SNAPSHOT OF

Australia’s Forest Industry

NOVEMBER 2019

Linden Whittle

This Insights report contains a brief overview of key aspects of Australia’s forest and sawmilling industries. Key components include forest area, log harvest, production, consumption, trade and industry structure. Future market conditions are considered alongside major policy interventions.
Contribution to the Australian economy

Australia harvests logs from native forests, hardwood plantations and softwood plantations. Logs harvested from different forest types have different physical characteristics and are used for different purposes.

In 2017–18 32.9 million $m^3$ of logs were harvested in Australia, generating $4.9 billion in sales and service income across the forestry and logging industries. In the same year, downstream wood product manufacturing industries generated $23.9 billion in sales and according to the latest housing and population census these industries supported over 52,000 jobs in 2016.

Taking into account the cost of intermediate goods and services purchased, the forest and wood product manufacturing industries are estimated to have added $9.2 billion (0.5%) to the national economy in 2017–18. This is the total value of profits earned and wages paid to workers in the industry.

While the total volume of logs harvested in Australia is small compared to countries such as the United States, Canada and Russia, Australia was the second largest exporter of woodchips (in value terms) and the 8th largest exporter of whole logs (in volume terms) in 2017–18. The vast majority of Australia’s log and woodchip exports currently go to China but Australia also exports woodchips to Japan and paper products to New Zealand. Over the last decade Australia has imported processed wood products from many countries including China, the United States, Indonesia and Malaysia.

Forest policy history

The harvesting of native forests is closely regulated in Australia through State-Commonwealth Regional Forest Agreements (RFAs) and state and territory legislation. RFAs are long-term agreements that seek to balance the economic, social and environmental benefits of forests (Figure 1). They ensure certainty of access to log supply for industry, sustainable forest management and reservation of areas for forest conservation. Each state or territory also has its own legislation designed to ensure the conservation and sustainable management of native forests.

Plantations are regulated through state and territory legislation but significant plantation reforms commenced at the national level with the 1992 National Forest Policy Statement. In 1997, the Commonwealth and state governments and industry launched Plantations for Australia: the 2020 Vision which had the primary objective of expanding the plantation estate. One of the main strategies to achieving this was to attract private investment through favourable tax arrangements under the Managed Investments Scheme Act 1998.

TABLE 1 Key stats for 2017–18

<table>
<thead>
<tr>
<th>Area available and suitable for commercial harvest</th>
<th>Log harvest</th>
<th>Sales &amp; service income</th>
<th>Trade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native forests</td>
<td>28.1 million ha</td>
<td>Native forests</td>
<td>4 million $m^3</td>
</tr>
<tr>
<td>Plantations</td>
<td>1.9 million ha</td>
<td>Plantations</td>
<td>29 million $m^3</td>
</tr>
<tr>
<td>Contribution to the Australian economy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contribution</td>
<td>$9.2 billion</td>
<td>% of GDP</td>
<td>0.5%</td>
</tr>
<tr>
<td>% of GDP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key trading partners

China, New Zealand, United States, Indonesia and Japan

**Forests are abundant**

Native and plantation forests are spread throughout Australia, particularly along the south and east coasts, Western Australia and Tasmania (Figure 2).

In 2015–16 there were around 132 million hectares of native forest. However, only 28 million hectares were available and suitable for commercial harvesting and only a fraction of this was actually harvested. For example, only 1.5% of the 5 million hectares of net harvestable area of public native forests was actually harvested in 2015.

The area of commercial timber plantations in Australia is much smaller than that of native forests—around 1.9 million hectares in 2017–18 (Figure 3). However, plantations are managed more intensively than native forests and produce a much higher volume of wood per hectare per year.

Much of the historical growth in the plantation estate was driven by state and territory government investment in softwood species on cleared native forests. The establishment of these plantations was assisted by low interest loans from the Australian Government to State and Territory governments in the 1960s and 1970s.

