross domestic product (GDP) growth to seven percent in 2012.

Latin America is another region that has grown through the global financial crisis, and although New Zealand's trade links with the region are more limited, rising domestic demand in Latin America means production increases in places like Brazil are having less impact on world agricultural markets.

COMMODITY PRICES FINDING A NEW, HIGHER, LEVEL

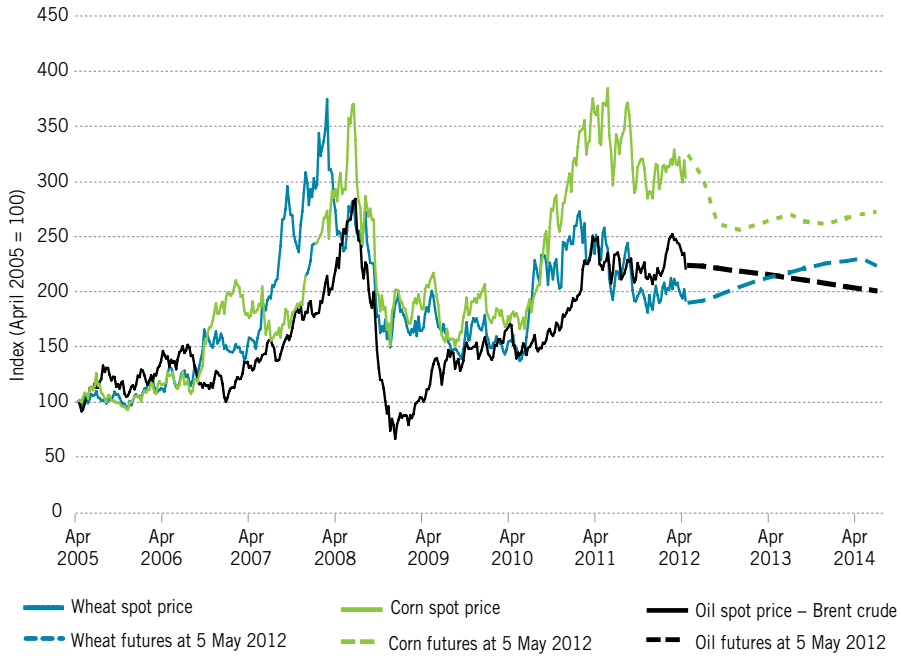
The past decade has seen an increase in the relative price of commodities. Despite increased volatility in the aftermath of the global financial crisis, this rise in the price of commodities looks persistent, as shown in figure 1.3.

MONETARY CONDITIONS AND ASSUMPTIONS

Against most currencies, the New Zealand dollar has continued to trade at high levels over the past 12 months relative to historic averages, as shown in figure 1.4. New Zealand's economic performance has been stronger than those of many other developed economies, and the associated higher interest rates have proven attractive to investors.

The New Zealand dollar has sustained this strength for two years now, meaning that exporters with hedging strategies are now purchasing forward cover at much higher rates.

FIGURE 1.3: INDEX OF US DOLLAR COMMODITY PRICES



SOURCES DataStream and MPI.

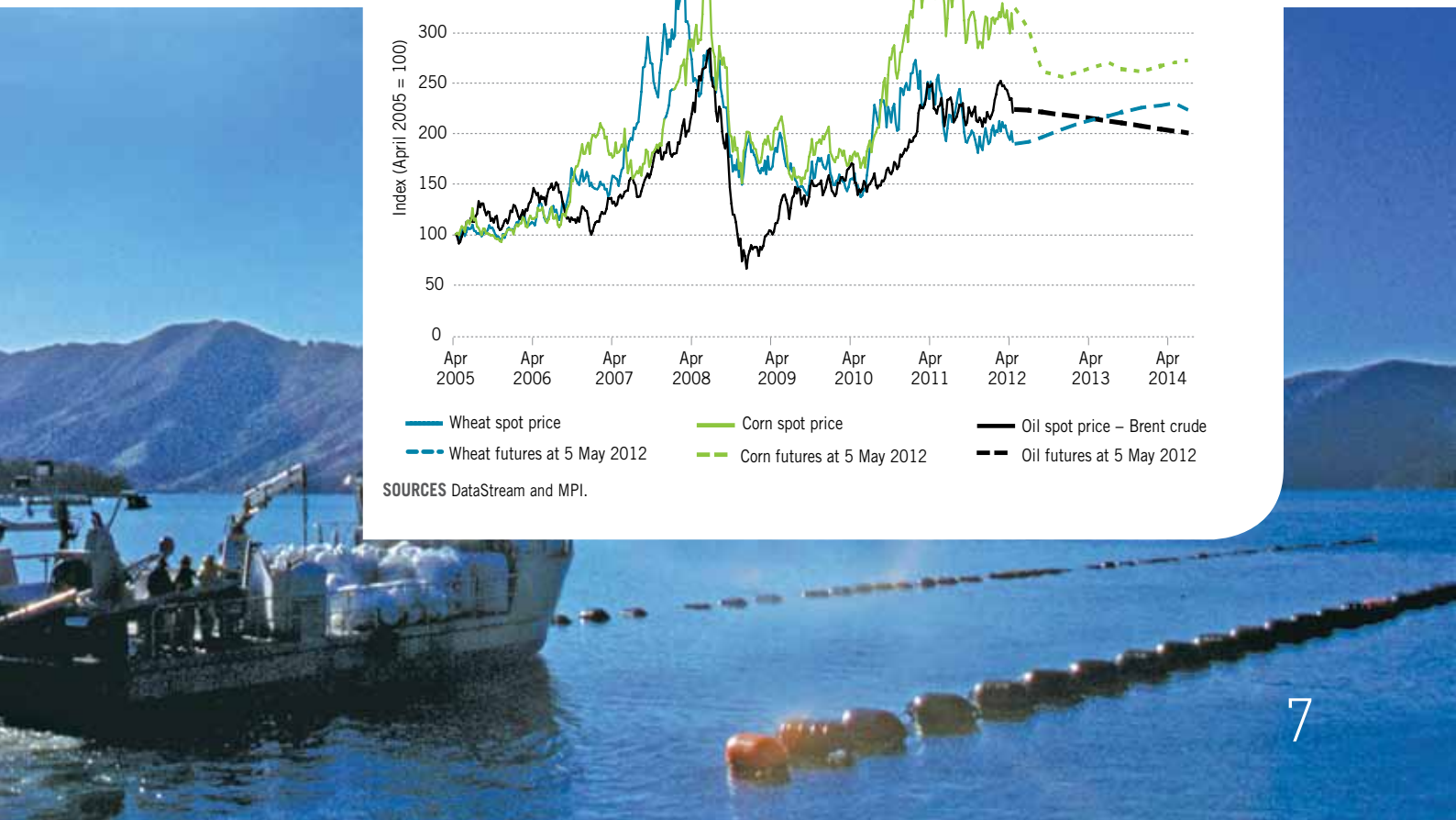
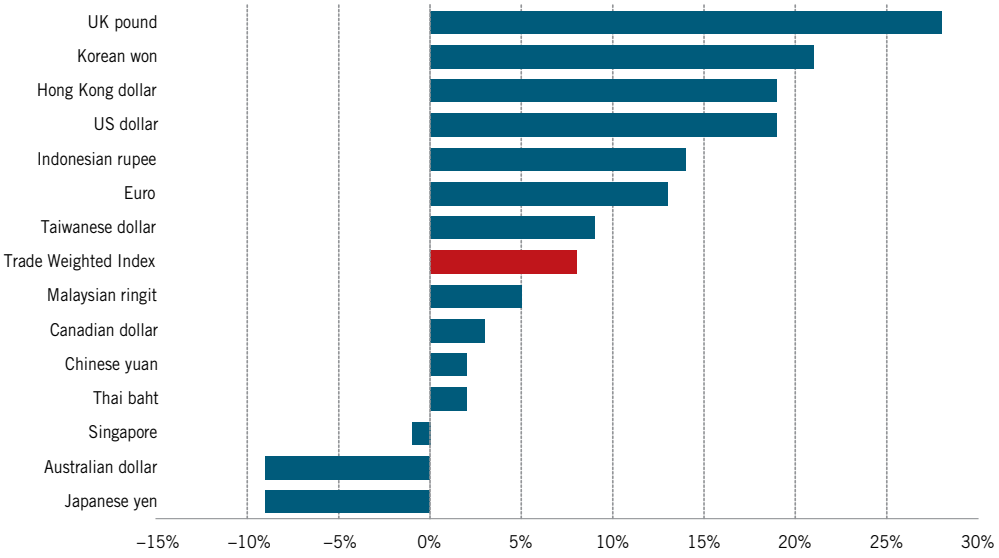


FIGURE 1.4: NEW ZEALAND DOLLAR VALUE FOR YEAR ENDED APRIL 2012 RELATIVE TO THE PREVIOUS DECADE



SOURCE Reserve Bank of New Zealand and MPI.

The forecasts presented here use exchange rate, inflation and interest rate assumptions from The Treasury's 2012 *Budget Economic and Fiscal Update* (see table 1.1). Against the US dollar, United Kingdom (UK) pound and Euro, the New Zealand dollar is assumed to remain at the current high levels until the end of 2013 and then depreciate but remain above long-run averages for these currencies. Against the Japanese yen and Australian dollar, the New Zealand dollar is weaker and assumed to remain at present levels.

In the shorter term, weak European and US economic performance, and lower interest rates relative to New Zealand drive the assumed strength in the New Zealand dollar. Longer term, New Zealand's high and growing level of international indebtedness is expected to be constrained by limits to lenders' appetite for risk eventually reducing the strength of the New Zealand dollar.

TABLE 1.1: EXCHANGE AND INTEREST RATES

	ACTUAL				ASSUMPTIONS			
	March 2009	March 2010	March 2011	March 2012	March 2013	March 2014	March 2015	March 2016
Trade weighted index	53.7	65.3	67.2	70.6	72.2	71.4	68.9	64.7
US dollar	0.53	0.71	0.76	0.81	0.80	0.79	0.75	0.69
UK pound	0.37	0.45	0.47	0.51	0.51	0.50	0.47	0.43
Australian dollar	0.80	0.78	0.75	0.77	0.81	0.82	0.81	0.81
Japanese Yen	50	64	62	64	65	64	62	60
Euro	0.41	0.51	0.55	0.59	0.61	0.60	0.57	0.53
90 day bank bill interest rate – percent	3.7	2.7	3.0	2.7	2.8	3.3	3.9	4.4
Consumer price index inflation – percent	3.0	2.0	4.5	1.6	2.6	2.5	2.4	2.4

SOURCE Reserve Bank of New Zealand, The Treasury and MPI.

Alternative exchange rate scenario

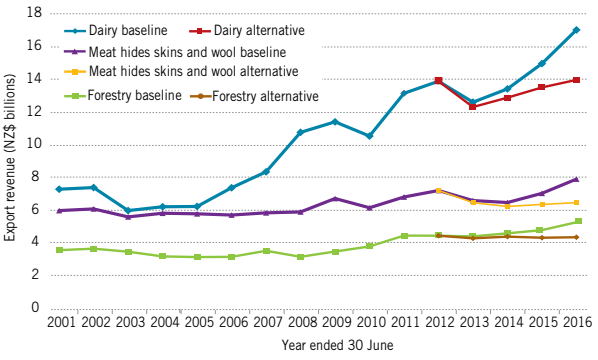
The greatest area of forecast uncertainty is the level of future exchange rates, with a range of factors influencing the New Zealand dollar's value against foreign currencies. The alternative exchange rate scenario presented here assumes high rates over the whole outlook period and demonstrates the impact on exports and producer prices of major products in comparison with the baseline assumptions. The alternative scenario implies further widening of New Zealand's current account deficit, further increases in New Zealand's already high level of offshore debt, and ongoing appetite for this risk among foreign lenders.

These alternative exchange rate assumptions result in lower export revenues over the outlook period, especially in the final two years of the outlook, owing to lower export prices in New Zealand dollar terms. Lower producer prices result in slightly lower animal numbers and production than predicted in the baseline.

FIGURE 1.5: EXCHANGE RATE ASSUMPTIONS

SOURCES Reserve Bank of New Zealand, The Treasury and MPI.

FIGURE 1.6: EXPORT REVENUES UNDER DIFFERENT EXCHANGE RATE ASSUMPTIONS, 2011–2016



SOURCES Statistics New Zealand and MPI.

Dairy export revenue would be 21 percent below baseline by the year ending 30 June 2016. Milk price would be forecast down from $7.83 in the baseline to $6.15 per kilogram of milk solids. These lower prices would result in a smaller increase in cow numbers and milk solids production.

Meat, hides, skins and wool export revenues would be 22 percent below the baseline by the year ending 30 June 2016. Average lamb schedule prices would be forecast down from 717 to 592 cents per kilogram carcass weight. Lower prices would drive lower sheep and beef cattle numbers than expected in the baseline scenario and slightly higher slaughter numbers.

Forestry export revenue would be 21 percent below the baseline by the year ending 30 June 2016. Lower export prices in New Zealand dollar terms would be expected to reduce log harvesting and forestry export volumes.

Seafood export revenue is likely to be affected only by lower prices, as volumes would remain fairly constant. Horticultural export revenues would be affected mostly by lower New Zealand dollar returns; sustained lower producer prices may result in lower levels of production in some crops.

AGRICULTURAL DEBT

Since the onset of the global financial crisis in late 2008, the overall level of the agricultural sector's debt has remained static. This is because banks' lending standards have tightened, reducing the supply of credit, and expectations of capital gain from farm land evaporated with declining land prices, reducing the demand for credit. This contrasts with the decade preceding the global financial crisis, when agricultural debt grew at over 14 percent a year.

GROSS AGRICULTURAL REVENUE AND EXPENDITURE

Gross agricultural revenue is estimated to have increased by 3 percent in the year ended 31 March 2012, reflecting higher prices for lamb and wool exports, in particular, as shown in table 1.2. Weakening international prices for most agricultural products, together with the assumption of continued strength in the New Zealand dollar, result in lower total gross revenues over the next two years. Expected increases in total gross revenues over 2015 and 2016 mainly reflect an assumed depreciation of the New Zealand dollar.

TABLE 1.2: GROSS AGRICULTURAL REVENUE AND EXPENDITURE[1] 2009–2016

	ACTUAL	ESTIMATE			FORECAST			
YEAR TO 31 MARCH	2009 ($ mil)	2010 ($ mil)	2011 ($ mil)	2012 ($ mil)	2013 ($ mil)	2014 ($ mil)	2015 ($ mil)	2016 ($ mil)
Dairy	6 608	7 567	9 819	9 790	9 300	9 787	10 884	12 470
Cattle	2 066	1 828	2 114	2 186	2 213	2 112	2 261	2 524
Sheepmeat	2 153	2 083	2 009	2 249	2 039	2 040	2 183	2 458
Wool	405	375	469	608	535	438	463	513
Pigs	182	181	165	187	181	183	185	187
Poultry	179	183	194	214	216	219	221	223
Other farming	499	462	490	528	506	495	530	594
Sales of live animals	741	686	728	784	752	735	786	882
Value of livestock change	30	28	29	32	30	30	32	36
Fruit	2 123	2 270	2 218	2 354	2 271	2 438	2 657	3 129
Vegetables	926	915	1 035	1 019	999	1 047	1 090	1 123
Other horticulture	273	270	305	300	295	309	321	331
Crops and seeds	727	738	769	724	658	672	705	770
Agricultural services	211	219	254	262	249	256	278	315
Non-farm income	378	393	455	469	447	458	499	564
Total gross revenue	**17 501**	**18 197**	**21 056**	**21 706**	**20 692**	**21 218**	**23 095**	**26 117**
Intermediate consumption	10 185	10 001	11 509	11 923	11 731	12 005	12 645	13 910
Contribution to GDP[2]	**7 316**	**8 196**	**9 546**	**9 782**	**8 961**	**9 213**	**10 450**	**12 207**

NOTES

1. Statistics New Zealand has changed its industry classification system for annual current price national accounts (Australian and New Zealand Industrial Classification 2006). For agriculture at this stage, details of total gross revenue and intermediate consumption are only available from 2007 to 2009. Furthermore, there is no detailed breakdown of "Contribution to GDP" for this period. The main difference with the previous classification system was the reclassification of the majority of services. The level of detail presented here is only available for agriculture.

2. GDP – gross domestic product.

SOURCES Statistics New Zealand and MPI.

Sector summaries

Dairy

New Zealand's dairy export revenues are expected to increase by 5.6 percent, to $13.9 billion, in the year ending 30 June 2012. This increase has been driven by strong production growth that has more than offset weakening prices for dairy commodities in world markets. More than any other New Zealand primary industry, the dairy industry has been able to tap into strong economic growth in emerging market economies. Further land use change to dairy farming is expected.

Forestry

New Zealand forestry exports (excluding newsprint) are expected to be $4.5 billion in the year ending 30 June 2012. The period was characterised by strong demand for logs, particularly from China, in contrast to weak demand for sawn timber, mainly as a result of the weak housing market performance in the traditional US and Australian markets. The March 2011 earthquake in Japan bolstered panel, pulp and chip exports. In the future, China will remain the key market for New Zealand forestry exports.

Meat and wool

Meat and wool export revenues are expected to increase by 5.8 percent, to reach $7.2 billion, in the year ending 30 June 2012 owing to increased meat volumes and wool prices. Prices have been at high levels but now lamb schedule prices are falling back faster and further than the normal seasonal decline. Some further falls are expected, but these should be modest because of past declines in livestock inventories here and overseas.

Beef demand and schedule prices have held up better because of robust demand from Asian markets and falls in supply in the US and Australia. This year, favourable climate and pasture conditions have increased meat production in New Zealand.

Horticulture

In contrast to the other sectors, profitability for many horticultural producers is marginal as a result of continuing low export prices. Volumes of gold kiwifruit are down because of seasonal factors and the bacterial disease *Pseudomonas syringae* pv. *Actinidiae* (Psa). In response to weak market demand in Europe and unfavourable exchange rates with the Euro, New Zealand horticultural exporters are seeking market development opportunities in Asia.

