

# High Level Assessment for Future Opportunities of Wood Products from New Zealand



Prepared for Bay of Plenty Regional Council

10 April 2011

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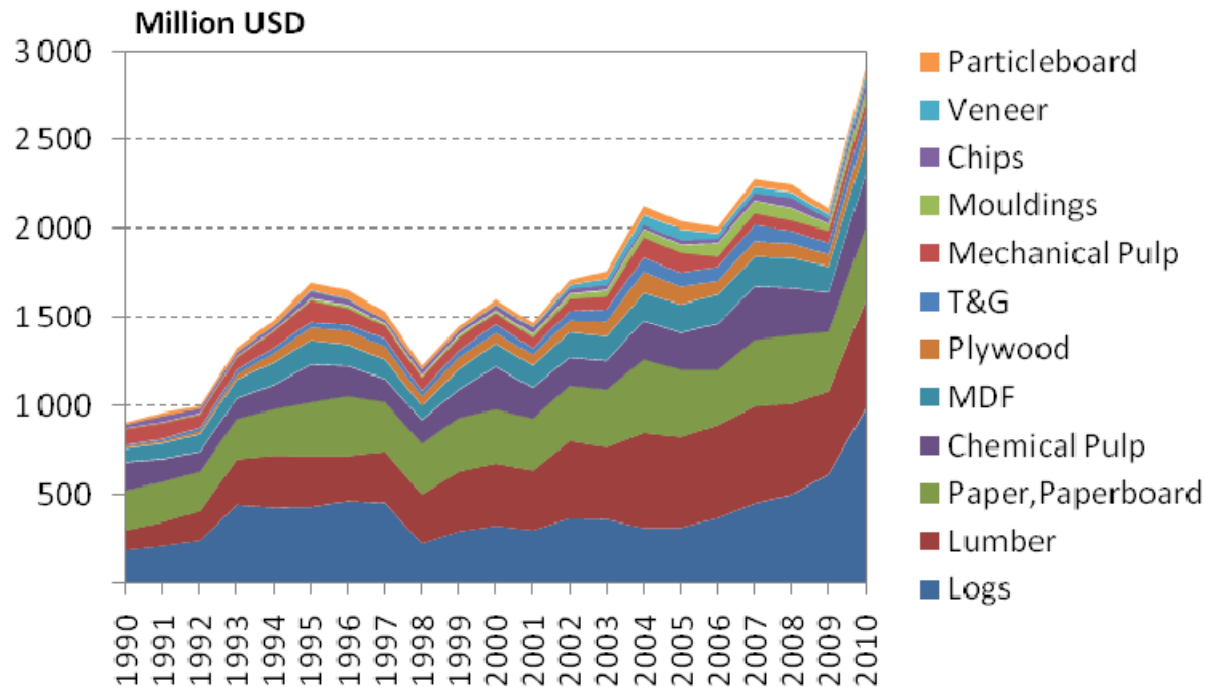
## Introduction

- The Bay of Plenty regional economic development strategy includes a sector development plan for the forest industry.
- The strategy is to develop a market-led high value wood products industry.
- To guide future developments the following sets out a high level future outlook for wood products from New Zealand.

# New Zealand Forest Product Exports

New Zealand's forest products exports have grown considerably over the past 2 decades, from less than 1 billion USD in 1990 to nearly 3 billion USD in 2010.

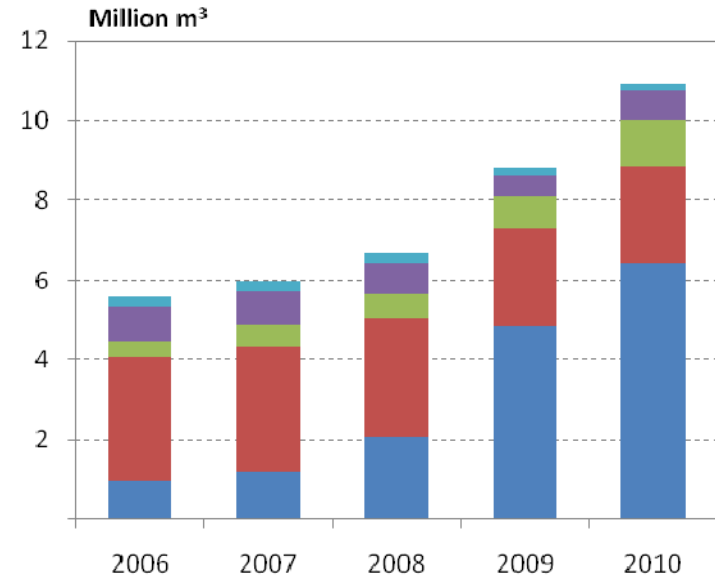
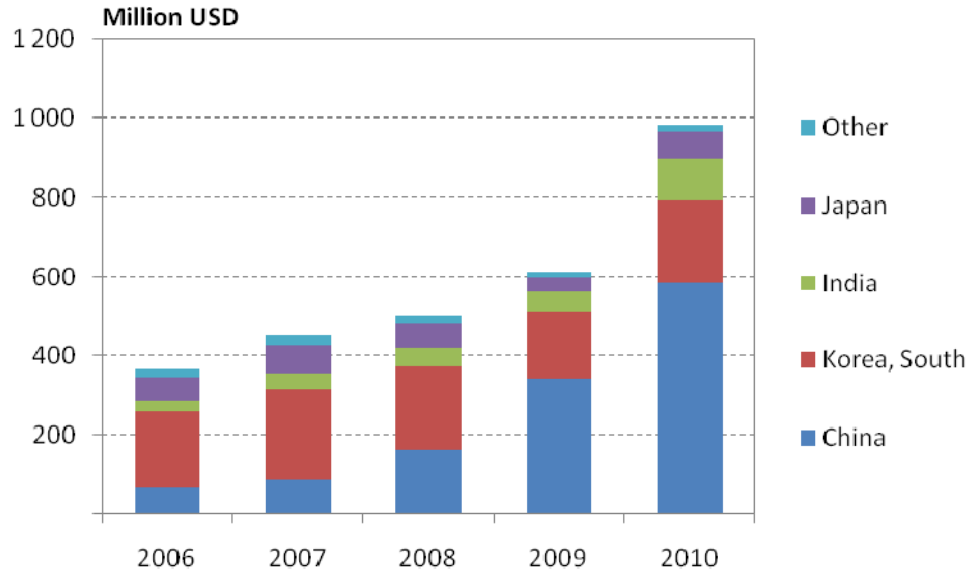
Major export items include logs, lumber, paper/paperboard, chemical pulp and MDF.



## Export of Logs by Destination

New Zealand log exports have expanded strongly during the latest years. China has become the dominant export market for New Zealand radiata pine logs replacing the position of South Korea.

China, South Korea, India and Japan currently represent 99% of New Zealand's log export.

