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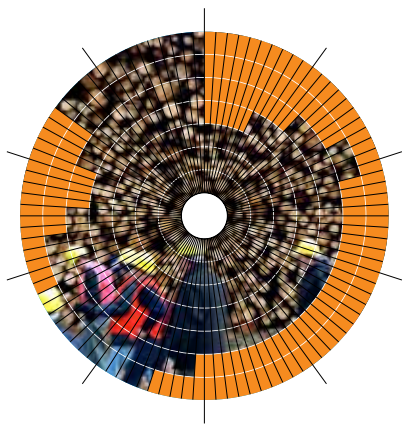
# Australian forest and wood products statistics

## March and June quarters 2012

Research by the Australian Bureau of Agricultural and Resource Economics and Sciences

NOVEMBER 2012





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### Contact

Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)

Postal address GPO Box 1563 Canberra ACT 2601

Switchboard +61 2 6272 2010

Facsimile +61 2 6272 2001

Email [info.abares@daff.gov.au](mailto:info.abares@daff.gov.au)

Web [daff.gov.au/abares](http://daff.gov.au/abares)

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### Notice

The detailed statistical tables can only be viewed in Excel workbooks that are linked in appendix A and are available on the ABARES website.

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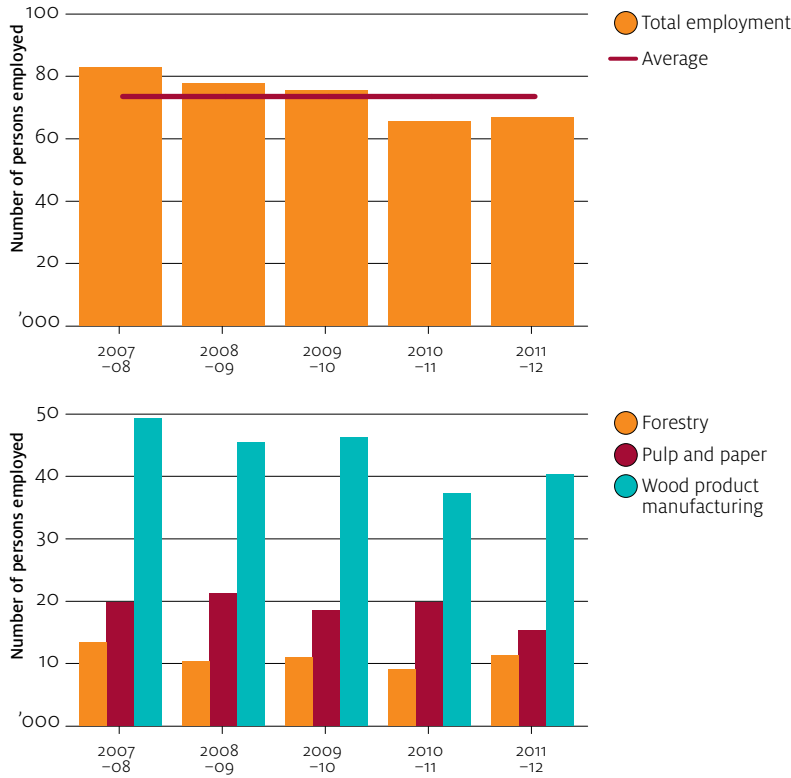
# Overview

This issue of *Australian forest and wood products statistics* (AFWPS) contains updated wood-based panels production data; financial information such as price indexes, wages, sales and service income and industry value added data; and trade data for the March and June 2012 quarters. This issue also includes 2011–12 data on forest employment, as well as industry socio-economic indicators based on the Australian Bureau of Statistics (ABS) 2006 Census data. ABARES has also updated historical data in response to revisions from information sources (such as the ABS) and improved the methodologies used to calculate some data series.

## **Modest recovery in forest sector employment in 2011–12**

Total forestry sector employment over the past five years has been on a declining trend. Although total forestry employment of 67 000 in 2011–12 is marginally higher than the 66 000 in 2010–11, total employment remains well below the 2007–08 level of 83 000 (Figure 1). The increase in employment in 2011–12 was a result of higher employment in the forestry and logging and the wood product manufacturing industries. However, this was partly offset by a decline in employment in the pulp and paper and forestry support services industries. Employment in the forestry and logging industry increased from 6000 in 2010–11 to 8000 in 2011–12, slightly recovering from a decline in 2010–11. Total employment in wood product manufacturing, which consists of 'log sawmilling and timber dressing' and 'other wood product manufacturing', increased from 37 000 in 2010–11 to 40 000 in 2011–12. 'Other wood product manufacturing' employment increased from 25 000 to 30 000, but was offset by a decline in employment in 'log sawmilling and timber dressing' from 13 000 to 11 000 over the period. Employment in the pulp, paper and converted paper product manufacturing industry declined from 20 000 in 2010–11 to 15 000 in 2011–12. Similarly, employment in the forestry support services sector fell from 4000 in 2010–11 to 3000 in 2011–12.