Seafood

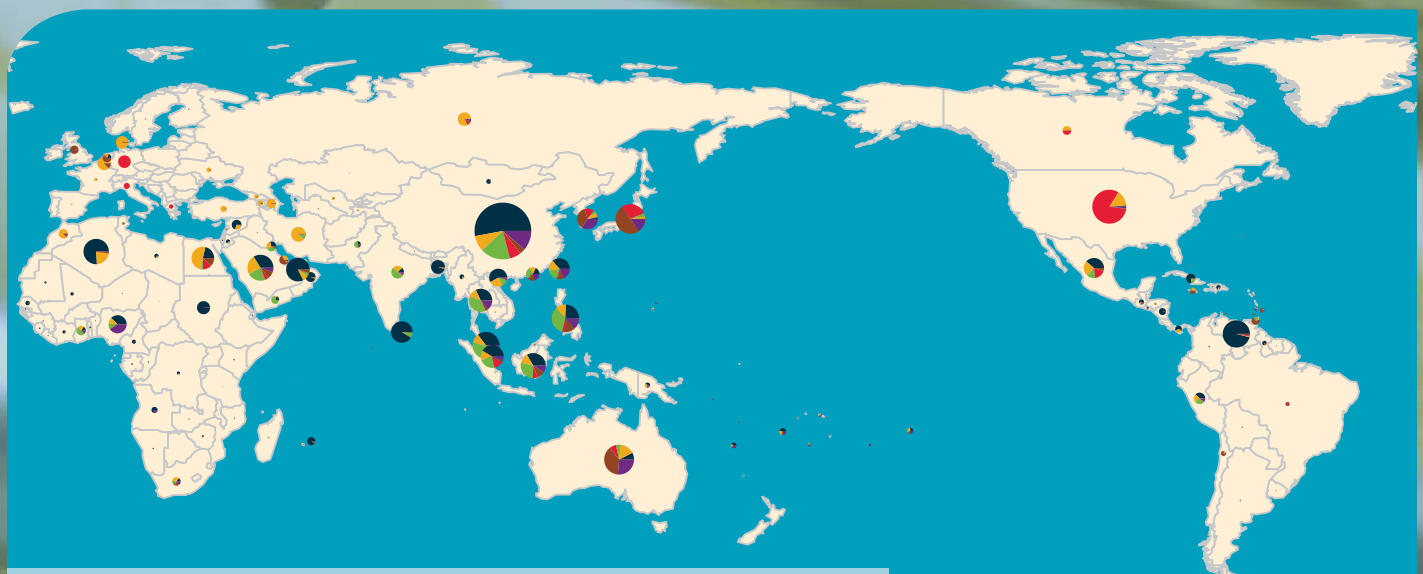
Demand for New Zealand seafood from China, Australia, the US and Japan is strong and is expected to be sustained. Export values of both wild capture fisheries and aquaculture are expected to increase as a result of limited global supply and strong demand, particularly for premium seafood products.

KEY FACTS - NEW ZEALAND PRIMARY INDUSTRIES*

....production and processing percentage of GDP, year ended 31 March 2011	12.1 percent
....production and processing percentage of employment, year ended 31 March 2010	11.8 percent
....commodities as a proportion of merchandise trade, year ended 31 December 2011	71 percent

* excludes mining
SOURCES Statistics New Zealand and MPI.

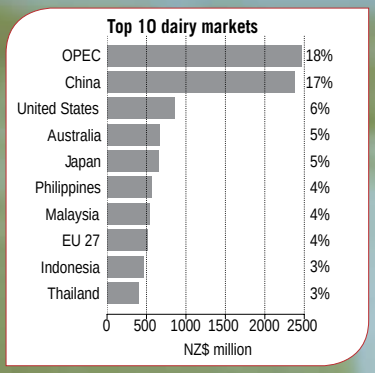
FIGURE 2.1: DAIRY EXPORT REVENUES BY DESTINATIONS AND BY PRODUCTS, YEAR ENDED MARCH 2012

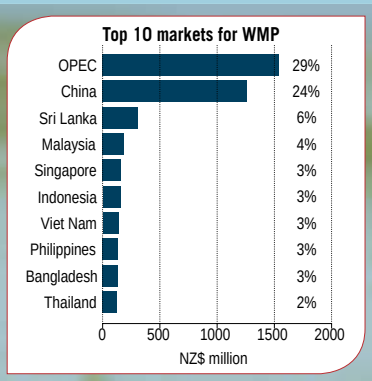


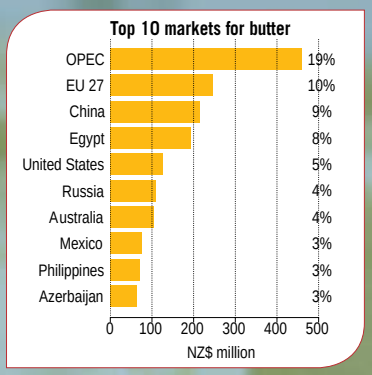
Legend: Export revenue by key products

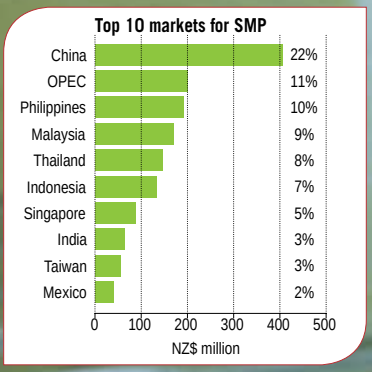
- **Whole Milk Powder:** NZ$ 5254 million
- **Butter:** NZ$ 2459 million
- **Skim Milk Powder:** NZ$ 1838 million
- **Casein:** NZ$ 1634 million
- **Cheese:** NZ$ 1404 million
- **Other dairy product:** NZ$ 1266 million

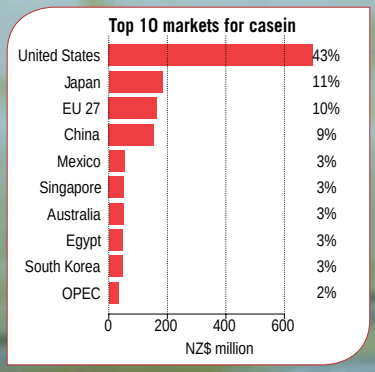
SOURCES Statistics New Zealand and MPI.

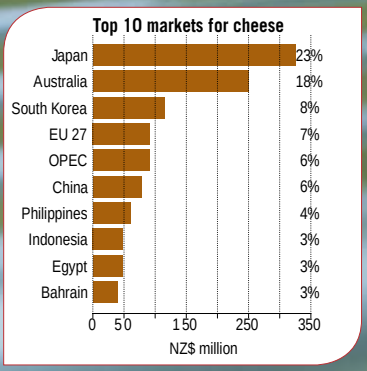












2 DAIRY

New Zealand's dairy sector currently faces weakening international prices as a result of the European debt crisis and an expanding global milk production. Prices are expected to ease further in the 2012/13 season. However, the long-term outlook for the sector is positive, with steady growth in domestic production and increasing prices as a result of good demand from emerging markets and an economic recovery in developed countries.

Dairy export revenue is expected to reach $13.9 billon for the year ending 30 June 2012, 5.6 percent higher than the same period last year, buoyed by strong production. This is then expected to decrease by 9.2 percent in 2012/13 with the expected weakening of dairy prices and the modest decrease in production that has been forecast. Looking to the latter years of the outlook period, export revenue is forecast to reach $17.0 billion for the year ending 30 June 2016, as shown in table 2.1.

TABLE 2.1: DAIRY FARM PRODUCTION, PAYOUT AND EXPORT VALUES, 2009–2016

	ACTUAL				FORECAST			
	2009	2010	2011	2012	2013	2014	2015	2016
Cows and heifers in calf or in milk[1] (millions)	4.35	4.61	4.68	4.82	4.93	5.02	5.10	5.17
Milk solids produced[2] (million kg)	1 394	1 437	1 513	1 664*	1 657	1 693	1 730	1 768
Milk price[2] (cents per kg milk solids)	472	610	760	608*	573	614	687	783
Total export value ($ million)[3]	11 429	10 562	13 169	13 904*	12 626	13 438	14 980	17 033

NOTES
1. Opening numbers as at 30 June of the preceding year.
2. Year to 31 May.
3. Year to 30 June.

SYMBOL
* Estimate

SOURCES Statistics New Zealand, DairyNZ, Fonterra Co-operative Group, and MPI.

PRODUCTION

New Zealand's dairy sector has had a highly productive 2011/12 season, largely attributable to favourable climatic conditions and a steady growth in cow numbers. Milk solids production is expected to reach 1664 tonnes – a 10 percent increase on last season. As at 30 June 2011, there were 4.82 million dairy cows and heifers in New Zealand, a 2.9 percent increase on the 2010 number.

Mild winter and excellent spring conditions contributed to great production conditions at the start of the 2011/12 season. High rainfall and soil moisture during the summer period lifted the entire production curve relative to the previous season. Even assuming average climatic conditions for autumn 2012, a 10 percent increase in milk solids production is very achievable.

A modest decrease in milk solids production is expected in the 2012/13 season, driven by a moderate increase in cow numbers offset by the assumption of a return to average climatic conditions. Milk solids per cow, which soared by 7.1 percent in the current season, is expected to drop in the 2012/13 season. Reflecting the expected easing in milk prices next year, the

increase in cow numbers is expected to be modest, at 2.3 percent. The combination of expected lower milk yield per cow and small increase in cow numbers results in a 0.4 percent decrease in production during the next season.

Over the remainder of the outlook period, as shown in figure 2.2, moderate increases in milk solids production are forecast. Milk solids production is expected to increase by two percent annually from the 2013/14 season. This assumes a gradual increase in cow numbers and milk yield per cow as well as average climatic conditions.

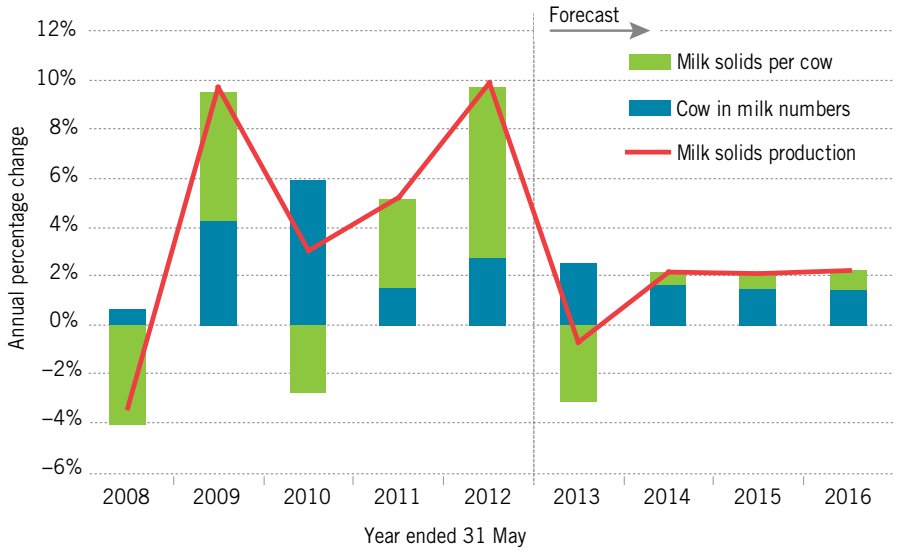
As dairy cow numbers are expected to increase, finding innovative means of dealing with environmental concerns arising from dairy intensification, especially in the area of nutrient management, is likely to become an increasingly important challenge for the dairy industry over the longer term.

EXPORTS

As a result of the high exchange rate, low prices and static production, export revenue is forecast to decrease by 9.2 percent, to $12.6 billion, for the year ending 30 June 2013. Export revenue is then predicted to reach $17.0 billion for the year ending 30 June 2016 with an expected rise in domestic production, recovering international dairy prices and a depreciating New Zealand dollar.

The composition of New Zealand's dairy export markets has changed during the past ten years, with the focus shifting from mature to emerging markets. The US and EU markets were New Zealand's top two dairy importers in 2001. In 2011, their positions were not only replaced, but left far behind by China, Organisation of the Petroleum Exporting Countries (OPEC) members and other Asian countries. This trend is partly as a result of the EU Common Agriculture Policy reforms and the general depreciation of the US dollar.

FIGURE 2.2: YEAR-ON-YEAR CHANGE IN THE NUMBER OF COWS IN MILK, MILK SOLIDS PRODUCTION PER COW AND TOTAL MILK SOLIDS PRODUCTION



The annual percent change in milk solids production is approximately equal to the sum of annual percent changes of numbers of cows in milk and milk solids production per cow.

SOURCES Statistics New Zealand and MPI.

The presence of New Zealand dairy products in the emerging markets continues to increase. Asian countries have been the most important dairy markets for New Zealand for the past decade, accounting for more than 50 percent of New Zealand's total dairy exports in 2011. New Zealand exports have increased significantly to China, in particular.

Exports to OPEC countries accounted for 18 percent of New Zealand's total dairy exports in 2011, and have been growing during the past decade, because of rising incomes as a result of high oil prices.

Demand in sub-Saharan Africa has been growing. Nigeria increased its total New Zealand dairy imports from $12.9 million to $242.1 million during the past decade – a 34 percent annual growth rate.

New Zealand is exporting more milk powders in response to increasing demand for high-value infant powders and liquid milk. Countries that have high numbers of births, relatively low costs of labour and capital, insufficient milk sources and existing infrastructures have large and continuous demand for milk powders for producing infant powders. Reconstituted milk produced using imported milk powders is a cheaper option than the imported liquid milk for such countries.

White gold: the importance of the price of milk to the economy

Dairy products are vital to New Zealand's economy. They make up over a quarter of our merchandise exports and are a key economic driver. They are also important to us as consumers.

It follows that the "price of milk" is vitally important. As a small exporting nation, we are largely reliant on international prices. But while high international prices mean exports earn more for New Zealand, driving economic growth, they also mean consumers pay more for milk. This has been the trend over the past decade. The result has been a "dairy boom", which many credit as helping us through the worst of the downturn, that has been coupled with calls for retail price controls.

Indeed, while international forces drive prices, we need to ensure that our domestic markets are operating effectively. Parliament's Commerce Committee is inquiring into the price of milk in New Zealand and whether our dairy markets are operating effectively at all levels. The committee is expected to report its findings in 2012.

The government's recent focus has been on Fonterra's farm gate milk price – the price that Fonterra pays farmers for milk. But why does this price matter for the economy and why focus on Fonterra's price when there are also other dairy processors in the market?

Fonterra has around 90 percent of the market for farmers' milk, which means the price it pays its farmers is effectively the default price other dairy processors need to pay to compete.

Therefore the price Fonterra pays affects not only Fonterra's suppliers and Fonterra's profitability, but also the shape of the industry – how many processors will compete and what products they produce. It also affects the profitability of dairy farming and hence land prices and land-use change over time.

The government is looking to bolster incentives for Fonterra to pay its farmers the "right" price to ensure that the market remains efficient and contestable. This should ensure the market is innovative and efficient, to the benefit of all New Zealanders.

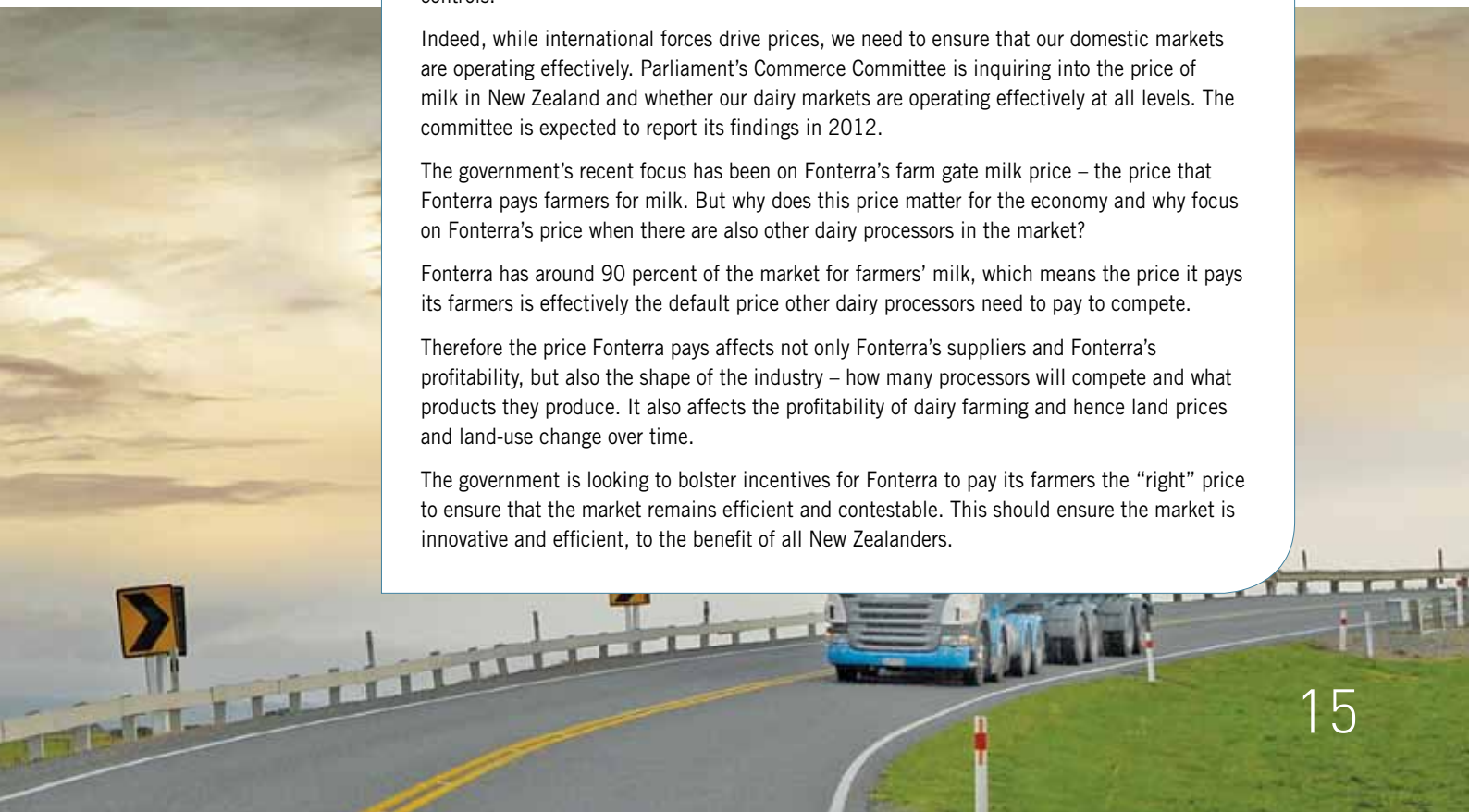
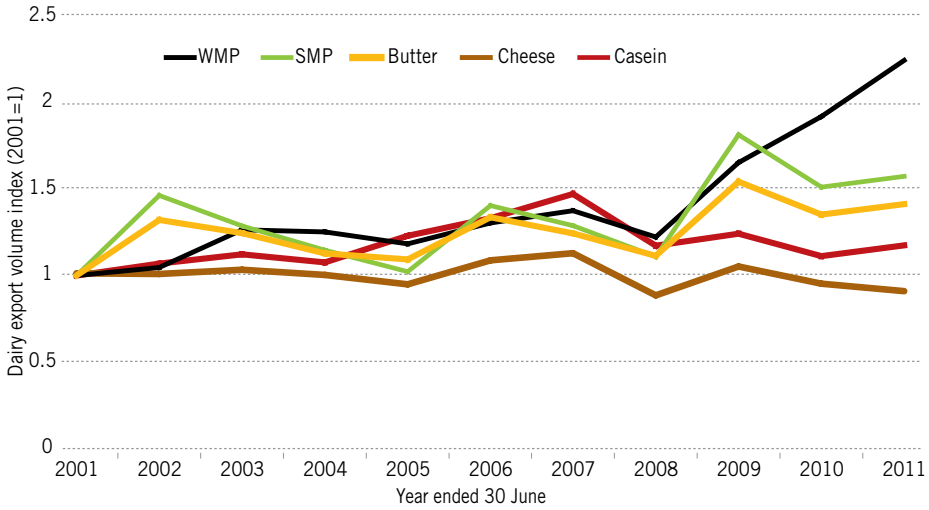


FIGURE 2.3: EXPORT VOLUME INDEX FOR MAJOR DAIRY COMMODITIES FROM 2001 TO 2011



SOURCES Statistics New Zealand and MPI.

Dairy futures

Increased price volatility in global dairy markets has encouraged the emergence of dairy commodity futures markets as a means of managing price uncertainty across the supply chain. Volatility of dairy commodity prices has tended to increase in recent years as a result of faster growth in global demand, combined with multiple unpredictable factors affecting supply such as extreme weather, changes in biofuel policies and trade restrictions.