Since 1995–96 almost all growth in the plantation estate was the result of rapid expansion of the hardwood plantation estate, which was associated with the removal of export controls on hardwood woodchips (*Export Control (Hardwood Wood Chips) Regulations 1996*) and the *Managed Investments Act 1998*. This allowed investors to claim immediate tax deductions for investment costs associated with establishing new timber plantations. In 2008–09 several companies using managed investment schemes for funding collapsed and establishment rates for hardwood plantations declined substantially.

While the vast majority of the plantation estate is replanted after harvest, a small area is converted to other land uses each year. In recent years, these areas have exceeded new establishments, resulting in a decline in the total plantation estate.

---

**FIGURE 1 Benefits of forests**

### Commercial benefits

**Wood products**
- Sawnwood for construction
- Paper and paperboard
- Wood-based panels
- Fuel

**Non-wood products**
- Wildflowers
- Seeds
- Honey
- Tea-tree and sandalwood oil

### Employment and income

- Employment and income opportunities for regional communities

### Social benefits

**Social and cultural**
- Recreation and tourism activities
- Cultural and spiritual values
- Aesthetic values

### Eco-system services

**Climate and atmosphere**
- Sequester and store carbon, mitigating climate change
- Trap particulate matter and absorb noxious pollution
- Control temperature, humidity, moisture availability and light in immediate vicinity

**Soils**
- Protection from impacts of wind and rain
- Increase water absorption and retention
- Produce nutrients for plants
- Maintain organic matter
- Moderate soil temperatures
- Reduce groundwater recharge that leads to salinity

**Water**
- Slow surface runoff, preventing sediment and sediment-bound contaminants from entering surface water
- Trap windblown dust before settling into rivers
FIGURE 2 Native and plantation forest areas

Note: ‘Other forest’ may not be visible at this scale.
Source: Montreal Process Implementation Group for Australia and National Forest Inventory Steering Committee (2018)

FIGURE 3 Plantation establishment and area, 1975–76 to 2017–18

Log harvest

In 2017–18 a total of 32.9 million m$^3$ of logs were harvested in Australia, comprising 17.4 million m$^3$ of softwood plantation logs, 11.3 million m$^3$ of hardwood plantation logs and 4.3 million m$^3$ of native forest logs (Figure 4). The total value of logs harvested is currently the highest on record, reaching almost $2.7 billion in 2017–18.

FIGURE 4 Volume of logs harvested by forest type and total value, 2007–08 to 2017–18

[Diagram showing volume and value of logs harvested by forest type from 2007-08 to 2017-18]

Source: ABARES (2019).

Plantations have become an increasingly important source of logs in Australia in the last decade with the share of logs harvested from plantations increasing from 68% in 2007–08 to 88% in 2017–18. This has largely been the result of hardwood plantings established in the late 2000s reaching maturity as well as a decline in the area of native forest available for harvesting.

Logs harvested from native forests, hardwood plantations and softwood plantations are not always directly substitutable for one another. This is because of differences in species, age and silvicultural practices which affect the properties of the wood and what this wood can be used for. For example, many consumers have a preference for hardwood over softwood sawnwood when it comes to appearance applications and the different characteristics of hardwood and softwood pulp make them suitable for different paper and paperboard products. Also, the uniformity of plantation pullogs reduces processing costs and makes them better suited for use in paper and wood-based panel manufacturing.

Log harvest by use

Almost all softwood plantations in Australia are managed for sawlog production with rotation lengths of 25 to 30 years. Most softwood sawlogs harvested in Australia are processed domestically to produce sawnwood for residential construction and furniture manufacturing. However, some sawlogs are exported for processing overseas.

Softwood plantations also produce lower grade pullogs as a by-product of thinning and final harvest operations. Softwood pullogs are typically converted into woodchips to be used in paper and wood-based panel manufacturing domestically or overseas (Figure 5).

FIGURE 5 Volume of logs harvested by forest type and end use, 2017–18

[Diagram showing volume of logs harvested by forest type and end use from 2017-18]

Source: ABARES (2019); ABARES GVP survey (unpublished).