**FIGURE 1** Employment split by major categories, 2007–08 to 2011–12



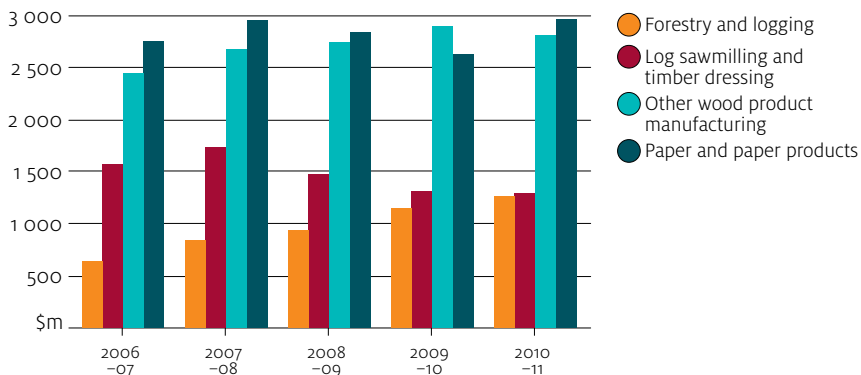
**Note:** The average employment over the past five years is shown on the first graph as a dashed vertical line.  
 Data source: Table 16a of this issue of *Australian forest and wood products statistics*

## Economic contribution of forest sector remains resilient

Despite the loss of forest sector jobs in recent years, the financial contribution of some parts of the forest sector to the national economy has been relatively strong. The value of turnover (sales and service income) from forestry and logging exceeded \$3 billion in 2010–11, and turnover in forest product manufacturing was over \$24 billion, up from \$22.3 billion in 2009–10. Forest product manufacturing contributed 6.2 per cent to manufacturing turnover in 2010–11, slightly up from a year earlier. New South Wales, Victoria and Queensland had the largest shares of national forest product manufacturing turnover in 2010–11.

Industry value added (IVA) is a measure of the wages, rent and profits attributed to each industry, and is used to compile national gross domestic product (GDP) data. In 2010–11, forestry and logging IVA was estimated at almost \$1.3 billion, a 10.5 per cent increase on the previous year. The wood and paper products manufacturing industries contributed 7 per cent to Australia’s manufacturing IVA. Between 2006–07 and 2010–11 forestry and logging IVA has almost doubled, while the wood and paper products manufacturing industries has increased by only 4.4 per cent (Figure 2). Overall, the forest sector (including the forestry and logging and wood and paper products manufacturing industries) contributed around 0.6 per cent of Australia’s GDP in 2010–11; this contribution has declined slightly in the past five years.

**FIGURE 2** Industry value added, forest product industries, 2006–07 to 2010–11



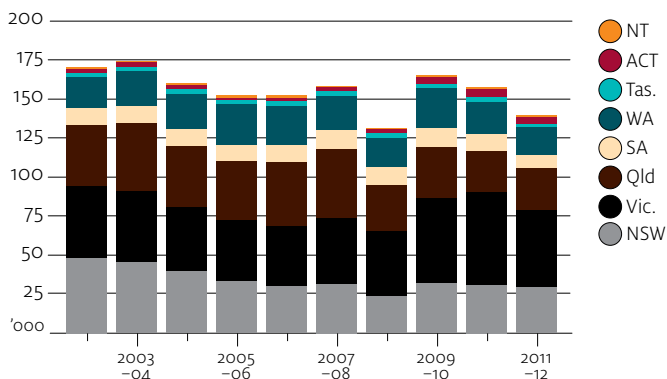
Data source: Table 14 of this issue of *Australian forest and wood products statistics*

### Easing in dwelling commencements

Dwelling commencements is an important indicator of wood product consumption because sawnwood and wood-based panels are commonly used in residential building construction. Dwellings consist of two building types: detached residential buildings and other residential buildings; the latter includes non-detached buildings such as high rise apartments, attached townhouses and villa units. In addition, household renovations and building additions, which may be a substitute for new household construction, can contribute to the consumption of decorative wood products, such as timber floorings and mouldings.

Dwelling commencements fell 11 per cent in 2011–12 to 140 000 units, down from 158 000 in 2010–11 (Figure 3). The largest fall in dwelling commencements was in Victoria, which fell from 59 200 in 2010–11 to 49 800 in 2011–12. However, Victoria still has the largest proportion of new dwelling commencements (36 per cent) compared with the other states and territories.

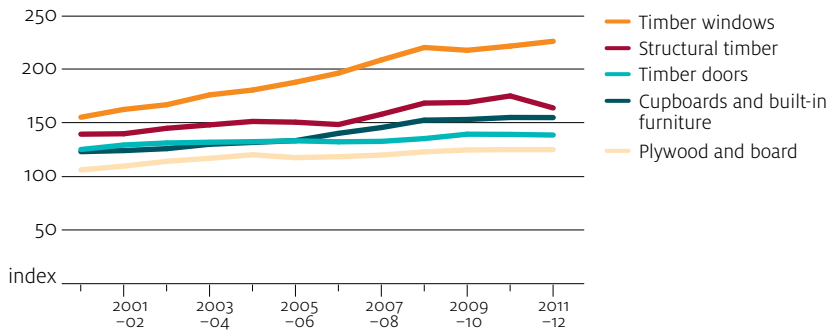
**FIGURE 3** Dwelling commencements by state and territory, 2002–03 to 2011–12



Data source: Table 21 of this issue of *Australian forest and wood products statistics*

The price of structural timber used in residential dwellings fell by 6.4 per cent in 2011–12 (Figure 4). Prices were relatively unchanged between 2010–11 and 2011–12 for non-structural wood products used in housing: timber doors, cupboards and built-in furniture.