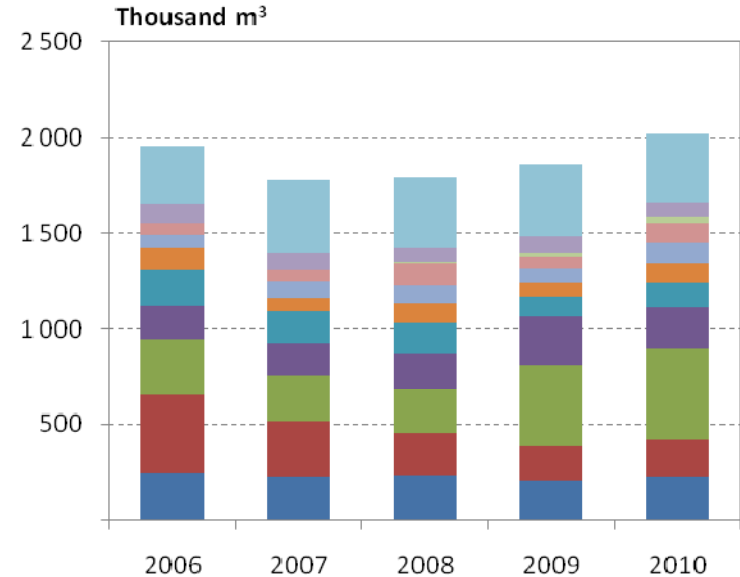
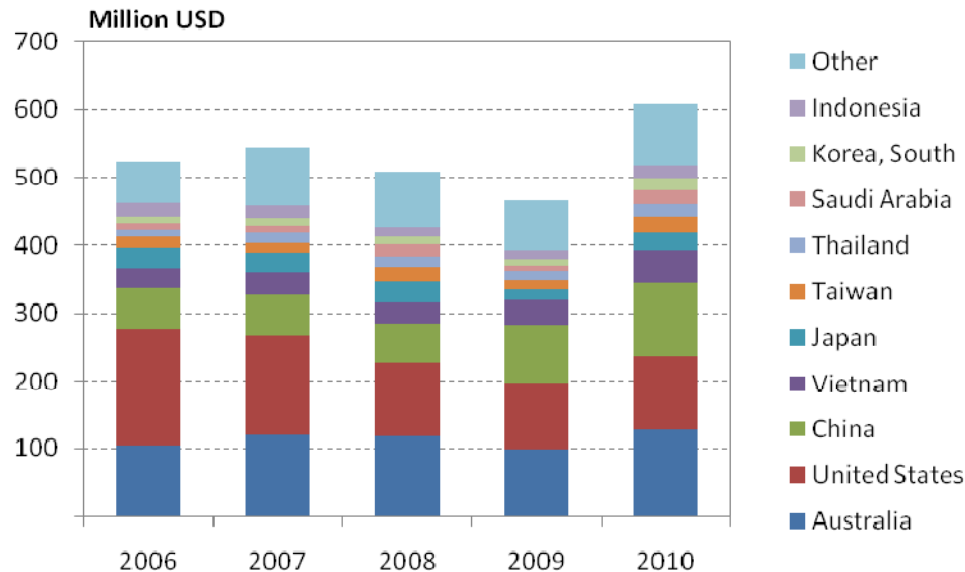


## Export of Lumber by Destination

New Zealand lumber exports have expanded only moderately in volume terms over in recent years. However, the USD value of lumber exported increased considerably, from 523 million USD in 2006 to 608 million USD in 2010.

The value of lumber exports to the US declined during this period, from 173 million USD in 2006 to 109 million USD in 2010.

China has lately become the largest lumber market for New Zealand in volume (3<sup>rd</sup> in value).

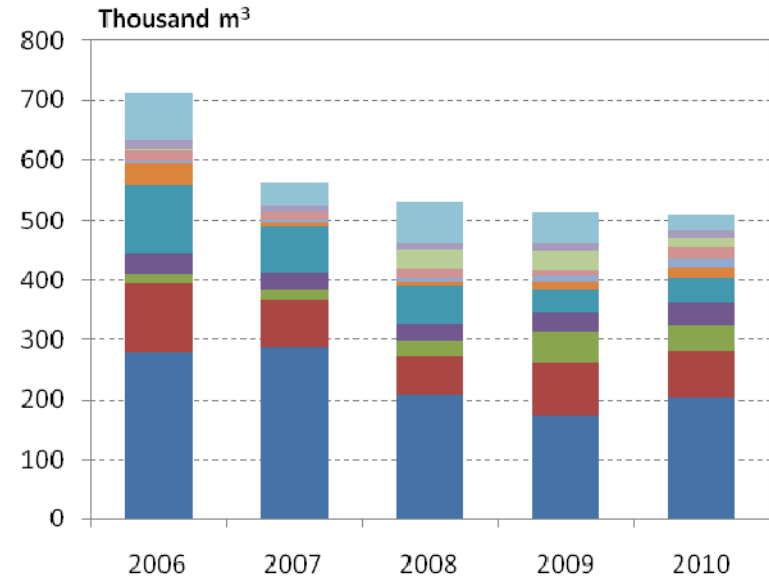
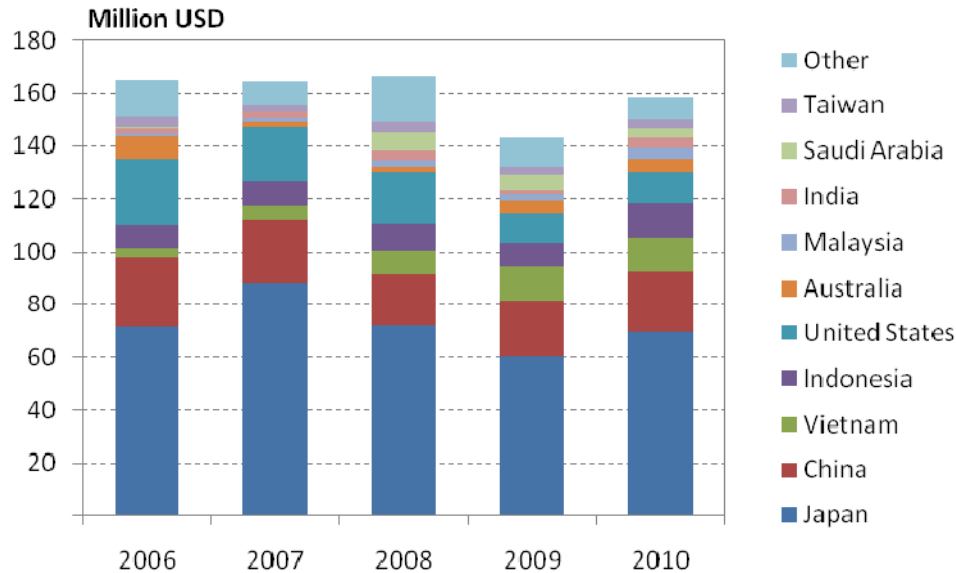




## Export of MDF by Destination

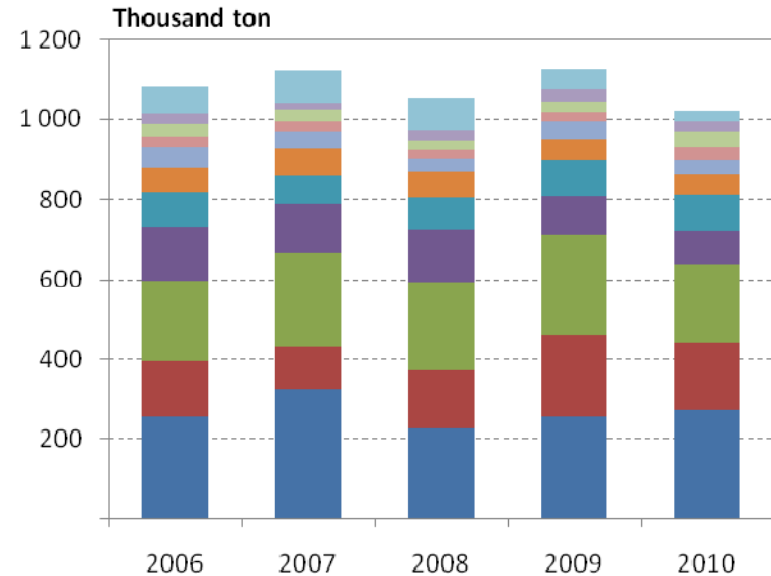
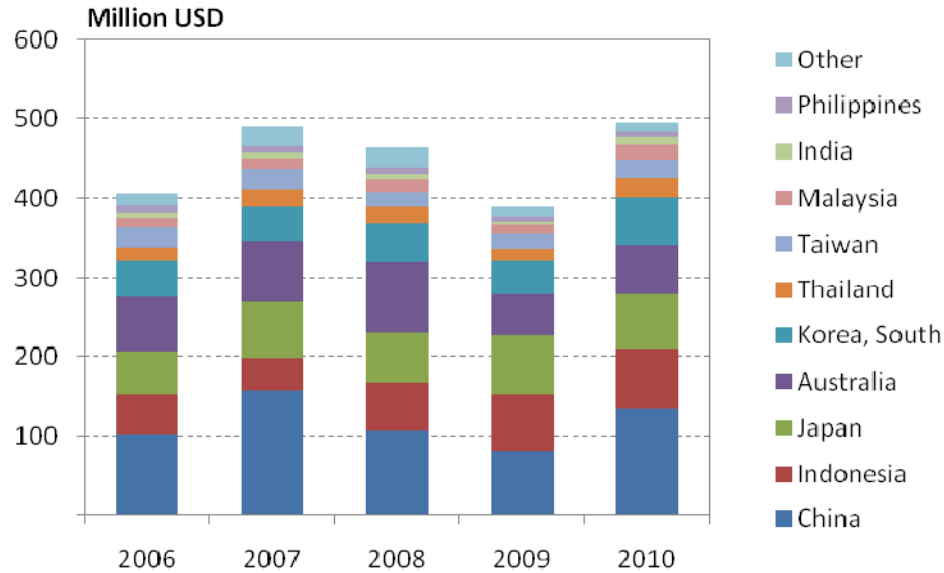
New Zealand export volumes of MDF have declined over the past years. Part of this decline was attributed to the closure of the Laminex MDF mill in Taupo in 2007.

