Australia's Timber Fibre Strategy

Final report

Prepared for
STRATEGIC FOREST AND RENEWABLE MATERIALS PARTNERSHIP

March 2025

CORPORATE ADVOCATES

For information on data, limitations and assumptions used in compiling this Report, see page 172.

ACKNOWLEDGEMENTS

The analysis and conclusions in this report have been underpinned by a host of invaluable contributions from across the entire Australian timber fibre value chain. The Fifth Estate is grateful for the time and effort offered and spent by so many in making this an inclusive and thorough study. Contributors included industry leaders, unions, consultants, researchers, government officials, academics, First Nations experts and community representatives.

Special thanks go to the Strategic Forest and Renewable Materials Partnership whose co-chairs, Michael O'Connor and Stephen Dadd, have shown strong leadership and dedication in their resolve to get the work done as efficiently and consultatively as possible, and to see its conclusions implemented.

Officials from the Commonwealth Department of Agriculture, Fisheries and Forestry have expertly facilitated the progress of the work over several months, including organising and following up the Minister's and industry's deliberations at the Hobart roundtable in early December. The Fifth Estate thanks the Minister and her Department for their commitment and stewardship of this phase of the timber fibre strategy's development.

Names and affiliations of many of those invited to contribute ideas and opinions for this work are shown in the Consultation Report (Appendix 1).

In the spirit of reconciliation, The Fifth Estate acknowledges the Traditional Custodians of Country throughout Australia, and we acknowledge their connection to the land and their custodianship of and care for Country and forests. We seek to engage with First Nations to learn from them, to respect their cultural connections and to work with them in the care and management of natural resources. We pay our respect to Elders past and present and extend that respect to all Aboriginal and Torres Strait Islander peoples.

CONTENTS

AUSTRALIA'S TIMBER FIBRE STRATEGY

Final report

SUMMARY

"… every single day, every single Australian uses and benefits from Australia's forest and wood products industry…" [1]

The Strategy presented in this report has been prepared for The Strategic Forest and Renewable Materials Partnership, which provides a forum for industry, unions and government to consult, exchange advice and information, and promote cooperation within the forest and wood products industries. A key role of the Partnership is to advise the Minister for Agriculture, Fisheries and Forestry and Government on Australia's sustainable timber and forest product supply, including ways to strengthen industry, employment and social outcomes, environmental outcomes from the use of forested lands in Australia, and considering such matters such as wood and fibre production and products, carbon, biodiversity, and First Nations cultural and economic outcomes.

The need for the Strategy is outlined in terms of the opportunities and challenges currently facing the timber fibre sector which impact its markets, returns and the investment climate. While there are big opportunities for the sector presented by a growing population demanding more housing, furniture, packaging, hygiene products, and a carbon-constrained world seeking to utilise renewable materials and energy, challenges exist. These include a national stagnation in timber plantation expansion, declining availability of harvestable timber resources, adverse government decisions around native timber harvesting, loss of sovereign manufacturing capacity and a widening gap between domestic timber demand and domestic supply capacity.

The Strategy described in this report is forward-looking and science-based, addressing national priorities and framing robust actions for investment and growth. It involved wide and deep consultation with stakeholders drawn from government, timber fibre supply chain companies, trades unions, industry associations, product manufacturers and builders, forest owners and managers, investors, First Nations Peoples, the research community, and regional community organisations.

The report identifies and details actions grouped under six strategies, each dealing with a cluster of domains, issues and themes that cover the entire timber fibre value chain over a nominal timeframe to 2050. The six strategies are:

1. **Building sovereign manufacturing capability and capacity**: The Australian forest products industry will materially increase its sovereign capability and capacity to manufacture domestically produced and recovered timber fibre products.

   Building sovereign manufacturing capability and capacity has been intentionally selected as the first strategy, not because other strategic issues are less important but because the objectives of the other strategies lead to and / or support the manufacture and use of wood products. The recognition of the requirement for greater sovereign manufacturing capability and capacity is due, at least partly, to the international supply disruptions and ongoing global geopolitical instability. In the face of international volatility, the need to build Australia's manufacturing scale, depth and resilience has been recognised

[1] Most of the italicised quotes in this report are selected verbatim comments from stakeholders consulted during the conduct of this strategy's development.

across many industries including the forest and wood products sector and others well downstream from wood products manufacturing.

2. **Meeting demand for timber fibre resources**: Australia's domestic demand for timber fibre-based products will be met from sustainably managed forestry resources.

   There is an obvious and concerning decline in Australia's overall harvest of timber fibre. At the same time a significant proportion of that harvested timber fibre has been exported in the form of woodchips and logs. The wisdom of exporting a high proportion of harvested timber fibre as comparatively low-value woodchips and unprocessed logs has been a subject of comment and debate during the consultation for this strategy development process. This point becomes particularly pertinent in the context of recent acute shortages, and the longer-term downward trajectory, of domestic timber fibre supply due to fire losses and low establishment rates. In the face of the projected strong demand for timber fibre for use in Australian manufactured goods and services, especially housing, it's clear that our current timber fibre supply sector will not be able to satisfy domestic demand into the future and a plan to address the timber fibre supply gap is required.

3. **Healthy forests, actively managed**: Australia will actively manage its forests for their health to sustain their many environmental, cultural, social, and economic services.

   Timber fibre sector leaders acknowledge that they, with all citizens, have an inherent duty of care to protect the environment, particularly Australia's native and planted forests, some of which also provide harvestable timber fibre resources the community needs. The adoption of the active forest management concept will protect and sustain forests' natural capital assets, including biodiversity and carbon, and their other essential ecological processes. The process of ensuring a healthy Australian forest estate will look very different in natural forests – with priority given to ecologically determined outcomes – and in plantations – with a greater focus on productivity and utilisation. Active forest management also incorporates measures to protect and manage against biosecurity and natural disaster risks, such as uncontrolled forest fires. Actively managing Australian forests, including application of First Nations' knowledge and culture, can contribute to the nation's Nature Positive and Nature Repair initiatives, Australia's Net Zero Target, and biosecurity and bushfire threat mitigation across and within all forest tenures.

4. **Attracting and engaging people and other industry enablers**: The Australian forest products industry will attract and engage the best people, the most advanced management systems and manufacturing processes, the required investment, and the necessary supporting infrastructure.

   Industry enablers are the people, services, systems, and processes that operate along the timber fibre value chain which spur continuous improvement, drive efficiency, maintain cost competitiveness, support new investment and innovation, engender community support and social licence, and ensure timely and profitable business operations. Attracting and engaging industry enablers is important for the long-term sustainability of the industry. Getting this right reduces investment risk throughout the value chain, particularly for investment in sovereign manufacturing capacity, although this is true for all enablers: people, infrastructure, technology, policy, regulation and research.

5. **Supporting and growing regional communities**: The Australian forest products industry will provide opportunities within, and support for, regional communities including First Nations peoples.

   The timber fibre sector is arguably the oldest primary industry in Australia and its activities have always been intertwined with dependant local peoples and their communities. It's reported that First Nations

peoples actively managed Country's forests for the bulk of their material needs, and for cultural activities, sometimes with remarkable effect. The timber fibre sector remains a highly regionally based, widely dispersed industry, reliant on and supporting forests and their forestry-related businesses in many areas. Regional Australia has over 8.5 million people and the timber fibre industry is the dominant primary industry sector in many regions where it supports significant jobs, investment and community infrastructure. Actively supporting and bolstering that contribution is a critical aspect of the timber fibre sector's future sustainable growth.

6. **Innovating the timber fibre value chain**: The Australian forest products industry will embody a science-informed culture that drives innovation and continuous improvement.

   The timber fibre industry is currently well served with sector-dedicated research, innovation and professional institutions. Organisations like Forest & Wood Products Australia (FWPA), the new Australian Forest and Wood Innovation (AFWI), Forestry Australia, the Regional Forestry Hubs, the university sector, and the CSIRO all contribute to this effort. In addition, many of the industry's individual companies have in-house capacity in research, development and innovation. These variously support new product and proprietary process innovations being undertaken within companies, such as pulp and paper, composite wood products, and forestry growing and management systems. Some university-based research and teaching programs that have important touchpoints with parts of the timber fibre value chain also collaborate with parts of the sector. There is a substantial body of relevant data, research and employed innovation in the international forest and wood fibre industry, and the industry and its research institutions must leverage international knowledge and experience. Developing an effective, science-informed innovation culture for the timber fibre sector will require greater coordination and collaboration between these existing research and innovation bodies.

Each of the Strategies described in this report have received the benefit of testing, comment and review from the Partnership and from wider consultations across the full stakeholder set between August and December 2024.

The consultations also revealed some issues that cut across the six identified strategies:

- **Investment risk:** The timber fibre industry is enthusiastic about the opportunities to invest and grow however it is characterised by very long investment cycles with relatively low risk adjusted returns. For industry to have sufficient confidence to invest, be it investment in new plantations, harvesting capacity, manufacturing, logistics, research or market development, the industry needs certainty over the long term. Fundamental to this is certainty of access and the ability to utilise fibre resources without the risk of adverse policy and regulatory changes.

- **Messaging:** Along the value chain from native forest and plantation management, silviculture and harvesting, to manufacturing and recycling, there is concern that the fundamental messages that the industry is sustainable, responsible, and environmentally and carbon friendly, are not getting traction outside the industry. The industry's raw materials, manufacturing processes and products are demonstrably superior to alternatives, and the industry is extremely well positioned to assist Australia meet its short and long-term net emissions goals. However, this is not well understood by consumers, policy makers and the broader community. The industry recognises that to meet its potential and to realise the opportunities, it needs to improve its messaging to those outside the industry.

- **Research:** There is need for ongoing research along the value chain and throughout each of the strategies. The industry has a strong commitment to research and innovation and recognises that investment is required to understand the opportunities and capitalise on them.

- **Science:** The industry's growth and development across the value chain has been hampered by policy decisions that have not been based on sound science. The industry wants all governments to work with it to develop and maintain a policy and regulatory environment that is science-based, recognising the value of the industry and its contribution to national and international objectives.
- **Employment:** Through all sectors of the industry and across the value chain there is a commitment to grow employment, improve safety, develop career paths and increase opportunities for well-paying jobs, especially in regional areas.
- **Indigenous engagement:** There is a recognition that the timber fibre industry has much to learn from First Nations Peoples, particularly in management of forests and care for Country. All acknowledge that more can be done across the entire industry to create employment and career opportunities for indigenous people. The industry also recognises that working with First Nations Peoples must start with appropriate engagement, and across all industry sectors there is a commitment to increasing understanding and engagement.
- **Complex industry structure:** Unlike other Australian primary industries, the timber fibre sector is multi-dimensional and complex due to a number of factors including:
    - its disparate geographic spread,
    - the wide scale of operations – from very small to world scale facilities and investments,
    - the breadth of fibre types and sources (e.g. plantation / native, hardwood / softwood, virgin / recycled), and
    - the multitude of products manufactured from timber fibre and the range of industries that use them.

    In addition, there are important issues that need to be addressed at a regional, state and / or national level. The result is a very complex web of associations, service organisations, employer and employee representatives, research, development and extension providers, and promotional bodies. This complexity creates inefficiencies, the potential for duplication and an industry that, rather than talking with one voice, can deliver mixed messages. The strategy does not make specific suggestions in this area but recognises that the issue of industry complexity should be addressed by the Partnership.

This report has been prepared as a key resource for the Partnership for its further evaluation and transmission to the Government as it sees fit.

INTRODUCTION

The Strategic Forest and Renewable Materials Partnership

The Strategic Forest and Renewable Materials Partnership (the Partnership) provides a forum for industry, unions and government to consult, exchange advice and information, promote cooperation within the forest and wood products industries, and has the responsibility to provide a long term plan for the strategic direction of Australia's forest and wood products sector.

The Partnership also provides a constant line of communication between industry stakeholders and the government to consult together and exchange advice and information on government policy and programs, opportunities for collaboration, and to promote co-operation between different sectors of the industry.

The Partnership serves an advisory function and is not a decision-making body.

It provides advice to the Government on how the industry can contribute to Australia's timber and wood product needs, its emission reduction goals and climate change challenges.

Membership of the Partnership is shown in Table 1.

Table 1 – Membership of the Strategic Forest & Renewable Materials Partnership (as of August 2024)

Co-chairs: Mr Stephen Dadd and Mr Michael O'Connor	
Mr Harry Burrows	Mr Frank Miller
Ms Denise Campbell-Burns	Mrs Sharon Musson
Ms Gina Castelain	Mrs Carlie Porteous
Mr Brad Coates	Ms Amber Seehars
Ms Anne Chuter	Mr Jim Snelson
Dr Michelle Freeman	Mr Ian Telfer
Mr Cameron MacDonald	
Observers: Ms Diana Hallam and Mr Travis Wacey	

The Partnership's secretariat function is provided by the Department of Agriculture, Fisheries and Forestry (the Department or DAFF), and the full role and responsibilities of the Partnership are described in its Terms of Reference[1].

The Partnership's objectives are to deliver for workers, jobs, business, communities and the environment by promoting the sustainable development and management of Australia's forests and forest resources.

The Partnership will do this by aligning forest policy with broader policy agendas including on climate change, sustainable land use and management, sovereign capability and domestic manufacturing, supply chain certainty, and enhancing First Nations' social, economic and environmental involvement in forest management and forest supply chains.

With a focus on workers and communities, the Partnership will seek to make the industry an employer of choice, improve access to training, enhance diversity of the workforce, and address workforce inequities.

[1] Source: DAFF. 2023. Strategic forest and renewable materials partnership. Terms of reference (Ref)

Within its specific role to advise the Minister and Government on forest and wood products sector issues, the Partnership considers the interface between government policy and programs and the sector and examines matters including:

- Identifying issues facing Australia's forest and wood products sectors to aid government policy making, including sustainable timber and forest product supply, and ways to strengthen industry, employment and social outcomes, and environmental outcomes from the use of forested lands in Australia.
- Consideration of matters such as producing wood and fibre products, carbon, biodiversity, and First Nations cultural and economic outcomes.
- Presenting strategic policy options and initiatives to foster investment, growth and sustainability of Australia's forest and wood products sectors.
- Highlighting priorities for infrastructure investment and value addition.
- Presenting priorities for nationally relevant research, development and innovation, and
- Developing a long term Timber Fibre Strategy (the Strategy) for the strategic direction of the forest and wood products sectors, with consideration given to opportunities for employment and business development, domestic timber supply, international market access, value-adding and sovereign capability, supply chain assurance, diverse community engagement and involvement, emissions and waste reduction, and biodiversity outcomes.

The Fifth Estate has been engaged by DAFF to assist the Partnership develop and document the Strategy.

Background to the Timber Fibre Strategy

Purpose

The purpose of developing this Strategy is:

> *Delivering an industry led and supported strategic direction for the forestry and wood products sector with the objective of sustainably maximising availability of timber, fibre and wood and most productively and efficiently utilising available supply, with consideration given to the demand-side factors, employment and business development, current and potential future sources of domestic timber supply, international market access, value-adding and sovereign capability, supply chain assurance, diverse community engagement and involvement, emissions and waste reduction, and biodiversity outcomes.*[2]

Vision and objective

The Partnership's agreed[3] *vision* for the Timber Fibre Strategy is:

> *Building a sustainable, world leading and innovative forestry and wood processing sector with products that are in demand domestically and internationally.*

The Partnership's agreed[4] *objective* for the Timber Fibre Strategy is:

> *To maximise the availability and utilisation of sustainable timber, fibre and wood products with consideration given to:*

[2] Source: Department of Agriculture, Fisheries and Forestry. 2024. *Potential Scope of the Strategic Forest and Renewable Materials Partnership's Timber Fibre Strategy*. Document supplied on 25 September 2024.

[3] Source: Department of Agriculture, Fisheries and Forestry. 2024. *Op. cit.*

[4] Source: Department of Agriculture, Fisheries and Forestry. 2024. *New Vision and Objectives of the Strategic Forest and Renewable Materials Partnership's Timber Fibre Strategy*. 6 August 2024 Partnership meeting - Agenda Item 6, Document supplied on 25 September 2024.

- *world-leading forest and fire management practices to ensure the health and productivity of forests, all estates*
- *balancing supply from plantations, the native forest estate and imported timber products*
- *innovation that supports domestic capability and capacity to manufacture high-value-added wood and wood-based products, including for international export markets*
- *promotion of the sector's contributions to carbon sequestration and emissions reduction*
- *investment in enabling infrastructure, including energy and supply chain efficiency*
- *investment in people and regional communities.*

Specific issues to be addressed by the Partnership

The Partnership's Terms of Reference provide the framework for developing the Strategy. This includes:

- Identify issues facing Australia's forest and wood products sectors to aid government policy making, including:
  - sustainable timber and forest product supply,
  - ways to strengthen industry, employment and social outcomes, and
  - environmental outcomes from the use of forested lands in Australia.
- Consideration of the above should include producing wood and fibre products, carbon, biodiversity, and First Nations cultural and economic outcomes.
- Present strategic policy options and initiatives to foster investment, growth and sustainability of Australia's forest and wood products sectors.
- Highlight priorities for infrastructure investment and value addition.
- Present priorities for nationally relevant research, development and innovation.
- Advise the Minister and Government on forest and wood products sectors, with consideration of government policy and programs.
- Develop the Strategy.

In addition to these specific terms of reference, the government has indicated that its priorities for the Agriculture, Fisheries and Forestry ministry include:

- Biosecurity
- Trade and market access,
- Sustainability and climate (emissions reduction),
- Workforce, and
- First nations people

Accordingly, where appropriate, this Strategy process has sought to comprehend these priorities in its output and recommended actions.

Situation analysis - why this strategy is needed now

The Australian forestry and wood products sector is at an inflection point.

There are enormous opportunities to grow the industry by leveraging the unique and enduring natural assets our managed forests represent and the benefits, products and services that flow from them.

With that, however, come significant challenges and headwinds that could hobble or inhibit the sector's possible growth path, and even set it on an alternative trajectory of shrinkage and decline. Table 2 summarises some of the identified opportunities and challenges that feature in current timber fibre sector discourse.

Table 2 – Some opportunities and challenges facing Australia's wood fibre sector

Opportunities	Challenges
Regionally based with high socio-economic multiplier	Low relative risk-rated return on investment
Major contributor to the emerging bioeconomy	Low community understanding / acceptance / social licence
Long-term, sustainable and scalable industry	Limited land availability
Offers strong contribution to the circular economy	Long planning horizons (incl. sovereign risks)
A recognised carbon sequestration sink and store	Competition for land (incl. "carbon-only" plantations)
Supporting major net zero economy solutions	Needs scale for cost competitiveness
Flexible materials offering new / innovative products	Internationally trade exposed
Supports skilled, well-paying, sustainable jobs	Competition for skilled workforce
Helps address Australia's housing needs	Static / declining production forest resource base
Reduces reliance on international supply chains	Cyclical demand / asynchronous cycles
Attractive investment for long-term capital	Contests over resource use (e.g. natural forests)
Offers multiple use land management options	Alternative construction materials
Well-aligned with government science priorities	Heightened forest protection risk (wildfire, disease)
Land management, engagement & jobs for First Nations	Subjected to adversarial academic / media opinion
Enhanced and protected biodiversity	Relatively fragmented industry structure
Import replacement and improved balance of trade	Many land use decisions not science-based
Increased timber fibre utilisation & sovereign manufacturing	
Improved fire management and reduced risk	

A suite of challenging circumstances

Within the immediate to medium time horizon a set of factors is operating – some counter-cyclically and others asynchronously – to variously impact the timber fibre market's activity, returns and the investment climate:

1. Stagnation in investment and activity to expand timber plantations
2. Declining availability of harvestable timber resources
3. Adverse State government decisions ending native timber harvesting
4. Depressed domestic market for sawn timber
5. A national crisis in house building, home availability and its affordability
6. A widening gap between domestic timber demand and domestic supply capacity

While these circumstances vary between States and Territories, they all have a bearing on current and future timber fibre supply chain dynamics as the following brief commentary explains.

1. Stagnation in investment and activity to expand timber plantations

New ("greenfield") timber plantation development is retarded by a combination of factors, including an upsurge in rural land prices in response, in part, to a renewed interest in Australian farming and agribusiness.

Since Australia's high greenfield plantation establishment rates in the late 1990's and early 2000's, rates have dropped by almost 100% (Figure 1[5]).

[5] Data for this chart was sourced from ABARES' 'Australian Plantation Statistics 2024 Update', under the 'New plantations by ownership' spreadsheet (Ref).

This has partly been driven by an upsurge in rural land prices in response, among other factors, to renewed interest in Australian farming and agribusiness. For example, it's reported that Dairy farming land has increased in price at an average rate of 5.6% p.a. between 1992-2023, and 28.1% p.a. between 2020-2023[6].

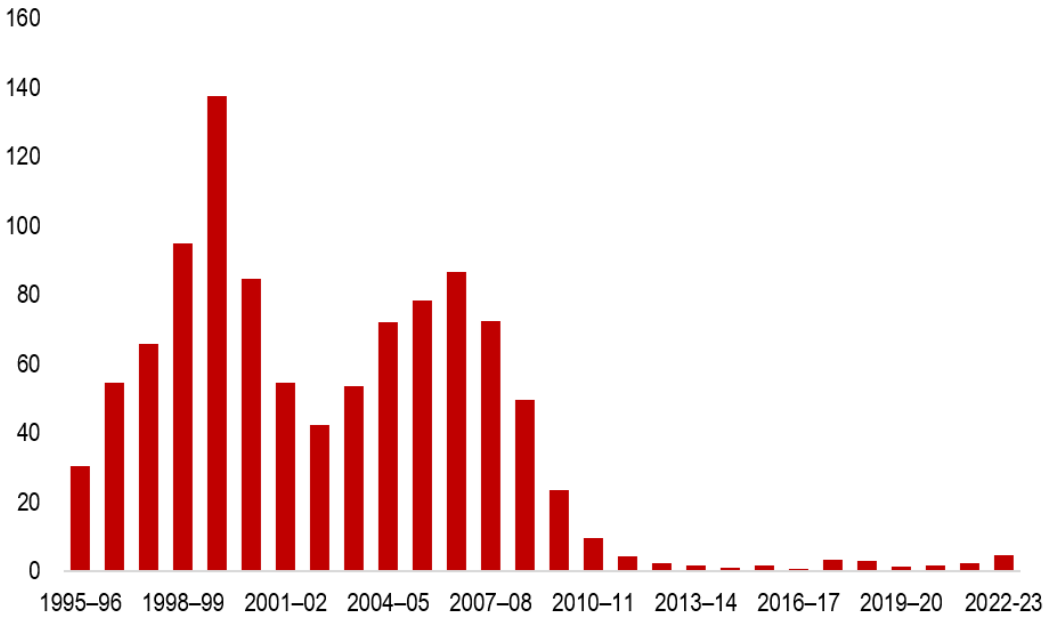


Figure 1 – Greenfield timber plantation establishment in Australia ('000 hectares)

2. A declining availability of harvestable timber resources

Forest-sourced timber supplies to existing processing facilities are variously in deficit due to a combination of adverse land use decisions (mainly involving native forest areas), recent catastrophic fire losses, or capacity mismatches.