**FIGURE 4** Selected price indexes of materials used in house building: timber, board and joinery, 2000–01 to 2011–12



**Note:** Base is 1989–90=100. Weighted average of six state capital cities.  
 Data source: Table 19 of this issue of *Australian forest and wood products statistics*

### Imports of wood products

Imports of wood products to Australia for the combined March and June quarters of 2012 were valued at around \$2.0 billion, which is around the same value as the same quarters over the previous two years (Figure 5). Historical data on the value of imports suggests seasonal trends, resulting in higher values of imports during the first half of most financial years. In addition, there have been changes to the product mix of Australia’s wood product imports between 2010–11 and 2011–12. Imports of sawnwood and paper and paperboard, in terms of value, fell by 5.3 per cent and 8.4 per cent, respectively, over 2011–12. This fall was partially offset by an 11.6 per cent increase in the value of wood-based panel imports, to \$323 million in 2011–12.



**FIGURE 5** Value of Australian forest product imports, 2006–07 to 2011–12

**Note:** 'Other' includes imports of paper manufacturers, recovered paper, pulp, woodchips and miscellaneous forest products not elsewhere classified. 'Other' excludes secondary wood products.

Data source: Table 23 of this issue of *Australian forest and wood products statistics*

The total value of wood product imports eased in 2011–12 relative to 2010–11, falling by 4.7 per cent from \$4.4 billion to \$4.2 billion. This was primarily due to a decline in the volume and value of paper and paperboard imports. Growth in the value of household and sanitary products and packaging and industrial product imports moderated the overall fall. Despite the overall decline, total paper and paperboard imports increased from China, Canada, Malaysia and the United States between 2010–11 and 2011–12.

The total volume of sawnwood imports fell in 2011–12 to 791 000 tonnes, a 6.5 per cent decline from 846 000 tonnes in 2010–11. This is mainly a result of a fall in coniferous roughsawn wood imports, which is commonly used for landscaping and housing construction in Australia. The total value of all sawnwood imports declined by 5.3 per cent in 2011–12, to \$448 million, principally due to the fall in coniferous roughsawn timber imports. Against this trend, the value of coniferous dressed sawnwood, broadleaved dressed sawnwood and broadleaved roughsawn timber imports increased in 2011–12.

Imports of wood-based panels have trended upward over the past decade and have accounted for an increasing proportion of Australia's apparent consumption of wood products in recent years. In 2011–12, Australia imported 555 000 cubic metres of wood-based panels with an estimated value of \$323 million. This is the highest recorded value and volume of wood-based panel imports since 2000–01. China, which is currently the world's largest producer and exporter of wood-based panels, accounted for 20 per cent of the total volume of Australia's wood-based panel imports in 2011–12. In 2011–12, Australia also increased imports of wood-based panels from many other trading partners, most notably the United States and New Zealand.

Imports of pulp and other paper manufactured products were lower in 2011–12 than in 2010–11. The value of imported pulp decreased from \$180 million to \$164 million but the volume increased from 233 000 tonnes in 2010–11 to 256 000 tonnes in 2011–12. Hence, the unit value of imported pulp decreased over 2011–12.

## Exports of wood products

Between 2010–11 and 2011–12, the value of Australia's wood product exports decreased from \$2.5 billion to \$2.2 billion. Exports of woodchips, Australia's largest wood product export, fell from 5.1 million bone dry tonnes (bdt) to 4.1 million bdt over the period. This corresponds with a decrease in the total value of woodchip exports between 2010–11 and 2011–12, from \$884 million to \$729 million.

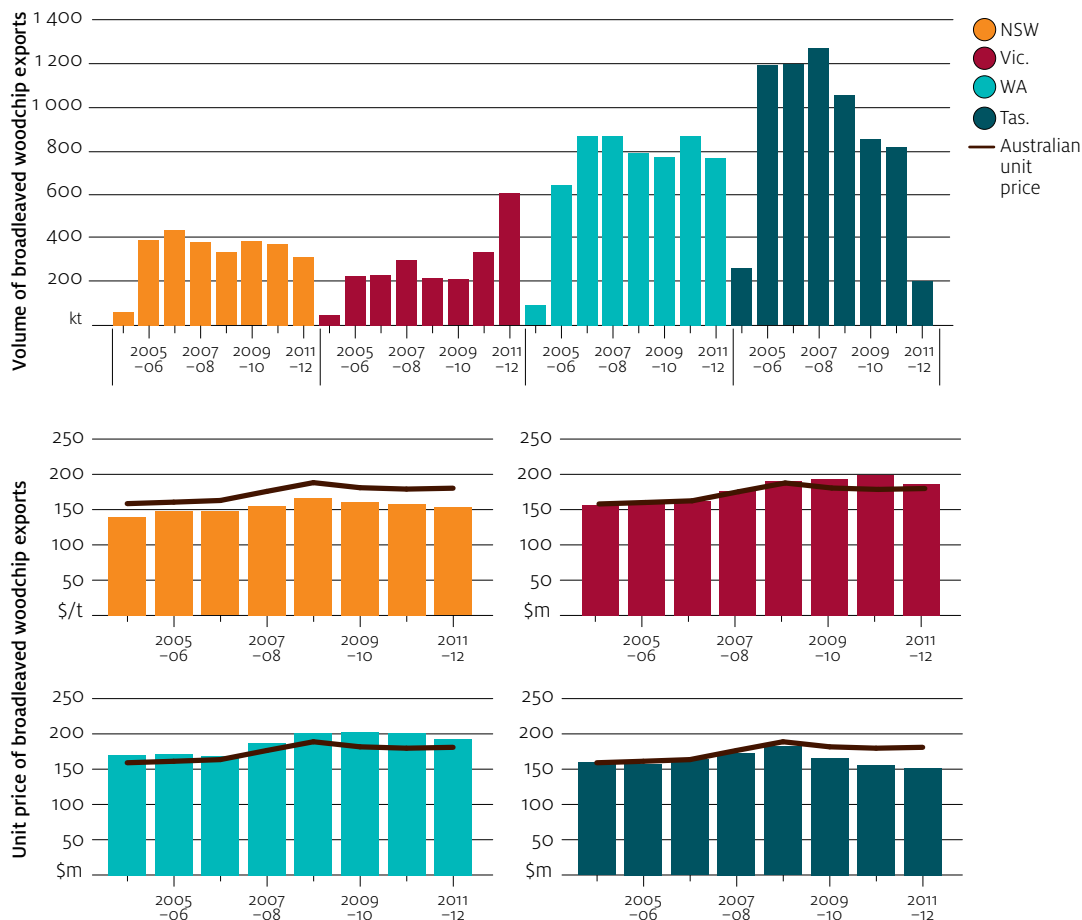
Exports of woodchips fell in 2011–12 in Tasmania, New South Wales and Western Australia. In comparison, the volume of woodchip exports from Victoria increased by 36.2 per cent, from 1.1 million tonnes in 2010–11 to 1.5 million in 2011–12, partially offsetting the declines from other states and territories.