Japan's traditionally dominant position in NZ MDF exports has continued to decline, while China has been an emerging market.



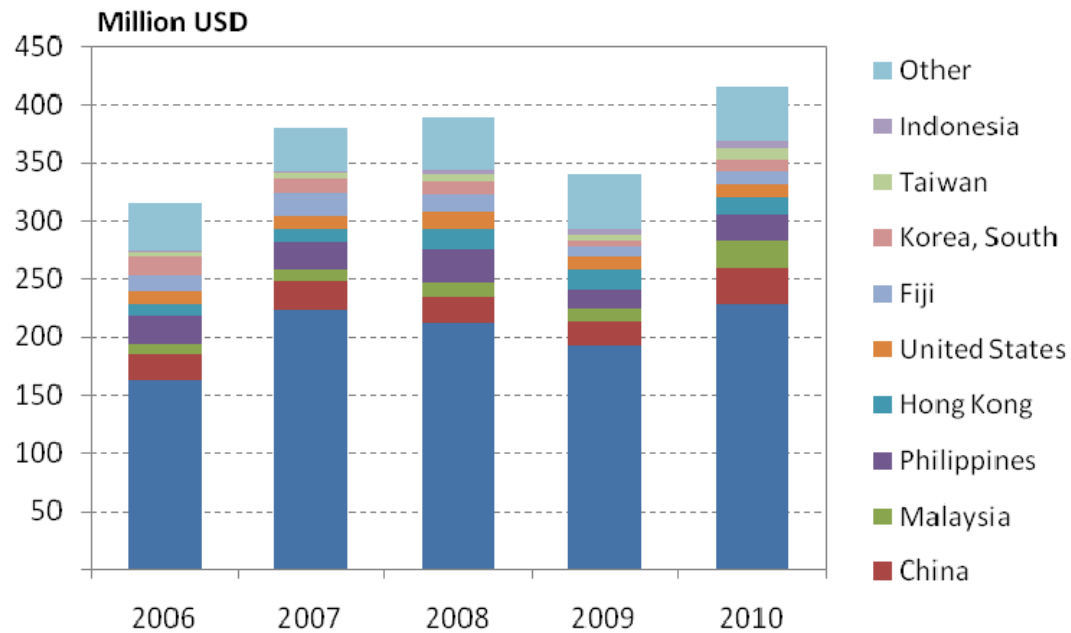
# Export of Pulp by Destination

New Zealand export volumes of pulp remained relatively stable from 2006 to 2010. In USD value terms, however, some fluctuations have been observed corresponding to USD/NZD movements during the period.



## Export of Paper by Destination

New Zealand exports a range of paper products. Australia is the dominant market for NZ paper. As with pulp, the USD value of paper exports increased in 2010 after a notable drop during the previous year.





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## Exports in Last 3 Years

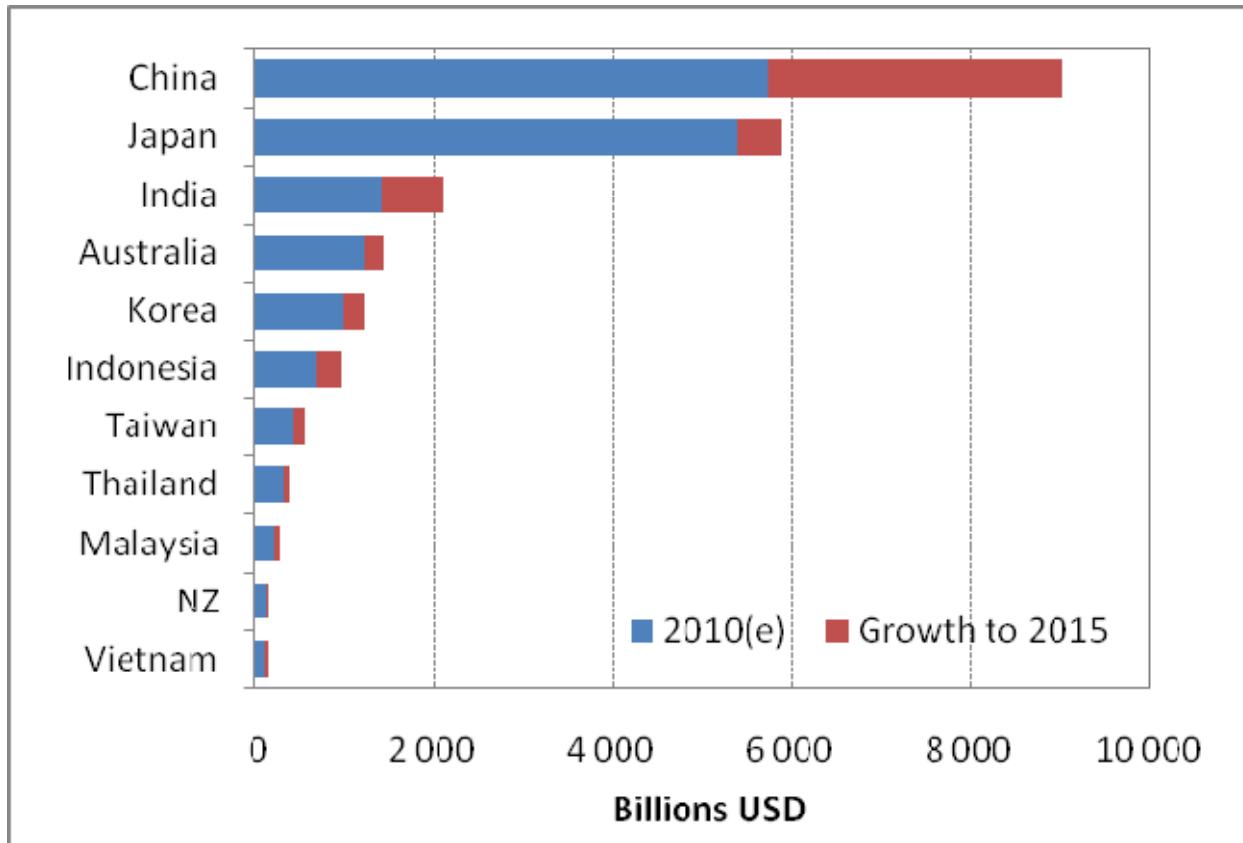
- Log export has increased sharply driven by massive demand from China.
- New Zealand's export value of other wood products had declined in 2009 but quickly recovered during 2010.
- The global financial crisis had a sizable negative impact during 2008/09, though the dominant markets for New Zealand products (Asia and Australia) were not significantly impacted by this.
- New Zealand producers have lost competitiveness in certain areas. Some of those are impacted by;
  - Exchange rate changes
  - Freight costs
  - Input costs such as energy and resin
- Domestic market demand also declined due to weak construction activities.
- Level of the above is different for each company but each and every company has been affected.