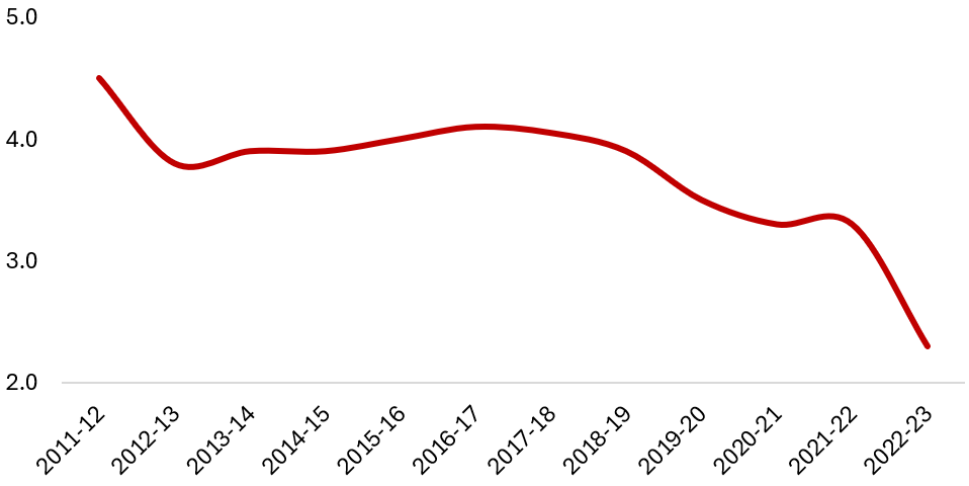


Figure 2 – Volume of native hardwood logs harvested in Australia (million m³)

[6] Source: ABARES' Farmland Price Indicator: July 2024 update – key findings (Ref).

Policy changes and high-level disputes relating to native timber harvesting have contributed towards the declining volume of hardwood native logs harvested in Australia, which has dropped by 30% between 2021-22 and 2022-23 (Figure 2[7]). This decline in volume was largely driven by changes to Victoria's native forestry policy, which resulted in a 78% reduction in annual harvest volume in Victoria over the same period[8].

Meanwhile, the annual harvest volume from Australia's softwood plantation estate declined by approx. 4 million cubic metres between 2019 and 2023: a 12.5% reduction (Figure 3[9]).

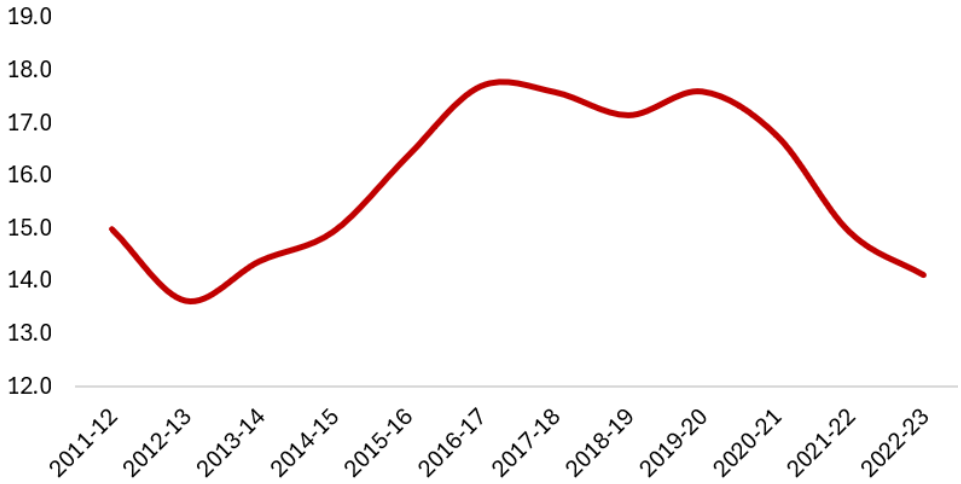


Figure 3 – Volume of plantation softwood logs harvested in Australia (million m^3)

Australian forests supplied overseas markets with $1.37 billion worth woodchips and roundwood in 2023, whilst many domestic mills and processors experienced log shortages. It's important, however, to note that exporting of unprocessed logs and woodchips is not necessarily an undesirable practice *per se*, given the exporters provide a market outlet for large volumes of timber fibre for which there is no domestic processing capacity and therefore no markets for the logs and / or the products that can be derived from them. Forest owners and managers prefer having access to export markets because it provides (a) optionality, (b) another price signal, particularly when they might operate in an environment where there is one dominant supply and one dominant domestic buyer, (c) volume flexibility, and (d) the opportunity to sell log products for which there is no other market.

What the export volumes demonstrate is that there is an opportunity, without an immediate increase in the domestic availability of logs, to increase sovereign manufacturing and reduce reliance on imports.

3. Adverse State government decisions ending native timber harvesting

Australia's 50-year history of environmental group activism against the harvesting of public native forests for timber has gained momentum over the past decade leading to a cascade of State government land use decisions which essentially banned or severely limited the harvesting of timber from public native forests (see Figure 4[10])

This progression of decisions to rescind timber harvesting rights from major areas of public native forest included:

- The Victorian Government's 2019 decision to end all commercial native timber harvesting in its state forests by 2030 was brought forward to be effective from 1 January 2024, accompanied by an "expanded

[7] Source: ABARES. 2024. *Australian Forest and Wood Products Statistics*: Production to 2022-23 (July) (Ref).
[8] Source: ABARES 2024 *Op. cit.*
[9] Source: ABARES 2024 *Op. cit.*
[10] Source: Analysis by The Fifth Estate drawing upon consultation inputs.

transition support package". This removed from timber harvesting some 1.8 million hectares of forest previously authorised by "timber harvesting allocation orders" in the East of the State.

- The Western Australian Government's 2021 announcement of a ban on public native forest harvesting for timber by 2024, resulting in the removal of some 850,000 hectares of previously allocated native forest from timber production[11].
- In Queensland, there has been a decline in the availability of publicly owned native forest for timber production over the past few decades as a result of previous policy. This included over 400,000 hectares of state forest that was converted to national park as a result of the 1999 South-East Queensland Forest Agreement. However, since 2019 and subsequently in 2024, the Queensland Government has adopted a more balanced policy position regarding future access to public and private native forests, while recognising the failure of a previous hardwood plantation program. Future long-term policy for the native hardwood industry will be determined over the next 12 months by the Queensland Government in consultation with industry as part of a Timber Action Plan announced in the October 2024 election.
- The NSW Government's 2023 decision to withdraw its allocation to timber management some 176,000 hectares of public native forest and instead declaring that land as a major new National Park[12].

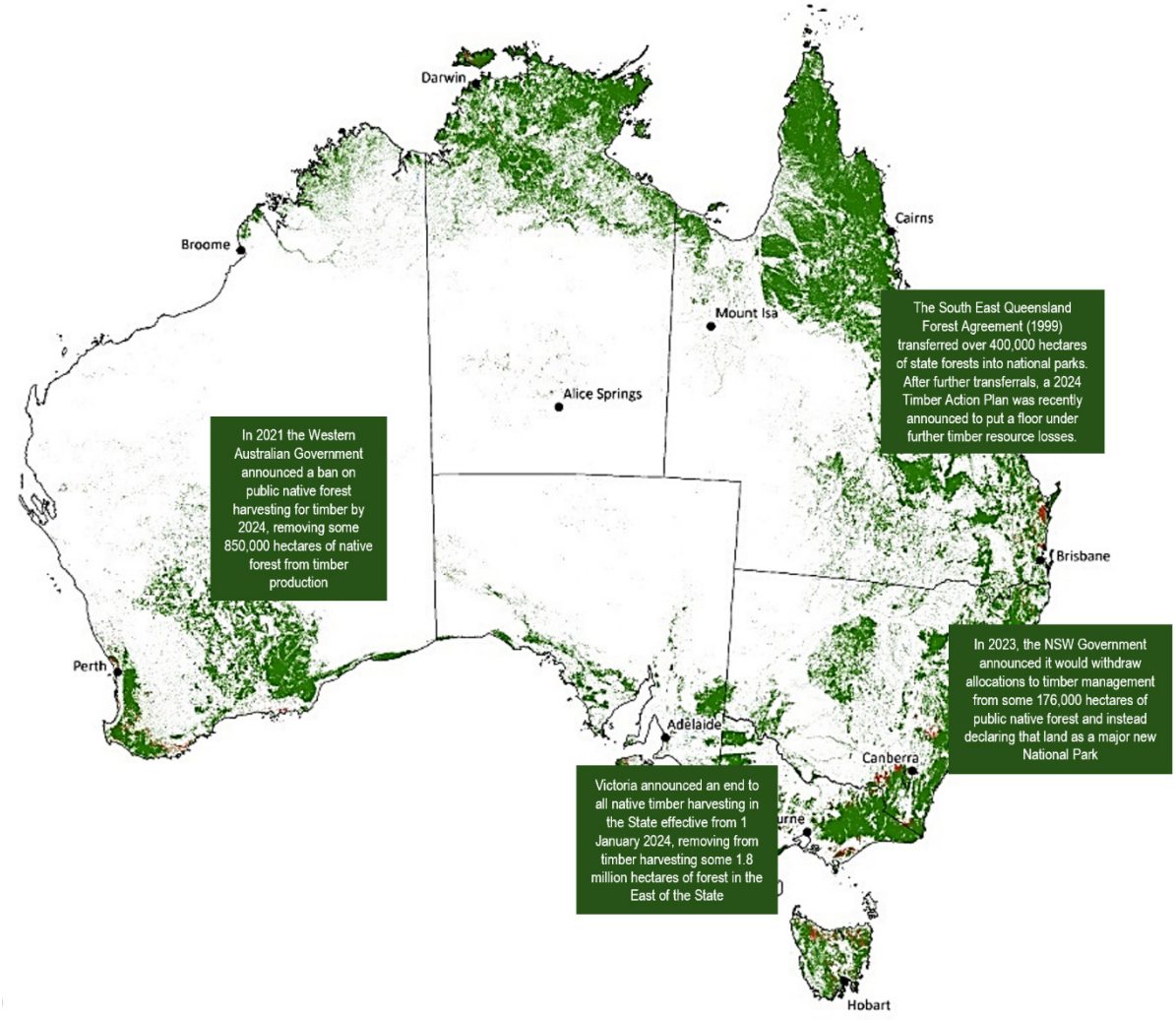


Figure 4 – Australian State decisions on removal of native forests from timber fibre production

[11] Source: Forest Industries Federation of WA. 2024. *Native forestry ban* (Ref)

[12] Source: NSW Environment & Heritage. 2024. *Great Koala National Park*. (Ref)

The magnitude and suddenness of these types of decisions has led to a sense of disillusionment in parts of the hardwood timber sector, particularly where they had been brought forward in the planning horizon. This has removed investment certainty from reliant hardwood producers, especially given the current lack of tangible strategies for the replacement of withdrawn forest areas with hardwood plantations.

4. A depressed domestic market for sawn timber.

Domestic sawmills are currently experiencing worryingly high sawn stock levels due to a cyclical depression in domestic timber demand.

Australia's housing construction activity has been in decline, with new dwelling completions contracting from approx. 220,000 in 2018 to approx. 175,000 in 2023[13].

As such, demand for wood products has slumped, which has, in part, caused suppliers such as timber mills to accumulate surplus wood products. Indeed, due to the downswing in construction activity since mid-2021, it's estimated that manufacturers have sufficient surplus wood to construct an additional 50,000 frames for houses[14].

5. An acknowledged crisis in house building, home availability and its affordability

Demand for new housing outstripping supply, with new home-building activity failing to keep pace with the population's overall demand for all forms of housing[15].

It's estimated that by no later than 2050 Australia will have a population of between 34 and 40 million people, new housing demand of 259,000 dwellings p.a., and sawn softwood demand of 6.5 million m^3 p.a. That level of sawn softwood demand will be 40 per cent greater than the projected domestic softwood supply at that time[16].

The Government has set an aspirational target to construct 1.2 million well-located homes over a five-year period beginning in mid-2024[17]. However, to achieve this target, average dwelling completion rates will need to increase by 37% compared to the average rate over the last 4 years[18].

At the same time, the home ownership aspirations of many Australians, particularly first homebuyers, are being thwarted by a combination of low housing stock and high costs of capital. One commentator summarised the situation, writing:

> *"… the root of Australia's housing crisis is that supply is failing to keep up with rising demand"*[19].

Meanwhile, according to Nerida Conisbee from Ray White, "… *it is cheaper to buy than build in many places*", driven by, amongst other things, increased costs of building materials and higher interest rates between 2022-2024[20].

During 2023, Australia experienced a net gain of over half-a-million people via overseas migration – the largest annual increase since records began[21]. As such, housing prices are likely to continually rise until supply starts to meet the rapidly growing demand.

[13] Source: analysis of data from ABS Building Activity, Australia (Ref).
[14] How Timber Can Help Australia's Housing Crisis, AFPA 2024 (Ref)
[15] Source: Master Builders' Association
[16] Woods and Houghton (2022). Future market dynamics and potential impacts on Australian timber imports: Final Report. FWPA (Ref).
[17] Source: Australian Government, The Treasury website under "Increasing Housing Supply" (Ref)
[18] Source: analysis of data from ABS Building Activity, Australia (Ref).
[19] Deloitte article from March 2024 titled, 'Australia's housing crisis: hardship and hope' (Ref).
[20] Source: FWPA 2024. Webinar 1: Australia's Future Housing Affordability (Ref).
[21] Source: Australian Bureau of Statistics. 2022-23 financial year: Overseas migration (Ref).

6. A widening gap between domestic sawn timber demand and domestic supply capacity.

Australia's demand for timber fibre in the form of solid construction wood is continuing to rise and is likely to outstrip domestic supply capacity (see Figure 5[22]).

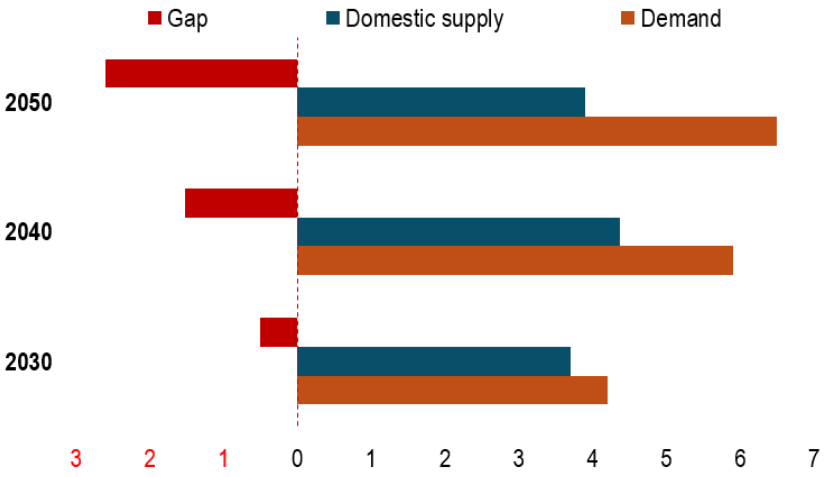


Figure 5 – Australia's projected sawn softwood timber supply gap (million cubic metres)

Already, Australia's apparent consumption of sawn softwood timber is 4.2 million m^3 per year, while domestic production is 3.6 million m^3 per year[23]. This current domestic supply gap of some 0.6 million m^3 is predicted to balloon over the coming decades such that, by 2050 "*…Australia's annual average sawn softwood demand will increase almost 43% to a projected 6.507 million m^3…*" leading to a severe sawn timber supply gap. The diversion of sawn timber from traditional construction applications to engineered wood products such as glulam and LVL as substitutes for high embodied carbon building materials such as concrete and steel will widen this gap.

Sawn softwood demand is an indicator for all solid wood products – demand for other products will continue to grow in similar proportions and without increasing availability of timber fibre, the gap will get bigger for all products.

Principles informing the Strategy's development

The development of the Strategy has been guided by several principles to ensure it meets the Partnership's objectives. These include taking a forward-looking perspective, embracing the total fibre value chain, addressing how the sector can help deliver on wider national priorities, and being firmly science-based.

Forward-looking

The Strategy is purposely forward-looking, seeking to identify areas for future sector growth, profitability and diversification. While it seeks to learn from the past, it is firmly future facing with a "2050 time horizon" in mind.

Boundaries

The project was structured to cover all aspects of the Australian timber fibre supply chain, from forest to the utilisation of primary end products in key domestic markets – such as house construction. Timber fibre utilisation in manufacturing further downstream, such as furniture, were not considered in detail.

[22] Woods and Houghton (2022) *Op.cit.*
[23] Woods and Houghton (2022) *Op.cit.*

The timber fibre industry schematic produced by the Department was adopted as a guide in defining the project's boundaries (Figure 6[24]).

The project team also sought but had no specific consultation or engagement with industry leaders from the *timber importer* segment. However, close consideration was given to the role of imported timber in Australia's timber fibre demand / supply dynamics.

The Strategy is specifically intended to be a *fibre* strategy … and hence its attention to aspects of forestry and forest management is directed to the role of forests in producing timber fibre of all types and for all possible end uses, while acknowledging the other services and values forests provide.

It will also feed into a new national forest policy as and when it emerges.

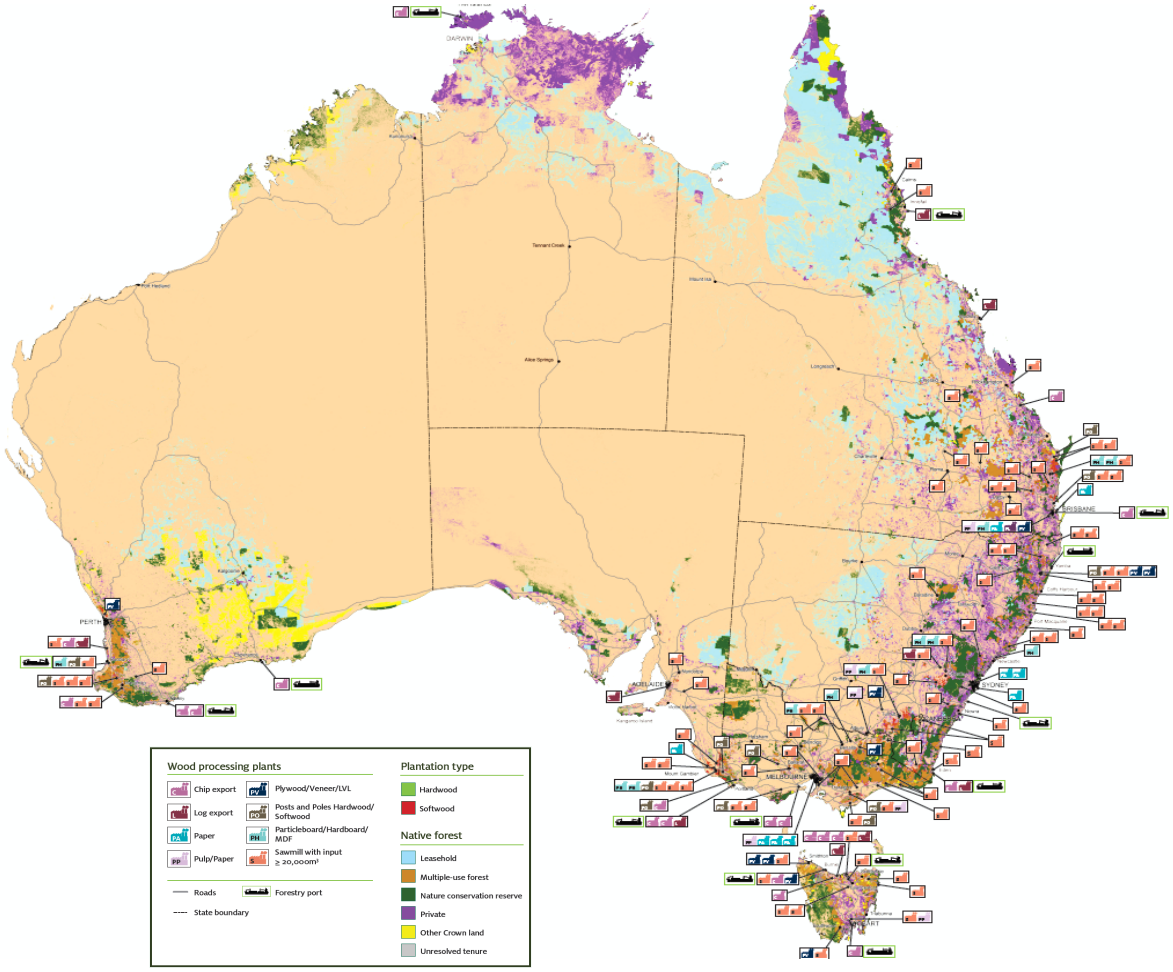


Figure 6 – Distribution of Australia's timber fibre industries

[24] Source: Department of Agriculture, Fisheries & Forestry "Australia's Forestry Industry 2017" graphic (Ref)

Addressing national priorities

This Strategy seeks to show how the Australian timber fibre strategy can and must contribute to Australia's wider national priorities for growth, sustainability and community wellbeing.

As such, the Strategy comprehends, for example, the three core objectives adopted by the agriculture, fisheries and forestry portfolio to advance its sectors' activities[25]:

- **sector growth** – supporting Australia's agricultural sector, including the food and fibre industries, to be increasingly prosperous and internationally competitive in an ever-changing world,
- **sector resilience and sustainability** – increasing the contribution agriculture, fisheries and forestry make to a healthy, sustainable and low-emissions environment, and
- **national biosecurity** – strengthening our national biosecurity system to provide a risk-based approach and an appropriate level of protection for Australia's people, our environment and economy.

Science based

The Strategy is formulated according to solid science-based analysis and decision criteria. This means that, wherever relevant in context, the development of the Strategy adopts a strictly science-led and science-based approach regarding its priorities and recommended policy outcomes.

This principle is especially important to observe in relation to *land use and forest management* and means, for example, that legislative and jurisdictional questions of land allocation and tenure, which principally belong in the governmental or political domain, ought not dominate or overly inform the Strategy development process unless specifically requested by The Partnership.

Observing this discipline is particularly relevant to the timber fibre sector which has been adversely impacted by subjective and sometimes ideological decision making, especially over forestry resource allocations. Accordingly, the Strategy process has sought to redress this unfortunate legacy through the application of rigorous science. The Government tacitly supports science informing and anchoring national strategies and programs, as detailed in its *National Science Statement*[26] which:

> *"… provides a framework to shape science policy and leadership across governments, in our labs, in research institutions and in boardrooms, to 2034 … supported by a set of revitalised National Science and Research Priorities*[27]*. These emphasise the science and research collaborations Australia will need to solve its greatest challenges …"*

A major benefit of this approach is that it provides tangible and practical ways by which the timber fibre sector and industries can help meet some of Australia's wider and most pressing national, science-informed priorities[28], including:

- transitioning to and sustaining Australia's **net zero emissions future**
- supporting **healthy and thriving communities**, particularly in the regions
- elevating Aboriginal and Torres Strait Islanders' **knowledge systems**
- protecting and restoring **Australia's environment**, and
- building a **secure and resilient nation**.