The largest decline in the volume of broadleaved woodchip exports in 2011–12 was from Tasmania, which fell by 72 per cent from around 1.5 million tonnes to 0.4 million tonnes (Figure 6). No significant volumes of woodchips were exported from Tasmania in the June 2012 quarter; however, provisional data show woodchip exports resumed in the September 2012 quarter.

Internationally, the economic slowdown across major economies has contributed to more competitive conditions in woodchip markets. This was exacerbated by the Japanese tsunami in March 2011, which has adversely affected Australian woodchip exports to Japan, a major market for this product. However, woodchip exports continue to account for the largest share (33 per cent) of Australia's total wood product export revenue in 2011–12.

Figure 6 illustrates that the unit price for broadleaved woodchip exports declined in each state over the same period, reflecting weak international demand. However, the estimated Australian unit price for broadleaved woodchip exports increased slightly (0.7 per cent) in 2011–12, and has remained around \$180 a tonne since 2009–10 (Figure 6).

**FIGURE 6** Volume of Australian broadleaved woodchip exports by state, 2004–05 to 2011–12



**Note:** In the first graph, the columns show the volume of broadleaved woodchip exports by state. In the graphs below it, the columns show the unit price of broadleaved woodchip exports by state. The solid line shows the Australian unit price and allows for the state and national unit prices to be compared in each case. Due to negligible volumes and values of broadleaved woodchip exports, Queensland, South Australia, Northern Territory and the Australian Capital Territory are not shown in this graph.

Data source: Table 66 of this issue of *Australian forest and wood products statistics*

Over the past year the largest decline in the volume of woodchip exports occurred in Tasmania, where the unit value is significantly lower than the national average (Table 1). In contrast, states where the average unit price for broadleaved woodchip exports is above the national average (Victoria and Western Australia) increased their share of national exports in 2011–12.

**TABLE 1** Exports of broadleaved woodchips by state, 2010–11 and 2011–12

	Quantity		Value		Unit price	
	2010–11 t	2011–12 t	2010–11 \$'000	2011–12 \$'000	2010–11 \$/t	2011–12 \$/t
New South Wales	667 470	559 689	105 590	85 543	158	153
Victoria	602 858	1 079 992	119 756	200 712	199	186
Western Australia	1 547 543	1 373 009	312 066	265 569	202	193
Tasmania	1 459 323	361 052	227 708	55 140	156	153
<b>Total a</b>	<b>4 277 568</b>	<b>3 374 034</b>	<b>765 811</b>	<b>608 316</b>	<b>179</b>	<b>180</b>

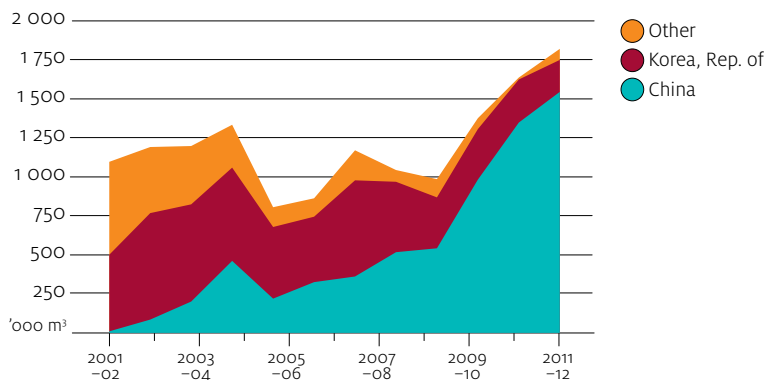
a Totals include exports from Queensland, South Australia and the Northern Territory.