## Business Cycle & Outlook - GDP

China, India, Vietnam & Indonesia: continued strong growth >6%/a

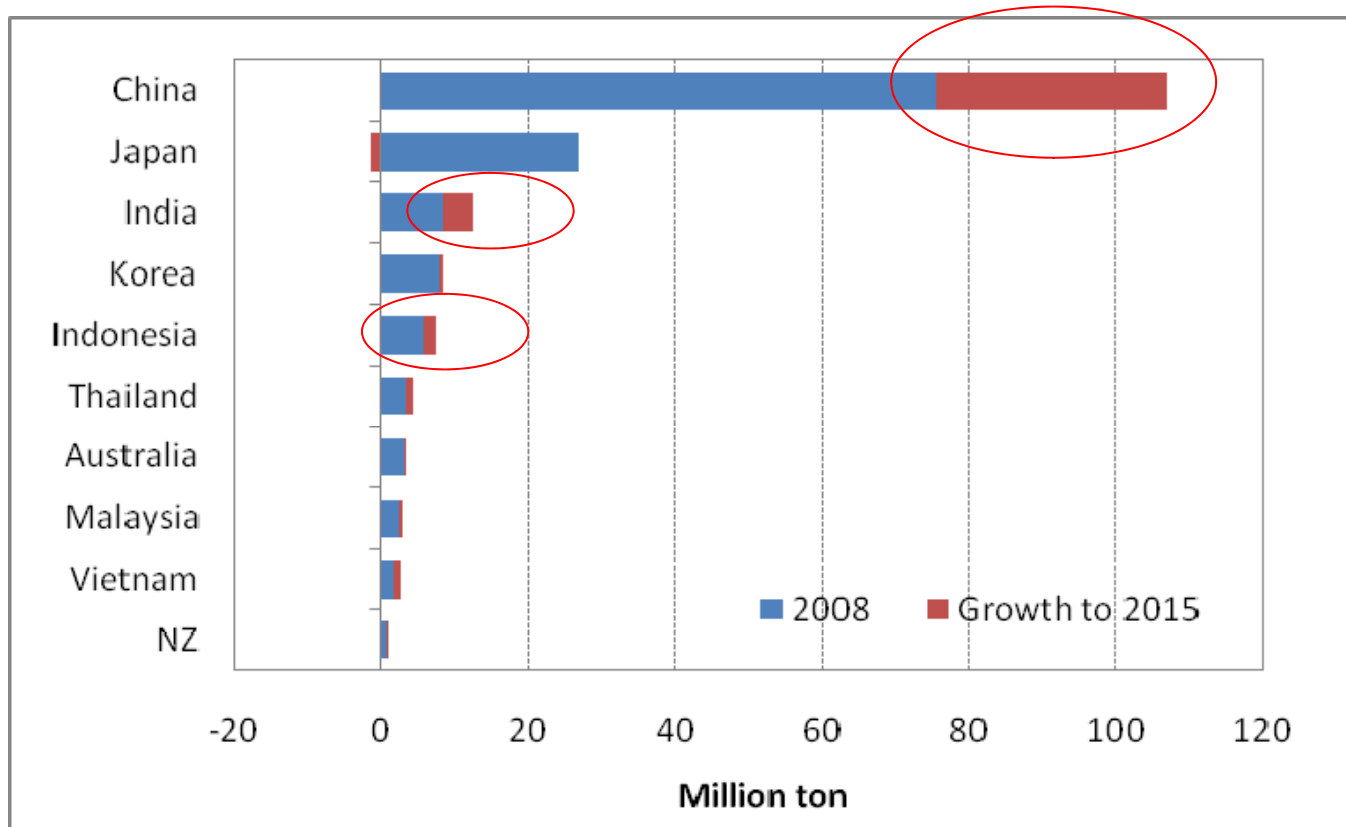
Malaysia, Taiwan, Thailand & Korea: stabilising 4-5%/a

Australia, New Zealand and Japan: moderate 1-3%/a



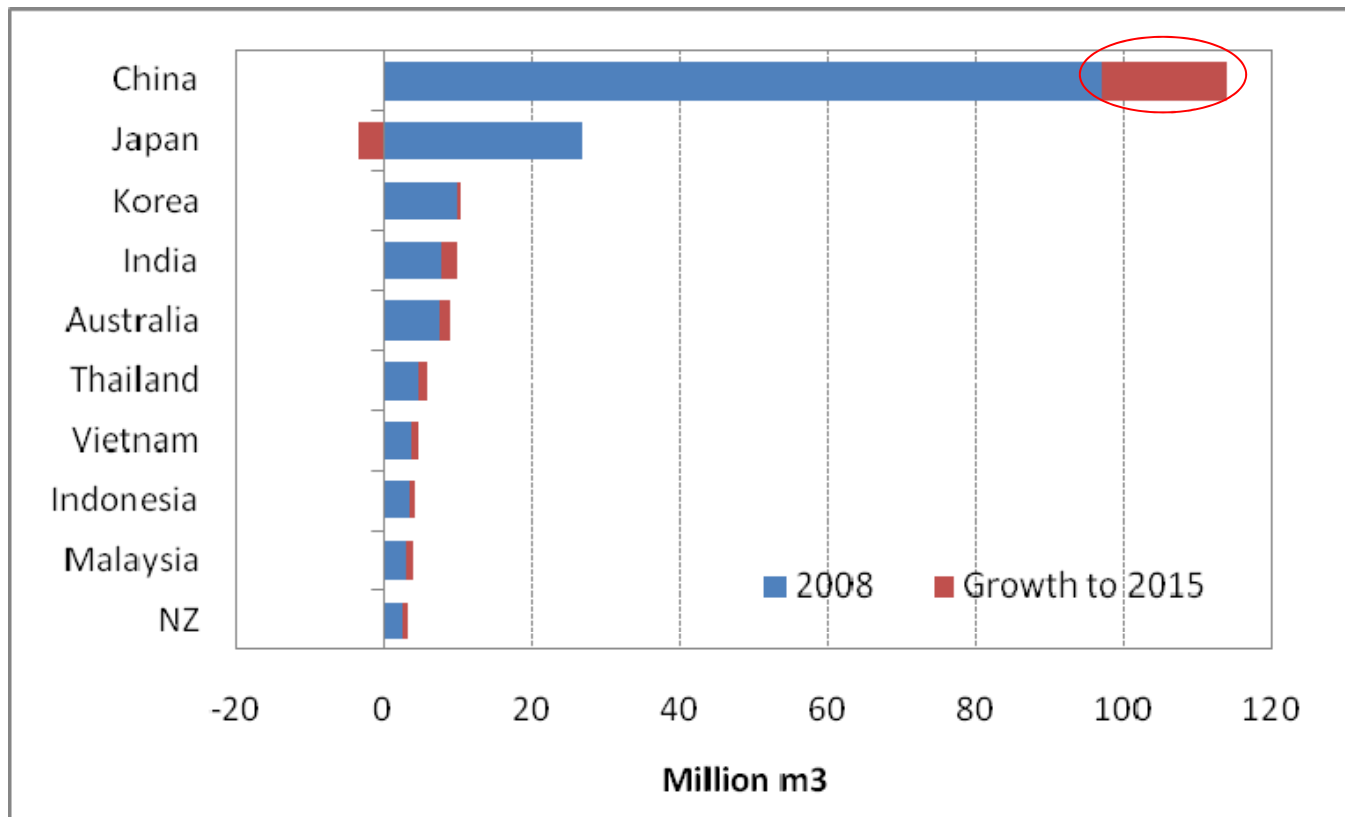
## Paper & Paperboard Products Demand Growth

China will remain the dominant growth area, followed by India and Indonesia. Chinese industry is building up rapidly. However opportunities remain for the offshore supply of pulp and paper products.