[25] Department of Agriculture, Fisheries and Forestry – Purpose and objectives (Ref)
[26] Source: National Science Statement 2024 (Ref)
[27] Source: National Science and Research Priorities 2024 (Ref)
[28] DISR 2024. *Australia's National Science and Research Priorities*, Australian Government Department of Industry, Science and Resources (Ref)

All of these priorities feature in the timber fibre sector's capabilities and core values.

For example, it's widely acknowledged that actively and sustainably managed forests, both plantation and native, contribute strongly to cost-effective CO_2 drawdown and provide other climate moderating services, while their timber products represent the most climate-friendly, energy-efficient construction materials available. This strong science-based foundation will also enable the Strategy to participate more integrally in such national policy initiatives as *A Future Made in Australia*, viz:

> *"… Through science and innovation, Australia will develop new industries that drive a dynamic economy, provide well paid jobs, improve our quality of life, preserve our unique environment and build a future made in Australia…"*

Consultation

The Strategy development process included an extensive and inclusive consultation component, with the feedback, other views and proposed recommendations of consultees taken into consideration in preparing the Strategy.

The following sections outline the consultation approach taken. A full account of all consultation activities and summaries of feedback received is provided in Appendix 1 (page 106).

Partnership Working Groups

The Department acted as the secretariat for working group meetings, including taking detailed meeting notes.

The Department determined that Partnership consultations on the Strategy development were to be allocated amongst four Partnership Working Groups:

1. Forest resource security, access, and management
2. Infrastructure, transport, and supply chain
3. Processing efficiency
4. People, communities, and workplace development

The approach for the Working Group consultation sessions adopted the following pattern:

A. Brief overview of the Strategy process as communicated to consultees:

"The Fifth Estate has been engaged by the Strategic Forest and Renewable Materials Partnership to develop and write the Partnership's Timber Fibre Strategy. We envisage that the Strategy will be constructed around a number of 'pillars', each of which represents a separate facet or theme relevant to the timber fibre sector. An initial six pillars have been conceived, as follows:

1. **Sustainable resources**: comprising, for example, resource security, climate-resilience, First Nations' land management, utilisation and integrated rural land use
2. **Sovereign manufacturing capability**: comprising, for example, domestic manufacturing, prioritising value-adding, circular economy opportunities and competitiveness
3. **Product and market development**: such as, new construction materials, export markets, affordable housing and carbon sequestration potential
4. **Sustainable jobs**: comprising improving job opportunities (particularly in the regions), skilled workforce, safe-working and career pathways
5. **Investment**: investment attraction and barrier removal for timber resources and processing facilities
6. **Innovation**: science-based decision-making, continuous R&D and extension, and maximum fibre utilisation (waste reduction and circular manufacturing)

B. Preparation instructions for discussion (to be completed before the meeting):

"Your particular Working Group deals with the [*Forest resource security, access & management*] domain. Thinking about the Australian timber fibre sector, document the important opportunities and challenges in your Working Group's domain that should be addressed in the strategy using the attached MS Word template".

C. During the consultation meeting(s):

"Discuss your written responses and discuss ***why*** they are important in addressing the opportunities and challenges within your domain, with particular reference to the above six pillars"

"Give consideration to any actions which may be included in the Timber Fibre Strategy that address these opportunities and challenges. These will be further elaborated at our second Working Group meeting".

Consultation approach and questions

The intention was to "speed date" with the consultees over a 10 to 15-minute discussion, typically by phone or video conference. The questions were be emailed to the consultees in advance.

They were:

1. What issues need to be addressed in a National Timber Fibre Strategy?
2. Why are these the most important issues?
3. How should they be addressed?

An additional bespoke question was asked of investor decision-makers: "What needs to change/happen to increase your confidence to invest?"

The Fifth Estate recorded the responses and grouped them to assist in synthesising and developing prioritised outcomes. Consultees were also asked to nominate examples, relevant to their jurisdiction (state, territory) or industry sector, of current ***best-practices*** or ***exemplars*** in relation to the timber fibre supply chain. This may include practices or innovations around, for example, timber fibre investment, access, management, growth, utilisation, logistics, market development, etc.

The consultations and analysis undertaken in the strategy development project uncovered an array of issues, concerns, and innovative ideas relevant to the sustainable growth of Australia's timber fibre sector. An initial analysis of these findings revealed that the issues could be consolidated and grouped into a set of some 67 response themes as shown in Table 3.

Table 3 – List of consultation response themes

Themes distilled from sector-wide consultations			
Active forest management	Forest protection (disease)	Native forests	Softwood plantation expansion
Alternative materials	Future Made in Australia	Nature positive	Sovereign manufacturing
Best practice	Government role / support	Planning rules	Strategy horizons
Bioenergy / biochar	Hardwood plantations	Plantation expansion	Sustainable forest management
Biosecurity	Hardwood residues	Plantation investment case	The human dimension
Carbon farming	Housing	Private Native Forest	The need for a strategy
Carbon value in timber fibre	Imports of timber fibre	Profitability	Timber Poles
Climate change risks	Industry growth	Promotion of timber use	Tree breeding / genetics
Community acceptance	Infrastructure	Protecting the resource	Uniform national legislation
Competitiveness	Insurance for plantations	Recycled wood	Value-adding / utilisation
Costs of forestry regulation	Integration of hardwood & softwood	Regional communities	Value chain
Ecological thinning	Investment / feasibility	Regional development	Woodchip exports
Energy	Labour shortages	Regional Forest Industry Hubs	Workforce, trades and skills
Exports	Land competition	Research & innovation	
Farm forestry	Local government road levies	Resource security	
Fire / fire risk	Loss of State Forest areas	Right to harvest	
First Nations' lands and practices	Modern Methods of Construction	Scale	
Forest ownership	National forestry policy	Showcase opportunities	

A further synthesis of these 67 identifies issues, themes and opportunities led to the development of a set of six unifying strategies which could potentially form the headline components of the Timber Fibre Strategy.

During the Hobart roundtable on 5th December, industry leaders were asked to review and reconcile these potential strategies with their experience of the various challenges and opportunities facing the sector.

Feedback from the roundtable working groups and general discussion on that day and during the following week was comprehended in crafting the final set of six strategies which are set out in detail in the next section of this report.

The Strategy contains numerous quotes from consultees. The consultees were advised that their input would be anonymous, so the quotes are not attributed. Nor are they intended to be read as fact but rather they are included to provided context and flavour to the strategies and particularly the rationale for selecting the six strategies.

A full compilation of the consultation input and discussions is set out in the Consultation Report (see Appendix 1).

Some additional background documents, written feedback and submissions were received from representative groups and other consultees. These have been compiled into a separate document entitled "*Timber Fibre Strategy Working Papers - Compilation of additional feedback from stakeholders*".

Status of this document

This current document, completed on 6 March 2025, is the final report on the Strategy that meets and completes The Fifth Estate's engagement terms.

It contains six strategies which The Fifth Estate has developed with the benefit of wide consultation with over 100 timber fibre sector stakeholders from across Australia. These consultation activities were followed by discussions with the Co-chairs of the Partnership and the production of six initial draft proposed strategies. Those draft strategies were then considered by a major timber fibre sector roundtable held in Hobart on 5 December 2024 (the Roundtable). The Roundtable was hosted by the Minister for Agriculture, Fisheries and Forestry and was attended by 60 timber fibre sector business, union and government leaders.

The input and advice gleaned from the Roundtable's deliberations has been comprehended in the production of this final Strategy which has been prepared from the Partnership.

… / Six Strategies

SIX STRATEGIES

The following sections of this report describe six strategies and associated details actions for each. These were developed and refined during the project's consultation and testing process, as described in the Consultation Report (see page 106ff), between August and December 2024.

The six strategies are:

1. **Building sovereign timber fibre manufacturing capability and capacity**: The Australian forest products industry will materially increase its sovereign capability and capacity to manufacture domestically produced and recovered timber fibre products.
2. **Meeting demand for timber fibre resources**: Australia's domestic demand for timber fibre-based products will be met from sustainably managed forestry resources.
3. **Healthy forests, actively managed**: Australia will actively manage its forests for their health to sustain their many environmental, cultural, social, and economic services.
4. **Attracting and engaging industry enablers**: The Australian forest products industry will attract and engage the best people, the most advanced manufacturing processes, the required investment, and the necessary supporting infrastructure.
5. **Supporting and growing regional communities**: The Australian forest products industry will provide opportunities within, and support for, regional communities including First Nations peoples.
6. **Innovating the timber fibre value chain**: The Australian forest products industry will embody a science-informed culture that drives innovation and continuous improvement.

Strategy 1 – Building sovereign timber fibre manufacturing capability and capacity

The strategy

The Australian forest products industry will materially increase its sovereign capability and capacity to manufacture domestically produced and recovered timber fibre products.

Rationale

> *"… The domestic wood products processing sector needs to be globally competitive. To be globally competitive, the sector needs to be represented by fewer and larger processing facilities to ensure cost efficiencies and economies of scale. …"*
>
> *"… Sovereign manufacturing capability has been lost in plywood and LVL because of increasing costs, inability to expand and achieve economies of scale, and the lower cost of imports. This capacity will not be regained …"*

Building sovereign manufacturing capability and capacity has been intentionally selected as the first strategy, not because other strategic issues are less important but because the objectives of the other strategies lead to and / or support the manufacture and use of wood products. For example, the strategies to ensure Australia actively manages its forests for their health (Strategy 3), and aspects of materials recovery, recycling and remanufacture (covered in Strategy 4), are there to underpin the manufacturing sector's sustainable timber fibre resources.

The recognition of the requirement for greater sovereign manufacturing capability and capacity is, at least partly, due to the international supply disruptions caused by COVID-19, the war in Ukraine, and ongoing global political instability. In the face of international volatility, the need to build Australia's manufacturing scale, depth and resilience has been recognised across many industries including the forest and wood products sector and others well downstream from wood products manufacturing. For example, the shortage of timber pallets impacted the distribution of food and groceries during the pandemic.

The industry consultation process provided extensive input and ideas on the need to build sovereign timber fibre manufacturing capability and capacity, why it is essential and how to make it happen. The text below summarises the industry inputs supporting the rationale followed by some actions and responsibilities.

Self-sufficiency?

In the past there have been calls for Australia to become "self-sufficient" in meeting domestic demand for timber products, but, despite this objective, Australia has continued to be a net importer of timber products. The most recent data show that Australia currently has net annual imports of over $4 billion, and that the deficit is increasing as the value of exports decline and imports ramp up (see Figure 7[1]). Strategies for self-sufficiency have clearly been unsuccessful, and the application of the concept warrants rethinking.

Rather than a goal of self-sufficiency, the forest and wood products industry has recognised that the objective should not be producing in Australia everything we use here and thereby eliminating imports, but rather the goal should be to *increase* sovereign manufacturing capability and capacity of the timber fibre products that can be manufactured from the resource base we have, with a focus on making the highest value products here in Australia.

The result will be an increase in domestic manufacturing, replacement of some imported products and an improvement in the current trade imbalance measured in both dollars and volumes.

[1] Source: ABARES, Australian forest and wood product statistics datasets, Sept-Dec 2023 (Ref)

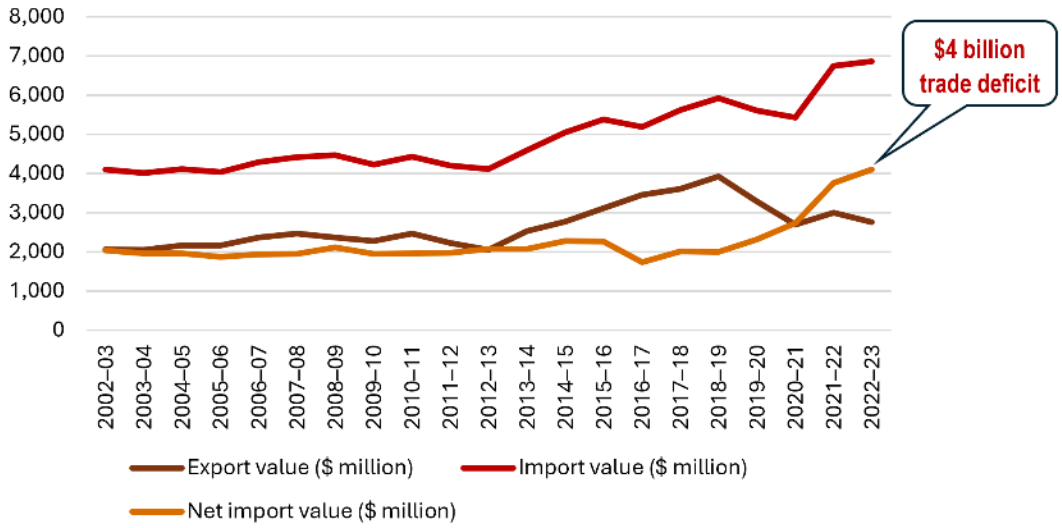


Figure 7 – Australia's forest products trade ($ millions)

Fibre availability

"… grow more trees and the domestic processing industry will prosper …"

"… we need to stop exporting high value sawlog …"

Any increase in sovereign manufacturing capability and capacity can only be achieved if there is fibre available. Increasing the total availability of fibre is dealt with in detail in Strategy 2. However, it is important to recognise here that an analysis of the current exports from Australia shows that there is an opportunity to increase fibre supply to domestic manufacturers by redirecting logs and woodchips currently exported (Figure 8[2]).

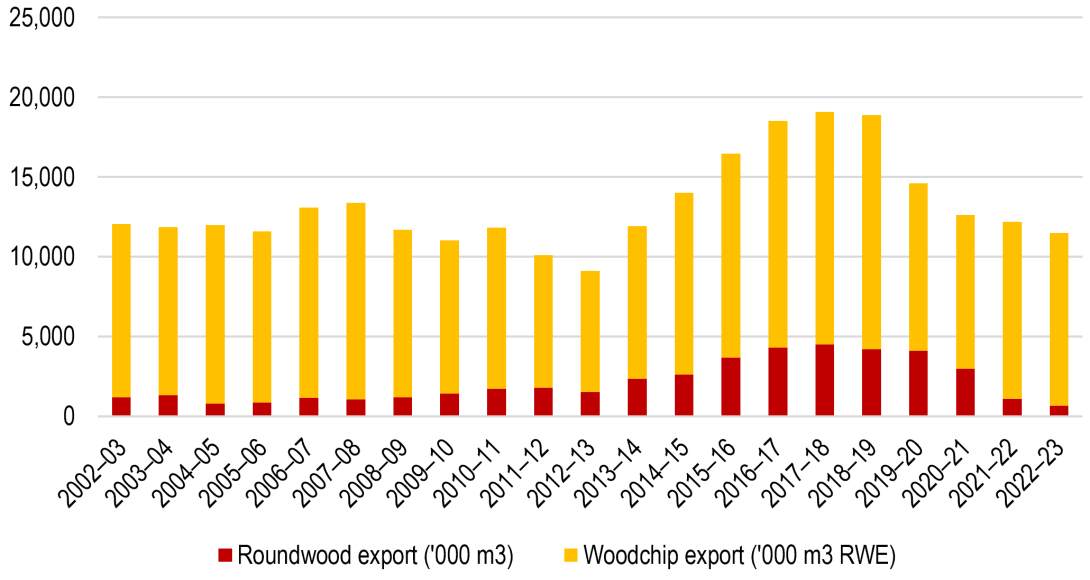
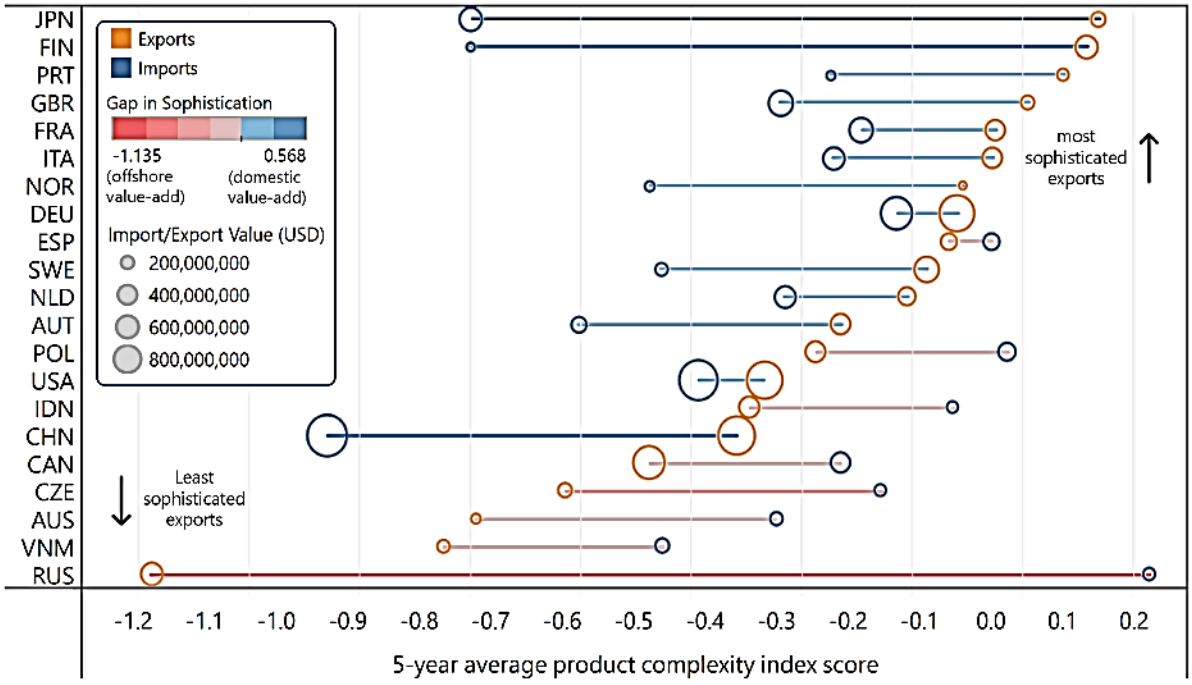


Figure 8 – Australia's log and woodchip exports ('000 M^3)

[2] ABARES, Australian forest and wood product statistics datasets, Sept-Dec 2023. Note that woodchip export data is expressed in bone dry tonnes which has been multiplied by 2 to estimate the round wood equivalent (RWE)

The industry recognises that innovation, new product development, new manufacturing methodologies and ultimately investment in sovereign manufacturing capacity and capability will be required to utilise the fibre currently exported in the form of logs and woodchips. This opportunity, and the imperative, to add more value to Australian grown fibre in Australia is demonstrated in Figure 9[3] which presents an analysis of Australia's comparative place in the value-added / import-export dynamic. It suggests Australia has a large competitiveness gap to make up if it is to excel as a nation which exports a higher proportion of more processed forest products than at present.



Explanation of import / export sophistication analysis

Figure 3 compares the imports and exports of countries with major forestry industries according to the sophistication, technical knowhow, industrial complexity, and specialisation required to produce the forest products in which those countries trade. The size of the bubbles represents the relative dollar value of that country's imports and exports, while the colour of the lines represents the extent of the 'sophistication gap' between them. A bright red line (such as Russia's and Australia's) indicates a net trade profile characterised by low domestic value-adding; in other words, a country whose imports are far more sophisticated than their exports. A bright blue line (such as Japan's) indicates the opposite. This means that countries at the top of the list – such as Japan, Finland and the United Kingdom – mostly import relatively basic 'raw materials' but export very sophisticated and specialised forest products. Countries at the bottom of the graph – including Australia, Vietnam and Russia – in the main, export unsophisticated and unprocessed forest products requiring only limited technical know-how to produce, and then import more innovative and specialised products from other places. In combination, these data clearly highlight some of the characteristics that set leaders in productive and innovative forest products manufacturing apart from laggards like Australia. Most notable in this regard are countries like Finland, Sweden and Austria, whose forest products exports are not only much more sophisticated than their imports but also much more valuable. It is worth noting that this analysis does not capture the fact that more sophisticated wood products – softwood sawnwood, wood-based panels, paper and paper products, and hardwood sawnwood – are indeed produced in Australia for the domestic market. However, Australia is not self-sufficient in the production of these products and relies on imports to meet our consumption needs, while at the same time we export significant quantities of low-value woodchips, pulp, and pulp logs which could potentially be optimised for higher-value end uses.

Note: The Product Complexity Index data in this chart are derived from https://atlas.cid.harvard.edu/growth-lab, and trade data derived from https://comtrade.un.org/, with the calculations by the authors. 5-year average values have been used for import, export, and PCI data to minimise impacts of short-run market volatility.

Figure 9 – Sophistication of forest products imports and exports by country

[3] Source: Langridge, M. et al. 2023. Australian forestry and forest products outlook and opportunities - A strategic review prepared for Australian Forest and Wood Innovations (AFWI). Tasmanian Policy Exchange July.

The Australian industry must be cognisant of the loss of sovereign manufacturing currently taking place in New Zealand. Although the country has timber fibre resources well in excess of domestic requirements, the manufacturing base in a number of wood products sectors is rapidly contracting, particularly in those parts of the industry that are exposed to international markets and competition. The Australian industry must learn from the New Zealand experience where an industry focused on the export of unprocessed logs is contributing to the loss sovereign manufacturing capacity and capability.

To support investment in sovereign processing capacity, existing participants and potential investors have expressed the need for fibre supply to be de-risked. Four issues have been specifically mentioned:

- Term of supply contracts: long-term fibre supply contracts are required to meet long-term investments in processing capacity.
- Take-or-pay clauses: these are counterproductive and stifle the appetite for investment.
- Security guarantees: companies with substantial investments that provide a secure market for forest owners are required to lodge security guarantees which are treated as debt by financiers and therefore reduce the capacity for processors to invest.
- Market power: in some regions, processors are exposed to fibre suppliers who have significant market power due to their scale and lack of competition and to invest in new capacity, processors need to have confidence that this market power will not be used against them

Current Government policy

Increasing Australia's sovereign manufacturing capacity and capability is consistent with current Federal Government policy.

At COP28 in Dubai the Australian Government, along with 16 other countries in the Forest and Climate Leaders' Partnership Coalition on Greening Construction with Sustainable Wood committed to increase the use of timber in the built environment by 2030, recognising that wood from sustainably managed forests provides climate solutions within the construction sector and that such policies and approaches will result in reduced Greenhouse Gas Emissions and an increase in stored carbon.