Data source: Table 66 of this issue of *Australian forest and wood products statistics*

This rise in the average national price of woodchips, despite declines in the unit price across states, was caused by a change in the composition of broadleaved woodchips exported. Some states export more plantation woodchips, which carry a premium price in international markets, especially for *Eucalyptus globulus* (blue gum). Plantation woodchips generally have higher wood fibre yields and consistent wood properties, such as thickness, strength and colour. In contrast, native woodchips, especially those sourced from mature forests, are sourced from different tree species and ages, resulting in different wood properties and fibre yields (Townsend 2011). Those states exporting a larger proportion of plantation broadleaved woodchips than native woodchips will, all other things being constant, exhibit higher average unit export prices than other states.

The volume of coniferous woodchips exported averaged less than 20 per cent of total woodchip exports between 2004–05 and 2011–12. All of the coniferous woodchips harvested in Australia are from plantations. Victoria is the largest exporter of coniferous woodchips in Australia, exporting around 468 000 tonnes, or 60 per cent of total coniferous woodchip exports in 2011–12. Queensland, New South Wales, Tasmania and Western Australia also export coniferous woodchips, but in much smaller volumes.

Exports of roundwood increased in 2011–12 to 1.8 million cubic metres from 1.6 million cubic metres in 2010–11. However, over the same period the value of roundwood exports decreased from \$197.6 million to \$175.1 million. Exports of roundwood from Australia to China have increased over the past decade, particularly since 2008–09. China accounted for 85 per cent of the total volume of roundwood exports in 2011–12 (Figure 7).

**FIGURE 7** Volume of roundwood exports by destination, 2000–01 to 2011–12

**Note:** Statistics for China do not include Hong Kong or Taiwan.

Data source: Australian forest and wood products statistics

Australia's exports of paper and paperboard increased by 9 per cent in volume to 1.1 million tonnes in 2011–12 relative to 2010–11, while the nominal value of these exports decreased by 4 per cent to \$717.2 million. However, in terms of nominal value, exports of paper and paperboard have increased by 56 per cent between 2000–01 and 2011–12. These exports are now almost equivalent to the value of woodchip exports, which have historically been Australia's largest wood product export. Over the same period, the nominal value of sawnwood exports increased from \$62.5 million to \$88.2 million and the volume increased from 78 000 cubic metres to 260 000 cubic metres.

## Socio-economic indicators

In recent years there has been increasing interest in monitoring social dimensions of primary industries in Australia. While several reports have examined ways to monitor different social dimensions in the forest sector, there has been no regular reporting of data. Under a project supported by Forest and Wood Products Australia and ABARES, coverage of the AFWPS published data is being expanded in 2012–13 to include a range of social indicators to provide information about workers in forest and wood products industries (the forest sector) and the communities they support. These indicators have been developed in consultation with industry representatives.

Socio-economic information may be used in a number of ways, including providing information to inform investment decisions and in developing policy. For example, in many regions there has been significant structural change in the forest industry in recent years. Information on the socio-economic characteristics of forest industry employees and the communities they live in provides a basis for the community, government and industry to understand, monitor and manage the implications of changes.

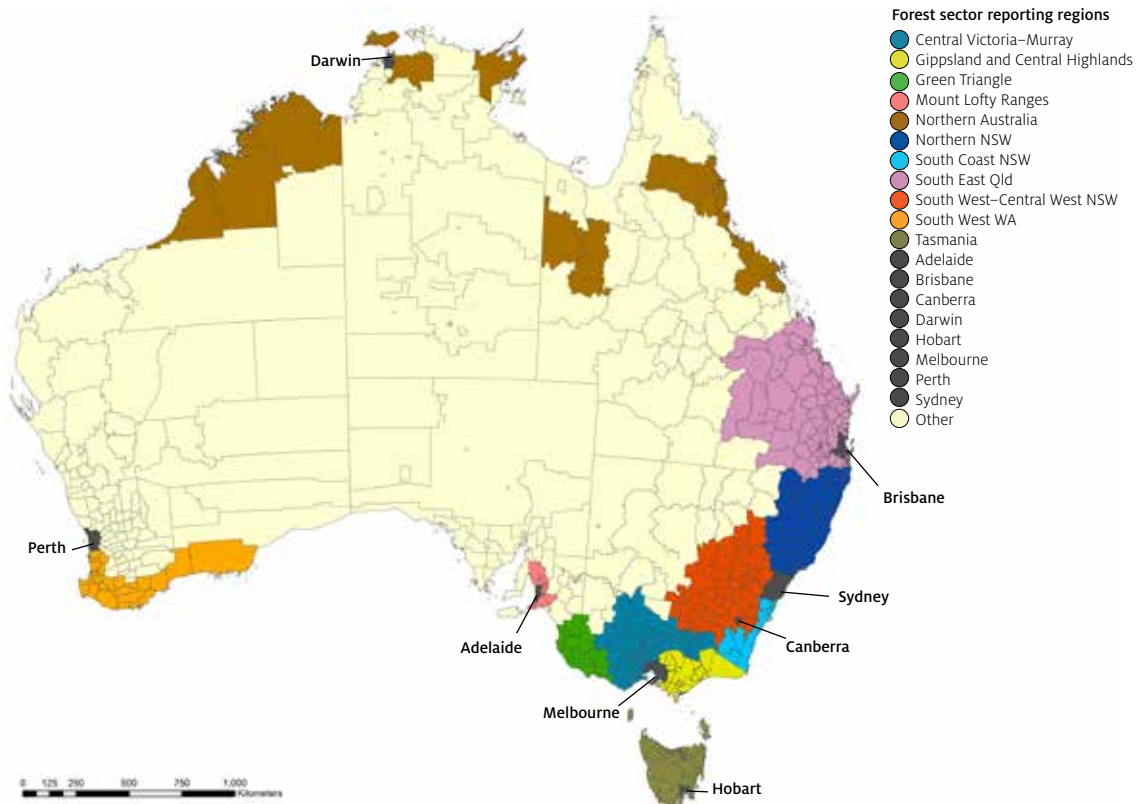
The socio-economic indicators presented here are based on Australian Bureau of Statistics (ABS) 2006 Census of Population and Housing data. The census provides data in a consistent framework that enables reporting of indicators at multiple scales across Australia and comparisons over time. Indicators are also listed for the total employed workforce, to enable comparison with the forest sector.