Commodity futures markets can perform several functions but their primary purpose is to manage risk and smooth price volatility by creating more price certainty, transparency and a forward view of market sentiment. Markets have operated globally for a number of years for a range of products including wheat, corn and coffee.

In the dairy industry, product purchasers look for certainty in both supply and price. For processors, risk lies in a combination of prices paid for liquid milk and forward sales prices of manufactured product, while farmers are seeking greater price certainty for their raw milk.

In 2010, NZX Limited launched NZX Dairy Futures. Whole milk powder contracts were the first to be offered, followed by anhydrous milkfat and skim milk powder contracts early in 2011. Options contracts were later introduced for whole milk powders.

In little more than a year, the market has grown to be the largest globally traded dairy futures market, having traded over 20 000 lots (tonnes) at a value of over NZ$80 million. Month-on-month trading growth exceeded 100 percent early in 2012. This is typical of a new market, where growth rates increase as liquidity builds, attracting more participants, thereby increasing confidence in the market.

There are two main differences between the NZX Dairy Futures market and other similar markets. First, the NZX Dairy Futures contracts are “cash settled”, meaning that participants do not have to make or take delivery of a product at the expiry of a contract. This reduces the need for complexities around food safety requirements and product specifications. Second, the contracts are settled to GlobalDairyTrade reference prices. This means that when a contract expires, the final settlement price of the contract is fixed to the current price of an identical, physically traded product on a transparent global market.

New Zealand is exporting less cheese. Tariffs on cheese tend to be higher than for milk powders, including those in the emerging markets, where most of the growth in demand is occurring. Over the outlook period, New Zealand should be able to continue to meet the increasing demand in emerging markets with more diversified product varieties, and supported by the continued negotiation and implementation of free trade agreements. Changes in export volumes of major dairy commodities over the last decade are shown in figure 2.3.

PRICES

The European debt crisis and expanding milk supply across all major dairy exporters has seen international dairy prices fall since June 2011.

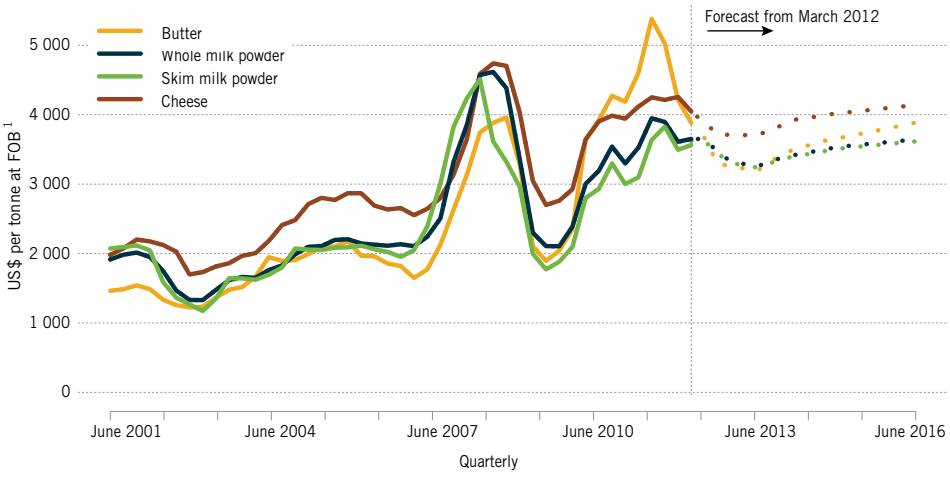
The four largest dairy exporters – New Zealand, the US, the EU, and Australia – all increased milk production in 2011/12. In addition, Argentina, Uruguay and Chile, which dominate the South American market, each had double-digit growth rates in milk production.

Weak domestic demand and low exchange rates in both the EU and US will increase supply of dairy products from these countries. This could exacerbate the expected weakening in dairy prices throughout the year.

As shown in figure 2.4, butter prices have declined more than the price for milk powders, reflecting the different economic conditions in the markets that demand butter.

Developed countries, which have been worst hit by the debt crisis, predominantly demand fat-based products such as butter and cheese. Emerging markets typically demand milk powders, which has helped prevent a collapse in milk powder prices.

FIGURE 2.4: DAIRY EXPORT PRICES AND MPI PRICE FORECAST IN US DOLLAR TERMS



NOTE
1 Free on board – the value of the goods at the port of export and loaded on to a vessel for transportation out of the country of origin.

SOURCES Statistics New Zealand and MPI.

Dairy prices are expected to recover during the latter years of the outlook period as increased demand from emerging markets catches up with the increased supply, and the global economic recovery supports demand in developed countries. Southeast Asian countries, OPEC members and Russia are the dominant importers of butter and milk powder. Their positive economic outlook, driven by high GDP growth rates or high oil prices, is expected to support increased demand in the medium and long term, contributing to the recovery of dairy prices.

The domestic farm gate milk price is expected to be $6.08 per kilogram of milk solids in the 2011/12 season, 20 percent lower than the previous season. This is attributed to the strength of the New Zealand dollar against the US dollar, as well as the weakening international dairy prices. As the high exchange rate and low dairy prices are expected to persist into the 2012/13 season, the outlook for the farm gate milk price is $5.73, a further decrease. Beyond 2013, the assumption of a depreciating New Zealand dollar and recovering international dairy prices lift the farm gate milk price, which is projected to be $7.83 per kilogram of milk solids by the year ending 31 May 2016.

Nitrogen trading in the Taupo catchment

Lake Taupo's beauty and water clarity are enjoyed by holiday makers, fishers and "boaties" alike. However, some water quality indicators in the lake have been declining, affecting the most valued features of the lake.

The Waikato Regional Council's Plan Variation 5 (operative from July 2011) aims to reduce and cap the amount of nitrogen entering the lake. Dairy and drystock farms in the catchment have been allocated annual nitrogen discharge allowances (NDAs) which they are able to sell, purchase or lease to each other. The Lake Taupo Protection Trust (funded by central and local government) also purchases NDAs and removes them from the system, to achieve a 20 percent reduction in discharges by 2020. The Trust has also funded supporting measures such as advice for farmers.

The market provides the option for farmers to intensify within the reducing nitrogen cap, provided they can buy NDAs at an affordable price. To date, the Trust has been the major buyer. Some drystock farmers have sold NDAs and converted part or all of their farms to forestry, encouraged by the incentives for afforestation provided by the introduction of the Emissions Trading Scheme in 2008. It is not clear whether the limited amount of farmer-to-farmer trades to date is the result of the immaturity of the market, or other factors such as transaction costs, or the relative homogeneity of enterprises in the catchment.

The Taupo scheme indicates that cap and trade programmes for agricultural diffuse discharges are feasible in the New Zealand context, and are a potential tool for managing water quality in suitable catchments. MPI is currently managing a research project examining water markets in New Zealand, including a case study on nutrient trading, which will shed further light on feasibility, efficiency and design. The Land and Water Forum is also considering methods of managing to water quality limits, and will be reporting in September 2012.

3 FORESTRY

Total New Zealand forestry exports (excluding newsprint) reached $4.3 billion in the year ending 31 March 2012. The period was characterised by strong demand for logs, in contrast to weak demand for sawn timber. Seven countries – Australia, China, Japan, the Republic of Korea, the US, Indonesia and India – accounted for around 86 percent of the value of New Zealand's forestry exports, as shown in figure 3.1. Strong log demand from China and India is expected to continue as a result of continuing economic growth in these countries.

High domestic log prices have increased manufacturing costs for New Zealand saw mills, making our sawn timber export prices less competitive than those of other timber exporters. The European debt crisis and the weak housing market performance in the US also contributed to the weak export demand for sawn timber.

The March 2011 earthquake in Japan bolstered some New Zealand forestry exports, boosting purchases of plywood, mechanical pulp and softwood chips, but these export volumes are expected to return to normal over 2012.

LOGS

Log export volumes in the year ending 30 June 2012 are estimated to increase by 0.4 percent on 2011 results. Demand from China was particularly strong in the second and third quarters of 2011, which drove log export prices and volumes to historically high levels. However, the current high log inventory level in Chinese ports is expected to slow down the demand for New Zealand logs in the June quarter 2012, leading to the low volume growth rate of the year ending June 2012.

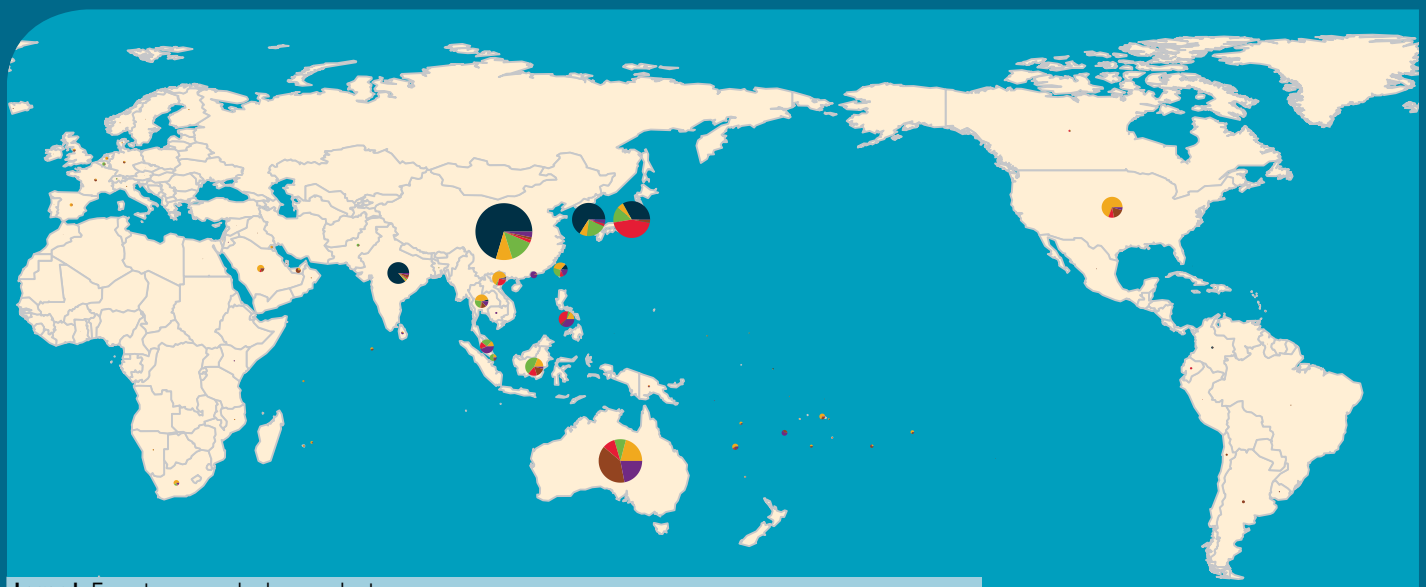
South Korea was the second largest overseas market for New Zealand logs in the year ended 31 December 2011, followed by India and Japan. India imported about 12 percent of total New Zealand export logs for low-value applications such as concrete formwork, packing cases and pallets. The March 2011 Japanese earthquake did not have a significant impact on New Zealand log exports to Japan, since most of the logs were purchased by Chinese, Korean and Indian buyers, with only limited volumes going to Japanese buyers.

China will remain the key market for New Zealand log exports for the foreseeable future. However, this market is not without uncertainty. Chinese policies to control property prices will continue in some cities in 2012 and possibly in 2013 and beyond. This may slow down the demand for New Zealand logs for Chinese construction uses. Moreover, the Russian log export quota system will add uncertainties to New Zealand log exports to China. The key questions are when this will take effect and how big an impact it will have. The impact is not expected to be significant in the short term, at least not for the 2012 and 2013 years.

Trends in urbanisation and improvements in living standards indicate demand from China for New Zealand logs will remain strong. Demand from India is also expected to grow over the medium to long term as its GDP is expanding at an average rate of about eight percent annually. Demand from Korea is forecast to be relatively stable, but demand from Japan is expected to decrease.

Total roundwood removals, including forestry exports and domestic consumption, are forecast to be within the range of 26 to 28 million cubic metres annually over the forecasting period.

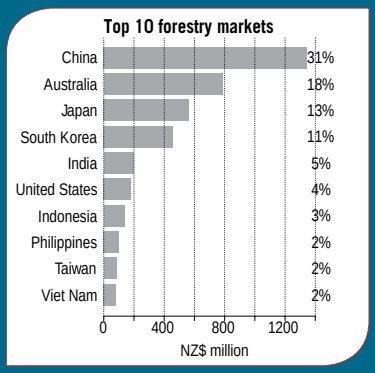
FIGURE 3.1: FORESTRY EXPORT REVENUES BY DESTINATIONS AND BY PRODUCTS, YEAR ENDED MARCH 2012

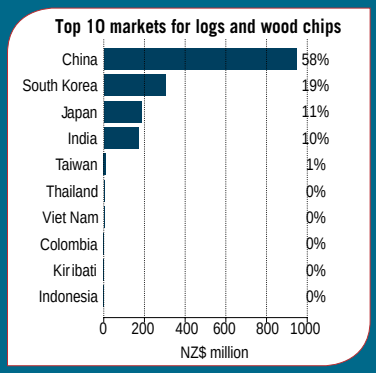


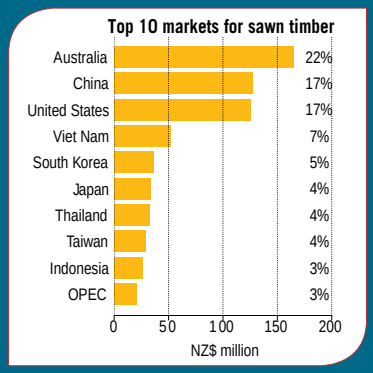
Legend: Export revenue by key products

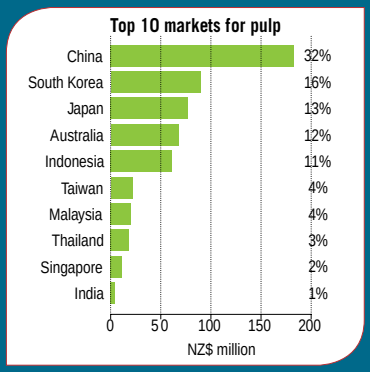
- **Logs and wood chips:** NZ$ 1627 million
- **Sawn timber and sleepers:** NZ$ 751 million
- **Pulp:** NZ$ 574 million
- **Other forestry products:** NZ$ 507 million
- **Panels:** NZ$ 496 million
- **Paper and paperboard:** NZ$ 388 million

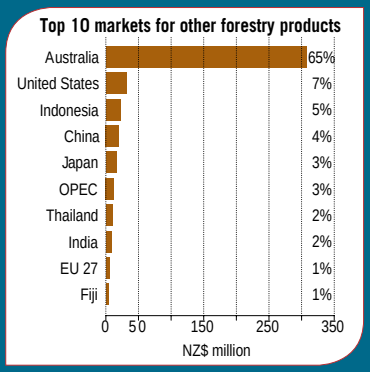
SOURCES Statistics New Zealand and MPI.

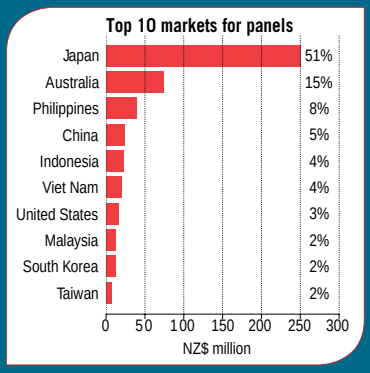












SAWN TIMBER

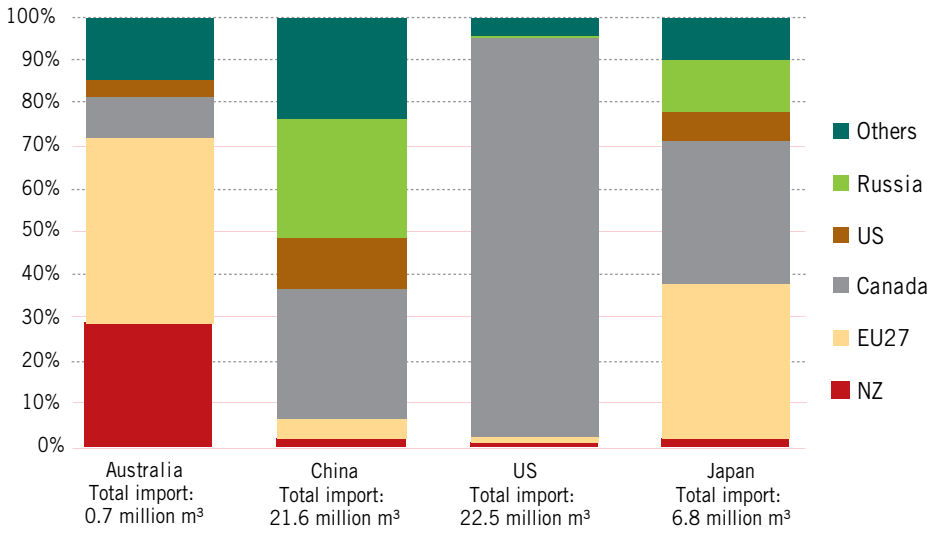
Timber export volumes and values in the year ending 30 June 2012 are estimated to decrease by 1.0 and 1.5 percent respectively on 2011 results, mainly owing to decreased demand from Australia and the US.

The weak housing market in Australia is depressing Australian demand for New Zealand timber. Moreover, the European debt crisis is causing EU countries (particularly the Czech Republic, Estonia and Austria) to supply greater volumes of sawn timber to Australia. The EU as a group passed New Zealand to be the largest sawn timber exporter to Australia in 2008. Figure 3.2 sets out New Zealand's share of its main export markets for sawn timber, while figure 3.3 illustrates the downward trend in new-start housing in Australia and the US over the last decade.

Although the demand from China has increased over past years, poor performance in the US housing market means that New Zealand timber exporters are facing competition from US and Canadian timber exporters. The accelerated harvesting made necessary by the massive mountain pine beetle epidemic in British Columbia's forests is another reason for the significant increase in Canadian sawn timber exports to China.

Over the medium to long term, New Zealand sawn timber export prices are forecast to remain at current levels because of high domestic log prices. Even so, demand is expected to increase, mainly as a result of growth in China. Once European economies recover and timber demand increases, EU timber exports to Australia may drop, giving New Zealand the opportunity to pick up market share there. Given the current debt crisis and weak economic conditions, however, it will likely be some time before economic growth in the EU recovers. In the meantime, New Zealand will continue to face stiff competition from EU exporters.

FIGURE 3.2: NEW ZEALAND'S SHARE OF ITS MAIN OVERSEAS SAWN TIMBER EXPORTING MARKETS, YEAR ENDED 31 DECEMBER 2011



SOURCE World Trade Atlas and MPI.

PANELS, CHIPS, AND PULP

The March 2011 earthquake in Japan created a surge in demand for New Zealand panels and softwood chips exports.