> *"This is an important step in the right direction by the Australian Government to build confidence in the timber construction market. We look forward to continuing our work with the Government on developing enabling policies which will turbo charge a greater use of wood in the built environment."*[4]

The Coalition intends to work with non-government partners (i.e. industry) to responsibly accelerate action and scale up impact in the following areas[5]:

- Advancing public policies and enabling regulatory frameworks that support sustainable wood production. Priority actions include:
  - identifying, developing, and updating regulations and forest monitoring and decision-support systems needed to ensure sustainable management of forests and associated wood supply, and fibre security, and
  - sharing the knowledge system more widely with other countries.
- Advancing public policies and enabling regulatory frameworks that reduce barriers for increased use of wood in construction. Priority actions include:
  - public procurement and public support for private sector uptake of sustainable wood in construction,

[4] Source: Australian Forest Products Association (Ref)
[5] Source: FCLP Public Announcement (Ref)

  - developing or updating building codes, and
  - tax incentives and/or guidance to subnational governments.
- Supporting systemic collaboration and facilitate access to knowledge and support. Priority actions include:
  - improving quality of, addressing gaps in, and facilitating access to relevant databases and mapping of public policies and supply & demand for sustainable wood sourcing, and
  - knowledge and technology transfer, education, and training for the diverse array of actors (both traditional and non-traditional) in this space to create a more collaborative and efficient community.
- Mobilising finance and enhancing risk-taking capacity. Priority actions include:
  - scaling up investments in research & development in wood design and construction,
  - encouraging partnerships between the public and private sector, and
  - enhancing and/or facilitating access to funding programs.
- Engaging societies. The coalition will work to promote a 'wood culture' from the top-down, to support sustainable forest management, circular forest bio economies, and greening construction; and develop pilot projects and mentoring within and between global south and north countries, and city-to-city engagement

This policy announcement builds on the recognition in a report from the Federal Government's Climate Change Authority (CCA) which cited the 'carbon stored in trees' as well as 'harvested wood products' helped reduce Australia's greenhouse emissions in the year to June 2023[6].

The industry is committed to working with governments to support this initiative and rightly expects the Federal Government to promote this policy and to work to bring the States along with its objectives.

The Federal Government's housing policy states that all levels of government need to collaborate with market participants – including investors, and the residential development, building and construction sector, to unlock quality, affordable housing supply over the medium term. To help tackle these challenges, the Australian Government is bringing these parties together under the National Housing Accord. The Accord initially set an aspirational target of one million new, well-located homes over 5 years from mid-2024. In August 2023, National Cabinet agreed to update this initial target to 1.2 million new homes[7].

Under its *Future Made in Australia* policy the Federal Government has outlined a framework to identify priority industries under two streams: the "net-zero transformation" stream and the "economic security and resilience" stream. Both streams could benefit from Australia's domestic timber fibre production and the 2024-25 Budget included a commitment to invest $22.7 billion over the next decade to build a Future Made in Australia[8].

This plan will detail explicit public investment, at scale, to attract private finance in sectors that have a comparative advantage in a net zero global economy, or where domestic capability could deliver economic resilience and supply chain security.

At present, the Federal Government has not identified the timber fibre industry as a target industry for its *Future Made in Australia* program. However, as can be seen from the extract below (Box 1)[9], the timber fibre industry *ticks every criterion* for Government support under this program. Accordingly, this Strategy will recommend specific inclusion of the timber fibre industry as a priority for *Future Made in Australia*.

[6] Source: Climate Change Authority 2023 Annual Progress Report (Ref)
[7] Australian Government, Increasing Housing Supply (Ref)
[8] Source: the Australian Government's 'A Future Made in Australia' 2024-25 Budget factsheet for details (Ref).
[9] Future Made in Australia – National Interest Framework supporting paper (Ref)

***Future Made in Australia* - The National Interest Framework**

Identifying priority industries in the national interest:

There are two streams under which an industry may warrant Government intervention to attract private investment at scale.

The **Net Zero Transformation Stream** will identify priority sectors where:

- Australian industry is expected to have a sustained comparative advantage in a net zero global economy; and ✓
- Public investment is needed for the sector to make a significant contribution to emissions reduction at an efficient cost. ✓

An industry is more likely to qualify for support under this stream if the industry:

- is energy-intensive and capable of substantially reducing its carbon emissions by taking advantage of our abundant renewable energy resources; ✓
- has output that embodies low carbon emissions and can help contribute to decarbonisation in other areas of the economy; ✓
- can leverage Australia's highly skilled workforce, using technological improvements to reduce labour intensity; ✓
- is able to achieve economies of scale in Australia ✓; and
- aligns with our international trading partners' current or future needs and is complementary to actions taken by our strategic partners. ✓

The **Economic Resilience and Security Stream** will identify priority sectors where:

- some level of domestic capability is a necessary or efficient way to protect the economic resilience and security of Australia, and the private sector will not deliver the necessary investment in the absence of government support. ✓

Consideration under this stream will include factors such as:

- The global and domestic concentration of supply and supply chains; ✓
- The vulnerability of supply to disruption; ✓
- How critical the industry or product is to our security and resilience ✓; and

Whether the industry can prevent, absorb, adapt or transform processes to limit the consequences of a shock to our national interests. ✓

Box 1 – Ways the timber fibre sector aligns with "Future Made in Australia"

The Housing Australia Future Fund Facility (HAFFF) is a Federal Government funding initiative administered by Housing Australia to support the delivery of 20,000 new social homes and 10,000 new affordable homes across Australia over a 5-year period, including housing to support acute housing needs. Its $10 billion endowment is managed by the Future Fund to be used to (1) address acute housing needs, including the needs of indigenous persons, women, children and veterans, and (2) enable support to be provided to increase the availability of social housing and affordable housing.

The HAFFF distributes grants to persons or bodies to address acute housing needs, social housing or affordable housing. However, the legislation is silent on specific requirements on types of housing except to say that it must be consistent with any other legislation for example laws governing disability housing requirements.

Amounts will be transferred from the Housing Australia Future Fund to the COAG Reform Fund for the purposes of making grants to the States and Territories, and therefore it is unlikely that the Commonwealth will be giving individuals grants, and more likely grant monies to the States to invest.

As recently as 13 November 2024 the Treasurer announced[10] that the States are to be offered incentives to cut red tape and boost modular construction productivity with a $900 million fund to boost modular construction The National Productivity Fund is designed to reward states and territories that adopt productivity-enhancing reforms which has the potential to revitalise the construction sector by encouraging modular and prefabricated housing through streamlined policies and regulations.

The National Reconstruction Fund is also relevant including the $500 million earmarked for the agriculture fisheries and forestry industries with potential areas of focus and activity including processing primary industry outputs into

[10] Source: Build Offsite 2024. $900 Million Fund to Boost Modular construction with policy Incentives (Ref)

higher value goods and manufacturing food, beverages, timber and fibre products that are processed from primary industry outputs[11].

The Buy Australian Plan[12] provides an opportunity with initiatives such as

- maximising opportunities for Australian businesses in major infrastructure projects,
- providing more opportunities for First Nations businesses with a view to maximise skills transfer so that we can get more First Nations workers into long-term skilled work,
- supporting industry sectors through the Government's purchasing power
- using Government spending power to take action on climate change.

The National Housing Accord, the *Future Made in Australia* policy, the National Productivity Fund, the National Reconstruction Fund, the Buy Australian Plan and the HAFFF provide ideal opportunities for the Australian timber fibre industry to encourage the Government to have terms and conditions that prioritise the use of timber fibre products and provide support and direct assistance in developing sovereign manufacturing capacity and capability. The industry must press its case to secure a significant proportion of each of these funding sources and programs to increase sovereign manufacturing of domestic timber fibre.

The Commonwealth Government is also continuing to offer the R&D tax incentive where eligible companies can receive a tax incentive of between 8.5% and 18.5% over the company tax rate for expenditure on qualifying R&D activities[13]. The industry will leverage these initiatives to increase research and development where appropriate. Research, development and innovation have been recognised by the industry as an essential component in this Strategy (refer to Strategy 6: *Innovating the timber fibre value chain*).

Global demand

Global demand for manufactured wood products is forecast to continue to grow based primarily on macro changes such as growth in GDP and population, and international trade policies (Figure 10)[14].

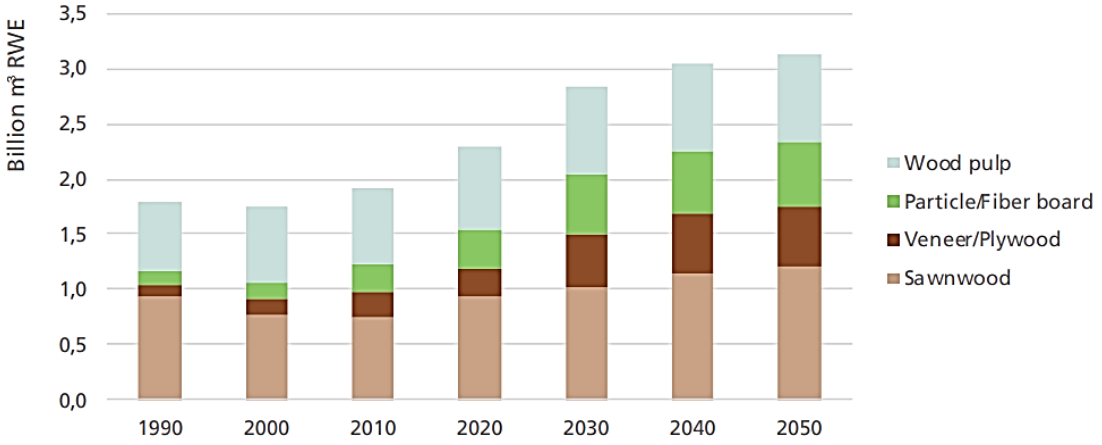


Figure 10 – FAO projected consumption of wood products

FAO forecasts that changes in the global use of wood products in modern methods of construction will be much more rapid with demand for mass timber products increasing at least fourfold from current levels by 2050.

[11] National Reconstruction Fund Corporation. 2023. *Value-add in agriculture, forestry and fisheries* (Ref)

[12] Australian Government Department of Finance Buy Australian Plan (Ref)

[13] Source: Australian Government (Ref)

[14] FAO. 2022. Global forest sector outlook 2050: Assessing future demand and sources of timber for a sustainable economy – Background paper for The State of the World's Forests 2022. FAO Forestry Working Paper, No. 31. Rome. (Ref)

This increase in consumption will be driven by countries promoting timber as a viable alternative to conventional steel and concrete construction in high-rise buildings as part of their national policies in the context of greenhouse gas emissions reduction and the reduction of environmental impacts of conventional construction materials. The supply of mass timber products from overseas is forecast to be constrained due to competing demand and reduced global supply of fibre. If the Australian building and construction sector is to use more mass timber it will need to be manufactured here.

Domestic demand

Domestic demand for forest and wood products will be largely driven by population growth, with actual population depending mainly on the birth rate and the rate of net overseas migration. According to the Australian Bureau of Statistics, Australia's population is projected to be between 34 million and 40 million by 2050[15] from a current population of 27 million[16], an increase of between 20% and 40%.

This increase in population will impact demand for all forest and wood products with an example of the impact on just one product, sawn softwood timber, highlighting the significance whereby no later than 2050, Australia will have[17]:

- New housing demand around 259,000 dwellings per annum, totalling …
- 5.175 million additional households whose demography will demand a marginally different housing mix to the current distribution of housing formats, requiring …
- 6.507 million m^3 of sawn softwood / annum, almost 2.0 million m^3 per annum higher than 2021, with …
- An implied gap between demand and local production of 2.638 million m^3 per annum, equivalent to 40.5% of total demand.

Domestic demand for products manufactured from pulped wood fibre – that is, pulp and paper products – are similarly driven by population changes. However, the past decade has seen Australia's *per capita* consumption of paper and paperboard falling by 3.2%, led by newsprint and printing & communication papers[18].

Hence, while tissue and packaging paper consumption continue to grow steadily, the overall *domestic* trend for the pulp & paper sub-sector picture is one of static-to-declining demand:

> *"…Over 28 years, Australian paper and paperboard demand has shifted from stable growth – ending 2008 when consumption peaked at 3.932 million tonnes – to persistent falls. In 1995, Australian consumption was almost 3.268 million tonnes. In 2023, demand was 14.7% lower at 2.788 million tonnes…"*[19]

The last 20 years have shown how difficult it is to secure investment in pulp and paper manufacturing capacity in Australia with the only material investments being the establishment and expansion of the Visy facility in Tumut NSW. New investment in sovereign manufacturing capacity will be dependent on resource availability, the ability to achieve internationally competitive scale, and the ability to manufacture whilst meeting Australia's strict environmental standards in a context where international standards and compliance costs may not be as high. At least in the short term, timber fibre grown specifically for pulp and paper manufacture (and some forest and processing residues), will need to find export markets. The export woodchip sector pointed out during the

[15] Data rounded to nearest million from ABS data accessed 20/11/2024 (Ref)

[16] ABS data accessed 20/11/2024 (Ref)

[17] Woods, T. and Houghton, J. 2022. *Future market dynamics and potential impacts on Australian timber imports*. Forest and Wood Products Australia report. August (Ref)

[18] Source: Industry Edge. 2023. Pulp & Paper Industry Guide for Australia and New Zealand (Ref)

[19] Source: Industry Edge. 2023. *Op. cit.*

consultations that they play an important part in the industry and has invested heavily in infrastructure and efficient materials handling capacity.

Although it is clear that Australia will need to rely on some import of wood products for the foreseeable future, an increase in its sovereign manufacturing capacity and capability is required to close the supply demand gap and reduce reliance on imports (in volume *and* value). As noted above, the type of products required to meet the growing demand will change, for example, the increased adoption of modern methods of construction will see an increase in demand for the full range of timber products including sawn structural grades, mass timber and other engineered wood products.

Locally manufactured products will therefore need to compete, but that competition must be on a level playing field. As an absolute minimum, imported timber products must meet Australian Standards, come from forests that have internationally recognised forest management and supply chain certification, and comply with Australia's illegal logging laws. Further, the Government must lead by example, through its own procurement policies, a national move to make timber the first choice in government funded buildings and fit outs. Procurement policies should be supported by regulation that ensures environmental product declarations are science-based and are incorporated consistently across regulatory authorities.

Competitiveness

> *"… As a result of high input costs domestic manufacturing will be lost …"*
>
> *"… unless manufacturing in Australia can be more cost competitive, all logs will be exported, and the manufactured wood products will be imported … "*

Imported timber products have a strong foothold in many Australian markets across a wide range of products, and Australia has free trade and / or low import tariff arrangements with most countries that supply forest and wood products into the market. One example is the imports of sawn softwood which have average over 600,000 cubic metres per year[20] (more than the output of Australia's largest sawmill) over the last three decades (Figure 11[21]).

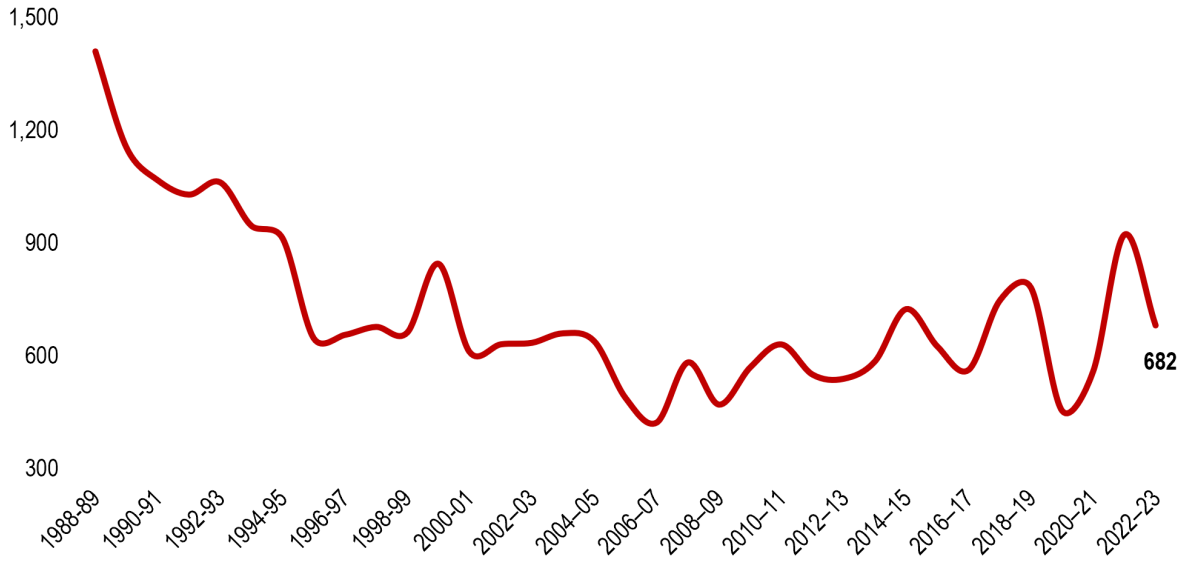


Figure 11 – Thirty years of sawn softwood imports ('000 cubic metres)

[20] ABARES data
[21] ABARES data

This situation will not change for another three decades at least, even if there is a rapid increase in plantation establishment.

Therefore, Australian manufacturers must be sustainably profitable *and* cost competitive with imported products for there to be sufficient confidence to invest in sovereign manufacturing. Whilst fibre costs have increased for many manufacturers, there is recognition across the wood products manufacturing sector that forest owners also need to receive a return on their investment over the long term to ensure the ongoing supply of logs and, for plantations, to provide sufficient incentive to replant after harvesting.

The domestic manufacturing sector also recognises that they must compete with log and fibre export markets. However, other (high) input costs are seen by the industry as the major disincentive to increasing capacity and capability. Consultees advised that product selling price increases are not keeping pace with, for example, energy, labour[22], insurance, compliance and transportation cost inflation, and these costs are cited as areas where Australia must improve to be competitive and to encourage growth and investment in sovereign manufacturing capability and capacity.

> *"… Australia's cost of production is making us less and less competitive. For example, unprocessed sawn wood can be value added in Vietnam which has a labour cost of AUD 2.12 per worked hour compared to Australian labour cost of AUD 36.50 per worked hour. Although labour productivity is not as high in Vietnam (mainly due to a lack of mechanisation), it is catching up quickly. It is more cost efficient to ship unprocessed timber to Vietnam and have it processed there and then ship it back to Australia or to international markets…"*
>
> *"… Energy costs are increasing unsustainably, and subsidies are needed to assist timber industry participants with the capital cost of installing renewable energy (burning timber waste) capacity. Wind and solar are subsidised so why not carbon neutral wood-based fuel? The renewable energy status of heat energy generated from burning wood residues must also be recognised …"*
>
> *"… Australian timber manufacturing is uncompetitive due to the cost of energy, labour cost, and raw fibre cost. NZ's Red Stag, China and Europe are particularly competitive in the Australian structural softwood market …"*

One industry leader asked: *"why is Australia uncompetitive against high labour cost countries in Europe?"*. Part of the answer to this is that we are putting our labour effort into relatively low value unprocessed fibre exports (as illustrated above in Figure 8 and Figure 9) so, where productivity is measured by dollars of output per unit of labour input, Australia is considered a "laggard". As well as labour productivity *per se*, international benchmarking of productivity should also consider technology, site efficiency, recovery and all other aspects of productivity to help Australian manufacturers understand what is possible and what can be implemented in Australia.

Although there is limited empirical data available, industry believes that labour productivity is stagnant in some sectors and regions and is improving rapidly in others. Regions / industries where labour productivity is improving correspond to areas where there has been significant capital investment in manufacturing. For example, in the NSW Central West Region where there has been extensive investment in new processing capacity and capability, between 2015/16 and 2021/22 labour productivity (GRP / number of direct employees) improved by 97%[23]. Importantly, competing supplier countries have undertaken, or are undertaking, similar investments and have achieved similar labour productivity improvements as has been experienced in the NSW Central West.

[22] No specific and up-to-date wages data are available to support this view from employers which is disputed by employee representatives.

[23] BDO & University of Canberra, Socio-Economic Impact of the Softwood Plantation Industry in The Central West NSW Forestry Hub Region, 2021-22, A Report for the Central West NSW Forestry Hub (Ref)

The need to increase labour productivity can be partially addressed by investments in machinery and technology, however this usually requires additional energy inputs – and energy costs have been cited as perhaps the most significant impediment to investment in new manufacturing capacity and capability. Industry will seek Government support to contain cost inflation, particularly energy costs.

Energy costs

During the consultation process, energy costs were highlighted as perhaps the most significant issue facing current Australian timber fibre manufacturers and concerns about future energy costs are a significant deterrent to new investment in sovereign manufacturing capacity.

> *"… we constantly monitor our spot energy costs and when the price gets to a critical level, we shut the factory … if we keep manufacturing, the more product we make, the more money we lose …"*

Energy prices have been quoted as the main cause of the loss of sovereign manufacturing capacity in New Zealand and there is great concern within existing manufacturers that Australia is on the same path (Box 2).

Governments must intervene to ensure that the timber fibre processing industry has access to reliable and affordable energy if it is to continue to compete with imports and have confidence to invest in new domestic manufacturing capacity (Energy strategies are expanded on in Strategy 4 – *Attracting and engaging people and other industry enablers*).

Box 2 - Example of impacts of high energy cost

Australian Forest Products Association

AFPA News: 20 November 2024

Closure of New Zealand paper facility highlights the pressures faced by Australia's wood and paper products manufacturers

Australia's forestry and forest products sector is warning that locally based manufacturing facilities are close to breaking point with spiralling energy, logistics and insurance costs taking a major toll on business operations, Chief Executive Officer of the Australian Forest Products Association (AFPA), Diana Hallam said today. The warning comes as Australia and New Zealand based paper and packaging manufacturer *Oji Fibre Solutions* (Oji FS) today announced it will likely end paper production at one of its major NZ mills because it's no longer profitable. The closure will cost around 230 local jobs. The mill supplies paper to Oji FS's three Australian packaging facilities.

Diana Hallam said, "The forestry and forest products supply chain is Australia's 6th largest manufacturing sector and the processing and manufacturing facilities that employ local people and create local products, from timber house-frames to packaging, cardboard and paper and other home furnishing products are under extreme pressure with rising costs. The challenges we face here are the same as those across the Tasman.

"One of AFPA's member manufacturers has reported its future Queensland electricity contract will increase threefold from $50 per megawatt hour to over $150 early next year. Rising energy costs like this, along with increasing transport and logistics and insurance costs, coupled with the depressed market for building and construction products like timber – is proving to be a very difficult storm for manufacturing businesses to weather. "Our sector is responsible for injecting $24 billion into the economy annually. We directly employ 80,000 people and indirectly employ another 100,000 on top. Many of these jobs are the lifeblood of regional centres. It is vital to maintain the scale and integration of our sector – if the cost of one element in the supply chain becomes too difficult it will have a huge ripple impact across the rest of the sector.