In contrast, almost all of the hardwood plantation estate in Australia is managed for pullogic production, with forest stands being harvested once every 10 to 15 years. In 2017–18 almost all (95%) hardwood plantation logs were exported whole or as woodchips (Figure 5). There is limited demand for hardwood woodchips in Australia as many of the panel and paper products produced in Australia utilise softwood fibre instead.

Native forests are similar to softwood plantations in that both sawlogs and pullogs are harvested but native forest stands are harvested much less frequently—once every 60 to 100 years. Also, given limited demand for hardwood pulplogs in Australia, a much larger proportion of pullogs harvested from native forests are exported whole or as woodchips, rather than used domestically (Figure 5).
Production and consumption of final wood products

Australia produces a range of wood products from logs processed domestically. In 2017–18 this included 3.9 million m$^3$ of softwood sawnwood, 0.7 million m$^3$ of hardwood sawnwood, and 3.2 million tonnes of paper and paperboard products (Figure 6). Data on the total volume of wood-based panel production is not available for 2017–18 but was estimated to be around 1.7 million m$^3$ for selected products in 2016–17.

![FIGURE 6 Production and trade of major wood products, 2017–18](image)

Note: Panels includes plywood, particleboard and medium density fibreboard for 2016–17. Paper and paperboard, and woodchips are measured in kilotonnes while all other products are measured in cubic metres.

Most of Australia’s production of sawnwood and wood-based panels is sold in domestic markets but over a third of paper and paperboard production is exported. A significant share of domestic consumption of sawnwood, wood-based panels, and in particular paper and paperboard, is met through imports.

Within the same broad product group, the specific types of products Australia produces and imports differ. For example, Australia tends to produce and export packaging and newsprint paper products while importing household and sanitary paper, and printing and writing products.

Trade in wood products is growing

Access to international markets is crucial to the sustainability and profitability of the Australian forest and wood processing industries. Export opportunities allow domestic growers and processors to take advantage of increasing overseas demand and manage fluctuations in log availability and domestic demand—while imports provide the industry and consumers access to cheaper goods that are not produced in sufficient quantity in Australia.

The total value of trade in forest and wood products has increased substantially over the last 5 years (Figure 7). Since 2012–13, exports have risen by 76% to $3.6 billion while imports have risen by 36% to $5.6 billion.

![FIGURE 7 Value of trade in all forest and wood products, 2012–13 to 2017–18](image)

Note: Miscellaneous products include builders’ carpentry and mouldings. Other includes roundwood, sawnwood and wood-based panels.

Growth in exports has been primarily driven by growth in log and woodchip exports to China while the increase in imports is largely associated with miscellaneous products such as builders’ carpentry and mouldings.
The wood processing industry is consolidating

Industry structure

Australia’s wood processing industry is diverse, with mills of all types and sizes producing a wide range of wood products.

In 2016–17 there were around 257 sawmills, 23 wood-based panel mills and a small number of pulp and paper facilities. Of the 257 sawmills in Australia, 182 processed hardwood sawlogs, 58 processed plantation softwood sawlogs, and 17 processed cypress pine (a softwood) from native forests.

While there are more hardwood sawmills than softwood sawmills in Australia, hardwood sawmills tend to be much smaller in size. In 2016–17 only 4% of hardwood sawmills (compared to 52% of softwood sawmills) had an annual log input capacity greater than 45,000 m$^3$ a year, while all of the largest sawmills in Australia (capable of processing more than 400,000 m$^3$ a year) were softwood sawmills (Figure 8).

The reason hardwood sawmills tend to be smaller than softwood sawmills is because the native forest resource (the primary source of hardwood sawlogs) is lower yielding and more dispersed. Concentrating hardwood sawmill processing capacity in a single area would require transporting logs over economically unviable distances.

Mill consolidation in the softwood sector

Consolidation is an important process in many industries—ensuring that resources are used in the most efficient way possible and ultimately improving the competitiveness of the industry.

Over the last 17 years there has been considerable consolidation in the softwood sawmill industry with more logs being processed by fewer, larger sawmills. For example, from 1999–00 to 2016–17, the number of softwood sawmills decreased by around 73% (from 279 to 75) while the volume of softwood sawlogs processed domestically increased by 27%. Most of the closures over this period were smaller mills, with annual processing capacities of less than 3,000 cubic metres (Figure 9).