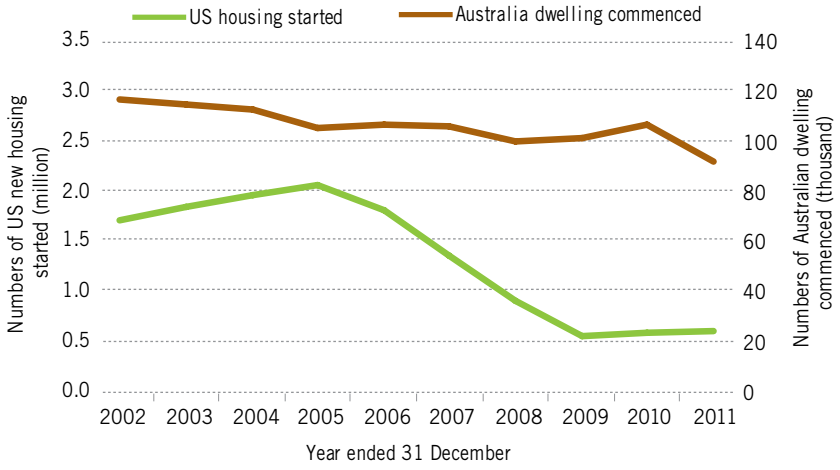
Plywood export volumes to Japan in the June 2011 quarter rose by 229 percent on 2010 volumes, driven in large part by demand for emergency housing in Japan. Softwood chip export volumes to Japan in the June 2011 quarter were up by 69 percent. On the other hand, mechanical pulp export volumes to Japan decreased by 67 percent for the same period because one of Japan's major pulp and paper mills was damaged by the earthquake and tsunami.

Panels, chips and pulp export volumes are expected to return to normal over the medium and long terms as the impact of the Japanese earthquake is absorbed by markets. Negligible growth in New Zealand production capacity suggests stable production of these products over the medium to long term. Nevertheless, export values are forecast to increase as a result of exchange rate assumptions, as set out in table 3.1.

CARBON

Carbon prices are beginning to have an impact on New Zealand forestry following the sector's entry into the Emissions Trading Scheme (ETS) in 2008. At March 2012, around 318 200 hectares (50 percent) of forests established after 31 December 1989 were registered in the ETS.

FIGURE 3.3: NEW HOUSING START INDICES OF AUSTRALIA AND US



SOURCES DataStream and MPI.

With this ability to earn carbon credits through the ETS providing an additional revenue stream for forest owners, there has been some investment in new plantings. However, this investment may be hampered by a significant decrease in the carbon price over the past year. The carbon spot price in April 2012 decreased by 64 percent compared with April 2011, from $20.24 per tonne to $7.20 per tonne.

THE FUTURE OF THE NEW ZEALAND FORESTRY SECTOR

A relatively stable harvest of 26 to 28 million cubic metres a year is forecast for the period to 2016. Thereafter, projections based on the maturing of the existing estate indicate that the annual harvested roundwood volume will increase. By 2023, the estate could supply an additional 10 million cubic metres a year. Already, half of the 26 million cubic metres of roundwood that is currently harvested is exported as logs.

The future for the forestry sector depends on how it responds to this situation. A business-as-usual strategy will likely see continued heavy reliance on log exports. A move to a value-added pathway will require the sector to change from its traditional "supply push" strategy to one driven by market "demand pull". That will require rigorous market analysis, coupled with consideration of radiata pine's wood properties, to establish what products have the best chances of competing successfully in the domestic and export markets.

TABLE 3.1: FORESTRY EXPORT PRICES, VOLUMES AND VALUES, 2009–2016

	ACTUAL				FORECAST			
YEAR TO 30 JUNE	2009	2010	2011	2012[1]	2013	2014	2015	2016
Logs								
FOB[2] price ($ per m³)	113	118	132	128	129	133	132	144
Export volume (000 m³)	7 572	9 912	12 286	12 320	12 500	12 600	12 100	11 800
Timber								
FOB price ($ per m³)	410	406	399	397	421	431	460	508
Export volume (000 m³)	1 787	1 942	2 010	1 990	1 940	1 940	2 000	2 100
Panels								
FOB price ($ per m³)	561	528	523	529	530	535	550	560
Export volume (000 m³)	842	806	896	929	871	886	899	902
Pulp								
FOB price ($ per t)	691	724	795	750	745	795	866	969
Export volume (000 t)	824	847	783	827	767	744	729	712
Total forestry export value ($ million)[3]	**3 567**	**3 862**	**4 527**	**4 487**	**4 448**	**4 634**	**4 830**	**5 307**

NOTES
1. Figures are estimated.
2. Free on board – the value of the goods delivered to the port of export and loaded onto a vessel for transportation out of the country of origin.
3. Newsprint values have been excluded since 2007 owing to Statistics New Zealand confidentiality requirements.

SOURCES Statistics New Zealand and MPI.

Industry action plan

Woodco, which represents the major stakeholders in the forest and wood products industry, released the *New Zealand Forest and Wood Products Industry Strategic Action Plan* in March 2012. This plan sets out a bold vision for the industry to more than double its current export revenues to $12 billion by 2022. This will be achieved by an industry that:

- delivers innovative wood-based solutions from a sustainable resource to meet customers' needs;
- manufactures a range of high-value, fibre-based products, including new biochemical and biofuel value streams;
- is recognised as a world leader in timber-engineered building solutions;
- is underpinned by forest growing as a valued and profitable land use; and
- is recognised as a key New Zealand growth industry, delivering strong economic and environmental benefits.

This vision has been developed through extensive consultation with participants across the forest and wood products value chain. The underlying driver is to maximise value from New Zealand's forest resource. Planted production forests in New Zealand have the potential to increase the annual supply of logs by 40 percent (an additional 10 million cubic metres per year) over current levels leading into the 2020s.

Under a business-as-usual scenario over the next 10 years, an increasing proportion of the harvest would be exported as logs, delivering at best a $1.6 billion increase in export revenues to a total of around $6 billion a year by 2022. An increasing reliance on Asian demand for export logs carries risks for the industry and does not maximise value for the New Zealand economy. Logs are currently sold to a small number of countries, and reduced demand, increases in shipping rates and changes in exchange rates can rapidly erode profit margins.

The action plan recognises that log exports are an important market for forest owners, but places a focus on actions to expand domestic wood processing and manufacturing, and to diversify product ranges and markets. This includes the manufacture of higher-value engineered wood products such as laminated veneer lumber and cross-laminated timber to provide customised building solutions, as well as innovative packaging products and exploring the potential to manufacture new bioproducts and biochemicals, including biofuels.

4 MEAT AND WOOL

After hitting record levels in late 2011, nominal producer prices for lamb, beef, and coarse wool have been falling. These high prices were due to past declines in livestock inventories in overseas markets and New Zealand, high feed grain prices and robust demand from Asian markets.

Producer prices are forecast to decrease over the next two years as production increases in Australia and the US. Further out, increasing demand and weakening exchange rate assumptions will cause prices to rise again.

This season, favourable climate and pasture conditions have increased carcass weights and meat production in New Zealand. Longer term, sheep and beef grazing land is expected to continue to be converted to dairy farming and, to a lesser extent, forestry. For this reason, sheep and beef inventory numbers are forecast to fall slowly over the outlook period.

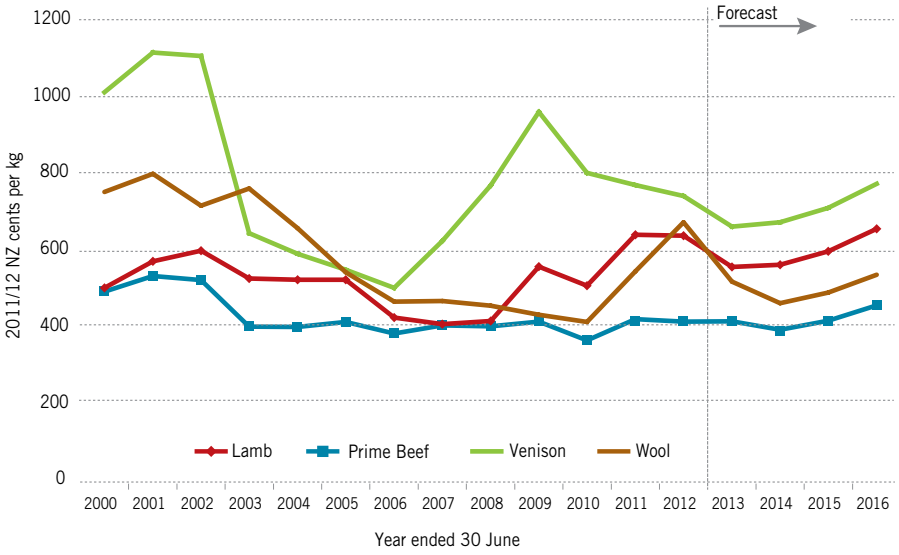
Meat and wool export revenue for the year ending June 2012 is estimated at $7.2 billion and, while falling over the next two years, revenues are forecast at $7.9 billion in the year ended 30 June 2016.

BEEF

New Zealand's beef and veal export prices in US dollars have been around historically high levels over the last 12 months. This has been due to past declines of beef cattle inventories in the US and Australia, high feed grain prices and robust demand from Asian markets. Over the outlook period some recovery in supply is anticipated and, with slowly increasing demand, New Zealand export prices are expected to remain relatively high.

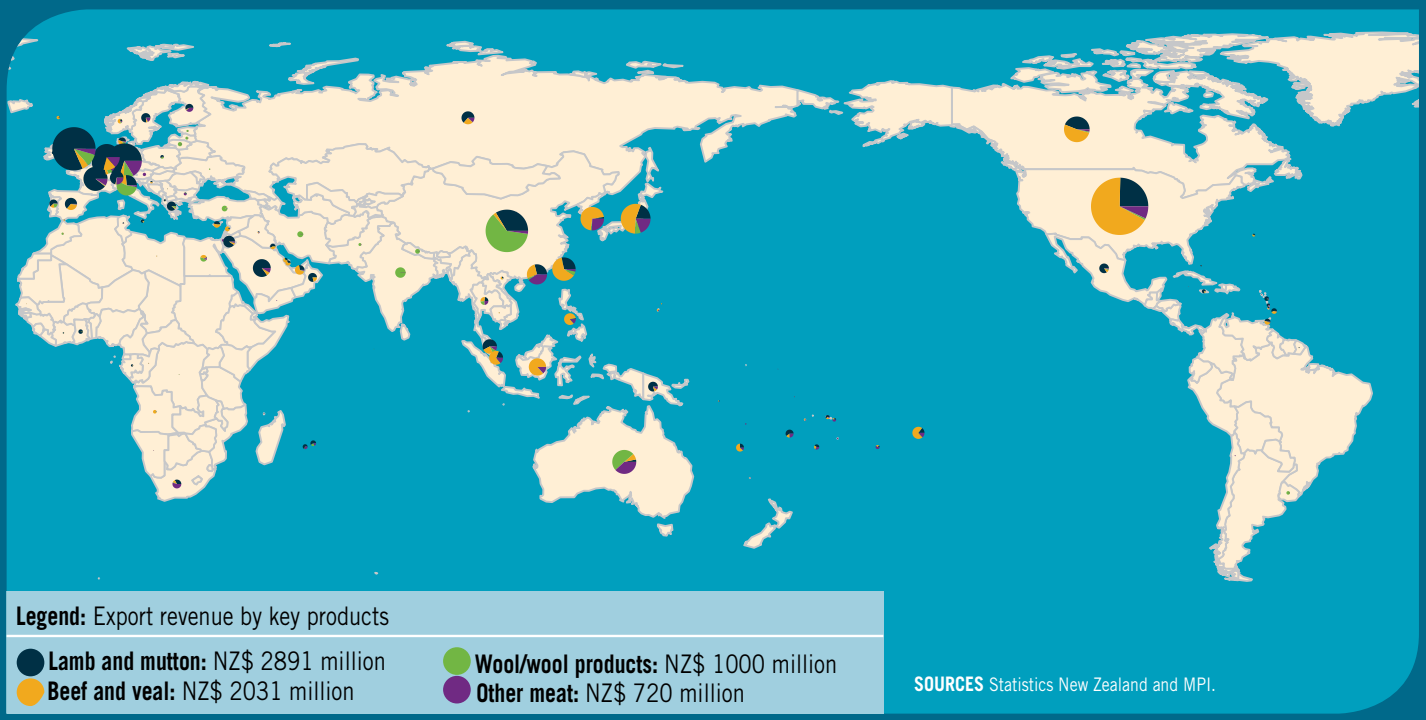
The US cattle inventory at 1 January 2012 was at the lowest level since 1952 because of a massive drought affecting 40 percent of beef producing areas. A weak US dollar has encouraged increased beef exporting to Asian destinations. Only a slow recovery is projected for the US cattle inventory.

FIGURE 4.1: MEAT AND WOOL PRICES IN REAL TERMS, 2000–2016



SOURCES Beef + Lamb New Zealand and MPI.

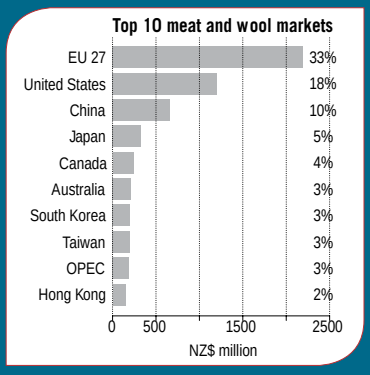
FIGURE 4.2: MEAT AND WOOL EXPORT REVENUES BY DESTINATIONS AND BY PRODUCTS, YEAR ENDED MARCH 2012

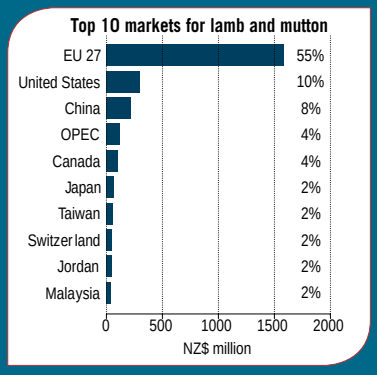


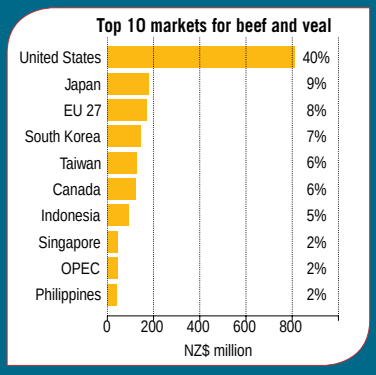
Legend: Export revenue by key products

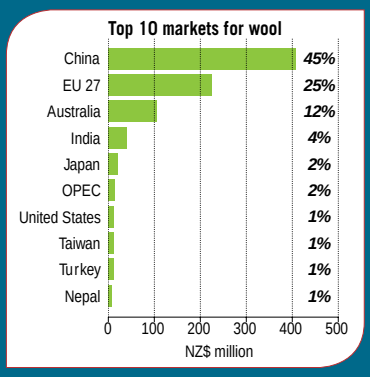
- **Lamb and mutton:** NZ$ 2891 million
- **Beef and veal:** NZ$ 2031 million
- **Wool/wool products:** NZ$ 1000 million
- **Other meat:** NZ$ 720 million

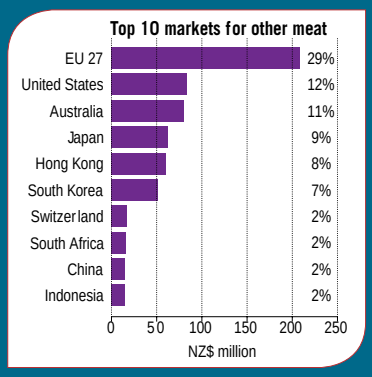
SOURCES Statistics New Zealand and MPI.











Over the outlook period, increased beef export volumes are expected from Australia as a result of a nine percent increase in its beef cattle inventory as at 30 June 2011 and a further nine percent forecast over the next two years.

Over the next 12 months, New Zealand beef export prices in US dollars are forecast to remain high because of the tight supply in the US market. However, increased exports out of Australia and the US and lower grain feed prices are expected to cause New Zealand export beef prices in US dollars to decrease in 2013. Further out, beef prices are likely to remain higher than in years prior to 2011, reflecting increasing incomes and demand for animal protein in Asia and some developing countries.

New Zealand beef schedule prices are forecast to be higher over the outlook period than earlier years, reflecting higher export prices in the US dollar and an assumed depreciation of the New Zealand dollar against it.

PRODUCTION

Total beef cattle numbers were down by 2.6 percent at 30 June 2011. Favourable pasture conditions resulted in an estimated 2.1 percent increase in beef and veal production for the year ending 30 June 2012.

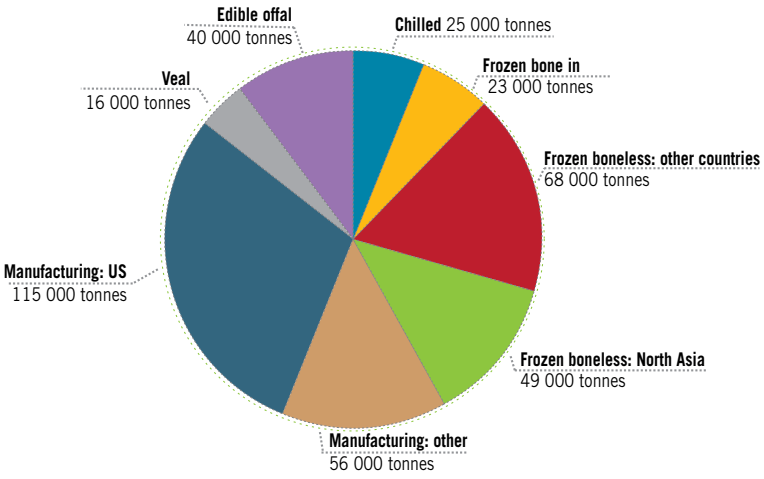
Total beef cattle numbers are expected to remain fairly static over the outlook period. Assuming average climate conditions and increasing carcass weights, beef production is forecast to rise slowly over the period.

EXPORTS

Total beef export value for the year ending June 2012 is estimated to be up by 0.9 percent, to $2.05 billion, reflecting a slight increase in price and a 1.3 percent increase in volume. By 2016, beef export value is projected at $2.52 billion as a result of increased prices.

Export volumes to the US and Canada have been decreasing over time, owing to diversification to other markets, particularly to the EU, the Philippines and Singapore. Figure 4.3 shows beef export volumes by type in 2011, while table 4.1 gives beef cattle numbers, beef prices, export volumes and values from 2009 to 2016.

FIGURE 4.3: BEEF EXPORT VOLUMES BY TYPE, SEPTEMBER YEAR 2011



SOURCES Beef + Lamb New Zealand and MPI.

Market share to Indonesia increased up to 2010. In 2011, the Indonesian government declared an import quota of 72 000 tonnes on beef from all sources, to protect its domestic beef industry, and that was reduced further to 34 000 tonnes in 2012. After peaking at 37 000 tonnes in 2010, New Zealand exports to Indonesia decreased to 21 000 tonnes in 2011. Exports for the first two months of 2012 were just under 2000 tonnes.

TABLE 4.1: BEEF CATTLE NUMBERS, BEEF PRICES, EXPORT VOLUMES AND VALUES, 2009–2016

	ACTUAL				FORECAST			
YEAR TO 30 JUNE	2009	2010	2011	2012	2013	2014	2015	2016
Total beef cattle[1] (million)	4.14	4.10	3.95	3.85	3.90	3.86	3.84	3.84
Schedule prime beef price (cents/kg)	370	335	408	411*	421	409	444	498
Export volume (000 tonnes)	371	362	350	354*	354	352	355	356
Export value ($ million)	2 005	1 822	2 036	2 055*	2 084	2 039	2 235	2 515

NOTE
1. Opening numbers as at 30 June of the preceding year.