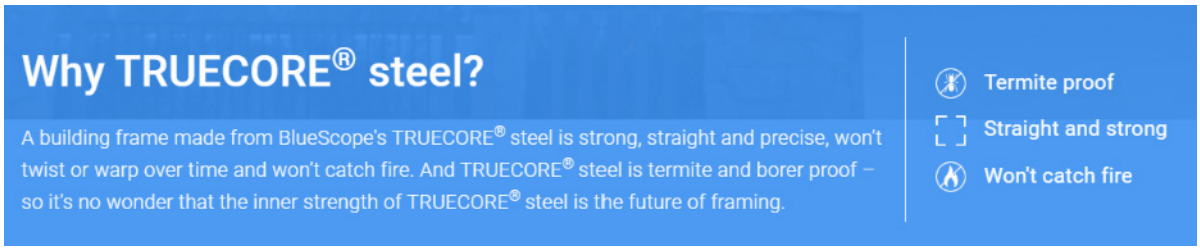
"The cost of local manufacturing and the flow on impact to local jobs and communities is shaping up to be a huge Federal Election issue in 2025. Large manufacturers need affordable and reliable power to run their equipment and make local products. Right now, those costs are out of control and flowing onto those other input costs like transport. "Forest products manufacturing needs a solution to this crisis and AFPA along with the rest of our sector will be campaigning on this issue ahead of the 2025 Federal Election," Diana Hallam concluded.

Competing products

> *"… we aren't sending the right signals about timber to the construction market. For example, after the Black Summer fires, we said "All our forests burnt down, so we need more plantations" - but this was a disastrous media message, because people are instead turning to alternatives such as steel framing … "*

Acknowledging that the Australian timber fibre industry will not be able to meet all domestic demand until additional resources become available, and Australia's sustainable yield of fibre increases and / or when unprocessed exports are manufactured into products consumed in Australia, the industry recognises that meeting the supply demand gap with imported timber products is preferable to allowing non-timber fibre products to gain additional market share.

However, in addition to sovereign manufacturing capacity needing to be cost competitive with imported timber products, some timber products manufactured in Australia are facing increasing competition from alternatives, with steel framing being the most obvious example.



Steel framing, produced and promoted by Bluescope, has made market share inroads by using Bluescope's advanced manufacturing and distributions systems, and their experience (and budget) in sales and marketing. The steel framing industry also has plans to neutralise timber's natural advantage as the more environmentally and emissions friendly product through the (eventual) production of green steel – Bluescope has the research capacity and budget to overcome their current disadvantages.

> *"… The timber industry doesn't have the cash to market its product like the steel industry does …"*

> *"… Our green and carbon friendly credentials will not last forever – green steel will eventually overcome its challenges …"*

The steel framing industry has some significant advantages over timber, particularly given the timber framing sector's structure and complicated supply chains – multiple sawmills, distributors, and fabricators. It is reported that steel has some significant cost and regulatory advantages, and that government contracts specify steel and not timber.

> *"… to install Structural Steel, they are only paying approximately $30/hr, however, if we were to engage installers for timber frames/trusses, we would have to pay approximately $70+/hr. We are not on a level playing field, and given there is no licencing to stop unskilled/qualified people installing steel frames, they are currently being paid peanuts … "*

> *"… we should be calling on the Government to specify all Government projects in timber, as we are disadvantaged from the start with all government jobs being put out in steel specs. We should be calling for this to be changed as it discriminates against timber …"*[24]

[24] Source: FTMA Australia (*pers com.*)

Imported timber, steel, or both, will be required to fill the framing supply gap identified and quantified by Woods and Houghton[25].

It has been suggested by some industry participants that, to build sovereign timber products manufacturing capability and capacity, the Australian wood products manufacturing sector will need to work with both importers and the steel framing industry to enable the sector to gain a sound understanding of their capabilities, to facilitate the incorporation of world's best practice and technology, and to maintain viable markets[26].

The industry understands the need to co-ordinate its promotion of the benefits of the use of timber fibre in all applications, clearly articulating timber fibre's status as the most environmentally friendly construction material, and there is concern that this promotion is not being done effectively, particularly compared to the big budget promotions by the steel industry.

The industry also raised concerns that not all imported timber products meet environmental and / or quality standards, for example:

> *"…. A clear framework addressing non-conforming building products is needed – States working with the Feds on compliance, consistent product information, and enforcement – we don't do it well and government has a huge role in it …"*

New products and value adding

Consultation with the Australian forest and wood products industry, right along the value chain, highlighted the need to develop sovereign manufacturing capacity in *new* products that will *add value* to available timber fibre resources. There is also wide recognition that appropriate technologies for the manufacture of new and highly value-added products exist and are being employed overseas.

> *"… Our current domestic fibre shortage, plus the value-adding imperative, means we should consider importing more of our commodity timber needs and focus our domestic processing industry on higher-value production …"*

Research and innovation (see Strategy 6) are required to adapt these technologies and processing methods to manufacture products that can utilise the resource available in Australia and meet domestic market requirements but learning from overseas experience will enable the Australian industry to speed up the development of new products.

> *"… We need to move the domestic timber fibre processing industry up the value chain as far as we can … shifting from "commodity timber production" toward engineered wood products …"*

> *"… We really need to learn from what's happening overseas … glulam has peaked in Europe and is being replaced in market volume terms with mass LVL – high volume recovery of products that can be used in structural applications …"*

There has been progress on the development, and application in construction, of engineered wood products in Australia. However, these products, as is the case, for example, of glue laminated beams and cross laminated timber, have utilised fibre already recovered from relatively high-quality logs.

[25] Woods, T. and Houghton, J. 2022. *Future market dynamics and potential impacts on Australian timber imports*. Forest and Wood Products Australia report. August – (Ref)

[26] Note that the Australian forest and wood products industry acknowledges their obligation to work within competition law requirements this was stressed by consultees.

> *"… We need to ensure we utilise all of the tree: we must process and sell the sausages … not just the filet steak …"*

The continued development of these products, and the markets that utilise them, is important but there also needs to be a concerted effort to develop and manufacture products, particularly products used in construction, that utilise fibre from lower quality logs and the fibre resources that are currently being exported as logs and woodchips. The building of manufacturing capacity for these new products may require current pulpwood only plantations to extend the rotation length and change silvicultural regimes. However, where wood properties are fit for purpose the potential to shorten rotations should be explored, potentially reducing the risk and increasing the returns for plantation investors.

The Australian Research Council Industrial Transformation Research Hub to Advance Timber for Australia's Future Built Environment, primarily funded by the Commonwealth Government with support from FWPA and some softwood timber manufacturers, is developing several innovative timber products and building systems to enhance Australia's wood processing and construction capacity. These include long-span timber and wood-based hybrid floors, connection systems for extended building life, hybrid timber load-bearing solutions, fire safety of open-plan timber compartments, and moisture monitoring systems.

Key research areas also include the value-adding of traditional non-structural wood fibre which involves exploring new applications and enhancing the properties of wood fibre to increase its utility and market value. Key outcomes of these projects include improved vibration performance and acoustic compliance, enhanced fire safety, better moisture management, and increased long-term performance of timber building elements. These innovations aim to stimulate regional development and support the transition to a circular, net-zero economy.

The development of new products should not be confined to the use of timber fibre in construction. Australia has virtually no bioproducts manufacturing, yet the raw material timber fibre resources required for the manufacture of, for example, biofuels, biochemicals and bioplastics, are currently available with large volumes being exported in an unprocessed state. The industry recognises that development and commercialisation of some of these products requires significant research, may have long lead times, may supply markets that currently don't exist and carries a relatively high level of risk. Therefore, support will be needed if sovereign capability and capacity is to be built in bioproducts manufacturing, particularly from governments and the research sector. However, there are a suite of bioproducts that can be manufactured from Australian grown timber fibre that have globally mature markets and are already being manufactured. It was suggested that the Government should play an active role in the facilitation of investment by existing global manufacturers into Australia and/or encourage investment utilising internationally developed bioproduct manufacturing technologies which use timber fibre.

Modern Methods of Construction

> *"… Trees are being bred and planted for traditional sawlog/sawmilling uses but these will not be harvested for 30+ years. Development and management of the plantation resource must be cognisant of the potential/likely changes in the log characterises that will be needed for the new timber products that will be used in MMC, and be in a position to adapt to these changes …"*

Modern Methods of Construction (MMC) refers to the wide variety of construction methods that are different from traditional onsite construction. This includes prefabrication, off-site manufacturing, and modular or volumetric dwellings, as well as new technologies such as 3D printing, robotics, and artificial intelligence.

The benefits include:

- Reduced construction time to deliver new homes.
- Factory controlled settings which improve quality.

- Flexibility and adaptability of designs.
- Predictability and ability to better plan contingencies, eliminating unanticipated events from impacting delivery timeframes i.e., weather delays.
- Waste and downtime minimisation.
- Better and safer working environments with improved labour productivity.
- Greater ability to manage the housing delivery pipeline.
- Reduced impact and disruption to neighbours and the community.[27]

The forest and wood products industry recognises the advantages of MMC, particularly, in house construction which traditionally uses significant quantities of timber and is the main driver of demand for a wide range of products manufactured from timber fibre. The industry embraces the opportunity to be at the forefront of utilising existing timber fibre products, and developing new products, to provide components used in MMC.

> *"… The Government's role could be to provide or underwrite an offtake agreement for, say 200,000 modular houses which would provide the investment security for private investors to launch a major new modular housing enterprise in multiple locations, producing flat-pack houses and components (maybe this could be akin to the national renewable electricity Capacity Investment Scheme which provides revenue underwriting, but for modern housing construction) …"*

MMC has a particular applicability to social, affordable and resilient housing which are a focus of Federal and States' housing policies. Governments have a role in supporting the uptake of MMC, through:

- Policies and regulation which promotes the use of timber fibre in modern methods of construction for social, affordable and resilient housing.
- Support financing for MMC capacity and the timber fibre-based components used in MMC.
- Support for the development of MMC precincts in regional timber fibre processing centres, particularly those closer to major areas of housing demand.
- Providing the infrastructure needed for the manufacture and transport of timber fibre-based components used in MMC.
- Streamlining the certification and regulatory process for construction using MMC.

> *"… A big blockage in wider and more rapid uptake of factory-built housing is certification and regulatory approval. This new method is unfamiliar with builders and regulators …"*

The Australian timber industry has a solid base in off-site manufacturing with 287 frame and truss plants. The industry can leverage this base, but the Australian construction sector is lagging behind many developed countries in the application of MMC. Australia can learn from the overseas experience and developments with MMC, and identify the methods, supply chain requirements and timber fibre-based components that are best suited to the Australian construction industry, housing demand and the timber fibre resources available. However, if the Australian industry does not develop new sovereign capacity and capability in manufacturing timber fibre-based components used in MMC, the market "could run away from us". Importation of these components is already occurring and, given their relatively high value per tonne or cubic metre, shipping costs do not provide protection for Australian manufacturers.

Developing MMC, and particularly the use of timber fibre in social, affordable and resilient housing, can also help address one of the major impediments to building sovereign timber fibre manufacturing capability and capacity:

[27] Multiple sources including industry consultation, NSW Land and Housing Corporation

the cyclical nature of demand for timber products in Australia. Further information on MMC and its practical applications are provided in the Snapshot: *Modern Methods of Construction* (see Appendix 2, page 144).

Smoothing demand cycles

The Australian forest and wood products sector is heavily exposed to building cycles (see Figure 12), particularly the housing construction cycle, and the drivers of these cycles are outside the control of the timber fibre industry. Previous industry responses to cyclical downturns have been to reduce prices in an attempt to stimulate demand and / or cut back on production to reduce supply.

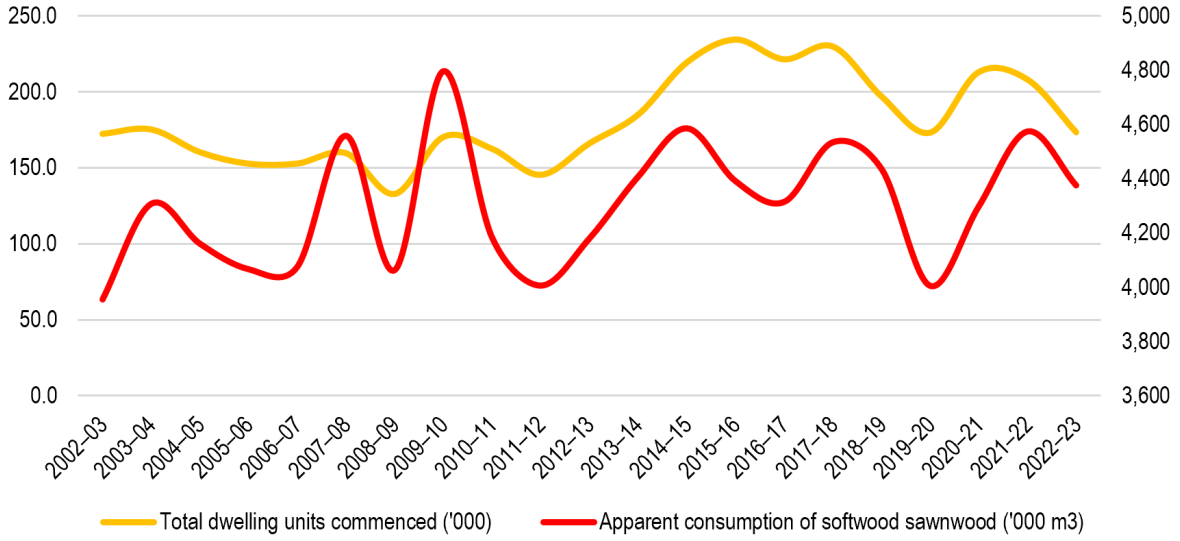


Figure 12 – Housing starts and softwood timber consumption

Both responses are “blunt instruments” and at best can only be effective at the margins – reducing timber prices does little, if anything, to increase demand because the drivers of cyclical demand are complex and are not directly related to construction input costs, and reducing production volumes pushes up the unit cost of production and has no impact on the supply and price of imports.

Although imports will be required to fill the demand supply gap for the foreseeable future *across the cycles*, high import levels during the troughs in the building and construction cycle are damaging to the entire industry.

During periods of high demand, imports must increase because the domestic manufacturing sector does not have sufficient access to resource or processing capacity to fully respond. Even more damaging to the industry is the loss of market share to alternative and less environmentally friendly products such as steel, and this market share is difficult to recapture when the next downward trend in the cycle occurs.

The cyclical nature of demand also impacts the profitability and cash flow of both the manufacturing and growing sector, employment, manufacturers’ appetite to undertake research, innovation and product development, and confidence to in building capacity and capability.

There is an opportunity to break this boom-and-bust cycle through Governments investing in social and affordable housing programs which favour the use of timber fibre products when other building activity is at a low point in the cycle and stepping back during periods of higher demand. This approach will support the manufacturing sector and increase its confidence to innovate and invest in capacity whilst providing job security for employees along the full value chain, from forest management through harvesting and haulage, processing, logistics and to the building and construction sector. The industry should work with governments to plan for increasing timber based construction during cyclical downturns.

Supporting infrastructure

Building sovereign timber fibre manufacturing capability and capacity requires the parallel building and maintenance of the infrastructure needed to support a growing wood processing sector. The location of fibre source relative to markets / processing is seen as a key feasibility determinant, and is important in ensuring scale rather than fragmentation.

Governments have the primary responsibility for providing this infrastructure noting that the best location for manufacturing is close to the fibre resource and therefore investment in infrastructure to support the industry will be regional and will include:

- A safe and efficient transport network for the delivery of raw materials to processors and the distribution of manufactured products.
- Reliable and cost competitive energy sources.
- The provision of community services to support the workforce including housing, education and healthcare.
- Widespread and reliable telecommunications and digital services.

The timber fibre industry will only build sovereign capacity and capability where it sees Government investment in, and support for, the infrastructure essential for competitive manufacturing. These issues are discussed in Strategy 4 – *Attracting and engaging people and other industry enablers*.

Environmental benefits and messaging

The environmental benefits of domestically manufactured timber fibre products need to be understood by users, regulators and consumers. These benefits include:

- Sourced from sustainably managed, independently certified and audited forests.
- Known origin.
- Sequestration and storage of atmospheric carbon.
- Low embodied emissions (particularly when compared to other substitute products).
- Contribution to net zero targets.
- Renewable.
- Recyclable.
- No waste.

The industry consultation process revealed that, although the *industry* has a very good understanding of the environmental credentials of timber fibre products, there is less confidence that the message is getting through to specifiers, users and consumers, and, as a result, the broad *community* understanding of, and support for, timber fibre products is less than needed to provide the market confidence necessary for investment in building manufacturing capacity and capability. One consultee expressed it this way:

> *"The high level of misinformation and politicisation about the renewability and sustainability of timber fibre in Australia has effectively led to market failure in the production of products that are accepted and desired throughout the rest of the world. Government should back this strategy with a bipartisan long term social marketing strategy and explicit support for timber products as a key component of Australia's renewable manufacturing capability."*[28]

[28] Healthy Forests Foundation, pers com.

The industry recognises it needs to continue to invest in the ongoing promotion of timber fibre products and the positive environmental story behind them.

> *"… AFPA's proposed 'Country of Origin' labelling scheme for timber is a positive initiative, that readily leads into 'buy local' campaigns and supports Australian industry through enhanced community knowledge …"*

FWPA undertakes consumer education and marketing programs on a limited budget utilising levy funds (expenditure on consumer promotion of wood products does not qualify for Government matching). FWPA's focus is to grow the demand for forest and wood products by increasing positive sentiment toward the industry and share research outcomes to grow the market. To achieve this, FWPA promotes the environmental, economic and social advantages of wood, The Ultimate Renewable™, to grow the market and increase positive consumer sentiment towards the industry[29]. FWPA has the experience and expertise to expand their education and marketing programs however this will require increased funding from new sources.

Regionally based

A key attribute of the timber fibre manufacturing sector is that it is regionally based, providing investment and jobs outside the major cities. Studies have also shown that timber fibre manufacturing provides the majority of the jobs in the supply chain and that it enjoys the support of the communities where they are located[30]. Regional locations provide challenges in infrastructure (discussed above) and in employment, however modern manufacturing facilities provide high quality and well-paid jobs, and some industry participants who have recently undertaken major investments are confident that this will be sufficient to attract the necessary skills required if the industry is to increase sovereign manufacturing capacity (see Strategy 5 – Supporting and growing regional communities for more detail).

Scale

Most of the feedback received from industry was about building sovereign timber fibre manufacturing capability and capacity related to large-scale manufacturing, ensuring economies of scale are achieved whilst serving large market sectors. However, building capacity will also require investment in small and medium sized facilities which match fibre supply and markets. This will be particularly applicable to building manufacturing capacity in parts of the hardwood sector, both plantation and native, where supply volumes of certain species and log types are relatively small as are the markets from the most valuable products that can be manufactured from that fibre supply.

> *"… one scenario is to have smaller, distributed "nodes" of timber fibre processing units that can handle all that the forest can deliver …"*

Similarly, some high value products, including some bioproducts may not require large volumes but can be developed into large scale industries. Consultations made it clear, however, that the scale of investment to build sovereign manufacturing capacity will be dependent on confidence in access to the timber fibre required to match the manufacturing scale (see Strategies 2 and 3).

Strategy components and actions

Based on industry consultations and the rationale above, some key components and actions to implement the strategy of building sovereign manufacturing capability and capacity are set out below.

[29] FWPA, pers com.

[30] BDO & University of Canberra, Socio-Economic Impact of the Softwood Plantation Industry in The Central West NSW Forestry Hub Region, 2021-22, A Report for the Central West NSW Forestry Hub (Ref).

Future Made in Australia

1.1. The Government will include the forest and wood products industry as a priority industry in its Future Made in Australia policy and the industry will access funding from this and other relevant programs to help build sovereign manufacturing capability and capacity.

1.2. The forest and wood products industry will focus on making the highest value products here in Australia.

1.3. The forest and wood products industry will look beyond traditional uses of timber fibre and develop manufacturing capacity in other products including in the bioeconomy.

1.4. The forest and wood products will invest in innovation, new product development and new manufacturing methodologies which can utilise the fibre currently exported in the form of logs and woodchips.

1.5. The forest and wood products industry will work with Federal and State Governments to deliver on housing policies that encourage the use of timber fibre products manufactured in Australia.

1.6. The forest and wood manufacturing sector will work with forest owners and managers to reduce investment risks and support adequate return on investments whist seeking to encourage plantation establishment on non-forested land.

Imports and competing products

1.7. The forest and wood products industry will work with timber importers and the steel framing industry to enable the sector to gain a sound understanding of their capabilities, to facilitate the incorporation of world's best practice and technology, and to maintain viable markets.

1.8. International benchmarking of productivity will consider all aspects of productivity, not only labour productivity, to help Australian manufacturers understand what is possible and what can be implemented in Australia. These should include technology, site efficiency, materials recovery, etc.

Modern methods of construction

1.9. The forest and wood products industry will develop manufacturing capacity and capability in timber fibre products that are used in modern methods of construction.

1.10. The forest and wood products industry will investigate and, where appropriate, introduce products and systems that have been developed overseas to support modern methods of construction.

Infrastructure

1.11. The forest and wood products industry will work with Governments to ensure the timely provision of essential infrastructure to enable the development of manufacturing capacity and support the workforce required, particularly in regional areas.

Smoothing the cycles

1.12. The forest and wood products industry will work with Governments to develop programs which create demand for Australian manufactured timber fibre construction products during the low points of the building cycle.

Promotion and credentials

1.13. The forest and wood products industry will promote the benefits, and particularly the environmental credentials, of Australian timber fibre products to increase their use and acceptance.

Cost competitiveness

1.14. The forest and wood products industry will build sovereign manufacturing capability and capacity through cost efficiencies and economies of scale matched to resources and markets.

1.15. Governments will provide subsidies to the forest and wood products manufacturing industry for investment in energy (including heat energy) generation utilising carbon neutral wood fibre waste.

1.16. The energy generated from carbon neutral wood fibre-based fuels will be recognised as renewable, and the benefits of utilising this form of renewable energy will be available to the timber fibre processing sector.

Investment facilitation

1.17. The Government will work with the forest and wood products industry to identify high priority candidates for investment facilitation to kickstart domestic capability in new products, particularly in the bioeconomy.

Research and development

1.18. With the support of Governments, the forest and wood products industry will continue to invest in the innovation, research and development of the range of timber fibre products that can be manufactured from the current and future resource base with an aim to maximise the manufacture of the highest value products in Australia.

Scale

1.19. The forest and wood products manufacturing sector will invest at scale where it has confidence in access to the timber fibre required to match requirements.

Implementation

Specific actions through which this Strategy may be implemented are set out in Table 4, noting which particular actors in the timber fibre value chain have most responsibility for implementation.