In contrast, the hardwood sawmill sector has not undergone the same degree of consolidation with the number of sawmills and volume of logs processed both falling.

![Figure 8](image-url)

**Figure 8** Number of sawmills by annual log input capacity (m$^3$), 2016–17

---

Source: Downham et al. (2019)
Demand for logs will continue to grow

Demand for logs (and in particular softwood sawlogs) is expected to grow over the coming decades as Australia’s demand for new housing increases.

In a recent report, ABARES estimated that the total volume of softwood sawlogs available to the domestic market could fall short of demand in 2050 by 3.4 million m$^3$ per year if log exports remain at 2015–16 levels. This has raised concerns that the industry could be missing out on opportunities for growth that may be taken up by other countries or industries.

To progress these issues the Australian Government released the plan *Growing a better Australia: A billion trees for jobs and growth* in 2018, outlining an approach to assist the forest industries to meet future challenges. The plan focusses on the creation of regional forest hubs, reducing barriers to expansion and extracting greater value from forest products. The Government has also committed to provide up to $500 million in concessional loans for plantation development.

References


Food and Agriculture Organisation of the United Nations 2019, *FAOSTAT Database*, accessed 10 October 2019


Whittle, L, Lock, P & Hug, B 2019, *Economic potential for new plantation establishment in Australia: outlook to 2050*, ABARES research report, Canberra, February. CC BY 4.0. https://doi.org/10.25814/5c6e1da578f9a

FIGURE 9 Number of sawmills and volume of sawlogs processed, 1999–2000 to 2016–17

Note: Excludes post and pole mills; softwood includes cypress pine; sawlog harvest excludes estimates of sawlog exports.

Source: Downham et al. (2019)
The Australian Bureau of Agricultural and Resource Economics and Sciences is the research arm of the Australian Government Department of Agriculture. Our mission is to provide professionally independent data, research, analysis and advice that informs public and private decisions affecting Australian agriculture, fisheries and forestry. ABARES performs applied economic and scientific research, including through developing innovative modelling techniques, undertaking comprehensive surveys and developing internationally recognised data management processes.

© Commonwealth of Australia 2019

Ownership of intellectual property rights

Unless otherwise noted, copyright (and any other intellectual property rights, if any) in this publication is owned by the Commonwealth of Australia (referred to as the Commonwealth).

Creative Commons licence

All material in this publication is licensed under a Creative Commons Attribution 4.0 International Licence, save for content supplied by third parties, logos and the Commonwealth Coat of Arms.

Creative Commons Attribution 4.0 International Licence is a standard form licence agreement that allows you to copy, distribute, transmit and adapt this publication provided you attribute the work. A summary of the licence terms is available from creativecommons.org/licenses/by/4.0. The full licence terms are available from creativecommons.org/licenses/by/4.0/legalcode.

Citation and cataloguing data

This publication (and any material sourced from it) should be attributed as Whittle, L 2019, Australia's Forest Industry, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra. CC BY 4.0, https://doi.org/10.25814/5dc8f4a1976b9.

ISBN: 978-1-74323-450-1
ISSN: 2209-9123

Internet

This publication available at agriculture.gov.au/abares/publications/insights.

Contact

Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)
Postal address GPO Box 858 Canberra ACT 2601
Switchboard +61 2 6272 3993
Email info.abares@agriculture.gov.au
Web agriculture.gov.au/abares

Inquiries about the licence and any use of this document should be sent to copyright@agriculture.gov.au.

The Australian Government acting through the Department of Agriculture, represented by the Australian Bureau of Agricultural and Resource Economics and Sciences, has exercised due care and skill in preparing and compiling the information and data in this publication. Notwithstanding, the Department of Agriculture, ABARES, its employees and advisers disclaim all liability, including liability for negligence, for any loss, damage, injury, expense or cost incurred by any person as a result of accessing, using or relying on any of the information or data in this publication to the maximum extent permitted by law.