## Lumber & Wood Panel Products Demand Growth

China's growth via imports: global search, in-country processing, compete for logs with local industries. India also looking offshore to source fibre and products.



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# THE NEW ZEALAND RESOURCE

# New Zealand Radiata Pine - Products

Two silvicultural regimes dominate in New Zealand. The Pruned regime, whereby the lower part of the tree is pruned, resulting in the production of clear logs (no knots), and a traditional und-pruned regime.

Grade and volume %

Pruned Log  
Average volume 2.4 m<sup>3</sup>

Industrial 15%

Sawlogs (with knots) 61%

Pruned Logs (no knots) 24%



Grade and volume %

Un Pruned Log  
Average volume 1.9 m<sup>3</sup>

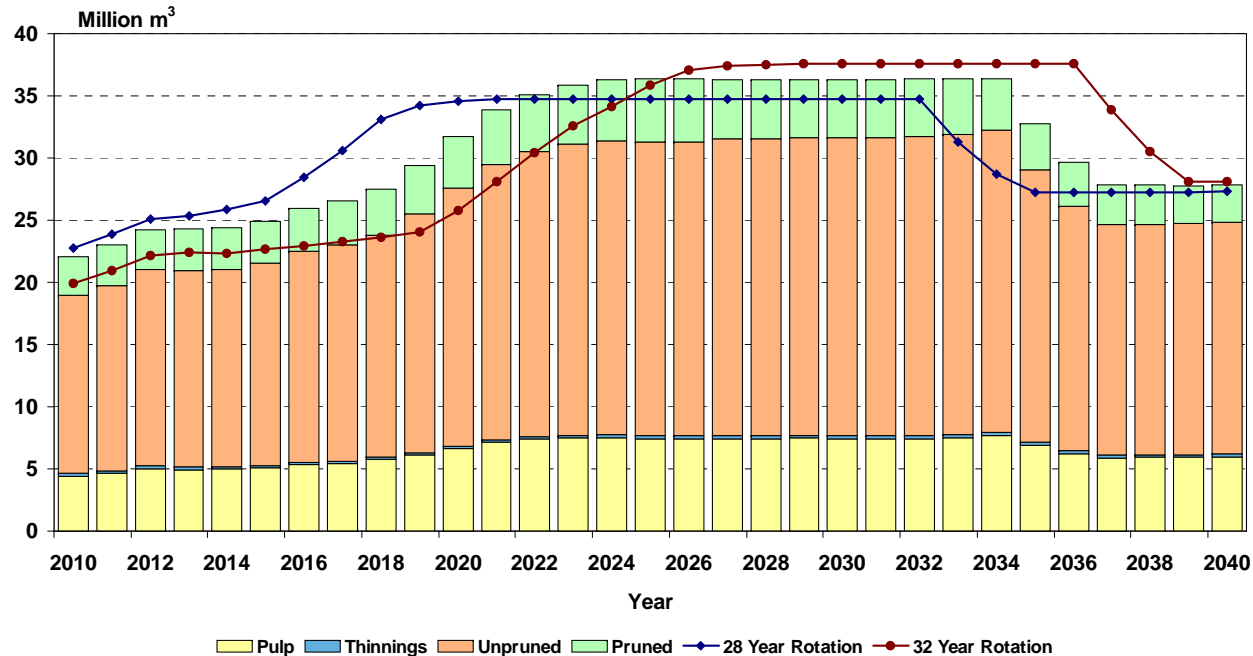
Industrial 15%

Sawlogs (with knots) 85%



# Resource Availability – Wood Flow Projection by Log Type

New Zealand’s potential wood supply is projected to increase over the next decade.



The potential wood supply from New Zealand’s planted forests is projected by the New Zealand Ministry of Agriculture and Forestry (MAF) to increase by 44% over the next decade, from about 22 million m<sup>3</sup> in 2010 to 32 million m<sup>3</sup> in 2020. The potential wood supply is expected to reach about 36 million m<sup>3</sup>/annum in 2024, before declining to a range of about 33 million m<sup>3</sup> – 28 million m<sup>3</sup> between 2035 and 2040.

Data Source: Latest MAF *Pinus radiata* wood availability forecasts by log grade for the period 2010 to 2040.

Data Notes: Base wood flow data assumes a split non-declining yield with a target rotation age of 30 years. Wood flow data is also presented against a variable target rotation age of 28 years and 32 years. Wood flows presented do not consider the NZ Emissions Trading Scheme and its impact on expected levels of deforestation or afforestation.



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## Resource Availability – Wood Flow Projection by Log Type (Cont'd)

**Increasing wood flow projections present opportunities, but actual harvests will depend on supply-demand balance.**

- New Zealand's wood processing industry offers substantial potential to expand as the country's harvestable wood flow coming on stream increases during the next two decades.
- However, these are *estimates* of potential supply, and there is no assurance that the market will actually adhere to the projections. Actual harvest depends on the market conditions and supply-demand balance, which is in turn influenced by a number of factors, as follows:
  - Sawn timber demand in the domestic and export sawn timber markets (Australia, USA, Asia).
  - Domestic wood processing capacity expansion.
  - Harvesting logistical constraints, namely availability of logging crews, transport capacity etc.
  - Harvest intentions by both large and small forest growers.
  - Log demand in New Zealand's key log markets of China, South Korea and Japan, as well as the impact of ocean freight costs and USD/NZD exchange rate movements on New Zealand log export earnings.
  - Declining Russian log supply into North Asia log markets due to Russia's rising log supply costs and increases in the log export tax, which is creating a supply gap in the market.

## Bay of Plenty - Overview

The Central North Island is the dominant wood supply and processing region in New Zealand.

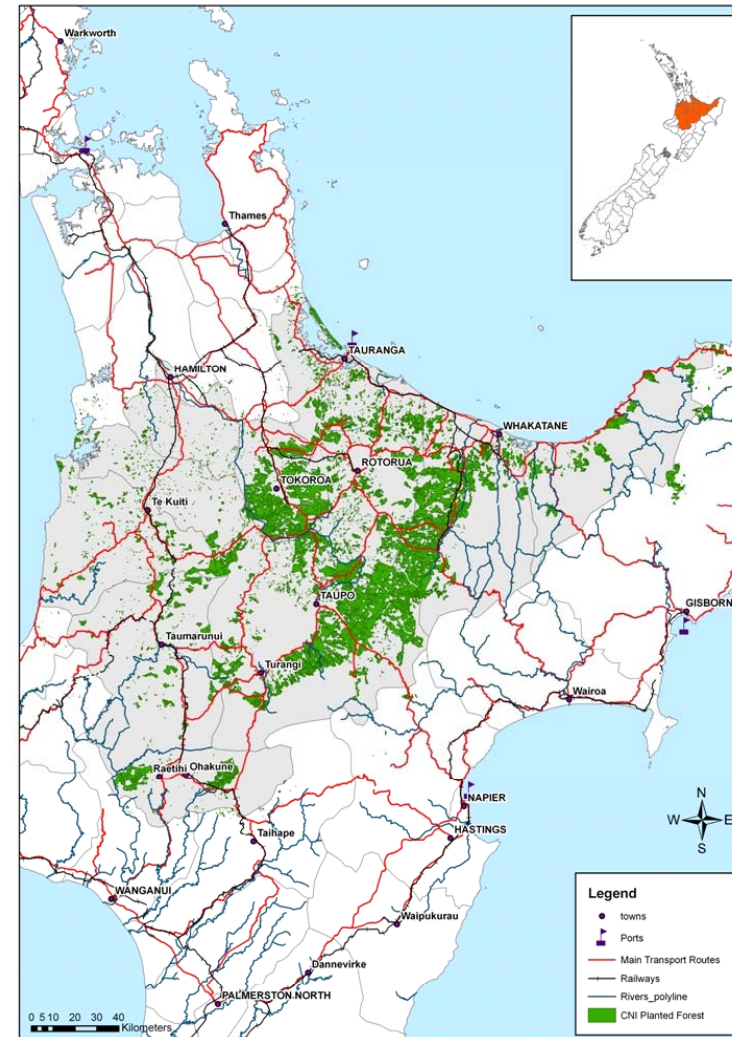
### Resource:

The CNI has about 527,000 ha of planted forest, and is the largest plantation region in New Zealand, accounting for 30% of the country's total plantation forests. The CNI is also the largest wood processing region in the country. Radiata pine is the dominant species in the CNI forest estate, accounting for 91% of total planted area.