SYMBOL
* Estimate

SOURCES Beef + Lamb New Zealand, Statistics New Zealand and MPI.

Land use and animal performance

New Zealand's pastoral landscape is becoming more dynamic and sophisticated, with greater movement of animals between properties and the boundaries between sheep, beef and dairy farms becoming increasingly blurred. The expansion of dairy and dairy support, as well as the land going into forestry, conservation, and lifestyle subdivisions, has reduced the area of sheep, beef and deer farming over the last decade. Yet sheep and beef farming continues to be the dominant agricultural land use in New Zealand.

New Zealand beef production comes from both dairy and beef cattle origins. Dairy provides all the bobby calves, bull calves subsequently reared and finished as bull beef, culled dairy breeding bulls, culled heifers and culled cows. Dairy's contribution has played a large part in maintaining overall beef and veal production over time as the traditional beef breeding herd has contracted.

Lamb production per breeding ewe and ewe hogget has been increasing, while the breeding numbers have declined. Improved lambing performance has been the result of the introduction of pregnancy scanning in the early 1990s, the introduction of new breeds, ongoing genetic selection and management improvements over time. Meat companies have also encouraged the trend to heavier carcass weights by having the same schedule price over a broad weight range.

LAMB

Export lamb prices in UK pounds from July 2011 to February 2012 were up by 22 percent on the same period in the previous year. This rise was mainly due to the cumulative impact of declining sheep numbers in the EU and an 8.6 percent decrease in lamb volume imported from New Zealand. High retail lamb prices have reduced consumption, with consumers shifting to poultry and pig meat.

A turnaround in global sheep meat supply is expected over the next year, which will lead to a downward correction in UK pound-denominated export prices. Higher producer prices in the EU resulted in increased sheep numbers as at January 2012. Australian sheep numbers had increased by nine percent at 30 June 2011, compared with the previous year, when the lowest numbers since 1887 had been recorded. Further increases are expected over the next four years.

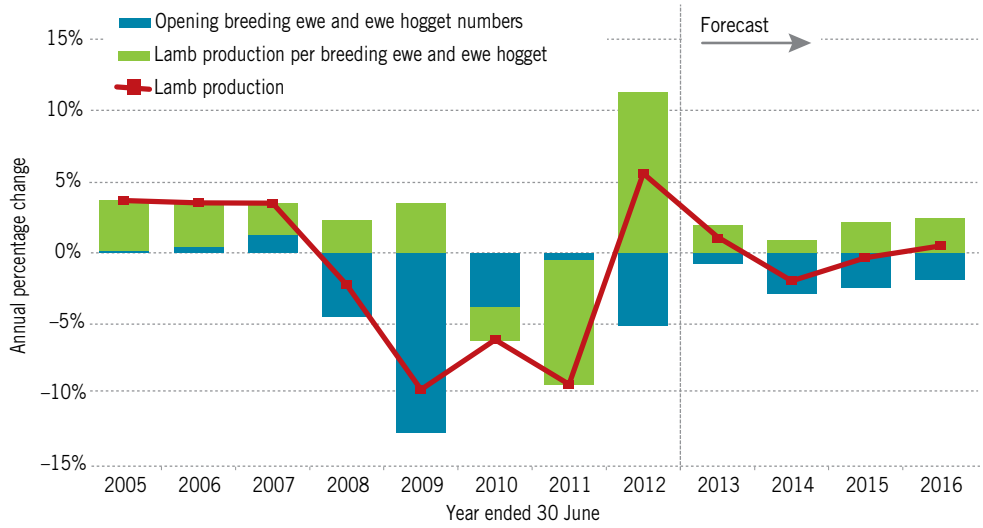
New Zealand (and Australia) will remain reliant on developed countries for the sale of higher-priced lamb cuts to the year ending 30 June 2016. Developing regions, particularly China and the Middle East, will remain important markets for New Zealand's low and mid-priced cuts, respectively, and will drive demand for increasing export prices in UK pounds over time.

The average lamb schedule price for the year ending 30 June 2012 is estimated to reach a record 635 cents per kilogram, up by 1.9 percent from last year. Over the following four years, the schedule price is expected to average 627 cents per kilogram, largely owing to an assumed depreciation of the New Zealand dollar against the UK pound.

PRODUCTION

Breeding ewe and ewe hogget numbers were down by 5.7 percent as at 30 June 2011. On the other hand, favourable climate and pasture conditions have increased lamb production for the

FIGURE 4.4: LAMB PRODUCTION PER BREEDING EWE AND EWE HOGGET, BREEDING EWE AND EWE HOGGET NUMBERS AND LAMB PRODUCTION, ANNUAL PERCENT CHANGE JUNE YEARS 2005–2016



The annual percent change in lamb production is approximately equal to the sum of annual percent changes of opening breeding ewe and ewe hogget numbers and lamb production per breeding ewe and ewe hogget.

SOURCES Statistics New Zealand and MPI.

year ending 30 June 2012. Climate conditions have a significant impact on lamb production per breeding ewe and ewe hogget particularly over the last two years, as indicated in figure 4.4.

Over the outlook period, a slow decrease in sheep inventory numbers will be offset by increasing lambing percentages and lamb carcass weights, leaving lamb production and export volumes fairly static.

EXPORTS

Lamb export revenue for the year ending 30 June 2012 is estimated at $2.58 billion, up by 5.8 percent, because of increased export volume. Further increases out to 2016 are due mainly to an assumed depreciation in the New Zealand dollar.

In the year ended December 2011, the EU took 48 percent of New Zealand's lamb export value volume. New Zealand's tariff-free quota of 227 854 tonne carcass weight equivalent for sheep and goat meat imports into the EU was under-filled by 20 percent. While some recovery of lamb export volumes is forecast over the outlook period, it is likely that a degree of quota under-fill will continue.

Total lamb export volumes have fallen from a peak in December year 2007, when the EU took 50 percent. Since then, lamb export volumes to member countries of OPEC and the rest of the world have also decreased. Exports increased to China, Hong Kong and Jordan, but were offset by reduced exports to other low-priced markets.

Table 4.2 shows breeding numbers, lamb prices and export volumes and values from 2009 to the end of the outlook period.

Increasing value chain rewards from New Zealand's red meat

There are opportunities to increase the value of New Zealand's red meat by improving the link between customer requirements in the various markets and production at the farm level. Much red meat appears simply to be sold rather than marketed. Competition is more around price than other points of New Zealand's red meat differentiation. Increasingly, the sector is recognising the importance of linking the farm to the market and having commercial strategies that enable this.

The *Red Meat Sector Strategy Report*, released in 2011, focused on increasing value chain rewards. The strategy was a joint initiative by farmer and processor organisations in New Zealand to improve long-term profitability. The strategy identified three core requirements to achieve this: co-ordinated in-market behaviour, efficient and aligned procurement, and sector best practice. Successful change also required all stakeholders to take ownership and, to be sustainable, the sector requires change that will be informed, aligned and behavioural.

The Government's Primary Growth Partnership (PGP), funded through MPI, supports the strategy by providing up to 50 percent of industry investments in innovation and value chain research. The Farm IQ's *Integrated Value Chain for Red Meat* and the Merino Company's *Merino Sheep – More than Wool* are two PGP projects that are currently under way in the red meat and wool sector. Several proposals are under consideration. A proposal led by Beef + Lamb New Zealand Ltd, aimed at improving on-farm productivity through effective access to research findings and technology for sheep and beef farmers, has been approved to the business case development stage.

TABLE 4.2: SHEEP BREEDING NUMBERS, LAMB PRICES AND EXPORT VOLUMES AND VALUES, 2009–2016

	ACTUAL				FORECAST			
YEAR TO 30 JUNE	2009	2010	2011	2012	2013	2014	2015	2016
Sheep breeding numbers[1] (millions)	25.0	24.0	23.9	22.6	22.5	21.8	21.3	20.9
Lamb schedule price (cents/kg)	498	467	623	635*	566	586	637	717
Export volume (000 tonnes)	317	308	262	277*	280	274	273	275
Export value ($ million)	2 630	2 454	2 436	2 578*	2 375	2 424	2 638	2 987

NOTE
1. Opening numbers of mated ewe and ewe hoggets as at 30 June of the preceding year.

SYMBOL
* Estimate

SOURCES Beef + Lamb New Zealand, Statistics New Zealand and MPI.

VENISON

Export prices in Euros tend to peak during the last six months of the calendar year as restaurant demand for venison increases during the historical hunting season in Europe. Prices have been falling since September 2011 and are forecast to bottom out in the first six months of 2012 and then slowly rise over the outlook period, reflecting decreasing supply from New Zealand and continuing demand. The New Zealand dollar against the Euro over the outlook period will remain strong compared with historical levels and will keep the schedule subdued over the next two years.

PRODUCTION AND EXPORTS

Venison production has been decreasing since peaking at 40 400 tonnes in the year ended 30 June 2005, reflecting a substantial decline in total deer numbers. As at to 30 June 2011, total deer numbers were the lowest since 1990. Further declines are forecast over the outlook period, which will result in lower production and exports. Table 4.3 shows total deer and venison prices by export volume and values from 2009 to the end of the outlook period.

The EU accounted for 80 percent of New Zealand's venison export volume for the year ended 31 December 2011, with Germany, the main market, taking 33 percent. Since 2005, market share has been diversified away from Germany to other EU countries and non-EU countries. The share of export volume grew from 15 percent in 2002 to 25 percent in 2011, reflecting increased year-round consumption.

TABLE 4.3: TOTAL DEER, VENISON PRICES, EXPORT VOLUME AND VALUES 2009–2016

	ACTUAL				FORECAST			
YEAR TO 30 JUNE	2009	2010	2011	2012	2013	2014	2015	2016
Total deer[1] (millions)	1.22	1.15	1.12	1.09	1.03	0.99	0.95	0.91
Venison schedule price – AP Stag (cents/kg)	860	739	750	738*	673	702	759	846
Venison export volume (000 tonnes)	16.9	15.0	15.6	13.5*	12.0	11.3	10.6	10.2
Venison export value ($ million)	293	209	215	183*	148	146	148	158

NOTE
1. Opening numbers as at 30 June of the preceding year.

SYMBOL
* Estimate

SOURCES Statistics New Zealand, NZX Agrifax and MPI.

WOOL

The export price of wool hit a record high of US$6.52 per kilogram of product weight in December 2011, but then corrected down. The short-term outlook for wool prices depends on China's increasing domestic demand and what happens in the export markets of finished wool products in the EU, Japan and the US. Weaker global economic activity is expected to weaken demand and cause wool export prices in US dollars to decrease over the next two years. Further out, prices are expected to rise slowly as global wool production remains fairly static and demand grows.

PRODUCTION AND EXPORTS

Wool production and export volume are expected to fall in the year ending 30 June 2012 because of a 4.4 percent decrease in total sheep numbers as at 30 June 2011. Further export volume declines are expected over the outlook period, in line with decreasing total sheep numbers, as shown in table 4.4.

New Zealand's wool export revenue for the year ending 30 June 2012 is estimated at $889 million, up by 25 percent on the previous year, reflecting higher export prices. By 2016, export revenue is projected at $749 million, reflecting a lower export volume.

TABLE 4.4: SHEEP NUMBERS, WOOL PRICES AND EXPORT VOLUMES AND VALUES, 2009–2016

	ACTUAL				FORECAST			
YEAR TO 30 JUNE	2009	2010	2011	2012	2013	2014	2015	2016
Total sheep numbers[1] (millions)	34.1	32.4	32.6	31.1	31.2	30.4	29.8	29.1
Average sale price (cents/kg)	385	380	530	670*	527	481	522	585
Export volume (000 tonnes)	126	133	123	122*	126	119	118	117
Export value ($ million)	567	547	711	889*	710	625	673	749

NOTE
1. Opening numbers as at 30 June of the preceding year.

SYMBOL
* Estimate

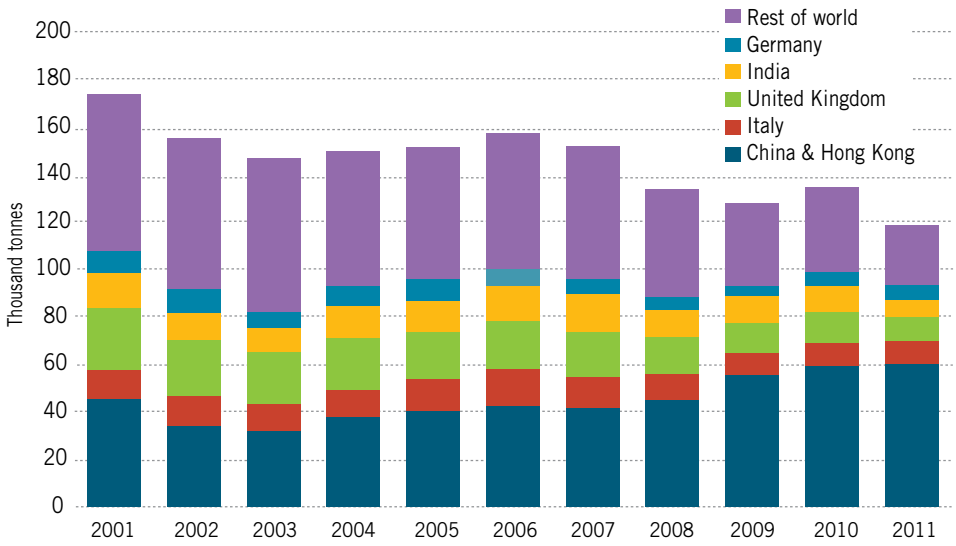
SOURCES Beef + Lamb New Zealand, Statistics New Zealand and MPI.

Increasing wool export share to China

Between 2006 and 2011, the share of wool export volume to China and Hong Kong rose from 27 percent to 51 percent. Most wool exported to China is scoured (degreased) there. China's wool import volume from all destinations has been rising over time and reached 319 000 tonnes in the year ended 31 December 2011, of which New Zealand's share was 16.5 percent. In contrast, Australia supplied 57 percent of China's total wool imports.

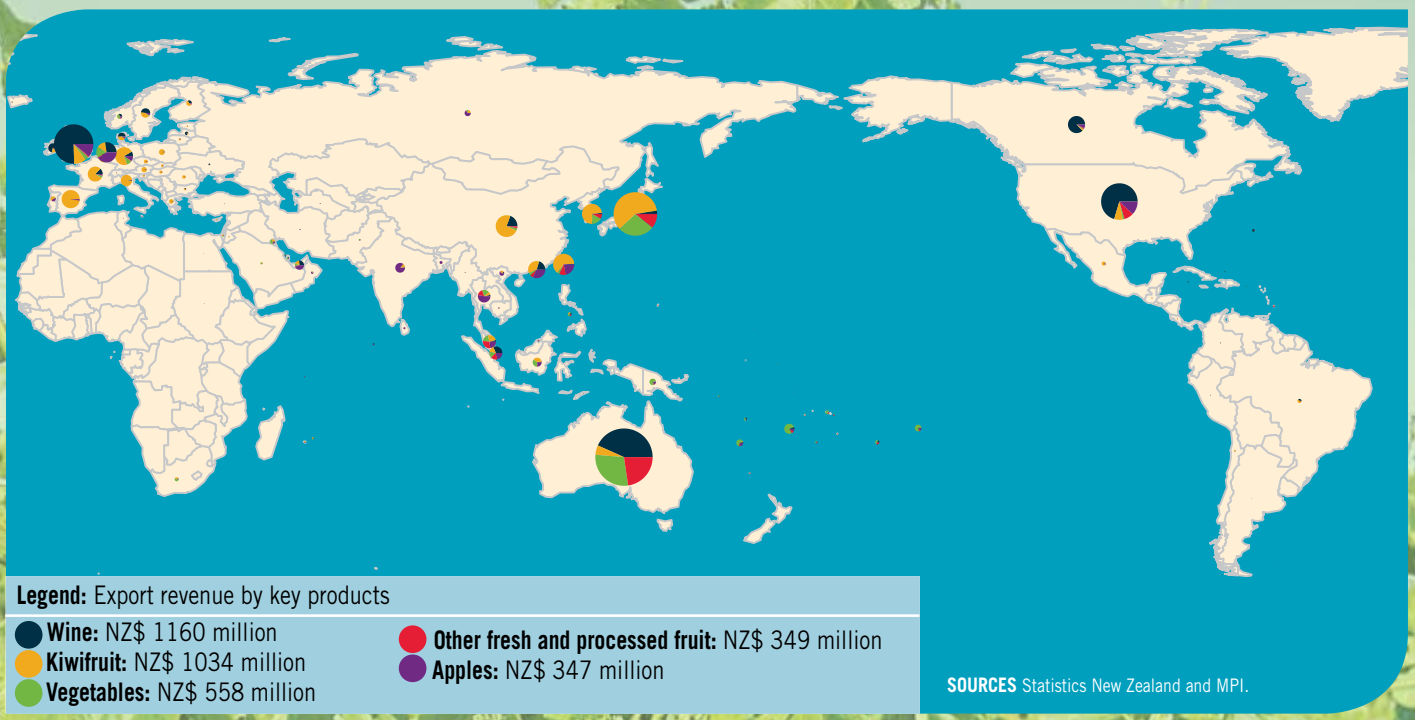
China is a growing manufacturing base for carpets and other textile floor coverings, sourcing raw wool both domestically and from wool exporting countries. Exports of carpets and other textile floor coverings from China have a global reach to both developed and developing countries. New Zealand imported $11 million worth of carpets and other textile floor coverings from China in the year ended 31 December 2011, exporting $388 million worth of raw wool from New Zealand to China over the same period.

FIGURE 4.5: WOOL EXPORT VOLUMES BY DESTINATIONS, DECEMBER YEARS 2001 TO 2011



SOURCES Statistics New Zealand and MPI.

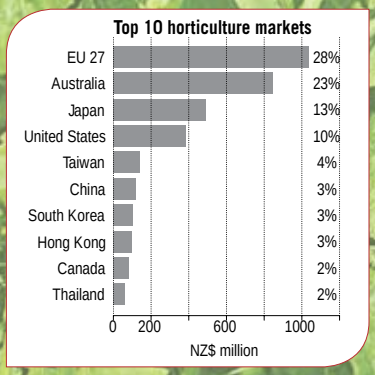
FIGURE 5.1: HORTICULTURE EXPORT REVENUES BY DESTINATIONS AND BY PRODUCTS, YEAR ENDED MARCH 2012

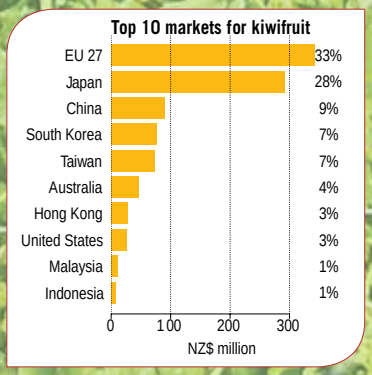


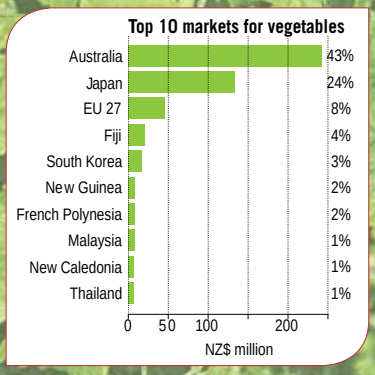
Legend: Export revenue by key products

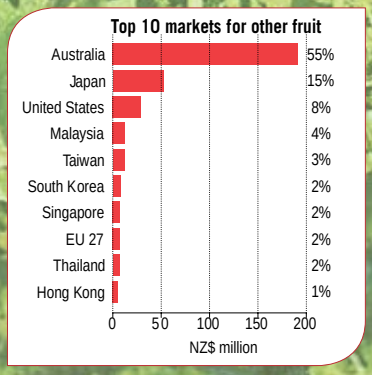
- **Wine:** NZ$ 1160 million
- **Kiwifruit:** NZ$ 1034 million
- **Vegetables:** NZ$ 558 million
- **Other fresh and processed fruit:** NZ$ 349 million
- **Apples:** NZ$ 347 million

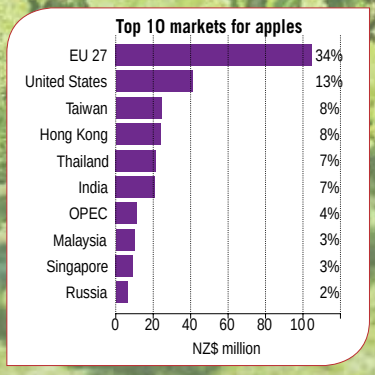
SOURCES Statistics New Zealand and MPI.