Table 4 – Responsibility matrix for actions under strategy #1: Building sovereign manufacturing capability and capacity

	Commonwealth Govt	State Government	Local Government	Processors / fabricators	Forest owners / managers / contractors	Investors / funders	Industry associations	Trades unions	Builders / architects / designers	Harvesting, haulage & transport contractors	Researchers / R&D institutions
1.1 Include forestry / timber in *Future Made in Australia* and access funding from this and other programs for sovereign manufacturing capacity.	■			■		■	■	■	■		
1.2 Focus on making the highest value products				■	■	■		■			■
1.3 Non- traditional uses of timber fibre				■	■	■		■			■
1.4 Products utilising fibre currently exported				■	■	■		■	■		■
1.5 Housing policies encouraging use of timber fibre products	■	■	■	■			■	■			■
1.6 Reducing risk and supporting adequate returns on investments	■	■	■	■	■	■	■	■	■	■	■
1.7 Working with timber importers & the steel framing industry				■			■	■	■		■
1.8 International benchmarking of productivity to include all aspects of productivity	■	■	■	■	■	■	■	■	■	■	■
1.9 Timber fibre products used in MMC	■	■	■	■	■	■	■	■	■	■	■
1.10 Support MMC with overseas innovation / developments				■		■	■	■	■		■
1.11 Ensuring that provision of essential infrastructure	■	■	■	■	■		■	■			
1.12 Smoothing the cycles	■	■	■	■	■		■	■	■		
1.13 Promote benefits and environmental credentials	■	■	■	■	■	■	■	■	■		■
1.14 Cost efficiencies & economies of scale matched to resource & markets	■	■	■	■	■	■	■	■		■	■
1.15 Subsidising investment in energy generation using fibre	■	■		■		■		■			
1.16 Recognise wood fibre as renewable energy	■	■		■	■		■	■			■
1.17 Investment facilitation to kickstart domestic capability in new products, particularly in the bioeconomy	■			■		■	■	■	■		■
1.18 Innovation, R&D to maximise highest value products manufacture	■	■		■		■	■	■	■	■	■
1.19 The manufacturing sector will invest at scale where it has confidence in access to timber fibre	■	■		■	■	■	■	■			

Strategy 2 – Meeting demand for timber fibre resources

The strategy

Australia's domestic demand for timber fibre-based products will be met from sustainably managed forestry resources.

Rationale

> *"… we need to ask where the sawn timber needed in the future decades will come from? Working backwards from there, we should identify what trees we should be growing now to suit that prospect …"*
>
> *"… although new plantations will take many years to yield useful fibre, establishment needs to start now to provide the timber fibre stock required to meet the 25-50 year horizon …"*

Types and amounts of timber fibre grown and harvested in Australia

Timber fibre used in the Australian domestic market falls into five broad categories:

1. Sawn timber, primarily for construction, infrastructure and remanufacturing
2. Roundwood for uses such as poles and posts
3. Reconstituted timber products, such as plywood, particleboard, MDF, CLT and LVL for construction
4. Wood chips, primarily for paper production, energy generation, and landscaping applications
5. Waste-derived fibre recovered from discarded waste products, used for the remanufacture of paper and construction products, such as fibreboards

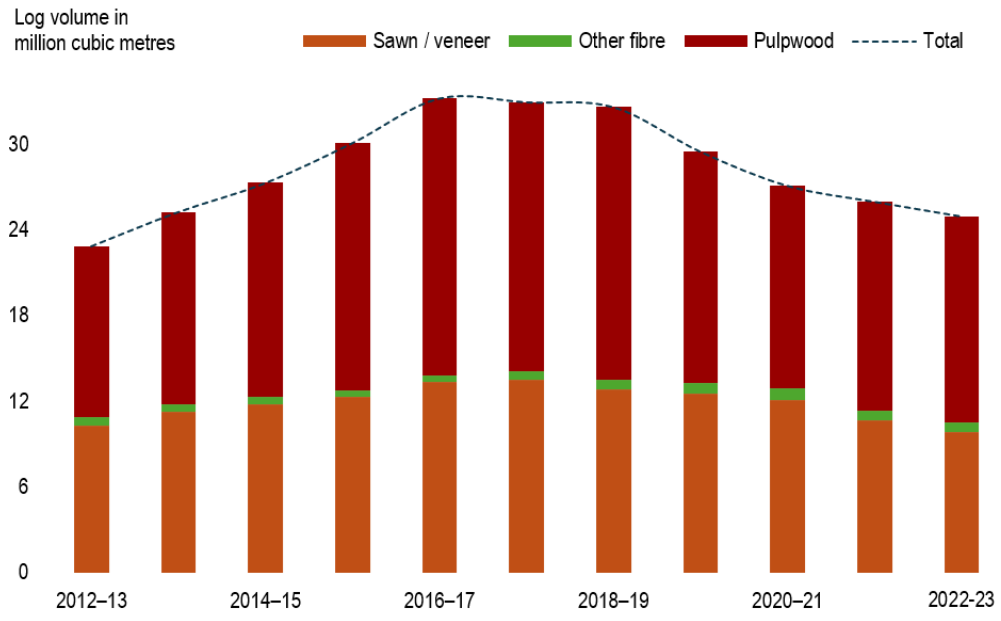


Figure 13 – Australia's timber fibre harvest since 2013

Last year some 25 million cubic metres of logs were harvested from Australia's forests (Figure 13[1]), of which 91% was from timber plantations.

[1] Source: ABARES. 2024. Australian forest and wood products statistics, Production to 2022-23, ABARES series report, Canberra, July, Ref CC BY 4.0. [see FE's source spreadsheet here].

Current trajectory of Australia's timber fibre harvests

There is an obvious and concerning decline in Australia's overall harvest of timber fibre. At the same time a significant proportion of that harvested timber fibre (as high as 57% in 2018-19) that has been exported in the form of woodchips and logs (Figure 14[2]).

The wisdom of exporting a high proportion of harvested timber fibre as comparatively low-value woodchips and unprocessed logs has been a subject of comment and debate during the consultation for this strategy-development process. This point becomes particularly pertinent in the context of recent acute shortages, and longer-term downward trajectory, of domestic timber fibre supply due to fire losses, State Government decisions regarding native forest harvesting and low plantation establishment rates.

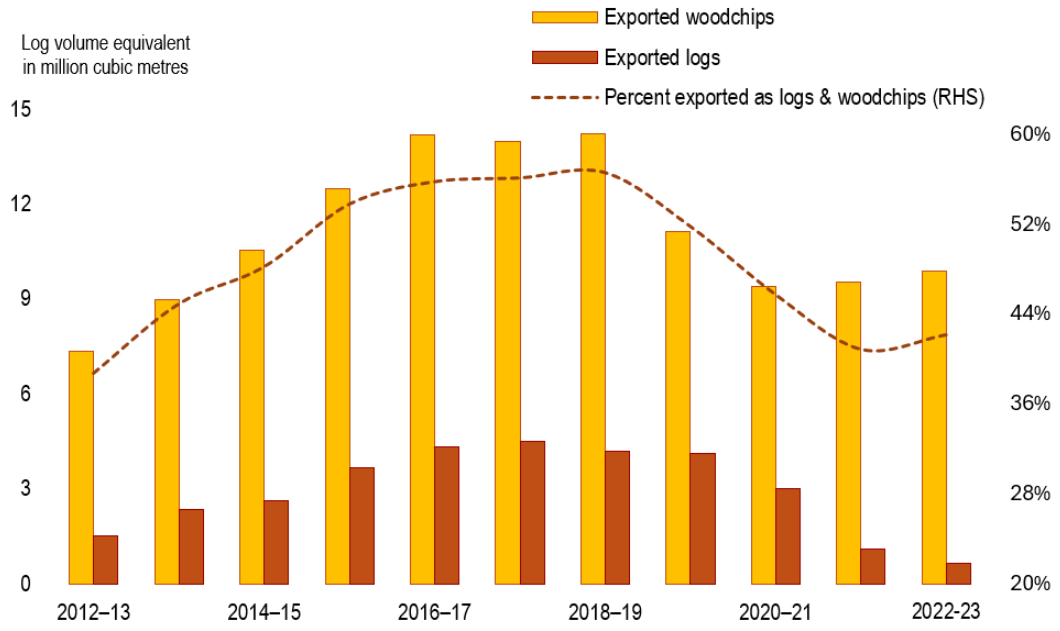


Figure 14 – Australia's Log and Woodchip exports since 2013

Further, in the face of the projected strong demand for timber fibre for use in Australian manufactured goods and services, especially housing, it's clear that our *current* timber fibre supply sector will not be able to satisfy domestic demand into the foreseeable future.

Indeed, recent analysis[3] puts Australia's current apparent consumption of sawn softwood timber at 4.2 million m^3 per year, while domestic production is 3.6 million m^3 per year. That is, solid timber demand is already outstripping supply capacity from domestic sources. While it is certain that Australia's domestic production of sawn timber has never fully met demand, meaning imports have always been required, the current domestic supply gap is concerning. Some predict the current 0.6 million m^3 gap will balloon over the coming decades such that, by 2050 the nation's annual average sawn softwood demand will increase by over 40% to over 6.5 million cubic metres a year.

This projected demand / supply imbalance will result in a domestic sawn softwood timber supply gap of some 2.6 million cubic metres. When considered in terms of required *additional* softwood timber supply, closing the implied

[2] Source: ABARES. 2024. *Op. cit.*

[3] Woods, T. and Houghton, J. 2022. *Future market dynamics and potential impacts on Australian timber imports*. Forest and Wood Products Australia report. August – (Ref)

gap would require the establishment of 468,000 hectares of greenfield plantations[4]. Adding to the sawn timber supply gap is the expectation that sawn structural timber will be diverted from traditional housing uses to higher value mass timber products like CLT.

For further analysis on the housing aspects of timber demand, see the Snapshot: *Australia's housing crisis – implications for domestic timber fibre dynamics* (Appendix 2, page 132).

The future of timber fibre imports

As noted earlier, imports of sawn and other forms of timber fibre (especially in paper products) have always made up the domestic demand gap, and this will continue to be the case in the near-term. Some industry commentators suggest that, given Australia's current domestic fibre shortage combined with a quest for greater domestic value-adding, Australia should consider importing more of our *commodity* timber needs and focus our domestic processing industry on producing higher-value products.

However, while timber imports have played an important part in meeting domestic timber fibre needs for centuries, and will continue to feature in national supply, a strategy that *increasingly relies* on timber product imports for a significant part of Australia's domestic needs is risky in the medium term due to increasing international demand, and therefore competition, for timber fibre[5]. This risk increases with industry's and the government's commitment to bolstering Australia's sovereign manufacturing capacity (Strategy 1).

For example, global *per capita* supply of sawn softwood – the housing construction timber of choice – is declining by an average 0.17% per annum[6], indicating the global production of sawn softwood timber is not keeping pace with global *per capita* demand. So, looking to imports to satisfy domestic demand levels affordably is an unreliable strategy.

Growing new forests to supply Australia's future timber fibre resources

The most sensible and reliable strategy in the face of domestic needs and global headwinds is for the Australian forest products industry to meet the future domestic demand for timber fibre-based products by growing that timber fibre in its own forests and doing so more efficiently and innovatively than has been done to date. Governments at all levels must recognise and support the timber fibre industry as critical, with land use policy and decisions overtly recognising timber fibre production as a vitally important land use, and all government policy and regulation must consider the impacts on the potential for land to be used for timber fibre production.

If Australia is to supply the bulk of its domestic timber fibre needs, the extent of and yield from all existing timber fibre-producing forests needs to be at least maintained while adding additional forest areas through greenfield timber plantation expansion, increasing productivity (e.g. growth per hectare) and recovering unutilised residues from active forest management identified in Strategy 3 - *Healthy forests, actively managed*.

However, recent decades have seen a virtual freeze in new greenfield timber plantation investment (see Figure 15[7]), the withdrawal of permits for the commercial harvesting of timber fibre from public native forests in Western Australia and Victoria, and high-profile challenges to it in other States.

These challenges to the existing timber fibre resource base, and almost two decades of failure in attracting new investment for an expanding timber plantation base mean that Australia is close to a critical juncture, whereby

[4] Woods and Houghton 2022 *Op. cit.*
[5] Source: FAO 2022 Global forests sector outlook
[6] Woods and Houghton 2022 *Op. cit.*
[7] Source: ABARES. 2024. *Op. cit.*

timber plantation resources are declining to a point where timber supplied from our own plantations will become subservient to imported timber.

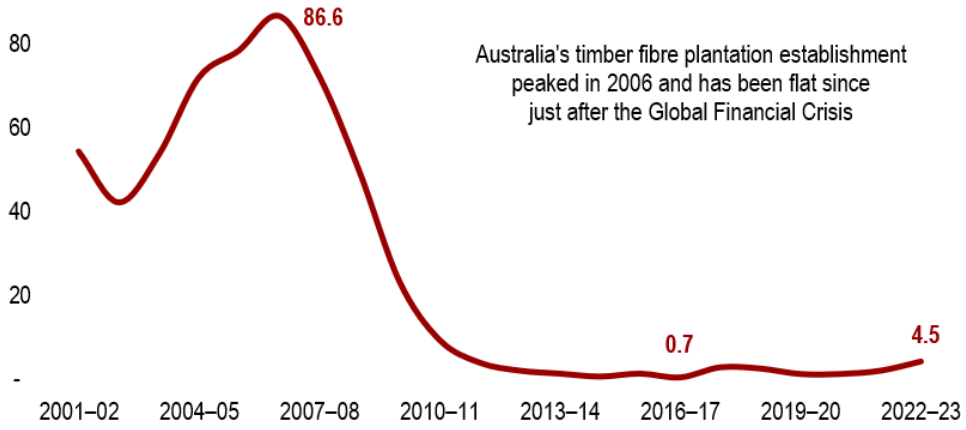


Figure 15 – New timber plantation establishment in Australia ('000s of hectares)

This calls for a bold strategy mix to ensure the Australian forest products industry can meet future domestic demands for timber fibre-based products through (a) maintaining operational access for timber fibre production from all currently allocated areas of sustainably managed native forest, (b) increasing the sustainable yield (i.e. productivity)) of these forests, (c) utilising unutilised residues from forests actively managed primarily for environmental outcomes, and (d) securing and deploying the required investment to expand the nation's timber plantation estate.

Risks to fibre production areas

The discussion below on native forests, private native forests and plantations details some of the risks to timber fibre supply however the industry also made it clear that fibre supply is an essential component of *national land use strategies*. Current policies do not place sufficient emphasis on the impact on timber fibre supply of land use decisions that affect large native forest areas (for example, significant new national park declarations over former native forestry lands) and smaller areas (for example, transmission line corridors). These variously reduce the area available for timber fibre production.

There is concern, for example, that sand mining many be favoured over fibre production in vast areas of land in one of Australia's most important plantation forestry regions. Similarly, productive native forest is being cleared for strip mining in Western Australia, there is a strong possibility that plantation land may be permanently lost to transmission lines from Snowy 2.0[8] and there are examples of plantations specifically established for timber fibre production being removed from production by State government and placed into national parks The industry is not seeking compensation for lost productive areas; it wants all land use decisions to place the highest priority on continuing fibre production from all areas currently producing timber fibre.

A case study of a current land use decision affecting a major regional native timber supply zone is provided in the following section and in the Snapshot: *Land use decisions affecting timber supply – the NSW Great Koala Park* (see Appendix 2, page 143).

[8] See TransGrid. 2024. HumeLink project (Ref)

Timber fibre from native forests

Of the estimated 132 million hectares of native forests of all types and in all tenures across Australia, approximately 25 million hectares (or 19%) are now classed as "available and suitable for wood harvesting"[9].

Constitutionally, Australia's State governments has had a long history of State government intervention in native forestry which has led, since at least the 1970s, to the successive removal of the timber fibre industry's access to public native forests for timber harvesting, constraining supply and stifling processing investment for this part of the industry.

Further reductions in fibre availability are anticipated with, for example, NSW's Great Koala National Park proposed, at its maximum likely size of 176,000 hectares, to reduce the NSW North Coast industry's supply by between 28% and 40%, including affecting supplies of 70% of Australia's hardwood power poles (see page 143 for further information).

A modern national timber fibre strategy should require authorities and governments to properly apply robust, objective science to future decisions regarding forest resource allocations and management and ensure legal frameworks, including regulations, set clear objective standards that appropriately balance economic, social and environmental considerations in accordance with the principles of ecologically sustainable management. This will mitigate some of the sovereign risk that has often been manifested by delayed native forest decisions, creating a virtual freeze on investment pending that decision-making. For example, in Victoria adversarial NGOs have leveraged clauses of the Code of Practice for Timber Production in Supreme Court actions to prevent authorised harvesting in native forests.

Many in the timber fibre industry will support management decisions based on clear science that protect non-timber forest values, such as set asides / reserves in forestry operations for the protection of threatened species (for example, eagle nests), extended / rehabilitated riparian zones to protect water quality and quantity, and protection of natural and cultural values. However, many decisions to withdraw native forests areas from harvesting access have not been based on science nor matched by coherent or realistic strategies for the *replacement* of withdrawn natural forest areas with plantations of native species for timber production.

There is therefore a cogent case for forest replacement policies that take into consideration the species mix, product yield mix (for example sawlogs, poles), volumes and most importantly timing. Further, decisions to withdraw supply from native forests and to "replace" native forest supply with plantations requires investment in those plantations at least 30 years *in advance* of the withdrawal. Even then, it must be recognised that many species of native timber are unlikely to be able to be grown in a plantation and would seldom achieve the same characteristics, particularly durability, achieved through slow growth over 60 to 80 years. Importantly, the industry does not want to a "trade off" with plantations simply replacing the *volume* of timber fibre produced from native forests with that produced from new plantations. There are many timber fibre products, including some of the most valuable and highly sort after products, that are best (and can only be) produced in sustainably managed native forests. Examples of these native timber products are featured of some of Australia's most iconic buildings such as the Sydney Opera House and the Australian Parliament House.

An analysis of the broad and far-reaching ramifications of a State-wide policy affecting native forestry production is provided in the Snapshot: *The impacts of sudden policy change – closure of Victoria's native timber industry* (see Appendix 2, page 149).

[9] Source: ABARES. 2024. *Australia's State of the Forests Report*. Web-based version, accessed on 5 March 2025 (Ref). Note: These cited statistics take into account the estimated exclusion of approximately 2.2 million hectares of public native forests from harvesting in Victoria and Western Australia which was effected after the report's data compilation.

At the market end of the value chain some of Australia's unique native forest timbers are becoming increasingly difficult to obtain and their purpose is progressively giving way to alternative materials such as steel, concrete, and hardwood imported from forests with significantly lower environmental management and compliance standards.

The consultations undertaken point to a consensus that if Australia is to meet its future timber fibre needs, the country will need to continue to source that fibre from plantations and from those areas of native forests, currently comprising 19% of all native forests, that are currently suitable and legally available for timber production.

Thus, a coherent national timber fibre strategy will need to address ways to ensure an ongoing supply of timber fibre from our sustainably managed native forest estate. Consultation with many parts of the timber fibre sector has identified a range of opportunities for maintaining that production role for native forests. They include:

- **Maintaining the existing public native forest estate for future harvest potential**. Some counsel that the nation will eventually regret its past policies of "closing down native forests", because it will expose Australia to sovereign risk through an over-reliance on imports of timber and other products. Accordingly, the timber fibre sector should encourage governments to be "smarter" in terms of retaining our native resource base for future optionality, including the appropriate utilisation of residual fibre resources. Adopting this scenario will be key ensuring these forests' resource base can continue to serve as a substantial source of sustainably managed timber fibre, while yielding other acknowledged ecosystem benefits, into the future. It will require actively managing native forests to ensure their multiple values are protected[10]. Simply changing the tenure of existing production forests to National Park, and excluding any form of utilisation of timber fibre, does not allow for smarter active forest management which will deliver better ecological outcomes is not supported by industry.

- **A niche sector limited to high-value timbers**. This version of a long-term future for sustainable *public* native forest timber production sees it transition to a niche / boutique industry limited to high-value timbers and value-added fibre products sold into local industry / or is an Indigenous-led enterprise. Plantations will continue to be the source of industrial scale timber and fibre supply for the nation.

- **An increased role for private native forests (PNF)**. There's a growing demand for hardwoods from private native forests in the face of reductions in availability for harvests from public native forests. This demand will dramatically increase if there is a continuation of State government policies to "exit native forests". Responsibly managing an expanding role for PNF will require increased government support for private native forest managers to restore their forests to a healthy state and for their ongoing management to be certified to international standards.

  This support could be augmented by rural extension agencies such as NSW Local Land Services, Tasmania's PFT, and AgForce in Queensland which has good relations and expertise across rural landholdings in that State. Also, much better data on the timber fibre volumes available from these forests, and transparent and regular market stumpage price data will be required for PNF under timber management.

  Finally, the current "dual consents" of State and local governments for PNF operations will need rationalising (for example, in NSW Kyogle Council has relinquished its local approval powers to the State authorities). Tasmania's PNF approach has been held up as an exemplar because it allows landowners to establish a Private Timber Reserve caveat on their land, exempting legitimate timber producers from local government planning requirements, provided they meet a harvest volume threshold and comply with the Tasmanian Forest Practices Authority and its Code of Practice.

[10] Active management of forests is detailed further in Strategy 3.

- **Recognition of carbon sequestration.** Given the significant carbon stores and sequestration potential of native forests, a national timber fibre strategy should include the development of appropriate carbon crediting methods that incentivise the sustainable management of our native forests for carbon, other natural capital, and for timber production. Specifically, an ACCU Scheme method for projects that involve harvesting of timber in native forests should be developed (as distinct from the current "avoided harvesting").

  Further, given the likely significant role of international trading in carbon credits, it will be important for the Australian government to advocate in international forums for forest based credits to be transacted between jurisdictions under Paris Agreement rules, on fair terms and without discriminating against commercial plantations and harvested native forests.

Timber plantation expansion

Strategies for securing and deploying the required investment for expanding Australia's timber plantation estate must be cognizant of the shortcomings of the many attempts made to date. Figure 16[11] shows the history of plantation development in Australia. Most previous initiatives have either been insufficiently funded to achieve scale (such as government grants[12]) or been mishandled and have been variously met with public backlash.