### Infrastructure:

The CNI has well-developed forestry infrastructure, and a well-established transport, harvesting, forestry and servicing contractor base.

**Rail Transport:** The rail network in the CNI can be described as well-established, well-maintained, and capable of handling increased wood volumes. The rail network connects Tokoroa to Hamilton and Auckland to the north, and Mount Maunganui to the north-east. The main trunk line runs through the western part of the region, north to Hamilton and south to Palmerston North and Wellington. In the east, Murupara has a rail link to Mount Maunganui. Rail has historically played an important role in transporting forest produce from the region's major forests to processing plants and to the Port of Tauranga. It has also played an important role in transporting forest products from the major processing plants to the Port of Tauranga.



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## CNI – Overview (Cont'd)

**Road Transport:** The CNI region has an extensive network of national and provincial highways and urban and rural roads. The network links the wood processing centres at Tokoroa, Whakatane, Kawerau and Murupara with the Port of Tauranga and key domestic market centres.

- As the forest estate matures and the woodlot areas established in the 1990s come on stream, the arterial and secondary roads in the western part of the region will see increased logging traffic. These roads are not as well designed and constructed for high volumes of heavy traffic as those in the east of the region. Consequently, issues are likely to arise due to additional heavy traffic interacting with existing traffic. Similarly, as forest operations extend to the far east of the Bay of Plenty, heavy traffic will increase on this stretch of coastal road.
- Planning is underway to build a motorway which will shorten the trip for trucks transporting logs from forests located south of Rotorua to the Port of Tauranga, which will significantly reduce travel time and transportation costs to the port.
- Although considerable expenditure has gone into improving state highways in the past 10 years, further upgrades may be necessary if/when log production in the region increases.

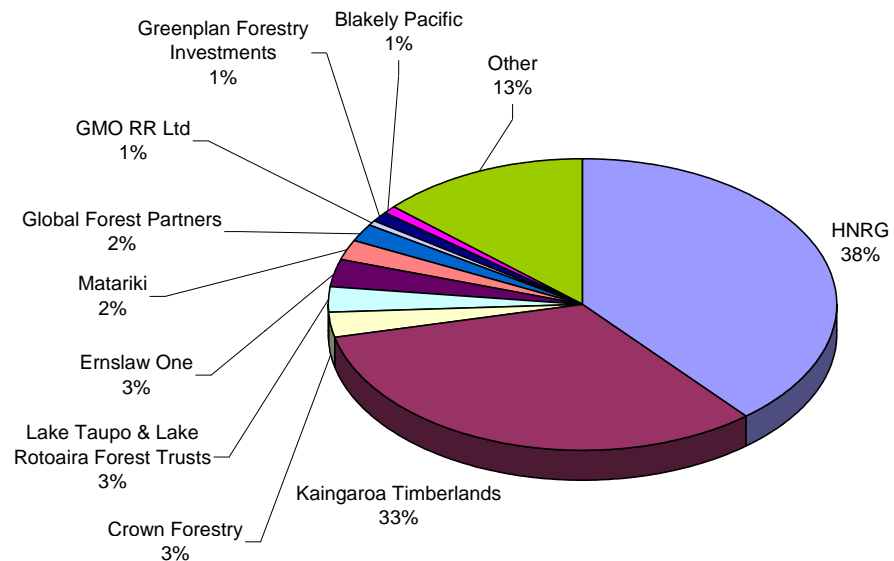
**Port Facility:** The Port of Tauranga at Mount Maunganui serves the whole CNI region. The port is New Zealand's largest log exporting port, handling around 41% of the country's log exports in 2009. The Port of Tauranga can handle ships up to 290 metres in length and has a low-water draught of 11.7 metres. Although recent experience with the expansion of the export log trade has created less confidence about the capacity to handle a surge in production, key features of the Port of Tauranga and recent developments have encouraged the expectation that it can handle increasing harvest levels in the future:

- Having purchased some additional land during the past few years, today the Port of Tauranga has a total land holding of 185 hectares. The available land at the Port means that it has capacity to expand its infrastructure, and is well positioned for further growth. Available land can also be used for expanding log storage areas as log harvests increase.
- The Port of Tauranga has applied for resource consents to widen and deepen Tauranga Harbour's shipping channels to accommodate larger vessels. New Zealand log exporters are looking into using larger vessels to handle their products in the near future, and the Port will therefore be in a position to handle these large vessels.

The Port of Tauranga considers itself well positioned to expand throughput to accommodate an increase in log harvests in the region.

## CNI – Main Forest Owners

Forest ownership in the region is diverse.



Central North Island Plantation Area (2009) : 527,000 ha

- Forest asset ownership in the CNI region reflects the trends that have been occurring in the industry in NZ over the past decade, with public forest ownership changing from government department to state-owned corporate, to listed corporate and now to foreign private equity investment through Timber Management Organisations (TIMOs).
- Today, CNI forest resource ownership is characterised by a significant presence of international organisations. The main forest asset owners in the CNI region are HNRG (38%) and Kaingaroa Timberlands/Harvard (33%). Other forest owners are Crown Forestry (3%), Lake Taupo and Lake Rotoaira Forest Trusts (3%), Ernslaw One (3%), Matariki (2%), GFP (2%) and several others.

## CNI – Main Processors

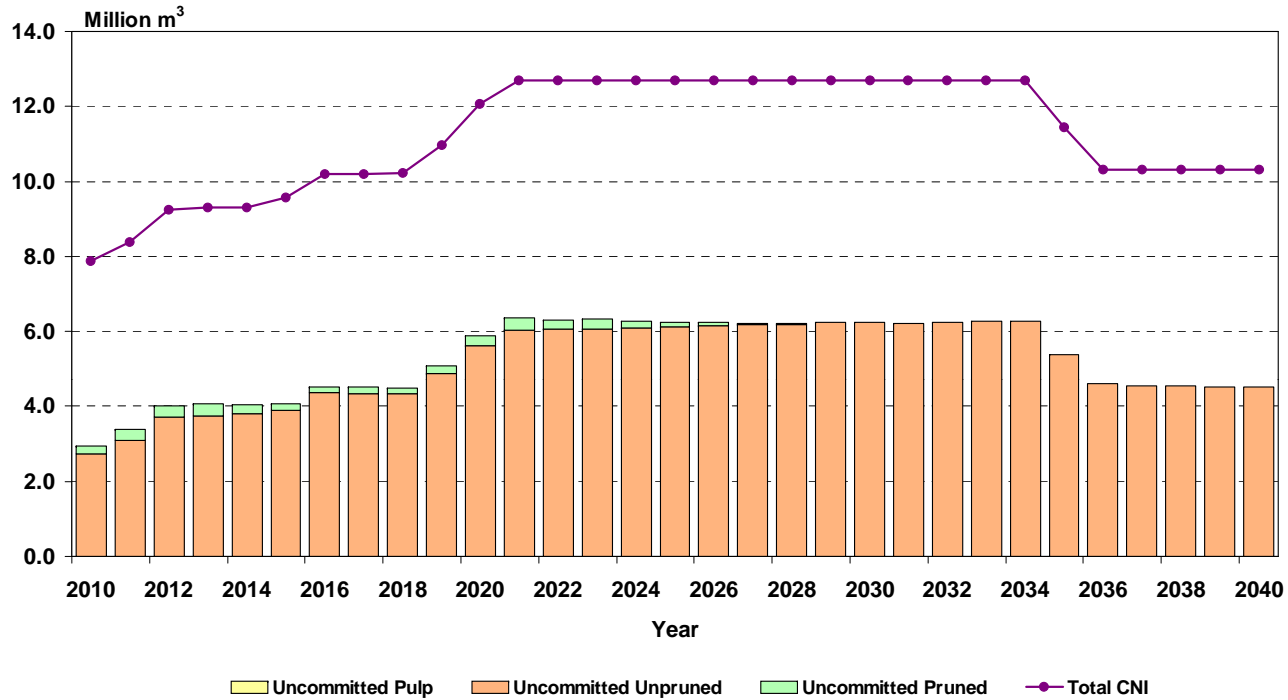
The CNI is the largest wood processing region in NZ.