HORTICULTURE

New Zealand's horticultural exports earned $3.4 billion in the year ended 31 March 2012, up from $3.2 billion in the previous year, with kiwifruit and wine exports both exceeding $1 billion, driven by increases in export volumes. Export earnings in the short-term will remain relatively static or decrease slightly, owing to lower exports of kiwifruit and the high value of the New Zealand dollar.

Production and exports of gold kiwifruit in the year ending 31 March 2013 are affected by the bacterial disease *Pseudomonas syringae* pv. *actinidiae* (known as Psa), but less than expected. Under a best case scenario, export volumes of gold kiwifruit are forecast to remain at levels similar to those of the year ending 31 March 2013 over the next two to three years as new gold kiwifruit varieties with tolerance to Psa gradually replace the cultivar Hort16A. Production and exports of green kiwifruit, which is more tolerant of Psa, should remain stable.

Reduced export volumes from New Zealand for wine, kiwifruit and apples should help lift in-market prices in 2012, with New Zealand dollar export prices expected to remain stable or improve slightly despite the stronger currency. However, with lower yields and rising production costs, profits will be marginal for many producers.

Faced with a high New Zealand dollar until the end of 2014, strategies to lift in-market prices and reduce production and supply chain costs are a priority to maintain profitability in the sector. Many horticultural exporters are seeking market development opportunities in Asia.

WINE

Most of New Zealand's wineries and grape growers have experienced a reduction in profit levels since 2008, when a bumper vintage coincided with the global financial crisis. Larger wineries have generally been more successful in selling down excess inventory from the vintages of 2008 and 2009, helped by advantages of scale in wine production and distribution.

New Zealand's higher costs of production and the need for a mechanism to manage situations where wine supplies fluctuate mean that bulk wine will continue to play a role in the industry's future over the short to medium term.

Export prices for New Zealand wine are expected to improve over the outlook period, assisted by reduced vintages in 2012 and 2013, continued efforts by industry to expand both developing and mature overseas markets for our high-end wines, the marked slowdown in new vineyard plantings since 2008, and an assumed depreciation in the New Zealand dollar after 2014.

PRODUCTION

As the 2012 crop is being harvested, reports indicate a potential vintage of about 260 000 tonnes, well down on the record vintage of 328 000 tonnes last year. This is due to a combination of an unusually cool spring that has affected fruit set, below-average temperatures that have delayed ripening, and the impact of rain on harvesting. Grape yields are also expected to be average to below average in 2013 as cool springs have a negative impact on bud initiation for the following year's vintage.

Given little or no new plantings in recent years, vintage size through to 2016 will be determined by yield per hectare.

New Zealand red wines gaining recognition

The New Zealand wine industry has experienced dramatic growth in export earnings, attributable in large part to the international success of the white varietal Sauvignon Blanc. Nevertheless, it is important that due recognition is given to the range of New Zealand red wines that provide much needed diversity to the New Zealand offering. These wines are currently achieving over $150 million in annual export earnings and are being appreciated in both traditional and developing overseas markets.

New Zealand red wines include Pinot Noir and blends of Bordeaux-style grapes, particularly Cabernet Sauvignon and Merlot.

Bordeaux-type wines come from areas that are relatively hot and dry, notably Hawke's Bay, but also areas like Waiheke Island, Marlborough and Waipara. In recent years, a select number of Bordeaux-type wines from the Gimblett gravels in Hawke's Bay have been compared favourably to top French Bordeaux wines.

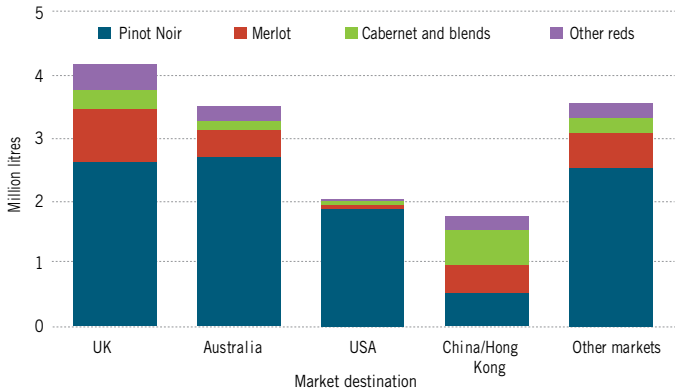
Pinot Noir wines from New Zealand started to achieve international recognition in the late 1980s as exports increased from wineries in the Wairarapa. About the same time, plantings of Pinot Noir were also taking place in Central Otago, a region that benefits greatly from being surrounded by mountain ranges that create large temperature variations between seasons, and between night and day. Other regions gaining prominence in the growing of this variety include Marlborough, Nelson and Waipara.

Export markets expanded to absorb 14.2 million litres of New Zealand red wine in the year ended 30 June 2011, up by 655 percent on volumes exported in 2000. The free on board value of these exports was $167 million, reflecting an average price per litre of $11.75.

The UK, with 4.2 million litres, dominates market share for New Zealand red wine by export volume. Although Australia and the US receive lower export volumes from New Zealand, these markets are known to deliver better export returns per litre. More recently, the China/Hong Kong market has begun to stand out for red wine sales. It has moved from not even justifying a separate classification in 2000 to now being ranked fourth in red wine export volumes.

Pinot Noir dominates sales to major export markets, typically accounting for two-thirds or more of all red wine sales. The exception is China/Hong Kong. This region has a history of importing prestigious Bordeaux wines. Hence, Cabernet blends and Merlot bottled wine dominate sales by volume from New Zealand to this market, as shown in figure 5.2.

FIGURE 5.2: NEW ZEALAND RED WINE EXPORT VOLUMES BY DESTINATION AND WINE TYPE, YEAR TO 29 FEBRUARY 2012



SOURCES Statistics New Zealand and New Zealand Winegrowers.

EXPORTS

New Zealand is expected to export 175 million litres of wine, valued at $1.2 billion, in the year ending 30 June 2012. This represents a 13 percent increase in export volumes but only a 7 percent increase in export revenues when compared with the previous year. The falling average export price reflects, in part, an increasing proportion of wine exported in bulk.

Export volumes in the year ending 30 June 2013 are expected to drop to 155 million litres, the first contraction since 1995, because of the lower vintage in 2012. Subdued export volumes are also likely in the year ending 30 June 2014 because of a lower vintage anticipated in 2013.

In the short-term, some wineries are likely to redirect product offshore from low-margin domestic markets to meet any international demand. A recovery in price per litre to $7.60 is forecast in the year ending 30 June 2013, mainly because of the contraction in export volumes. Table 5.1 indicates wine export volumes, prices and values from 2009 to 2016.

TABLE 5.1: WINE EXPORT VOLUMES, PRICES AND VALUES, 2009–2016

	ACTUAL				FORECAST			
YEAR TO 30 JUNE	2009	2010	2011	2012[1]	2013	2014	2015	2016
Export volume (million litres)	113	142	155	175	155	175	185	190
FOB[2] price ($/litre)	8.8	7.3	7.1	6.7	7.6	7.7	7.8	7.8
Export value ($ million)[3]	992	1 041	1 094	1 173	1 180	1 350	1 445	1 480

NOTES
1. Figures are estimated.
2. Free on board – the value of the goods delivered to the port of export and loaded onto a vessel for transportation out of the country of origin.
3. Export values for forecast years are rounded.

SOURCES Statistics New Zealand, New Zealand Winegrowers and MPI.

KIWIFRUIT

New Zealand exported a record 112 million trays of kiwifruit in the year ended 31 March 2012, driven mainly by an increase in the volume of gold kiwifruit, lifting export revenue above $1 billion. Table 5.2 details kiwifruit export volumes, prices and values from 2009 to 2016.

Export volumes to Asia increased by 19 percent to 48 million trays, comparable to the 49 million trays exported to Europe. On the other hand, differences in the strength of consumer demand and varietal mix resulted in a significant difference in export revenue: $611 million from Asia and $344 million from Europe.

PSA TO REDUCE GOLD KIWIFRUIT EXPORTS

The bacterial disease Psa, which affects the health of kiwifruit vines, is spread mainly by heavy rain, wind, and plant material. Psa spread rapidly over the spring of 2011 in the Bay of Plenty, the main growing region, which contains 80 percent of the 13 000 canopy hectares of kiwifruit planted in New Zealand. Over 40 percent of the national kiwifruit canopy area is on orchards that have Psa present.

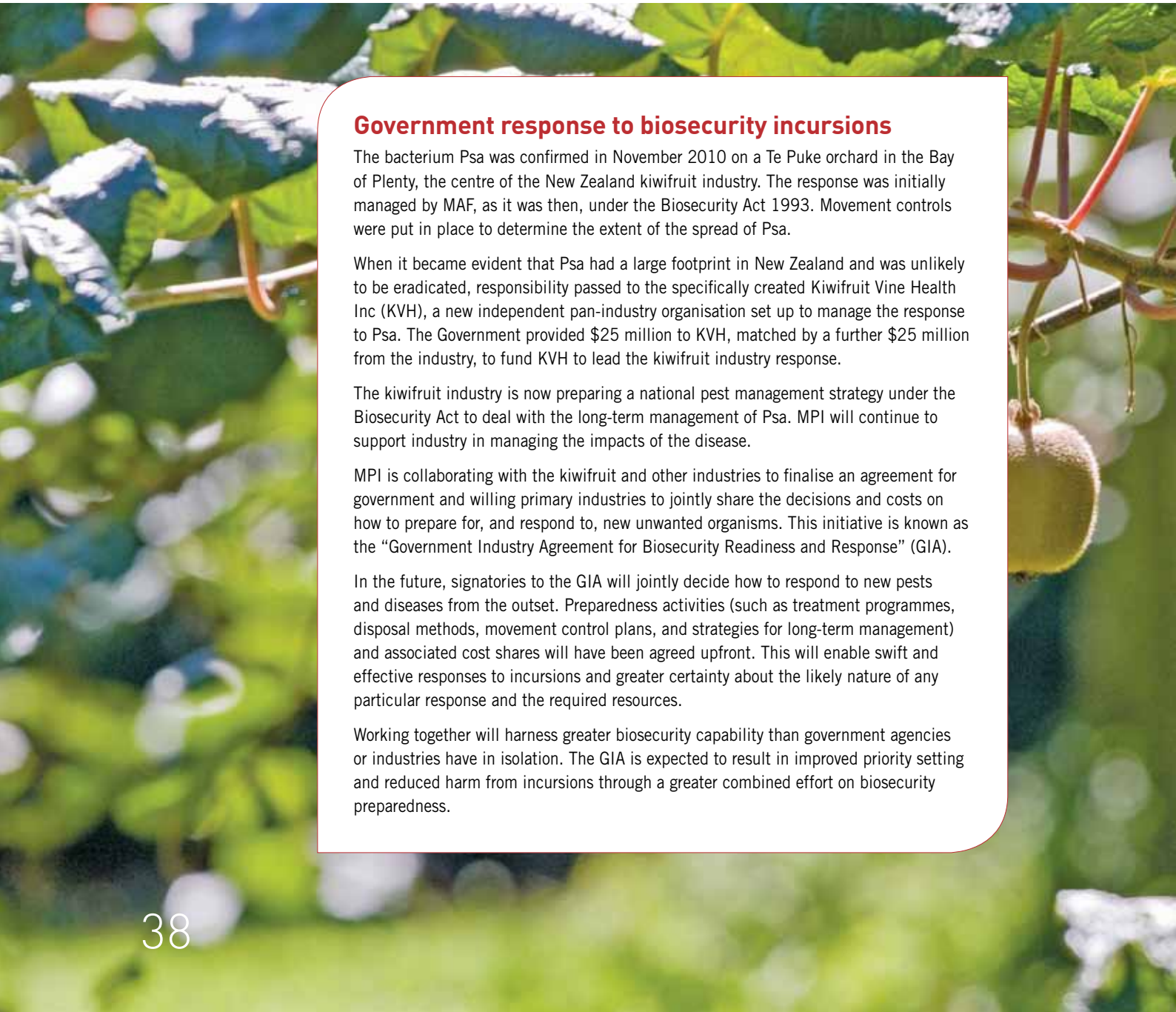
The main gold kiwifruit cultivar, Hort16A, is particularly susceptible to Psa and, so far, over 400 hectares of Hort16A have been removed because of the disease. This, combined with seasonally lower production, is expected to reduce export volumes of gold kiwifruit by about one-quarter, to 20 million trays, for the year ending 31 March 2013, similar to export volumes for gold kiwifruit in the years ended March 2009, 2010 and 2011. The reduction to 20 million trays of gold kiwifruit in 2012/13 aligns with the best case scenario modelled by MAF in its December 2011 *Outlook Report*.

Green kiwifruit orchards have also been infected with Psa, although they are proving to be more tolerant of the disease. Around 75 million trays of green kiwifruit are expected to be exported for the year ending 31 March 2013, down by nine percent on the previous year, largely as a result of seasonal factors.

PRODUCTION

The New Zealand kiwifruit industry has set in place a recovery pathway to replace the Hort16A cultivar with new gold kiwifruit varieties that are more tolerant of Psa, such as the G3 cultivar. G3 had already been commercialised in 2010 although in small quantities, showing promising performance on-orchard, in the supply chain, and with consumers.

Over time, research and development programmes will identify new kiwifruit varieties that are both tolerant of Psa and meet key attributes, such as taste and storage, that will make them commercially successful.



Government response to biosecurity incursions

The bacterium Psa was confirmed in November 2010 on a Te Puke orchard in the Bay of Plenty, the centre of the New Zealand kiwifruit industry. The response was initially managed by MAF, as it was then, under the Biosecurity Act 1993. Movement controls were put in place to determine the extent of the spread of Psa.

When it became evident that Psa had a large footprint in New Zealand and was unlikely to be eradicated, responsibility passed to the specifically created Kiwifruit Vine Health Inc (KVH), a new independent pan-industry organisation set up to manage the response to Psa. The Government provided $25 million to KVH, matched by a further $25 million from the industry, to fund KVH to lead the kiwifruit industry response.

The kiwifruit industry is now preparing a national pest management strategy under the Biosecurity Act to deal with the long-term management of Psa. MPI will continue to support industry in managing the impacts of the disease.

MPI is collaborating with the kiwifruit and other industries to finalise an agreement for government and willing primary industries to jointly share the decisions and costs on how to prepare for, and respond to, new unwanted organisms. This initiative is known as the "Government Industry Agreement for Biosecurity Readiness and Response" (GIA).

In the future, signatories to the GIA will jointly decide how to respond to new pests and diseases from the outset. Preparedness activities (such as treatment programmes, disposal methods, movement control plans, and strategies for long-term management) and associated cost shares will have been agreed upfront. This will enable swift and effective responses to incursions and greater certainty about the likely nature of any particular response and the required resources.

Working together will harness greater biosecurity capability than government agencies or industries have in isolation. The GIA is expected to result in improved priority setting and reduced harm from incursions through a greater combined effort on biosecurity preparedness.

Most of the Hort16A in the Bay of Plenty is expected to succumb to Psa over the next few years, although the timing is uncertain. MPI's forecast for the gold kiwifruit crop harvested in 2013 is based on no Hort16A production from the Te Puke district and around 70 percent of pre-Psa production from the wider Bay of Plenty region.

In the medium term, maturing vines of recently planted gold cultivars that are coming on stream, such as G3, could balance out the anticipated loss of Hort16A gold kiwifruit volumes. This would result in gold kiwifruit volumes remaining stable for a few years at around 20 million trays. There is no certainty, however, that this will occur. It depends on how quickly Hort16A in the wider Bay of Plenty region and in the rest of New Zealand succumbs to Psa, and how quickly growers whose orchards do not have Psa make the change to new cultivars. Growers with healthy Hort16A vines may choose to defer the transition and continue to produce Hort16A for as long as possible. It also depends on the uptake and success of new orchard management tools and practices that have been and continue to be developed to counter the impact of Psa , as well as the ability of growers to finance these activities.

PRICES

Export prices in the medium term are expected to strengthen for both green and gold kiwifruit, driven by changes in market composition and the forecast depreciation of the New Zealand dollar after 2014. The reduced export volumes of green and gold kiwifruit are expected to result in lower volumes of kiwifruit going to Europe, resulting in a higher proportion of kiwifruit exported into higher-return Asian markets, which will strengthen overall prices.

EXPORTS

There remains much uncertainty around the progression of Psa and the transition to new kiwifruit cultivars. The best case scenario would suggest that the disease is likely to have reduced kiwifruit export volumes from New Zealand and halted the volume growth that was projected for the three-year period from 2013 to 2015. There remains significant growth potential for the New Zealand kiwifruit industry from 2015 onwards.

TABLE 5.2: KIWIFRUIT EXPORT VOLUMES, PRICES AND VALUES, 2009–2016

		ACTUAL				FORECAST			
YEAR TO 31 MARCH		2009	2010	2011	2012	2013	2014	2015	2016
Export volume (million trays[1])	Green kiwifruit	84	80	78	83	75	75	74	71
	Gold kiwifruit	22	22	21	27	20	19	22	36
	TOTAL	**106**	**102**	**100**	**111**	**95**	**95**	**97**	**108**
FOB[2] price ($/tray)	Green kiwifruit			7.9	7.7	7.6	7.9	8.3	9.1
	Gold kiwifruit			15.3	14.1	15.2	16.1	16.4	16.2
	TOTAL	**9.3**	**10.3**	**9.5**	**9.3**	**9.2**	**9.5**	**10.2**	**11.5**
Export value ($ million)	Green kiwifruit			622	639	570	597	620	651
	Gold kiwifruit			315	389	305	306	359	586
	TOTAL[3]	**987**	**1 043**	**944**	**1 034**	**880**	**909**	**984**	**1 244**

NOTES
1. One tray equals 3.6 kg.
2. Free on board is the value of the goods delivered to the port of export and loaded onto a vessel for transportation out of the country of origin.
3. Total may not round owing to other kiwifruit categories.

SOURCES Statistics New Zealand, Zespri and MPI.