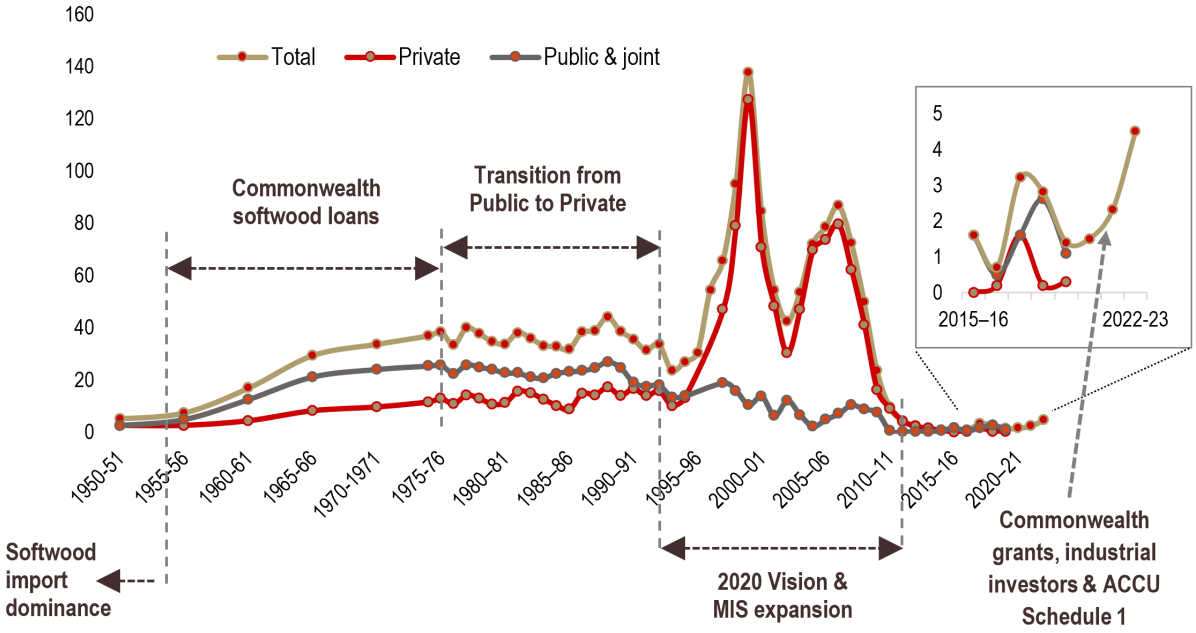


Figure 16 – History of drivers and ownership of new plantation development ('000 hectares)

A case in point is the role of Managed Investment Scheme (MIS) structures. While there is wide industry recognition that previous the tax-driven MIS arrangements were extremely effective in increasing the area of plantations in Australia, many in the industry acknowledge that the structures resulted, in some cases, in very negative outcomes for the industry. These negative outcomes included examples of the wrong species being planted in the wrong regions, community disruption, social discord, artificial land price inflation, poor plantation management, lessors being left unpaid, broad industry reputational damage, and loss of investor funds.

If the lessons from these unintended negative consequences of MIS can be learnt and overcome through regulation, some sectors of the industry are supportive of utilising taxation to generate an expansion of a well-

[11] Source: The Fifth Estate and ABARES

[12] Acknowledging that the Commonwealth softwood loans assisted the States expand their plantation estate from the mid-1950s to the mid-1970s which was largely achieved by converting state-owned native forests to softwood plantations.

managed plantation estate with the right trees in the right place (proximate to domestic processors) at the right scale.

The Australian Government's current Support Plantation Establishment grants program has helped support the establishment of just under 8,000 hectares of new plantations and there is funding available for a further 29,000 hectares. The program presented some challenges for potential applicants in relation to prerequisites, timing and carbon additionality requirements and, when it closes in November 2025, there is the potential that funding will not be fully allocated. This should not be interpreted as an indication from the industry that the program is unsupported or has not been successful in getting new plantations established.

Identifying and securing suitable land is difficult and industry is conscious of the potential for social disruption if the rapid and large-scale expansion experienced under the MIS regime was repeated. A relatively slow and steady growth in the plantation estate across multiple plantation regions is more advantageous, not just from a social perspective but also for planning future sustainable yields and harvesting regimes. A continuation of the program beyond is supported by many in the industry and, if the current funding is exhausted, future funding could be continued through the Future Made in Australia and / or the National Reconstruction fund.

Some of the recent plantation expansion has been undertaken by vertically integrated companies suggesting that new plantation investment is enhanced by cooperation between growers/investors and their target markets.

Consultation with industry has identified that successfully expanding the timber plantation estate will need to comprehend and solve for some challenges and impediments that have, to date, limited Australia's investment in new timber plantation. Key ones include:

- **Return on investment for new plantation establishment**. There is capital available for new plantations but, like all investments, timber plantations need to demonstrate suitable returns on investment[13]. The long-term nature of timber as a rural land use calls for innovative ways to bridge the typical investment feasibility gap compared with short-term alternatives. Examples gleaned from the strategy consultations include encouraging shorter rotations which have a lower investment risk (e.g. from biophysical factors such as cyclones) and deliver timber fibre resources more quickly by removing disincentives against short rotations (in, for example, carbon and water market instruments). Grower incomes would be increased through utilising more of a plantation's harvest residues for energy and other uses, and improving efficiencies in timber harvesting, haulage and logistics to reduce costs which can be a barrier to greater fibre utilisation. The particular challenges facing potential investors in longer rotation hardwood plantations grown for more than pulpwood only must be addressed with an emphasis on maximising the value of the grown and harvested hardwood log products. Feedback from the consultations and our observations indicate that the Schedule 1 afforestation ACCU methodology and the Federal Government's Support Plantation Establishment Program grants have made a material impact on the returns from new plantations by providing new revenue streams early in the rotation.
- **Right to harvest timber plantations**. Many Australian timber plantation managers express concern at the risk to their right to harvest when a plantation is ready for commercial harvesting. Challenges typically occur with local councils on matters of, for example, road and traffic issues (such as size of logging trucks, noise, etc.), and with some farmers around land use priorities. In some cases, where endemic tree species have been used for timber plantation stock, regulators have questioned whether the area is a timber plantation at all. This right to harvest risk is even emerging in NSW where, according to most consultees, the *Plantations and Reafforestation Act* has provided an historic level of harvest certainty not enjoyed by other States. In the case of NSW, the emerging risk involves the legislation requiring the regulator to "adaptively assess and manage" threatened species risks. The subjectivity of this requirement works against certainty, raising

[13] These need for a suitable return on investment applies both to new plantation establishment and replanting harvested plantations.

sovereign risk concerns. Developing and implementing nationally-uniform, harmonised "right to harvest" legislation, drawing upon elements of a revised NSW model, would enhance investment certainty for timber plantation expansion. The case for *national* uniform legislation is supported by the fact that plantation investors and owners are often large corporations operating across State borders, and that timber supply zones do the same.

- **Eliminating skewed rural land use regulations – the right to plant**. Timber plantation proponents point to the "uneven playing field" when it comes regulation of their timber plantations compared with other rural tree crops. For example, while an orchard or a vineyard is a 30-40 year crop, there are virtually no regulatory barriers to planting or replanting and councils don't impose "rolling consent" requirements. In Victoria, the local government planning scheme (clause 52.18) requires forest owners and managers to make-good all roads used for harvesting to standards prior to the harvesting commencing. The only primary production industry where this rule applies is forestry. Hence, this type of uneven shackle on investment represents a significant constraint to timber plantation estate expansion. One consultee asserted:

  > *"this discrimination needs to be abolished, and State and local governments should instead look after their roads properly … but are too busy spending their infrastructure money in the cities and ignoring regional industry needs".*

  In order for timber fibre plantations to assume their place and role as a legitimate rural land use, plantation land use regulations should be aligned with those for other permanent crops such as orchards and vineyards.

- **Leveraging carbon and other natural capital benefits**. Another emerging source of income from new timber plantation establishment and management is the generation of carbon credits under the Australian Carbon Credit Unit (ACCU) Scheme. This added "natural capital" dimension could make timber plantations more attractive to Australia's domestic superannuation funds as they seek ESG credentials within their portfolios, especially as biodiversity credits are added to carbon benefits. Attention needs to be given to the ease of application of plantation forestry ACCU methods, including the encouragement of commercial plantings over non-harvestable (so called environmental plantings) options. Australia also needs to secure the optimal application of Paris Agreement credit trading rules (namely, "Article 6") to best leverage the carbon sequestration and other benefits commercial forestry (plantations and natural forests) have for climate moderation. Although there have been some improvements, work needs to be done on improving and simplifying mechanisms to the audit and compliance requirements of carbon methods, and the current uncertainty around FullCAM needs to be resolved.

  Schedule 1 of the ACCU Scheme plantations method is providing incentives for new plantation establishment where other key investment parameters (e.g. cost of land and establishment, access to fibre markets) are also met. There is, however, price risk, particularly in a dynamic policy environment. Removal of some of the price risk, for example by Governments providing a floor price, would further enhance the attractiveness of Schedule 1 plantings.

  Further coverage of the role of carbon markets and offset generation in plantation and native forestry projects is provided in Appendix 3 - *Carbon markets and production forestry* (page 155).

- **Competition with other land users for plantation areas**. Land competition, which flows through to land price, is a major issue which requires some form of mutual incentive to break the feasibility barrier, especially given land cost is the largest component of the new plantation feasibility equation. As well as existing rural landholders, principally farmers and graziers, land competition is also emerging from new rural entrants such

as renewable energy investors (wind farms[14] and photovoltaic arrays). Some industry commentators suggest the industry should be better "stewarding" its available land for establishing higher-value hardwood products (rather than producing large volumes of export woodchips) so as to not "squander" the productive land base.

Others identify the “dysfunctional dynamic between farming and forestry” as a driver of debates and rulemaking around, for example, plantation establishment limited to certain rainfall zones and catchment areas. This dysfunction contrasts with the Scandinavian model of a mosaic rural landscape with multi-benefits in all parts, suggesting Australia shouldn't aspire to having massive swathes of timber-only plantations across our rural landscapes. Rather, the pervading farming / forestry polarisation needs to shift toward a “mosaic rural landscape” approach where trees deliver various benefits to all landowners and to the community, including timber supply.

With most of the public forestry estate already "fully occupied", future timber plantation expansion must look to private land for its additional greenfield investment. This means the plantation sector must comprehend the needs and perspectives of wider rural land sector stakeholders who will need to be able to see the multiple benefit of having productive timber fibre plantations on farms. Achieving this change in mindset will require new, palpable extension and engagement programs for farmers and other land managers including such initiatives as field days, online advisers, and extension officers ensuring real, on-ground engagement occurs with farmers and other rural community representatives.

One example of an emerging new consensus on “trees on farms” is silvopastoral developments – a form of agroforestry that integrates livestock grazing on pasture with various configurations of timber plantings. Research in New Zealand is discovering that “when forestry and livestock come together it can be the best of both worlds, leading to resilience against climate change, productive landscapes into the future and improved animal welfare”[15]. Of course, the design of such developments need to comprehend criteria such as the need for the right scale, tree species, cost-effective property access, and a viable market within feasible haulage distance.

Ideally, to ensure appropriate aesthetic and cultural outcomes in traditional farming landscapes, timber plantation expansion should occur in a consistent, measured way. For example, it is better to expand a regional estate by 1,000 hectares a year for 20 years than by 20,000 hectares in one year. This will allow for wood flow planning and sustainable yield increases. Regular smaller areas of establishment will also create less social / community disruption and reduce the risk of loss of social licence. However, this approach only works if there is *certainty* regarding the 1,000 hectare per year, and certainty requires secure access to land, community acceptance and ongoing government regulatory and funding support.

An example of an approach to timber plantation expansion within a cohesive regional community context is provided in the Snapshot: *The right settings for successful timber plantation expansion* (see Appendix 2, page 148).

Consultees maintain that, in view of the clear national timber fibre deficit, scarce land resources should really be protected and made available for plantation expansion. They cite, as an example, the capacity for mining exploration licence terms to permit compulsory land clearances which “eat away” at timber plantation lands and call for State laws and regulations to protect strategic timber plantation lands, harmonised for national application.

[14] A perceived opportunity for expanding the timber plantation estate is through also securing other revenue on the same land parcels from wind turbines. In particular, the requirement for wind energy companies to replace affected plantation lands on a 2-for-1 basis can provide valuable additional land for new plantations. However, the loss of the “original hectare” to wind farms raises the question of who benefits from a strategy which relegates timber plantation to competing land uses.

[15] Scion. 2024. Livestock with forestry is the best of both worlds. TimberBiz 9 December. (Ref)

Fire and other risks. From a plantation investor point of view, more trees will be established if there's confidence in mitigating the increasing risk of catastrophic fire losses. Sustainable timber fibre supply regions therefore require effective fire risk mitigation and management systems. A three-pronged approach to fire risk mitigation should include (a) technology for early detection and rapid response (for example drones, A.I. generated vision systems, and low-orbiting satellites), (b) "Extreme Red Day" total fire bans on all rural machinery operations, and (c) expert local fire teams being established, well-equipped and well-trained. The larger regional timber fibre centres need to maintain specialist fire brigades which could include mill workers with adequate fire training, and access to the necessary equipment, infrastructure and technology, given that volunteer brigades are in decline. Australia is also behind its competitors in terms of *national* bushfire strategy, and the loss of timber plantation areas is currently not recognised as being a material "loss" in most people's minds.

Plantation risks also encompass disease and, as climate change progresses the incidence of fungal and other pathogen attack in plantations is increasing. This calls for new statistical models to predict the likelihood of increased fungal attack, and the optimal time to take protective action. Today, uncontrolled fire represents possibly the greatest material risk to the future of a sustainable timber fibre strategy in Australia. Accordingly, this Strategy must include a commitment from governments to implement the recommendations of the 2014 *National Bushfire Management Policy Statement for Forests and Rangelands*, which was prepared for The Council of Australian Governments (COAG)[16] but which has yet to see proper adoption. This action alone would deliver a coherent, coordinated national bushfire strategy, including recognising the loss of timber plantation areas as constituting a material loss.

- **Insurance for plantation loss**. It's been noted that it's "almost impossible" to feasibly insure timber plantations to cover catastrophic fire loss. For example, since the 2019-20 NSW / Victorian wildfires, plantation insurance costs for a small 40-ha block have in some instances risen by up to 700%. In another case, the inability to obtain an adequate insurance payout following an October 2023 fire in Victoria led the plantation manager to not replant. With insurance costs for timber plantations becoming prohibitive, it's been proposed that State governments could leverage their ability to secure low-cost insurance to provide a service to private plantation investors.

Increasing plantation productivity

In addition to expanding the plantation estate footprint, there are opportunities to increase timber fibre supply by growing more on the area already planted. This opportunity will be achieved through continual improvements in silviculture and through genetics. Consultees pointed out that it may be easier both operationally and commercially to increase the timber fibre available through an increase in growth and yield per hectare that it is to increase the number of hectares.

> *"… a 10% increase in productivity in the plantation estate is the same as finding and establishing 170,000 hectares of new plantations … easier, quicker, cheaper and no negative community impact …"*

These issues and specifics regarding productivity improvements are discussed in Strategy 6 – *Innovating the timber fibre value chain*.

[16] Source: Forest Fire Management Group. 2014. *National Bushfire Management Policy Statement for Forests and Rangelands*. Prepared by The Forest Fire Management Group for The Council of Australian Governments (Ref). See also Forestry Australia's 2022 policy entitled *National Bushfire Management Policy Statement – Objectives and KPIs* which gives informed effect to the 2014 report's recommendations (Ref)

Farm forestry

Industry consultees provided input and examples of ways the timber fibre sector can engage in a new wave of sustainable investment in timber fibre production via tree plantings on farms.

These can overcome the past sense of alienation between many farmer landowners and forestry investors due to, for example, the collapse of many managed investment scheme companies, and / or conventional practices of "blanket timber plantations" across farmed rural landscapes.

Factors that are contributing to a new approach to tree planting on farms – for timber or for other services (or multiple outcomes) include[17]:

- Our newly carbon-constrained world where farmers are seeking opportunities to reduce or offset their carbon emissions in the face of carbon taxes or other net-zero aspirations. Here, there is a renewed recognition that planted forests can provide effective carbon sequestration to offset the impacts of fertiliser emissions, fossil fuels in agriculture, and other emissions such as livestock methane,
- New recognition of the role of trees in delivering agricultural productivity and other land management benefits such as climate resilience in times of drought or flood, wind protection for crops, erosion control, shade and shelter for livestock with reduced climatic stress (either heat or cold) and improved calving / lambing rates. These "agroecological functions" of trees on farms are becoming an obvious ally as many farmers consider embracing the new thinking around 'regenerative agriculture', and
- The growing consumer trend for zero or low emissions foods and fibre products providing a market driver for timber plantations to provide on-farm offsets for cropping and livestock outputs while at the same time as generating future timber income for the farmer.

The new combination of timber value plus carbon value does improves the financial feasibility of farm forestry investments and provides a solution for the challenge – especially for family farms – of a typically long waiting period between tree planting and timber harvest.

A Timber Fibre Strategy for Australia should promote the complementary outcomes that trees on farms can bring for farmers and other rural land managers. This complementarity allows farmers to still assign respective on-farm activities to the most relevant parts of the farm to generate the highest financial return. It may involve, for example, mixing activities at a paddock or stand level (i.e. on the same unit of land) or allocating larger areas across the farm to the range of available uses to optimise benefits and generate a diversified income.

Further commentary and strategy recommendations on farmer / forestry engagement and relationships are given in the Snapshot*: Trees on farmland* (see Appendix 2, page 150), the Snapshot: *The right settings for successful timber plantation expansion* (see Appendix 2, page 148), and in this report's Strategy 5 (see section on *Community acceptance / social licence* on page 83). The principles of active forest management, including its application to native forests on private land, are discussed in detail in Strategy 3 - *Healthy forests, actively managed*.

Getting the message across

The industry believes that the message about the need for and the benefits of an expanding plantation resource and continued access to sustainably managed native forests is not getting across to the general public and particularly the farming community, nor is it being heard by Government (and this is a message that cuts across a number of the strategies).

[17] Source: Stephens, M. 2022. New investment pathway for trees on farms is a sweet spot. *TimberBiz* 30 September (Ref)

Better communication is required with a particular emphasis on informing and educating relevant ministers and officials responsible for forestry, agriculture, environment, climate change, energy, housing and manufacturing.

Strategy components and actions

The Australian timber fibre sector will meet its own future product demand through investing in additional timber plantations and maintaining sustainable wood fibre flows from healthy, actively managed native forests (see Strategy 3 for more detail). The strategy components and actions by which the sector will meet its own future product demand are set out below.

Invest in timber plantation expansion

2.1 The Australian timber fibre industry will solve the "plantation resource gap" by making new plantation investment a key strategy priority, critical for both timber fibre competitiveness and to bolster Australia's sovereign capability in timber fibre products, specially building construction materials.

2.2 The timber plantation expansion imperative will be framed as a "nation-building" initiative which speaks into our need to provide sovereign resources for the nation's use.

2.3 Timber plantation expansion will be implemented in a consistent, measured way rather than in large, sudden swathes. The industry will also ensure that plantation expansion follows the principle of ensuring "the right trees and planted in the right place, at the right scale". This will allow for proper wood flow planning and sustainable yield increases and will foster greater social / community acceptance and the retention of social licence.

Ensure access to land for new plantations

2.4 Restricted access to, and unaffordability of, land for new timber plantation establishment will be actively managed and resolved through the industry deeply engaging in relationship-building and advocacy with local farmer groups and organisations such as the National Farmers Federation and kindred State farming associations.

2.5 The industry will sponsor new, palpable timber plantation extension and engagement programs for farmers and other land managers, including field days, online advisers, and extension officers who can ensure real, on-ground engagement occurs.

2.6 Industry leaders will work to break the pervading farming / forestry polarisation by adopting a "mosaic rural landscape" approach in appropriate regions, where trees can deliver various benefits to all landowners and to the community, including timber supply.

2.7 State laws and regulations will be implemented to protect strategic timber plantation lands from alienation, such as compulsory land clearances under mining lease permits, and these will be harmonised for national application.

2.8 Governments and the industry will implement better communications to inform and educate relevant ministers and officials responsible for forestry, agriculture, environment, climate change, energy, housing and manufacturing of the benefits of an expanding plantation resource and continued access to sustainably managed native forests.

Secure a return on investment

2.9 The timber fibre sector will leverage the opportunities created by vertical integration and locating plantations close to existing major timber fibre processing facilities (see NSW Central West case study), assisting to deliver suitable investment returns.

2.10 The industry will implement programs to reduce the plantation investment feasibility gap including improving productivity per hectare, increasing preparedness and capacity to pay for logs, changing species, encouraging shorter rotations, greater utilisation of plantation harvest residues consistent with

maintaining forest health, and employing technologies to improve timber harvesting, haulage and logistics costs.

Capture and monetise carbon and other natural capital benefits

2.11 Given the significant carbon stores and sequestration potential of native forests, the government will develop appropriate ACCU Scheme methods that incentivise the sustainable management of native forests for carbon, other natural capital, and for timber production (as distinct from the proposed "avoided harvesting" approach that does not account for regeneration, increased growth rates or substitution).

2.12 The industry will leverage the provisions of the ACCU Scheme to generate carbon credits from new plantation establishment and management and promote the benefits of commercial plantings over non-harvestable (so called environmental plantings) options.

2.13 The government will advocate in international forums for forest based credits to be transacted between jurisdictions under the Paris Agreement's Article 6 rules on fair, science-informed terms without discriminating against commercial plantations and sustainably managed native forests.

2.14 The industry will promote the national benefits of an expanded timber plantation base to Australian superannuation funds and make them more aware of the investment opportunities, including for biodiversity, carbon and other natural capital products.

Secure a continuing role for public and private native forests

2.15 Governments will maintain access to existing native forest estates in their jurisdictions to avoid exposing Australia to sovereign risk through an over-reliance on imports of timber and other fibre. This will include the Australian Government requiring States and Territories to meet their obligations under Regional Forest Agreements to ensure forest areas are available for timber fibre production.

2.16 Governments will provide funding and extension support for private native forest managers to restore their forests to a healthy state to secure their ongoing management to be certified to international standards and providing diversification opportunities for rural land managers.

2.17 Governments and the industry will collect and curate reliable, transparent, and timely data on the volumes and market prices / values for private native forest timber fibre and make them widely available to industry.

Apply timely, science-based decision-making

2.18 Forest management authorities will apply robust, objective science to future decisions regarding forest resource allocations and management.

Enact "right to harvest" legislation in forests for timber production

2.19 Governments will collaborate to implement a nation-wide "right to harvest" for all sustainably managed forests permitted for timber harvesting irrespective of jurisdiction and forest type. This will replace Local and / or State government consents for private native forest operations in their jurisdictions.

Regulate forestry land use consistently with other primary industries

2.20 Timber production forests, including plantations, will be regulated according to "level playing field" principles, being afforded the same rural land use status as other farming and cropping enterprises. Landowners will be afforded a "right to establish" timber plantations, consistent with the principle of establishing "the right trees in the right places".

Protect the forest resource from the adverse impacts fire and disease

2.21 The industry will implement effective fire risk mitigation and management systems including technology for early detection and rapid response, total fire ban protocols, proactive year-round infrastructure maintenance, and training of expert local fire teams.

2.22 Governments will implement the recommendations of the 2014 *National Bushfire Management Policy Statement for Forests and Rangelands*, prepared for The Council of Australian Governments (COAG) to deliver a coherent, coordinated national bushfire strategy, including recognising the loss of timber plantation areas as constituting a material loss.

2.23 New statistical models will be developed and communicated to predict the likelihood of increased biosecurity threats (such as fungal attacks), and the optimal time to take protective action.