Socio-economic indicators are organised under four categories:

- employment (and economic diversity)
- contribution of industry to community
- workforce characteristics—workers' wellbeing
- workforce characteristics—workforce diversity.

To make the information more useful at a regional level, 11 forest sector reporting regions were identified based on clusters of forest sector employment. It is possible to provide local area detail within each region, and to compare indicators with whole-of-industry figures. Map 1 shows the regions where social indicators have been reported. Regional areas tend to have more activity in the growing, harvest and (initial primary) product processing parts of the sector, while most of the employment in (downstream secondary) wood and paper product processing and manufacturing is in cities. Because of these differences, regional areas and capital city regions are reported separately. The tables contain employment indicators at the national and state scale; and more detailed indicators at scales of forestry region, capital cities and statistical local areas (SLA).

MAP 1 Regions for AFWPS socio-economic indicator reporting



**Note:** Only the main region label is provided. Coloured areas incorporate all SLAs in region including 'remainder of region'. Capital cities are defined by ABS Statistical Division boundaries. Region boundaries defined by Australian Bureau of Statistics statistical local areas (SLAs).

Source: ABARES

The way in which communities respond to change is strongly influenced by local context and historical processes that are ongoing, and this context is not necessarily captured by indicators based on ABS data.

The socio-economic indicators included here use 2006 ABS data. In subsequent issues of AFWPS, their application and presentation will be updated, including using ABS 2011 Census results.

## Employment and local economic diversity

Jobs creation in the forest sector (combined forest and wood product industries) is one of the sector's key contributions to the community. Employment data can also indicate how dependent a community is on forest sector industries.

Three employment indicators have been provided to describe forest industry employment and economic diversity:

- direct employment numbers, by industry category
- employment dependence (forest sector)
- economic diversity index (statistical local area scale only).

The employment estimates are provided according to the following industry categories used by ABS:

- forestry and logging
- wood product manufacturing
- pulp, paper and converted paper product manufacturing
- forestry support services
- timber wholesaling.

These categories account for the bulk of sector activities including the growing, management and harvesting of commercial timber; sawmilling and processing of paper and other wood products including woodchips; silvicultural services such as planting and thinning trees; reforestation; forest plantation maintenance; and forestry planting stock nursery production.

Indirect or flow-on employment generated in other industries from activities in the forest sector is an important contribution. However, robust estimates of indirect employment are not straightforward to produce and are not currently available.

The employment dependence indicator shows the percentage of the total workforce in a given area that is directly employed in the forest sector. The economic diversity index (Hachmann Index, as described in Moore 2001) measures the variety of employment sectors present in a local area, relative to the Australian economy. Areas that are more economically diverse are likely to be in a better position to respond to change than less diverse areas.

At state scale, Tasmania has the highest forest sector employment dependence at 2.7 per cent, compared with 1.0 per cent nationally, with most jobs in forestry and logging and wood product manufacturing. Economic diversity can vary greatly between SLAs in a region. In regional Tasmania there is a large difference between the West Coast and Launceston (more urbanised) SLAs. At the forest sector reporting region level, the Green Triangle region has the highest employment dependence, with 5 per cent of the total workforce employed in the forest sector (Table 69).

## Contribution of industry to community

Forest sector industries make important contributions to the communities where they operate and where workers reside. Spending generated by the forest sector contributes to jobs and to the demand for goods and services. Workers also contribute to the local community by taking part in community groups, events, volunteering and other activities. These contributions can influence the wellbeing of the community.

Four indicators are used to represent the contribution of the industry to communities:

- regional employment—household dependence (forest sector)
- community participation—volunteering rate
- community participation—long working hours (negatively influencing participation)
- community participation—workforce stability (living in the same area five years earlier).

The indicators can provide information about how the community and industry workforce interact. Participation of forest sector workers in organised volunteering groups is generally higher in regional forestry areas than in capital cities (Table 70), with the highest rate being in the Mount Lofty Ranges (25.4 per cent) and the lowest



rate in South East Queensland (16.1 per cent), compared with around 11–13 per cent in most capital cities. Within all regional areas reported, volunteering rates are lower in the forest sector than in the total workforce. Forest sector workforce stability in regional areas was higher than in the total workforce in all regions. The highest stability was 83.8 per cent, in the Gippsland and Central Highlands region, indicating potentially stronger links between workers and their communities.

