

Wood Brief – International Supply Chain Benchmarking Sectoral Assessment

Report for the Department of Infrastructure, Transport, Regional Development and Communications

20 August 2021



L.E.K. Consulting Australia Pty Ltd

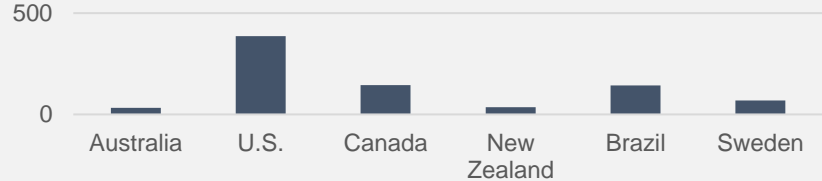
Level 26, 88 Phillip Street, Sydney, 2000, Australia

Phone: +61 2 9323 0715

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....1
WOOD SUPPLY CHAINS IN AUSTRALIA.....1
INTERNATIONAL SUPPLY CHAIN COMPARISON.....2
BENCHMARKING OUTLOOK.....3
REFERENCES.....3

Executive Summary

<p>Est. value of freighted goods*</p> <p>c.\$54b</p>	<p>Jobs in Aus</p> <p>c.11k</p>	<p>Key issues</p> <ol style="list-style-type: none"> 1. Current road restrictions reduce supply chain efficiency 2. A high number of small sawmills reduce economies of scale within the supply chain 														
<p>Total transported volume*</p> <p>c.34Mt</p>	<p>Roundwood exports</p> <p>c.6.3m cubic meters</p> <p>Roundwood imports</p> <p>c.4.7m cubic meters</p>															
<p>Supply chain cost</p> <p>c.3-4%</p> <p>of total commodity value</p>	<p>Roundwood production (2019)</p> <p>m³</p>  <table border="1"> <caption>Roundwood production (2019) in m³</caption> <thead> <tr> <th>Country</th> <th>Production (m³)</th> </tr> </thead> <tbody> <tr> <td>Australia</td> <td>~50</td> </tr> <tr> <td>U.S.</td> <td>~400</td> </tr> <tr> <td>Canada</td> <td>~150</td> </tr> <tr> <td>New Zealand</td> <td>~20</td> </tr> <tr> <td>Brazil</td> <td>~100</td> </tr> <tr> <td>Sweden</td> <td>~50</td> </tr> </tbody> </table>		Country	Production (m³)	Australia	~50	U.S.	~400	Canada	~150	New Zealand	~20	Brazil	~100	Sweden	~50
Country	Production (m³)															
Australia	~50															
U.S.	~400															
Canada	~150															
New Zealand	~20															
Brazil	~100															
Sweden	~50															

*Volume and value include hardwood and softwood, as well as wood products such as wood chips, timber, wood panel, paper, tissues, pulp, plywood, firewood and logs.

Australia has a significant area of productive forest and is the second largest producer of woodchips globally. Its forests are located mainly in Queensland, the Northern Territory, Western Australia and New South Wales.

Australia's wood and wood product supply chain is dominated by road and is complex, with a number of different processing steps depending on the type of wood and its end purpose. Furthermore, Australia's sawmills are considered small by international standards, increasing the number of unique contact points of the supply chain and reducing the potential economies of scale available. A key issue within the wood supply chain is the high number of restrictions on road transport, making it difficult to efficiently move wood and wood products.

Wood Supply Chains in Australia

Australia has over 134 million hectares of forest.ⁱ Of this area, c.98% is native forest, with 88 million hectares of this privately owned or leased, 22 million hectares in formal nature conservation reserves and 10 million hectares in multiple-use public native forests. While c.28 million hectares of native forest is considered "productive", much of this area is not particularly suitable for wood production and is predominantly used for purposes outside of commercial logging.ⁱⁱ Most logs are therefore harvested from c.2 million hectares of commercial plantations

Australia's plantation area is concentrated in Victoria (c.22%), New South Wales (c.20%), Western Australia (c.19%), Tasmania (c.16%) and Queensland (c.12%). Many saw mills are concentrated near to plantations, reducing the required travel distance once logs are harvested. Portland (Victoria), Albany (Western Australia) and Bell Bay (Tasmania), Gladstone (Queensland) and Esperance Port (Western Australia) are the large

Australian ports for wood product exports.ⁱⁱⁱ Wood and wood products are transported in bulk and containers by road and rail, with road being the dominant method of transport.