Demand name	Products	Location	Year	Pruned & Partial Pruned	Structural	Industrial	Roundwood	Pulpwood	Total
				P40S, P40, P30, PS MA, MB, PP	70% : S30, S1, S2 30% : S20, S3	70% : A, L 30% : K, KI			
CHH Kinleith	Kraft Pulp	Tokoroa	2010					1,840,000	1,840,000
			2015					1,840,000	1,840,000
CHH Tasman	Kraft Pulp	Kawerau	2010					860,000	860,000
			2015					860,000	860,000
CHH Whakatane	Pulp & Paper	Whakatane	2010					170,000	170,000
			2015					170,000	170,000
Norske Skog	Mechanical Pulp	Kawerau	2010					300,000	300,000
			2015					300,000	300,000
WPI/Ernslaw One *	CTM Pulp	Ohakune	2010					165,000	165,000
			2015					165,000	165,000
WPI/Ernslaw One	Sawntimber	Okahune	2010	37,800	99,900	132,300			270,000
			2015	37,800	99,900	132,300			270,000
CHH Ecopine	Plywood	Tokoroa	2010	70,000	100,000				170,000
			2015	70,000	100,000				170,000
CHH	Sawntimber	Kawerau	2010		640,000				640,000
			2015		640,000				640,000
Tenon	Sawntimber	Taupo	2010	420,000					420,000
			2015	420,000					420,000
Red Stag Waipa Sawmill	Sawntimber	Rotorua	2010		500,000				500,000
			2015		500,000				500,000
Tachikawa Forest Products	Sawntimber	Rotorua	2010		460,000				460,000
			2015		460,000				460,000
Pukepine Sawmills (1998) Ltd	Sawntimber	Te Puke	2010	25,000	54,000	35,000			114,000
			2015	25,000	54,000	35,000			114,000
Sequal Lumber	Sawntimber	Kawerau	2010			180,000			180,000
			2015			300,000			300,000
Claymark Sawmills	Sawntimber	Katikati	2010	180,000					180,000
			2015	180,000					180,000
Mamaku Sawmills Co Ltd	Sawntimber	Mamaku	2010	56,000	14,000				70,000
			2015	56,000	14,000				70,000
McAlpine Rotorua Ltd	Sawntimber	Ngapuna	2010	14,000	56,000				70,000
			2015	14,000	56,000				70,000
Pacific Pine Industries Ltd	Sawntimber	Putaruru	2010	60,000					60,000
			2015	60,000					60,000
RH Tregoweth Ltd	Sawntimber	Te Kuiti	2010	60,000					60,000
			2015	60,000					60,000
Waitete Sawmill Ltd	Sawntimber	Te Kuiti	2010	60,000					60,000
			2015	60,000					60,000
Kiwi Lumber Ltd	Sawntimber	Putaruru	2010	45,000					45,000
			2015	45,000					45,000
Other			2010			30,000			30,000
			2015			30,000			30,000
<b>Total</b>			2010	<b>1,027,800</b>	<b>1,923,900</b>	<b>377,300</b>	-	<b>3,335,000</b>	<b>6,664,000</b>
			2015	<b>1,027,800</b>	<b>1,923,900</b>	<b>497,300</b>	-	<b>3,335,000</b>	<b>6,784,000</b>

The wood processing industry consists of pulpmills, sawmills and wood based panel mills. Installed domestic demand across all log types in the CNI is estimated to be around 7 million m<sup>3</sup>. Pulpmills in the region utilize all pulplogs in the region, and also source some pulplogs from surrounding wood supply regions. \*WPI/Ernslaw One pulpmill has a total pulplog intake of 343,000 m<sup>3</sup>/a, of which 165,000 m<sup>3</sup>/a is sourced from the CNI region and 178,000 m<sup>3</sup>/a from the SNI.

# CNI – Uncommitted Log Availability

No uncommitted pulplogs and limited uncommitted pruned logs



- No uncommitted pulplogs and limited uncommitted pruned logs are currently available in the CNI region.
- Uncommitted structural logs are expected to increase to 6 million m³ by 2021.
- Pulpmills in the region utilize all pulplogs in the region, and also source some pulplogs from surrounding wood supply regions.

Data Source: Latest MAF *Pinus radiata* wood availability forecasts by log grade for the period 2010 to 2040 adjusted with Pöyry- determined level of domestic demand.

Data Notes: Base wood flow data assumes a split non-declining yield with a target rotation age of 30 years.

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# PRODUCTS AND PRODUCTION



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## Radiata Pine can be manufactured in a wide range of products

### Selection of Present Products

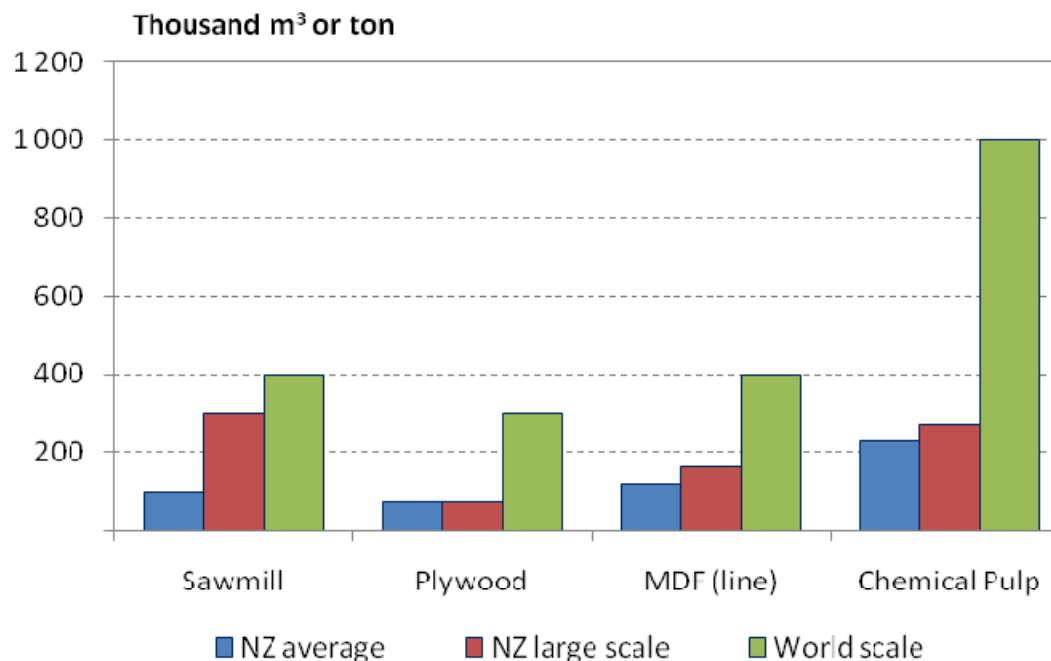
- Sawn timber – structural, appearance and industrial
- Wood chips and pulp
- ‘Squared’ logs and treated poles
- Newsprint and other paper products
- Fibreboard, Triboard, plywood, veneers and Particleboard
- Wooden furniture and components
- Engineered products such as laminated beams and LVL
- Finger-jointed mouldings, profiles and edge glued panels.
- Fuel, in solid, chip and pallet form

### Potential Products

- Bio composites
- Feedstock for bio chemicals
- Feedstock for bio fuel
- Complex engineered construction components
- Cross laminated panels
- Composite building materials

## New Zealand Competitiveness (commodities)

- In most previous studies, New Zealand has shown to have the ability to be competitive, if and when world scale operations are assumed.
- To date, most of the New Zealand forest industry operates facilities which are small compared to competitors in Australia, Latin America, North America and Europe. This has led to an industry struggling to remain competitive within the international market.
- However, the expansion of capacity at several sawmills in recent times has been notable, replacing much of the closure of smaller structural mills in CNI. These expanded mills are now ready to achieve competitive scale close to global standard.