## Workforce characteristics—workers' wellbeing

The wellbeing and diversity of the workforce directly employed in the forest sector are important to ensuring industry sustainability. To support workers' wellbeing the forest sector needs to provide satisfying and rewarding working conditions. Although wellbeing is commonly defined based on a person's perceptions of their own quality of life, measurable objective factors are often associated with higher subjective wellbeing. Factors commonly identified as affecting wellbeing are physical health, family status, gaining skills, employment, income, and age, which are mediated by individual personality factors (Layard 2010). In an industry that is evolving and changing, as with other industries, monitoring wellbeing of workers can be useful in identifying issues that could be addressed to avoid high staff turnover and loss of skilled workers.

Three indicators are presented to represent the concept of wellbeing using ABS census data:

- relative income rates (access to financial resources can contribute to higher wellbeing and capacity to adapt to stressors)
- long working hours, full-time (longer hours may contribute to stress and reduce opportunities for social interaction and relaxation)
- educational attainment—year 12 completion and non-school qualifications (education can contribute to a person's wellbeing and skill levels that enable them to succeed)

In capital cities, the percentage of forest sector workers on low incomes (<\$600 per week) was generally higher than the total workforce (Table 70). While the same was true in Queensland and Northern Australia, in regional areas including Tasmania and the Green Triangle, the forest sector had lower rates of low income than the total workforce. Across all regions and capital cities, forest sector workers had lower rates of formal educational attainment than the total workforce. In the forest sector, year 12 completion was higher in capital cities than regional areas.

## Workforce characteristics—workforce diversity

Diversity among employees can indicate the range of opportunities that an industry or workplace provides. A high level of diversity can provide a supportive work environment that fosters innovative ideas and addresses disadvantage.

Aspects such as workforce age profile may help indicate the attractiveness of an industry sector and contribute to sustainability of the workforce. An ageing workforce with few younger recruits is likely to face issues such as loss of skills and difficulty replacing retiring workers. A young workforce resulting from rapid expansion may have different skills needs to an older workforce. The extent that women, Indigenous people and people with a disability are represented may indicate whether barriers for entering the workforce are being addressed successfully (relative to the total workforce and between different regions).

These indicators can help gauge industry success in recruiting a demographically sustainable workforce, and also show aspects of industry contributing to communities. While both wellbeing and diversity are influenced by many factors, and could be measured in other ways such as through local surveys, the indicators presented here use available ABS data.

Four indicators are presented to represent wellbeing and diversity using ABS census data:

- workers' age profile (<25 years and >55 years)
- female employment
- Indigenous employment (persons identifying as Aboriginal or Torres Strait Islander)
- employment of people with a disability.

Indigenous workers are represented slightly more in the forest sector than in the total workforce, in regional areas. Northern Australia, Tasmania and South Coast NSW had the highest employment of Indigenous workers. Most capital cities (except Darwin) had lower rates of Indigenous forest sector employment than regional areas. In most regional forestry areas there was a smaller percentage of workers less than 25 years old, compared with the total workforce. There is also generally greater representation of mature workers (over 55 years old) in the total workforce compared with the forest sector. The forest sector has much lower female employment rates than the general workforce, in all regions and capital cities.

For full explanations of socio-economic indicator calculations and limitations, see the accompanying tables and footnotes. The review of the socio-economic indicators presented is ongoing and their application and presentation in future issues of AFWPS will be updated.

## References

Layard, R 2010, 'Measuring subjective well-being', *Science*, vol. 327, pp. 534–535.

Moore, E 2001, *Measuring economic diversification*, Oregon Employment Department, USA, available at <[http://www.co.lane.or.us/Departments/CAO/EconomicDevelopment/Documents/Measuring\\_Economic\\_Diversification.pdf](http://www.co.lane.or.us/Departments/CAO/EconomicDevelopment/Documents/Measuring_Economic_Diversification.pdf)>.

Townsend, P 2011, 'Woodchips', *Australian commodities*, vol. 18, no. 2, pp. 81–84, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

## Definitions

Values presented in trade tables are 'value for duty' for imports and 'free on board' (fob) from Australian ports for exports.

Apparent consumption is defined as production plus imports minus exports. This excludes any allowances for change in inventory or interstate transfers.

Small discrepancies in totals are generally caused by rounding.

The National Forestry Inventory uses the following definitions for tree height:

- low—2 to 10 metres
- medium—11 to 30 metres
- tall—greater than 30 metres

and the following terminology for forest area:

- closed forest—areas with trees more than 2 metres tall and with a canopy cover greater than 80 per cent
- open forest—areas with trees more than 2 metres tall and with a canopy cover between 50 and 80 per cent
- woodland—areas with trees more than 2 metres tall and with a canopy cover of between 20 and 50 per cent.