Australia’s timber industry has different flows, depending on the type of wood. Hardwood is typically used to make woodchips that are turned into pulp and then paper. In the hardwood value chain, after harvesting, some chipping occurs on site, and wood is transported to a pulp mill and then a paper mill. Logs that are not chipped on site are hauled and chipped at port prior to export.

Softwood is typically used for building and construction. In the softwood value chain, timber is typically transported to sawmills for processing before transport to lumber yards close to the key areas of demand or to port for export.

Australia’s wood supply chain has the following key issues:

1. The timber industry is highly dependent on road freight and therefore exposed to issues around road transport regulations and road condition. For example, B-trains can move timber in a more cost-efficient way than with ordinary road vehicles. However, only certain roads are approved for B-Train use due to the high physical strain they exert on the road. As a result, routes are prescribed and it is difficult to gain permission to use new routes.
2. Australia’s saw mills are small compared to those overseas, preventing significant optimisation within the supply chain.^{iv} There is some evidence that sawmills are consolidating, but there is scope for further consolidation of saw mills to improve the economies of scale within the supply chain.^v

International Supply Chain Comparison

Globally, 2.4bn hectares of forest (making up c.60% of the world’s forests) are used for the production of wood products. 60% of log production comes from Brazil, Canada, China, the EU, India, Indonesia, Russia and the U.S.^{vi} However, the countries that lead the world in the production of wood chips are, in order of size: Vietnam, Australia, Chile, the U.S. and Belarus.

Wood and wood products, by country (2019)	Australia	U.S.	Canada	New Zealand	Brazil	Sweden
Roundwood production (cubic meters)	c.33m	c.387m	c.144m	c.36m	c.143m	c.69m
Roundwood quantity exported (cubic meters)	c.6.3m	c.8m	c.8m	c.23m	c.1m	c.1m
Wood chip and particle exports (cubic meters)	c.14m	c.5m	<c.1m	<c.1m	c.2m	<c.1m
Mode of transport	Mainly road	Mainly road	Road and rail	Mainly road	Mainly road	Road and rail

Benchmarking Outlook

Intl benchmarking considerations	Importance	Supply chain
Size and growth		The wood supply chain employs c.11k Australians, and moves 34Mt of wood (and related products) per year
Freight importance		While the cost of freight for wood products is c.3-4%, the high volume moved indicates that freight is of substantial importance for this industry
Export importance		Increase supply chain efficiency could make Australian exports of wood chips and other products more competitive
Geographic scope		Key forests are located in Queensland, Northern Territory, New South Wales and Western Australia, with wood products used nationwide
Known efficiency / public interest		Participants in the wood product industry suggest that the known efficiency of the wood product supply chain could be improved

The U.S., Canada and NZ all offer potential supply comparators for Australia. In the U.S., timber is mostly moved by road, similar to Australia, but can also be moved by rail. Most of its forests are concentrated on the eastern and western ports (and lakeside) and are close to major ports, suggesting that the country's geographical forest layout mirrors Australia's.

Canada uses significant rail infrastructure to move natural resources. It is a large area, relative to its population, acting as a good comparator for Australia. Furthermore, Canada has c.9% of the world's forests and, while this is larger than Australia, the timber it produces is broadly comparable in terms of scale.

New Zealand relies mainly on road transport for wood / wood products and is the largest exporter of roundwood in the world. Despite strong local demand for timber in New Zealand to support housing and construction, most of the logs produced are still exported (mostly to China). A large proportion of New Zealand's log exports and lumber ships through Tauranga Port, which is New Zealand's largest port (North Island). New Zealand offers a good comparator due to its similar reliance on road and relatively similar roundwood production yield.

References

ⁱ Department of Agriculture, Water and Environment, Australia's Forests, 19 June 2020

ⁱⁱ Department of Agriculture, Water and Environment, Australia's State of the Forests Report 2018

ⁱⁱⁱ Ports Australia, Trade Statistics, 2020

^{iv} Department of Agriculture, Water and Environment, Upscaling the Australian softwood sawmill industry, July 2, 2020

^v Department of Agriculture, Water and Environment, Upscaling the Australian softwood sawmill industry - Feasibility and implications for future plantation investment, February 2019

^{vi} United Nations Forum on Forests, Sustainable consumption and production of forest products, April 2018