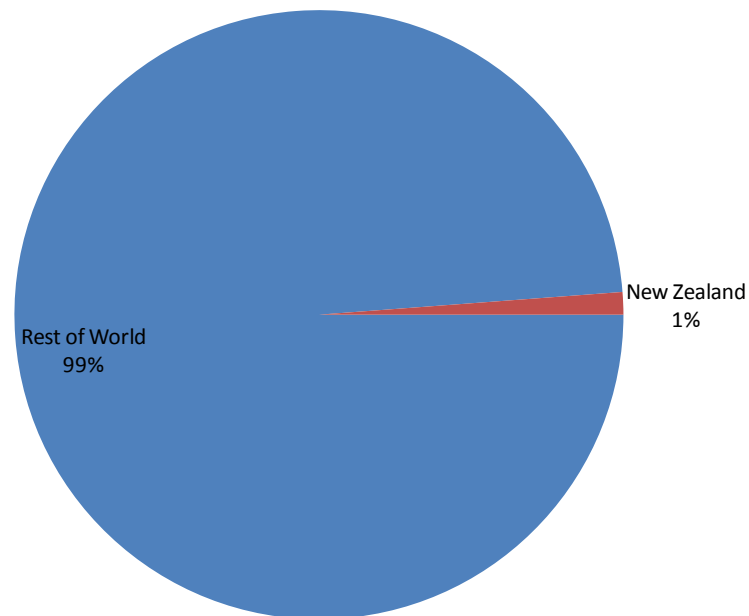


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## New Zealand Competitiveness (specialities)

- New Zealand forest industry is small by international standards
- The New Zealand radiata supply, and more importantly, the New Zealand clear-wood supply is very small in the international markets.
- As such, internationally many of the New Zealand products could be regarded as niche, or speciality products. This particularly refers to various clear wood products.

Share of Global Softwood Lumber Production

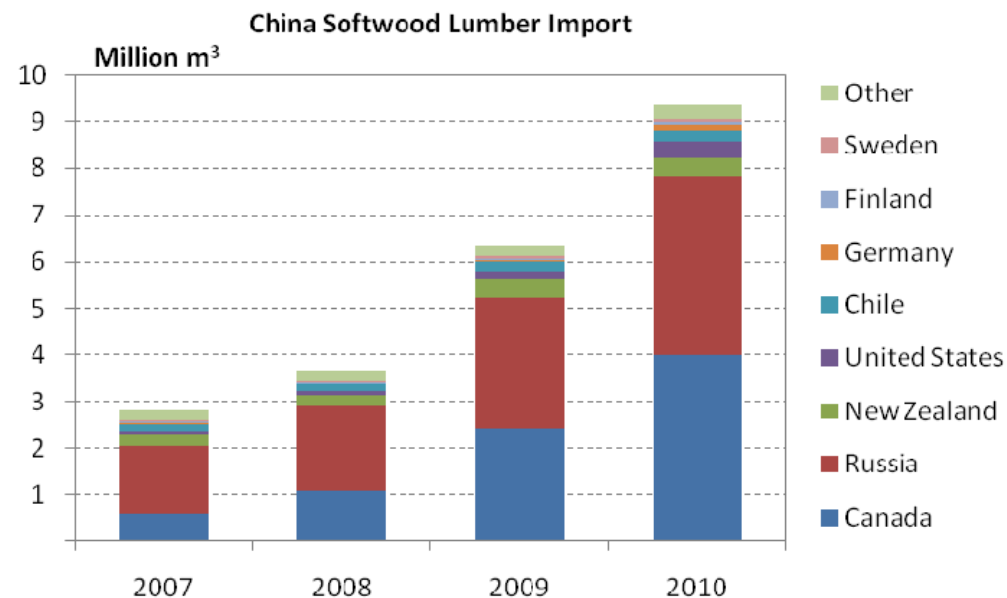


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# THE WAY FORWARD

## Market Opportunities - China

Chinese lumber imports have exploded in recent years. Although New Zealand has expanded its exports to China, its market share has dropped from 9% (2007) to 4% (2010). This is in sharp contrast to the growth in log exports. For New Zealand to expand its lumber exports to China, lumber production has to become more competitive in commodity grades. Within the Chinese lumber market, various niche and high end markets are also present where radiata pine products could find a unique market position; e.g. furniture components and various interior fittings/fixtures. To access these niche markets, New Zealand exporters will need to target and work closely with selected remanufacturers and value-adding operations.



## Market Opportunities - USA

Imports of lumber into the US have traditionally been dominated by Canada. New Zealand has been a small supplier into this market focusing clear wood products and competing with e.g. Chile. It is unlikely that New Zealand will be able to compete in the commodity grades of lumber in the US.

New Zealand should however be able to expand sales in a range of higher value lumber products, taking advantage of the availability of long length clear material. The US market is anticipated to regain its importance for New Zealand suppliers as the market conditions eventually bounce back.



## Market Opportunities – Australia

New Zealand has traditionally been a natural and significant supplier of structural softwood lumber to Australia. In recent years, European suppliers have also been very aggressive in the Australian market, while traditional suppliers such as New Zealand and Canada have only managed to maintain supplies at historical levels.

Given Australia's capped domestic supply and its sound demand platform, the country will require increasing imports of structural lumber. For New Zealand to effectively fulfil this demand, it will need to meet all grading requirements and remain cost competitive at the same time.





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## Market Opportunities – Other Markets

- New Zealand's radiata pine products have a number of unique properties which will allow them to be successfully used in a wide range of end uses globally.
- Opportunities are present in practically all product categories.
- Key however to successfully entering, and sustainably supplying any of those markets is having and maintaining a cost competitive position.
- This cost competitive position needs to be “built” in. It will require attention to the cost structure throughout the distribution chain - from forest to market.
- In manufacturing - scale and efficiency are essential.
- In distribution – strategic supply chain management and minimising the number of intermediaries is key.
- In product development – innovation remains crucial.

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## Options for New Zealand

- New Zealand's options are governed by the availability of wood, and the physical attributes of the radiata pine resource. Although availability will increase over the coming years, the “extra” availability is of minor importance in the global markets.
- In the commodity group of products, New Zealand has to regain and improve cost competitiveness. Continued effort in developing world-scale operations is key to this.
- New Zealand faces a number of hurdles, such as distance from market and cost structures which will need to be negated through targeted market approach and offering unique value proposition.
- Key to future success in exporting New Zealand wood products will be through developing more market-specific product offerings, where the characteristics of New Zealand radiata pine logs can be fully capitalised.
- Each market has different market characteristics and seeks tailored product solutions. New Zealand should not only remain cost competitive in the target markets, but also endeavour to create customised value proposition.
- Looking forward, key success factors include; value maximisation of appearance grade output (China, USA), cost competitiveness of industrial and utility grades (China/Asia, India, the Middle East), and staying absolute top of the Australian housing/structural market.



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