APPLES AND PEARS

Export earnings for New Zealand apples and pears will be subdued by the high New Zealand dollar over much of the outlook period. These low earnings will affect the profitability of the sector at the orchard level and may prompt further rationalisation of the grower supply base.

Market conditions for the 2012 season are mixed. By April 2012, existing stocks in European markets were clearing slowly for most varieties, although Royal Gala stocks had cleared well. Import volumes from Southern Hemisphere suppliers were low and delayed, in response to weaker market demand in Europe and unfavourable exchange rates with the Euro. Apple stocks in the US were also higher than in recent years. In contrast, early signals indicate good demand from markets in Asia, especially for the Pacific series of apple.

Total export earnings for apples and pears are expected to decline in the year ending 31 December 2012 as a result of reduced export volumes and the higher New Zealand dollar. Export prices are expected to improve over the forecast period, helped by further expansion of markets outside Europe and changes in the variety mix. The assumed depreciation of the New Zealand dollar should assist after 2014. Table 5.3 shows apple and pear export volumes, prices and values – actual and forecast – from 2008 to 2015.

New Zealand's leadership critical in Psa research

Kiwifruit Vine Heath Inc (KVH), the independent pan-industry organisation set up to manage the response to Psa, is leading a global research and development programme on Psa. KVH has subcontracted ZESPRI to manage this activity on its behalf. The programme has been established and structured to enlist the best scientific minds globally to provide solutions to Psa.

The research programme aims to explore all avenues to develop a set of technologies that will assure the long-term viability of the New Zealand and global kiwifruit industry. The programme has already produced a greater understanding of Psa and how it can be detected and how its spread can be slowed. This information is flowing directly into practical Psa-management advice to growers, post-harvest operators and the associated service industries, with refinements and modifications to be introduced as the knowledge about Psa develops.

The research and development progamme has been split into six stream, with individual research projects categorized into the relevant streams below:

- **DETECTING PSA:** Developing technologies to provide more accurate, faster and reliable identification of Psa.
- **UNDERSTANDING PSA:** Studying the distribution and the biology of Psa and the causal events which lead to the spread and progression of the disease.
- **CONTROLLING PSA:** Research to identify the best combinations of products and/or vine management techniques to be applied, how best to apply them, and when best to apply them in order to mitigate and control Psa.
- **BREEDING TOLERANCE AND RESISTANCE:** Research to understand how to identify individual seedlings that are resistant to Psa, how to efficiently pass this resistance on to the selected seedlings, and what the mechanisms are for cultivar resistance.
- **RESOURCE DEVELOPMENT:** To supply the underlying resources needed to be able to accelerate the research and development programme, including the use of existing knowledge from the control of other plant bacterial diseases.
- **IMPACTS ON THE SUPPLY CHAIN:** Research to understand and mitigate the impacts of Psa on the kiwifruit supply chain.

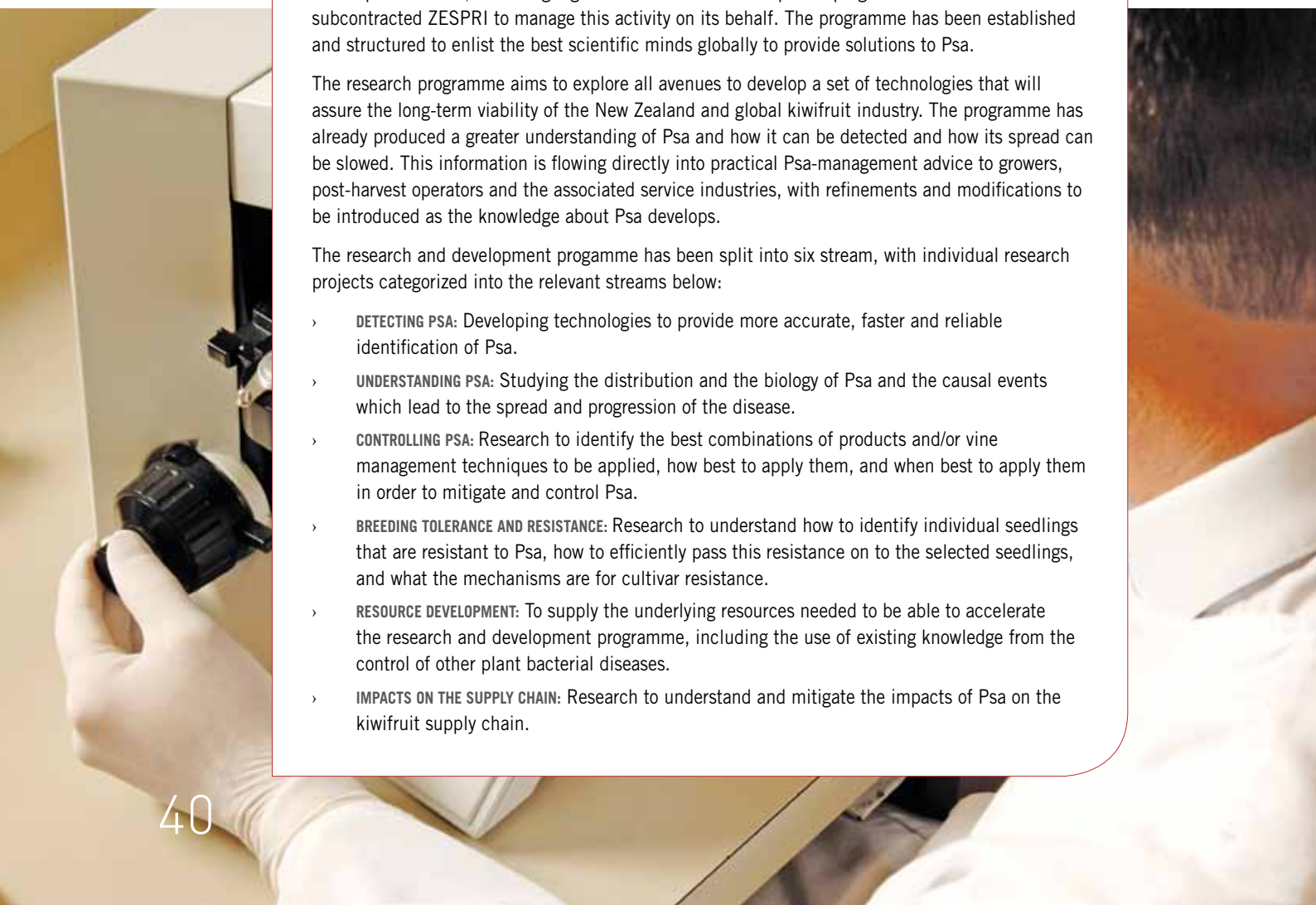


TABLE 5.3: APPLE AND PEAR EXPORT VOLUMES, PRICES AND VALUES, 2008–2015

	ACTUAL				FORECAST			
YEAR TO 31 DECEMBER	2008	2009	2010	2011	2012	2013	2014	2015
Export volume (million cartons)[1]	14.7	17.1	14.7	16.9	15.5	16.5	16.5	16.5
FOB[2] price ($/carton)	28.2	24.4	26.0	24.0	24.0	25.0	26.0	28.0
Export value ($ million)[3]	415	418	382	406	372	413	429	462

NOTES
1. A carton is equivalent to 18.0 kilograms.
2. Free on board – the value of goods delivered to the port of export and loaded onto the vessel for transportation out of the country of origin.
3. Official statistics for FOB price and export value modified for 2008, 2010 and 2011 as industry data and MAF Farm Monitoring data indicate higher prices were achieved.

SOURCES Statistics New Zealand and MPI.

PRODUCTION

Apple and pear production in 2012 is expected to be well down on the previous year. This is due to a combination of a late and prolonged flowering period, below-average temperatures over summer in the main producing region of Hawke's Bay, and growers opting to send more fruit to processing. Fruit size is smaller than normal for most varieties, affecting market opportunities and prices. On the other hand, the cooler temperatures during ripening have resulted in excellent fruit colour.

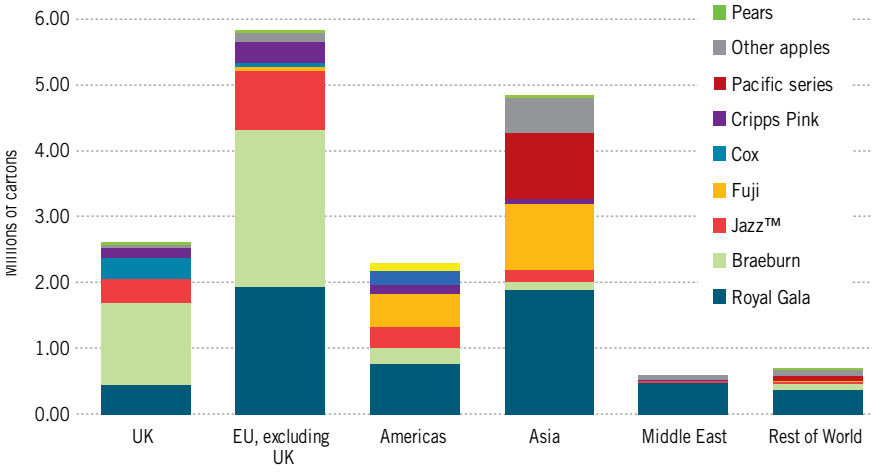
Production is predicted to recover in 2013 and stabilise thereafter, as new plantings reach maturity and the industry continues to maximise yield.

EXPORTS

New Zealand is expected to export around 15.5 million cartons of apples and pears in the year ending December 2012.

Asian markets continue to develop, taking 29 percent of apple and pear exports in 2011 (see figure 5.3), compared with 15 percent in 2006. The intention to grow markets in Asia is reflected in the quality characteristics of apple varieties planted in recent years, including Pacific Queen™, Kiku (a high-colour sport of Fuji), Envy™, Smitten® and Premier Star (a high-colour sport of Royal Gala).

FIGURE 5.3: APPLE AND PEAR EXPORT VOLUMES BY DESTINATION AND BY VARIETY, YEAR ENDED 31 DECEMBER 2011



Sources Statistics New Zealand and MPI.

FRESH AND PROCESSED VEGETABLES

Total fresh and processed vegetable export values are estimated to reach $560 million for the year ending 31 December 2012, with the fall in prices for onions and higher New Zealand dollar counteracting the increase in overall export volumes, as indicated in table 5.4.

FRESH VEGETABLES

Export volumes for fresh vegetables are expected to increase slightly in the year ending 31 December 2012.

Export volumes of onions and squash, the dominant fresh vegetable export crops, are expected to remain relatively static over the forecast period. This is due to rising production costs and, for onions, a shorter marketing window as northern hemisphere producers increase production and develop better quality storage systems. Competition with supplies from Mexico is limiting growth opportunities for squash going into Japan. Initiatives are under way to increase market demand for New Zealand squash in South Korea in the medium term.

Favourable growing conditions in Europe led to an oversupply of onions in international markets this year, with an associated drop in prices. A combination of low market prices and adverse climatic conditions in some producing regions is holding back growth in onion exports from New Zealand in 2012. Export volumes of squash are likely to remain similar to those of recent years, with good demand from markets in South Korea.

PROCESSED VEGETABLES

Exports of processed vegetables are expected to increase by at least five percent in the year ending 31 December 2012. The main increases will be for frozen vegetables and canned beetroot, as a result of the rationalisation of vegetable processing facilities in Australia and the subsequent transfer of production, and increased processing capacity, to the Hawke's Bay region in 2011. Further increases in export volumes are likely over the forecast period, mainly to Australia, as this additional processing capacity is fully used. Exports of processed vegetables to Australia grew from a value of around $100 million in 2002 to $228 million in 2011. Total vegetable export volumes to Australia are shown in figure 5.4.

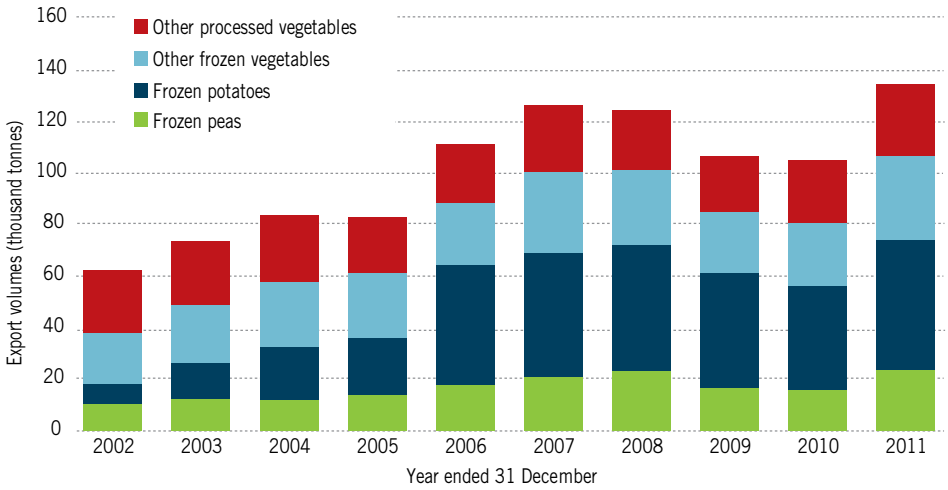
TABLE 5.4: VEGETABLE EXPORT VOLUMES, PRICES AND VALUES, 2008–2015

	ACTUAL				FORECAST			
YEAR TO 31 DECEMBER	2008	2009	2010	2011	2012	2013	2014	2015
Fresh vegetables								
Export volume (000 tonnes)	313	269	311	276	280	290	293	293
Processed vegetables								
Export volume (000 tonnes)	188	168	169	188	200	210	220	220
Total fresh and processed vegetables								
Export value ($ million)	528	521	548	605	560	600	635	650

SOURCES Statistics New Zealand and MPI.

Vegetable juices, mainly carrot juice, have developed into an important segment of the processed vegetables category, with export earnings increasing from $4 million in 2002 to almost $30 million in 2011. Increasing demand from Japan and elsewhere indicates potential to double current production levels of carrot juice.

FIGURE 5.4: PROCESSED VEGETABLE EXPORTS TO AUSTRALIA, BY VOLUME, 2002–2011



Sources Statistics New Zealand and MPI.

6 ARABLE

INTERNATIONAL MARKET

Record global grain production was realised in 2011/12 as a result of increased areas planted combined with favourable climatic conditions. High global stocks are now at levels last experienced in the early 2000s. As a result of high stocks and continuing production increases, world wheat prices (NZ$319 per tonne free on board (fob) Gulf in April 2012) are projected to weaken through to 2017.

Maize futures spiked before settling at NZ$289 per tonne (fob Gulf) as increased planted area was harvested and stored. Australian feed barley pricing is forecast to fall by 15 percent from AU$181 per tonne by 2013 and to AU$159 per tonne by 2017. Stocks are expected to rebound when Europe, the Black Sea region and Canada return to normal areas planted, after unfavourable climatic events in the previous season.

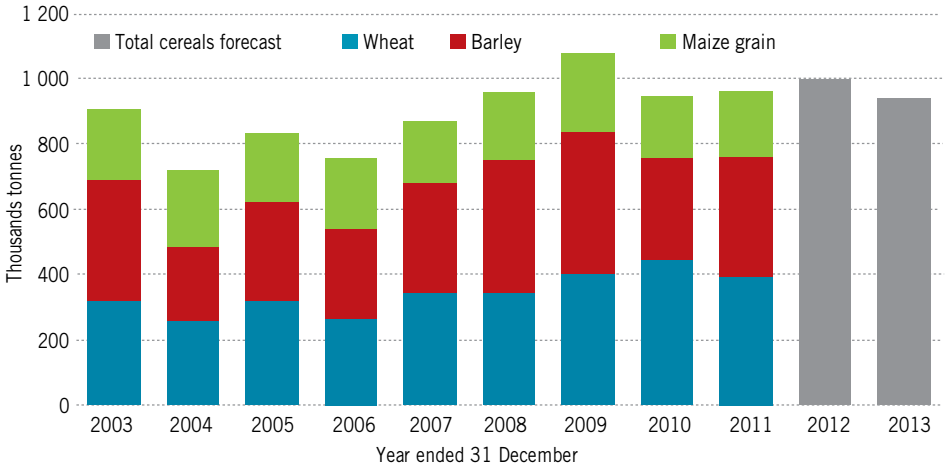
Population growth and increasing prosperity will boost grains consumption. Animal feed use is expected to rise at a slightly faster rate than in recent years, while increases in the use of maize for biofuel will slow from the very rapid rates of the past decade. Wheat production is projected to increase by one percent a year, while maize and barley are expected to increase by two percent a year. Stocks are expected to slowly build as increasing supply outpaces increasing demand.

DOMESTIC SITUATION

Increased areas of wheat and barley and record yields have led to high 2012 stocks. A return to normal yields and marginally reduced planted area, as a result of markedly reduced prices, will see the 2013 production volume reduced to more normal levels.

High Australian grain stocks will also put downward pressure on New Zealand prices. Contract feed wheat prices in April 2011 fell from NZ$420 per tonne to below NZ$340 per tonne in April 2012, reflecting world prices. Structural shifts in the industry, whereby more

FIGURE 6.1: NEW ZEALAND GRAIN PRODUCTION TRENDS 2003–2013



SOURCES Statistics New Zealand, Arable Industry Marketing Initiative, and Macfarlane Rural Business Ltd.

imported grain replaces domestically grown product, may be under way. Domestic grain production trends from 2003 to 2013 are shown in figure 6.1.

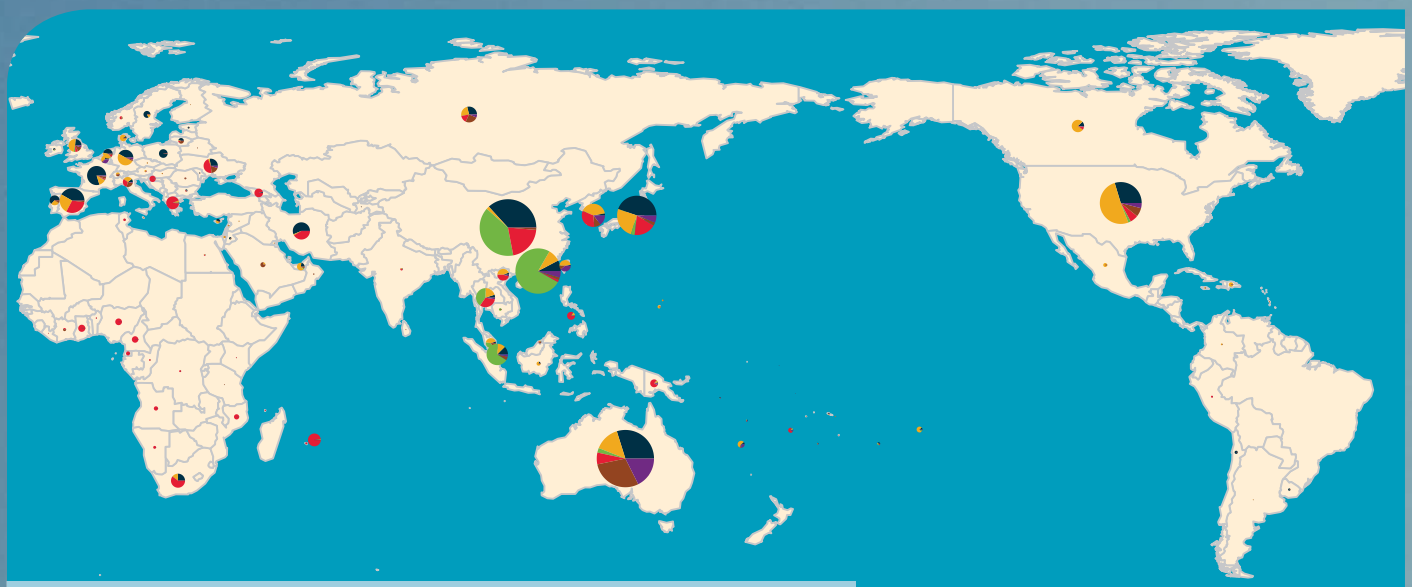
EXPORT SEEDS

Export receipts for herbage seed have trended upwards in the last two years, as a result of European production problems. This export opportunity is not expected to remain into 2014. Ryegrass and white clover seed contract prices for 2013 are up by 20 and 15 percent respectively on the previous year, albeit constrained by the high New Zealand dollar.