### Abbreviations and symbols

bdt	bone dry tonne
bdu	bone dry unit (1.0886 tonnes)
t	tonne (1000 kg)
kt	kilotonne (1000 tonnes)
ha	hectare (2.471 acres)
m <sup>3</sup>	cubic metre (1.307 cubic yards)
\$m	million dollars (Australian)
ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ABS	Australian Bureau of Statistics
GST	Goods and services tax
GRWE	Gross roundwood equivalent volume: round measure, true volume under bark
MDF	Medium density fibreboard
NFI	National Forest Inventory
NPI	National Plantation Inventory
na	not available
nec	not elsewhere classified

# Appendix A: Australian forest and wood products statistics, detailed tables



## **AFWPS summary tables**

*(Click to download Excel data)*

1 Overview of the Australian forest industry

### **Resource base**

2 Land areas, by vegetation cover, 2008

3 Native forest areas, by forest type, ownership and state, 2008

4 Plantation areas, by type and state

5 Plantation establishment, by type and state

### **Logs**

6 Logs harvested, by log type

7 Gross value of logs harvested

8A Volume of logs harvested, by state and forest type

8B Value of logs harvested, by state

8C Log volume, by state and type

9 Log price indexes, by log type

10 Estimated logs consumed

### **Wood products**

11 Production annual

12 Sawnwood production, by state

13 Sales and service income in forest product industries

14 Industry value added in forest product industries

15 Wages and salaries in forest product industries

16A Employment in forest product industries (Labour Force survey)

16B Employment in forest product industries (Australian Industry survey)

- 17 Capital expenditure in forest product industries
- 18 Disposal of assets in forest product industries
- 19 Selected price indexes
- 20 Apparent consumption
- 21 Dwelling units commenced
- 22 Recovered paper
- 23 Imports
- 24 Exports
- 25 Imports from selected countries
- 26 Exports to selected countries
- 27 Selected trade unit values
- 28 Imports of secondary wood products
- 29 Exports of secondary wood products



**AFWPS imports quarterly**  
*(Click to download Excel data)*

- 30 Imports
- 31 Imports selected unit values
- 32 Imports from selected countries
- 33 Imports of sawnwood, summary
- 34 Imports of roughsawn coniferous sawnwood
- 35 Imports of roughsawn broadleaved sawnwood
- 36 Total imports of roughsawn sawnwood
- 37 Imports of dressed coniferous sawnwood
- 38 Imports of dressed broadleaved sawnwood
- 39 Total imports of dressed sawnwood
- 40 Imports of miscellaneous forest products
- 41 Imports of veneers
- 42 Imports of plywood, by type
- 43 Imports of plywood continued
- 44 Imports of board products, by type
- 45 Imports of paper and paperboard, by type
- 46 Total imports of paper and paperboard
- 47 Imports of paper manufactures
- 48 Imports of recovered paper
- 49 Imports of pulp
- 50 Imports of secondary wood products



## **AFWPS exports quarterly**

*(Click to download Excel data)*

- 51 Exports
- 52 Exports selected unit values
- 53 Exports of sawnwood, summary
- 54 Exports of coniferous sawnwood
- 55 Exports of broadleaved sawnwood
- 56 Exports of roundwood
- 57 Exports of railway sleepers
- 58 Exports of miscellaneous forest products
- 59 Exports of veneers
- 60 Exports of plywood
- 61 Exports of board products
- 62 Exports of paper and paperboard
- 63 Exports of paper manufactures
- 64 Exports of recovered paper
- 65 Exports of pulp
- 66 Exports of woodchips
- 67 Exports of secondary wood products

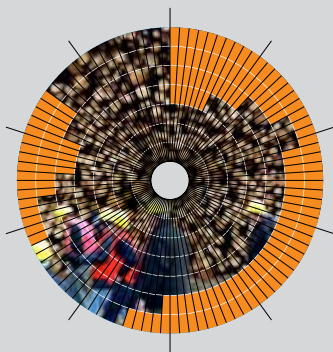


## **AFWPS socioeconomic tables**

*(Click to download Excel data)*

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- 69 Direct employment, 2006 - Region aggregates
- 70 Community contribution and workforce characteristics, 2006 - Region aggregates
- 71 Employment and community contribution indicators, 2006 - Central Victoria-Murray region detail
- 72 Workforce characteristics, 2006 - Central Victoria-Murray region detail
- 73 Employment and community contribution indicators, 2006 - Gippsland and Central Highlands region detail
- 74 Workforce characteristics, 2006 - Gippsland and Central Highlands region detail
- 75 Employment and community contribution indicators, 2006 - Green Triangle region detail
- 76 Workforce characteristics, 2006 - Green Triangle region detail
- 77 Employment and community contribution indicators, 2006 - Mount Lofty Ranges region detail

- 78 Workforce characteristics, 2006 - Mount Lofty Ranges region detail
- 79 Employment and community contribution indicators, 2006 - Northern Australia region detail
- 80 Workforce characteristics, 2006 - Northern Australia region detail
- 81 Employment and community contribution indicators, 2006 - Northern NSW region detail
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- 83 Employment and community contribution indicators, 2006 - South Coast NSW region detail
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- 85 Employment and community contribution indicators, 2006 - South East Queensland region detail
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- 87 Employment and community contribution indicators, 2006 - South West and Central West NSW region detail
- 88 Workforce characteristics, 2006 - South West and Central West NSW region detail
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- 91 Employment and community contribution indicators, 2006 - Tasmania region detail
- 92 Workforce characteristics, 2006 - Tasmania region detail



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**Contact**

Australian Bureau of Agricultural and  
Resource Economics and Sciences

**Postal address**

GPO Box 1563, Canberra ACT 2601 Australia

**Location**

18 Marcus Clarke Street,  
Canberra City ACT 2601 Australia

**Switchboard** +61 2 6272 2000



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