High-value specialist vegetable seed production and pricing are expected to be unchanged because of constant supply and demand. Substitution of small seeds with cereals and oilseeds around the world has led to opportunities for the New Zealand industry. International seed companies continue to recognise New Zealand as a consistent producer of high-quality seed.

The New Zealand arable sector is well positioned domestically and globally but will remain under pressure to adjust crop mix towards seed production, develop new markets and to increase efficiency and productivity over the next few years. This direction is currently coming up against the relative profitability of other land uses.

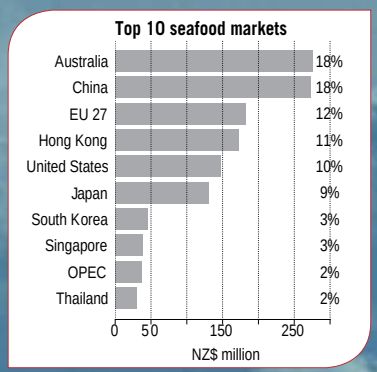
FIGURE 7.1: SEAFOOD EXPORT REVENUES BY DESTINATIONS AND BY PRODUCTS, YEAR ENDED MARCH 2012

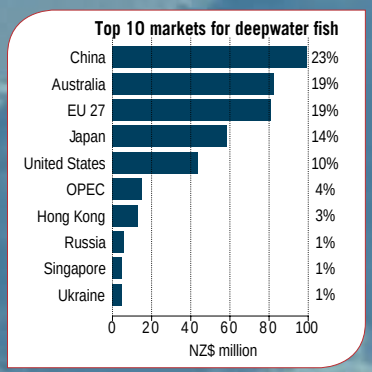


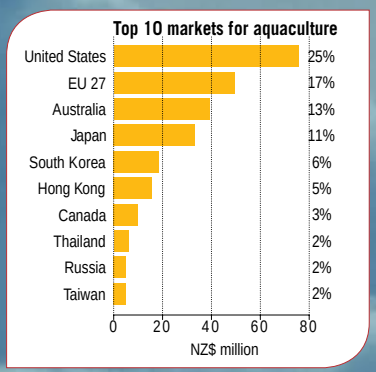
Legend: Export revenue by key products

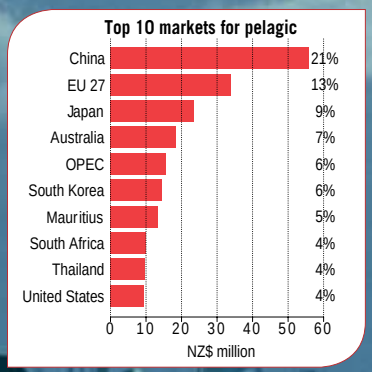
- **Deepwater:** NZ$ 424 million
- **Aquaculture:** NZ$ 297 million
- **Inshore Shellfish:** NZ$ 295 million
- **Pelagic:** NZ$ 260 million
- **Inshore Finfish:** NZ$ 133 million
- **Other fish products:** NZ$ 101 million

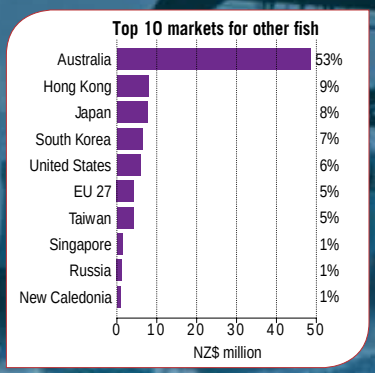
SOURCES Statistics New Zealand and MPI.











7 SEAFOOD

Fisheries resources provide economic, social and cultural benefits to all New Zealanders. Healthy fish stocks are fundamental to the realisation of economic, social and cultural benefits. The fisheries resource is therefore managed to balance its various uses – whether commercial, customary or recreational – and to maximise the benefits available to New Zealanders.

The Quota Management System (QMS) helps to ensure sustainable use of fisheries resources through the direct control of harvest levels for each species in a nominated geographical area (fish stock). Total Allowable Catches (TAC) are set for each fish stock at a level that maximises the yield of a fishery without compromising sustainability. From the TAC, an allowance is made to provide for customary uses. The remainder of the TAC is allocated between the recreational and commercial sectors at the Minister's discretion. The Total Allowable Commercial Catch (TACC) is the total quantity of each fish stock that the commercial fishing industry can catch for that year.

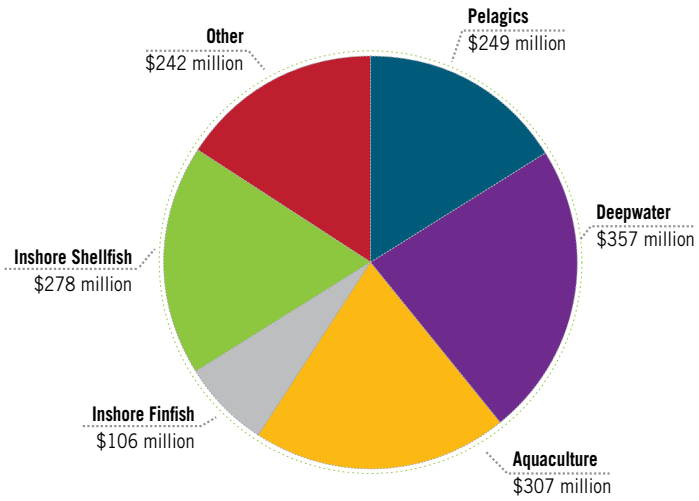
The aquaculture sector operates within the same marine space as the other sectors. Aquaculture legislation is designed to ensure that its development balances and respects other uses of water space.

COMMERCIAL

Ninety percent of our seafood production is exported, and seafood export earnings account for around four percent of total merchandise trade. Total export earnings in the fisheries sector in the year ending June 2012 is estimated to be $1.64 billion.

New Zealand is a very small player in world fisheries markets, accounting for 0.5 percent of world wild capture production and 0.2 percent of aquaculture production in 2008. Key markets for New Zealand seafood exports are China, Australia, the US, Hong Kong and Japan, which account for 66 percent of seafood export earnings. In the year ended December 2011, China passed Australia as the seafood sector's largest export market, at $300 million, accounting for 20 percent of total earnings.

FIGURE 7.2: SEAFOOD EXPORT VALUES BY TYPE, DECEMBER YEAR 2011



SOURCES Statistics New Zealand and MPI.

Wild capture fisheries accounted for 80 percent of total fisheries export earnings in the December 2011 year. Wild capture fisheries consist of four species groups: deepwater, pelagics, inshore shellfish and inshore finfish. Aquaculture accounted for the remaining 20 percent. The aquaculture and inshore shellfish groups are composed of high-value, lower volume species while the deepwater and pelagic groups are generally composed of higher volume and but lower value species. Figure 7.2 shows export values by type for 2011.

New Zealand's top export species by earnings are mussels, rock lobster and hoki.

Quota is owned by 1533 companies, entities and individuals. In 2010, 1396 registered vessels were fishing in New Zealand waters. The sector directly employed just under 8000 people in 2011.

RECREATIONAL

The recreational fishing sector contributes both social and economic value to New Zealand. Recreational fishing is one of New Zealand's most popular outdoor activities. In 2007/08 the recreational marine and/or freshwater fishing participation rate was 19.5 percent of New Zealanders. Fishing tourism generates economic revenue. Over 90 000 international visitors fished in New Zealand in 2010.

High-quality product innovation – Precision Seafood Harvesting

The Precision Seafood Harvesting (PSH) programme is a $56.3 million co-investment between the Crown, Aotearoa Fisheries, Sealord Group and Sanford Ltd under the PGP. The Crown and the industry co-investors are contributing equal shares of the funding.

The programme aims to develop a new wildfish harvesting technology that will allow more precise catches and allow fish to be landed fresher and in better condition. Current trawl methods are efficient in volume terms but damage fish and irreversibly degrade final product quality and shelf life. Environmental impacts of bottom trawling are of increasing public concern. This is a key constraint on the total value that can be realised from seafood products. The PSH programme is tackling the challenge of moving from a quantity to quality focus in trawl fisheries.

Increased selectivity will create processing efficiencies and allow delivery of desired fish species and sizes to markets when required. It will also increase the environmental sustainability of trawling, creating an opportunity to further push New Zealand's reputation as a leader in the environmentally sustainable production of seafood.

The programme builds on research and development work that has shown the potential of new harvesting technology and developed a prototype model. The PSH programme will develop the potential of the prototypes to make them accessible to the New Zealand fishing industry.

Expected seafood revenue gains are $100 million (20 percent) annually by 2029. Wider economic benefits are also expected in relation to the terms of the trade balance and GDP.

CUSTOMARY

Fisheries are a traditional source of cultural wealth for Māori. Customary food gathering has always been part of the cultural heritage of tangata whenua. The customary fishing regulations let iwi and hapū manage their non-commercial fishing in a way that best fits their local practices.

OUTLOOK

The outlook for the New Zealand fisheries sector is positive. Earnings for the year ending 30 June 2012 are forecast to rise from $1.56 billion to $1.64 billion and to continue to increase in the medium term, as shown in table 7.1. Both export volumes and prices are expected to contribute to this. Prices are forecast to increase at a faster rate than volume, indicating greater value extraction from the fisheries resource. In 2011, however, significant increases in prices per kilogram of pelagic and aquaculture species were offset somewhat by declining prices per kilogram in other species groups.

WILD CAPTURE FISHERIES

The export value of wild capture fisheries is expected to rise by five percent, to $1.33 billion in the year ending 30 June 2012 and to continue to rise in the medium term. Wild capture fisheries export volume is expected to continue to increase modestly over the medium term by 0.5 percent a year.

The modest production increases will be driven by the recent increase in the hoki TACC to 130 000 tonnes for the 2011/12 fishing year. Hoki is New Zealand's biggest export species by volume, and the hoki TACC has historically been fully utilised. There is little potential for further growth in wild capture production beyond this.

AQUACULTURE

The export value of aquaculture is expected to rise by 3.3 percent, to $311 million in the year ending December 2012, and at an increasing rate in the long-term. Aquaculture species are currently limited to greenshell™ mussels, oysters and salmon. Greenshell™ mussels accounted for 74 percent of revenues in 2011, as shown in figure 7.3. There are opportunities for new species to be realised commercially, including paua.

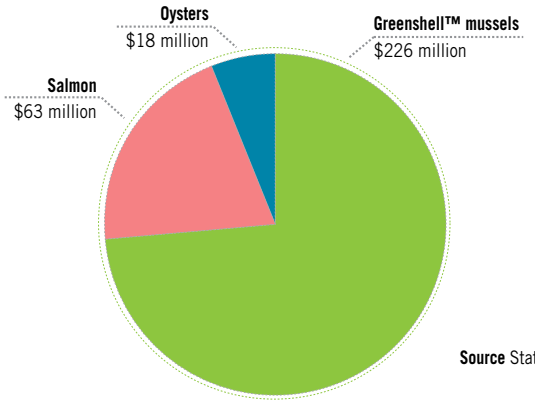
TABLE 7.1: SEAFOOD EXPORT VOLUMES, PRICES AND VALUES, 2009–2016

		ACTUAL				FORECAST			
YEAR TO 30 JUNE		2009	2010	2011	2012[1]	2013	2014	2015	2016
Export volume (000 tonnes)	Wild capture	233	249	268	257	258	260	261	262
	Aquaculture	39	42	45	45	46	46	47	47
	TOTAL	**272**	**291**	**313**	**302**	**304**	**306**	**308**	**309**
FOB price ($/kg)	Wild capture	5.0	4.6	4.7	5.2	5.4	5.7	6.1	6.9
	Aquaculture	7.8	6.0	6.7	6.9	7.1	7.5	8.2	9.3
	TOTAL	**5.3**	**4.8**	**5.0**	**5.4**	**5.7**	**5.9**	**6.5**	**7.3**
Export value ($ million)	Wild capture	1 158	1 156	1 261	1 329	1 404	1 470	1 605	1 810
	Aquaculture	301	248	301	311	323	342	381	441
	TOTAL	**1 459**	**1 404**	**1 562**	**1 640**	**1 727**	**1 812**	**1 986**	**2 251**

NOTE
1. Figures are estimated.

SOURCES New Zealand Seafood Industry Council and MPI.

FIGURE 7.3: AQUACULTURE EXPORT VALUES BY TYPE, DECEMBER YEAR 2011



Source Statistics New Zealand.

In years ended 31 December 2009 and 2010, prices for greenshell™ mussels in the US market dropped as a result of New Zealand suppliers dropping prices to maintain market share during the financial crisis. Prices have begun to rebound, which will drive increased returns. Oyster disease in Northland and the Coromandel, causing the loss of up to 80 percent of juvenile oysters on some farms in 2010, affected oyster harvests in 2011. At the same time, reduced production was partially offset by increased export prices. This disease still poses a risk to future production and revenues.

A salmon disease outbreak in Chile and disruptions of Norwegian salmon caused by the volcanic eruption in Iceland have increased demand for New Zealand salmon since 2009. The salmon disease has also recently been identified in Canada.

As a result of the limited global supply of fish from wild fisheries and increasing demand for seafood, particularly premium seafood, by 2025 over half of all seafood consumed globally will be farm-produced, surpassing wild capture production in 2018. This is expected to drive the forecast growth in the New Zealand aquaculture sector. The legal framework needed to support production growth in the sector was established through the new aquaculture legislation passed in August 2011. Production is expected to increase in three to four years' time, when new farms established under the legislation are up and running. New Zealand King Salmon has submitted the first proposal under the new legislation, for nine new salmon farm sites.

The aquaculture sector's growth opportunities are reflected in the industry's goal of growing sales to $1 billion in value by 2025. The government's aquaculture strategy also presents an important step in establishing a whole-of-government pathway to enable the sector to grow. The strategy focuses on the development of new space and extracting more value from existing space and production.

ISSUES

TRADE ACCESS ISSUES

The environmental impact of fishing has increasingly become one of the critical determinants of trade access for the New Zealand seafood sector. The EU, Australia and the US have particularly high levels of regulation aimed at preventing environmentally unsustainable or illegally caught products entering their markets. Together, these markets make up about 49 percent of New Zealand's seafood exports.

New Zealand has taken a proactive approach to ensure it can meet the requirements of regulatory developments. For example, in response to EU importation regulations to deter illegal unreported and unregulated fishing, New Zealand has established a catch certification system. Because the seafood sector is not insulated from future environmental market requirements, New Zealand must be able to be highly responsive to developments in international regulations and changes in consumer expectations of fishing practices to ensure trade access and the opportunity for export growth.

INCREASING GLOBAL SEAFOOD DEMAND AND GROWTH OF PREMIUM MARKETS

Future global demand for seafood is expected to remain strong. Global consumption per capita is expected to rise from 18.5 kilograms to 19.6 kilograms in the next 10 years. Market demand for seafood products has high income-elasticity, and demand for seafood of a premium quality is relatively more responsive to changes in income than low-value fish is. Rising incomes are expected to lead to greater than proportionate increases in demand, especially from the Chinese and Australian markets. Increasing demand and limited supply will drive price rises.

Demand for high-end product is strong in Australia, the US and the EU, where consumers are willing and able to pay premium prices. In China, consumers are also becoming increasingly

discerning and, with rising incomes,the commodity focus of this seafood market can be expected to change. Seafood products such as rock lobster, paua, and mussel, which are high-value species for New Zealand, are regarded as luxury products in China and as incomes grow, demand for these products can be expected to grow.

Global demand for high-value, naturally derived neutraceutical substances is expected to increase by 8.9 percent annually to $7.3 billion in 2015. These substances are sourced from fisheries by-products and therefore enable full utilisation of catch.

NEW ZEALAND'S HIGH-VALUE PRODUCTS

New Zealand has a competitive advantage in premium seafood markets because of the country's reputation for environmental sustainability. The QMS is considered a world leader in the sustainable management of wild fisheries. The New Zealand hoki, albacore troll, southern blue whiting and Ross Sea toothfish fisheries are among 156 fisheries worldwide to be certified as sustainable by the Marine Stewardship Council. Three other New Zealand fisheries are under assessment. Third party certification supports market recognition of New Zealand's sustainable fisheries management.

Much of New Zealand's aquaculture production is of niche species that carry valuable nutritional, aesthetic and culinary qualities. New Zealand greenshell™ mussels and Pacific oysters are unique to New Zealand waters. Despite being a very small salmon producer in global terms, New Zealand accounts for half of the production of the Chinook (King) salmon species.

Innovation is another source of competitive advantage in premium markets. It enables the development of niche products and can lead to improved on-water production techniques that can create efficiencies in the use of resources. Products developed as a result of innovation being pursued in the New Zealand seafood industry can be expected to increase demand for New Zealand products in premium markets.

One of the first seafood sector projects to be funded by the PGP, the Precision Seafood Harvesting programme, is an excellent example of initiatives that have potential to increase the sustainability of inshore and deepwater commercial fishing and increased quality of fish.

A weakness of the New Zealand seafood industry in premium markets has been that sources of competitive advantage have been underexploited as New Zealand exporters compete against each other for market share. This was the cause of the significant drop in prices for greenshell™ mussels in the US in 2009/10. Differentiating products from substitutes in commodity markets is vital to avoid products being perceived as commodities.

Developing premium markets – Pure New Zealand greenshell™ mussels

New Zealand greenshell™ mussels are New Zealand's largest seafood export and are unique to New Zealand, with well-recognised nutritional benefits.

Over a decade ago the first attempt was made to establish a market for New Zealand greenshell™ mussels in China. It was later abandoned, however, because of problems with counterfeit product and price competition driving down prices.

In 2010, Sanfords, Aotearoa Seafood and Greenshell New Zealand recognised the potential in the emerging Chinese "consumer class" market for high-quality imported foods. The market for New Zealand greenshell™ mussel remained largely untapped. In 2009, export mussels were worth $202.5 million to New Zealand, although only $1.5 million went to China. In 2010, these companies collaborated to form a joint venture company, Pure New Zealand Greenshell Mussels.

The aim of the venture is to work together to differentiate New Zealand greenshell™ mussels in order to develop the emerging premium markets, where optimal returns can be captured. It has created a single brand to exclusively market greenshell™ mussels into China. The company's goal is to avoid its product becoming a commodity in the Chinese market as it had elsewhere.

Success towards achieving this goal is evident. The company is already a multi-million dollar export venture and the target for 2012 is to double sales. The price paid for its product has risen from US$4.50 per kilogram to US$4.85 per kilogram in the past year. The company sees potential in co-ordinating better in other markets, including the United States. There is also potential for the model to be emulated in other untapped Asian markets for products such as for live lobsters and oysters.