Sponsor catalyst initiatives to attract plantation developments

2.24 Governments will sponsor and support "regional catalyst initiatives" (such as affordable insurance, and a floor price for carbon) to attract and facilitate timber plantation expansion investments in those regions.

2.25 Governments will provide ongoing direct financial incentives for new plantation development such as the current Support Plantation Establishment program[18], plus funded "trusted adviser" extension services for private landholders wishing to participate in timber, carbon and other markets.

[18] See: Australian Government. 2024. *Support Plantation Establishment program* (Ref)

Implementation

Specific actions through which this Strategy may be implemented are set out in Table 5 suggesting which actors within the timber fibre value chain have most responsibility for implementation.

Table 5 – Responsibility matrix for actions under Strategy #2: Meeting demand for timber fibre

	Commonwealth Govt	State Government	Local Government	Processors / fabricators	Forest owners / managers / contractors	Investors / funders	Industry associations	Trades unions	Builders / architects / designers	Harvesting, log haulage & transport contractors	Fire control authorities	Researchers / R&D institutions
2.1 Invest in the expansion of new timber plantations	■	■			■	■						
2.2 Treat timber plantations as sovereign resources	■	■	■		■	■	■	■	■			
2.3 Expand plantations in a community-aware way	■	■	■		■	■	■	■				
2.4 Build relationship between the industry and local farmer groups	■	■	■	■	■	■	■	■		■	■	
2.5 Provide extension support for private native forest managers	■	■	■					■			■	
2.6 Adopt a “mosaic rural landscape” approach		■	■		■	■						■
2.7 Protect timber plantation lands against alienation to other land uses	■	■	■					■				
2.8 Inform and educate on the benefits expanding plantations and accessing sustainably managed native forests	■	■	■	■	■	■	■	■	■			
2.9 Locate plantations close to processing facilities.	■	■	■	■	■	■	■					
2.10 Remove barriers to growing short timber rotations	■	■		■			■					■
2.11 Provide carbon crediting methods for sustainable native forests	■				■		■	■				■
2.12 Promote harvestable timber plantings for carbon crediting	■	■	■	■	■	■	■	■			■	
2.13 Secure favourable Paris Agreement trading rules (Article 6)	■			■	■		■	■				
2.14 Engage super funds in timber plantation investment	■	■		■	■	■		■				
2.15 Maintain access to the native forest estate for timber fibre production	■	■	■		■		■	■				
2.16 Support private native forest managers	■	■	■			■	■	■		■	■	■
2.17 Collect and provide transparent volume and price data on Private Native Forest timber volume	■	■		■	■	■	■					■
2.18 Apply science-based forest allocation and management approaches	■	■			■		■	■				■
2.19 Enact harmonised nation-wide “right to harvest” laws	■	■	■		■		■	■				
2.20 Regulate production forests like other rural land uses		■	■				■	■		■	■	
2.21 Deploy bushfire mitigation / management technology	■	■	■	■	■	■	■	■	■	■	■	■

	Commonwealth Govt	State Government	Local Government	Processors / fabricators	Forest owners / managers / contractors	Investors / funders	Industry associations	Trades unions	Builders / architects / designers	Harvesting, log haulage & transport contractors	Fire control authorities	Researchers / R&D institutions
2.22 Implement the 2014 national bushfire strategy prepared for the COAG.	■	■	■		■	■	■	■	■	■	■	■
2.23 Model fungal attack and other forest protection risks and the required management responses					■							■
2.24 Provide government-sponsored insurance and carbon price floor	■	■			■	■	■	■				
2.25 Provide direct financial incentives and "trusted adviser" resources for new plantation development	■	■		■	■		■	■				

Strategy 3 – Healthy forests, actively managed

The strategy

Australia will actively manage its forests for their health to sustain their many environmental, cultural, social, and economic services.

Rationale

> "*… Because of the complexity and ecological diversity of a nation's forests, a national timber fibre strategy cannot adopt a 'one-size-fits-all' approach. It needs to be flexible enough to comprehend the large range of forest types and landscapes…*"
>
> *"… Government should recognise that an actively managed native forest is the best outcome for the community and for forest health and habitat …"*

All citizens have an inherent duty of care and moral obligation to protect the environments within which they live and work. By applying this principle to its own context, the timber fibre sector, which depends on plantations and natural forests for the goods and services they provide, will continue to recognise the intrinsic values of Australia's forests. This will in turn build community trust, and ensure a secure, long-term future for domestic supply from a range of different forests.

Globally, the science-informed management of forests is viewed as having the potential to make a major contribution to environmental and community wellbeing. For example, in 2007, the Intergovernmental Panel on Climate Change (IPCC) noted:

> *"In the long term, a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fibre or energy from the forest, will generate the largest sustained mitigation benefit."* [1],

and, in its most recent Assessment Report, expanded its catalogue of forest management benefits as follows:

> *"… Improved sustainable forest management of already managed forests can lead to higher forest carbon stocks, better quality of produced wood, continuously produced wood, while maintaining and enhancing the forest carbon stock, and can also partially prevent and counteract the impacts of disturbances … Furthermore, it can provide benefits for climate change adaptation, biodiversity conservation, microclimatic regulation, soil erosion protection and water and flood regulation with reduced lateral carbon fluxes …"*[2]

Defining active forest management

Ecologists are increasingly recognising that, because of the pervading influence and pressure of humans on the natural environment, the persistence and healthy functioning of most "natural" ecosystems today depends upon some form of management intervention. In the case of Australia's forests, opting for an entirely passive approach to management is likely to lead to a deterioration in ecological condition in many forest areas and contexts.

---

[1] Nabuurs,,G -J., *et al.* 2007. *Forestry*. In Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [B. Metz, *et al.* (eds)], Cambridge University Press, Cambridge, UK & New York, NY, USA. (Ref)

[2] Nabuurs, G-J., et al. 2022. *Agriculture, Forestry and Other Land Uses (AFOLU)*. In IPCC, 2022: *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [P.R. Shukla, *et al.* (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA. - page 781 (Ref)

The concept of *active forest management* has taken many definitional turns since it was first conceived in the early 1990s[3]. Most recently, active forest management has been defined in the following terms:

> *Active management is deliberate human tending of a forest or forest landscape by implementing practices or sets of practices to maintain and modify composition, structure or function towards a diverse range of potential purposes and goals. Active management sits within broader frameworks or approaches, which enact the overarching philosophy, paradigm and desired outcomes of forest management* [4].

In most instances, adopting active forest management is a precondition for protecting and sustaining forests' innate and intrinsic features, including sustaining their natural capital assets with their associated essential ecological processes.

Within this broad remit, embracing and promoting the concept of active forest management will be fundamental to sustaining Australia's supply of timber fibre from both plantations and from natural forests, without which the nation will be increasingly dependent on imports to meet its timber fibre needs.

Most leaders in the timber fibre industry equally acknowledge that the required timber fibre supply can and should only be sourced from sustainably managed forests that are suitable and legally available for this purpose[5], and that this sustainable management must be demonstrable and promoted to consumers, the community and all participants along the value chain.

As noted above, sustainable forest management requires action, which is where the concept of ***active forest management*** comes into its own. Industry leaders stressed that active forest management and its effective communication is required to maintain the health and resilience of the forests, their biodiversity, and community benefits and safety.

There is wide industry recognition, supported by peer-reviewed research, that active forest management provides the best outcome for forest health and communities, as illustrated in Figure 17[6] (to be read in conjunction with the definition on page 55).

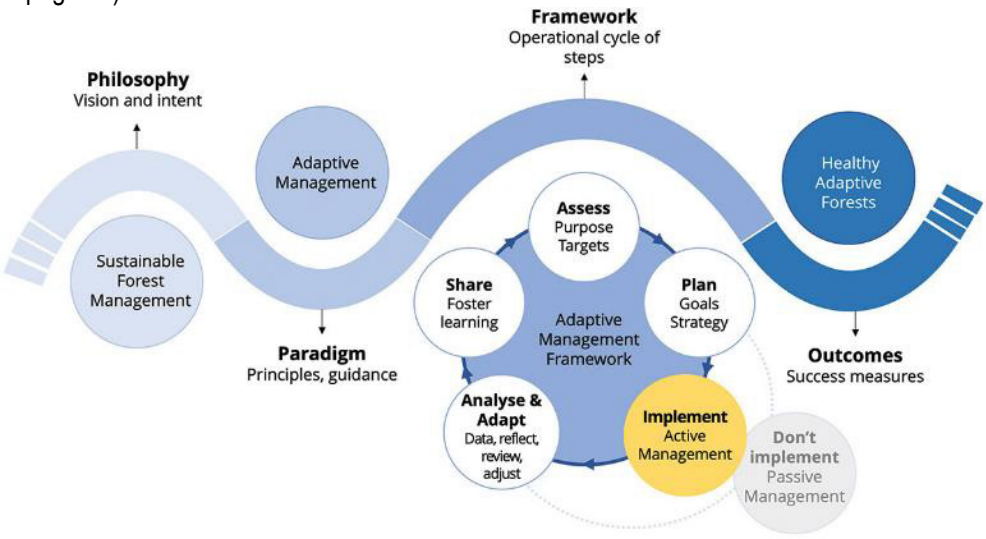


Figure 17 – Conceptual pathway toward healthy forests via active management

[3] See Bennett, L.T., Fairman, T.A, Ford, R.M., Keenan, R.J., Fletcher, M.-S. and Nitschke, C.R. 2024. Active management: a definition and considerations for implementation in forests of temperate Australia. *Australian Forestry* 87(3) – (Ref)

[4] Bennett, L.T. *et al. Op. cit.*

[5] As noted in relation to Strategy 2 - *Meeting demand for timber fibre resources* – 19% of Australia's forests are currently classed as "available and suitable for wood harvesting".

[6] Source: Bennett, L.T., Fairman, T.A, Ford, R.M., Keenan, R.J., Fletcher, M.-S. and Nitschke, C.R. 2024. Active management: a definition and considerations for implementation in forests of temperate Australia. *Australian Forestry* 87(3) – Ref

Adopting active forest management in this Strategy

The above analysis highlights that active forest management to produce and maintain healthy forests should comprise an essential pillar of this Strategy. It can and should be applied to all areas of forests by all their mangers, irrespective of tenue, to sustain essential ecological function, natural capital assets and, where so designated, to enable the sustainable harvesting of timber fibre.

All forests need active management to become and stay healthy and therefore the concept of healthy forests is tenure blind, regardless of a particular forest's ownership, management or previous use. All forests should be managed under sustainability principles which are independently certified and audited.

Forestry Australia's *Position Statement on Ecologically Sustainable Forest Management*[7] advocates for the following:

> *Ecologically sustainable forest management should be the primary objective for managing all forests regardless of land tenure, with its application and balancing of economic, social, cultural and environmental values determined by the nature and ownership of the forest.*

The full text of the Statement and its context is reproduced as a Snapshot in Appendix 2 (page 137).

Within this ambit, it's accepted that the *process* of ensuring a healthy Australian forest estate will look very different in plantations and natural forests. For example, the focus for plantations should be on productivity and utilisation, whereas a key priority for natural forests could be on ecologically determined outcomes, with timber fibre utilisation being an outcome rather than a driver of a particular management approach. Those ecological outcomes may include, for example, the maintenance or improvement in biodiversity, water quality, habitat, and carbon sequestration and storage, and in all cases based on rigorous data and science. Such management should also be directed at imparting resilience in the face of climate change, and reduced risk and impact of catastrophic or unnatural fire events. Active forest management which also incorporates protection from, and management of, biosecurity risks is essential for healthy timber plantations and natural forests in Australia.

> *… the health, resilience, biodiversity and carbon sequestration capacity of natural forests can be improved by a reduction in woody biomass and, in many instances because of the current condition of the forest, physical removal provides a better outcome than burning …*

Forest certification

Most of Australia's forests that are available and suitable for commercial wood production (public and private, plantation and native) are currently managed on a sustainable basis.

According to the latest *State of the Forests* reports there are 1.7 million hectares of commercial plantations and 27.4 million hectares of native forest available and suitable for wood production. Of this area, 20.4 million hectares is Certified by Responsible Wood and 1.2 million hectares by the Forest Stewardship Council and almost all multiple-use public forest is certified under at least one certification scheme.

The areas not certified and available for wood production are largely on private, leasehold and indigenous managed lands which are available for but not currently primarily managed for wood production. Both certification schemes are recognised by the Australian Government, and it is reported that Australia has one of the highest rates of forest certification in the world, with Australian forests accounting for 8% of the world's certified forest area[8]

[7] Forestry Australia Position Statement on Ecologically Sustainable Forest Management (Ref)

[8] These data are drawn from the indicators updated in 2023 and 2024 for Australia's State of the Forests Report and Australia's State of the Forests Report 2018 (Ref), and industry publications

Certification plays a vital role in sustainable forest management, ensuring compliance, verified through auditing by independent third parties, with international criteria and indicators. Accordingly, the Strategy should highlight that certification schemes not only guarantee the sustainable management of forests but also support responsible and ethical supply chains while providing assurance of environmental, social, and economic sustainability.

Nature Positive, Nature Repair, and Net Zero

Actively managed Australian forests have the potential to be an integral part of national Nature Positive and Nature Repair initiatives and to contribute to Australia's Net Zero Target across and within all forest tenures. Actively managed natural forests can act as a carbon sink and where this active management contributes increased sequestration, this activity should be recognised under the Australian Carbon Credit (ACCU) Scheme.

The Commonwealth Government's *Nature Positive Plan: better for the environment better for business*[9] is largely consistent with the industry's requirement for active forest management, particularly the overarching principles of:

- Delivering better environmental protection and laws that are nature positive
- Speeding up decisions and making it easier for companies to do the right thing
- Restoring integrity and trust to systems and environmental laws.

It's important to note that the science-based implementation of active forest management represents a very low threat to forest-dwelling vertebrate fauna, a key biodiversity indicator. Further, the evidence suggests active forest management should be deployed as a tool for enhancing biodiversity, as well as helping address some of the major threats including an unsuitable fire regime (Figure 18)[10].

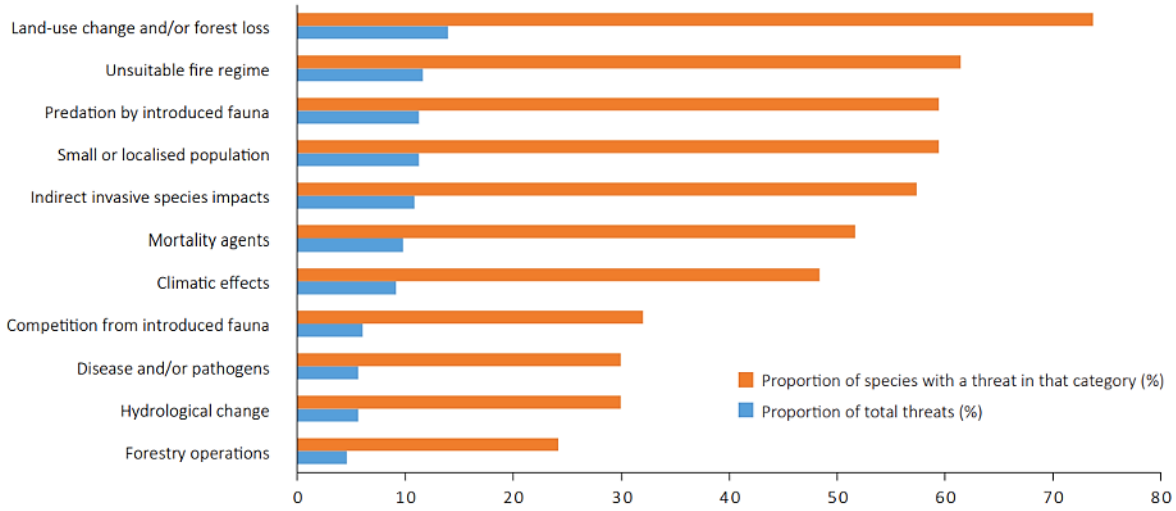


Figure 18 – Threat ratings for extant threatened forest-dwelling vertebrate fauna (as at 2021)

The timber fibre industry recognises that it has been ineffective at getting this science-based message across to policy makers and the community.

The industry has specific concerns regarding the review of the Regional Forests Agreements and stresses that the Government, in its review, rigorously applies good science to decision making. The industry welcomes the Government commitment to the review provided it is done in genuine consultation with industry, viz:

> *"… The Government will work with stakeholders and relevant jurisdictions towards applying National Environmental Standards to Regional Forest Agreements to support their ongoing operation together with stronger environmental protection. The timing and form of this requirement will be subject to further*

[9] Australian Government. 2024. *Nature Positive Plan: better for the environment, better for business* (Ref)
[10] Australia's State of the Forests Report, DAFF (Ref)

consultation with stakeholders. Consultation will consider future management and funding opportunities under voluntary environmental markets...".[11]

The industry also has expressed concerns that the terminology "Nature Positive" is used in Government policy but is also widely used by other organisations. For example, the industry has significant concerns that the term "Nature Positive" has been corrupted through the definition used by the WWF which include the removal of 1 million hectares from timber fibre production.[12]

First Nations

First Nations Peoples and the traditional custodians of Country have knowledge and culture that is consistent with active forest management and an objective of healthy and resilient natural forests. This knowledge and culture have been supressed across Australia's forested landscape and the consultation process confirmed that the Australian forest industry is enthusiastic about engaging with First Nations and traditional custodians to help bring natural forests back to health and improve their resilience and whilst providing other benefits including reconnection to Country, employment and income through the utilisation of fibre that needs to be removed.

While many consultees acknowledged that there is much work to do to progress First Nations engagement, understanding of the concept of Country and learnings regarding forestland management, small and encouraging steps are being taken in some regions. For example, recent work within stakeholders in the Northern Australia Forestry Hubs has produced a practical framework for engagement in information-sharing on forest management in Northern Australia (Figure 19). It promises to provide:

"… a mutual starting point in establishing relationships with First Nations people and a foundation from which community development, business initiatives, research and other projects on Indigenous Forest Country can be built…" [13].

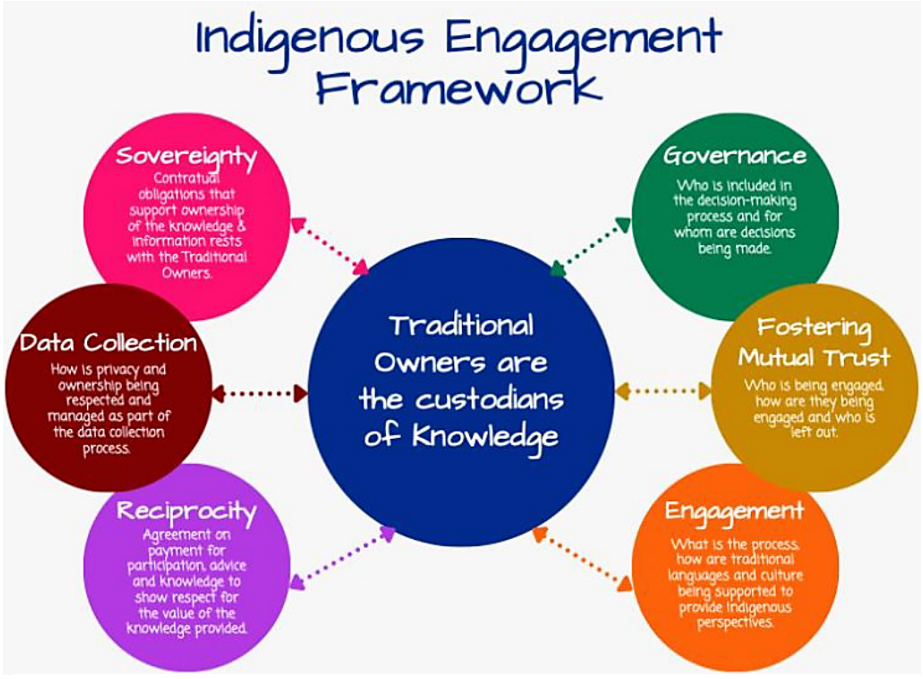


Figure 19 – Decision-making framework and engagement protocol for Northern Australia

[11] Australia's State of the Forests Report, DAFF (Ref)

[12] World Wide Fund for Nature. 2024. *Nature Positive - What does it mean and why is it so critical for Australia and our future?* (Ref).

[13] Northern Territory Ord Valley forestry Hub and North Queensland forestry Hub. 2024. *Indigenous Engagement Protocols* (Ref).

The industry acknowledges that is has a lot to learn from traditional custodians and, although there has been a long history of employment of First Nations people in the hardwood sawmilling sector, the industry has a long way to go in engagement and understanding indigenous culture. Ways in which institutional structures and legislation should and can formally recognise First Nations' People as experts in determining their own futures and their on-going roles as custodians of their ancestral lands are outline in the Snapshot: *Recognising First Nations' knowledge, expertise, and practice* (see Appendix 2, page 135).

The industry is committed to continuing and improving engagement including, where appropriate, gaining free prior and informed consent which acknowledges the long-standing role of Aboriginal and Torres Strait Islander peoples in actively managing forested landscapes for over 60,000 years and that this historical and cultural context aligns with and enhances the principles of active and sustainable forest management practices.

Healthy forests

The industry supports the active management of all forests which may include harvesting and utilisation of natural forest timber fibre where there is a demonstrable improvement in forest health. The ecological thinning now being undertaken in WA is an example of the benefits of active forest management in natural forests (see Appendix 2, page 133). A collateral benefit of such ecologically driven practices is optimisation of the use of residue timber fibre from actively managed healthy forests, contributing to Australia's domestic manufacturing sector and reducing imports of critical and desirable products. They thus become a practical response to the fact that timber grown in plantations has different characteristics, and is generally less durable, than timber grown in a natural forest environment over a longer period.

Active forest management will ensure the nations forests are more resilient to threats from a changing climate and exposure to increasing biosecurity risks. Specific feedback from consultations included comments such as:

> *… more attention needs to be paid to protecting the existing resource base from fire and other threats. As climate change progresses, the incidence of fungal attack in pine plantations is increasing (with greater humidity). We need new (statistical) models to predict the likelihood of increased fungal attack, and the optimal time to take protective action …*

The same approach applies to resilience to the threat of loss of fibre, stored carbon and biodiversity from large scale, high-intensity and unplanned fires – active forest management has the ability to reduce the risk and impact of such events which are forecast to increase across much of Australia's forested landscape as a result of a changing climate. Active management will include the detection, suppression and management of unplanned fires and will also include, by drawing on contemporary science and indigenous knowledge, the use of fire as a management tool for the recreation and maintenance of healthy forests.

> "*… The use of fire by First Peoples in Australia was and remains nuanced and appropriate for Country, there were no general recipes, nor would we ever advocate for one. Traditional custodians know Country and fire in ways that ecological science and western practice does not…*"[14]

Active forest management can also extend to the strategic use of forest planting as a nature positive opportunity across Australia's significant areas of degraded lands. This will include improvements in forest structure, species diversity and the removal of noxious and invasive weeds species. For example, replacing areas of prickly acacia infestations in North Queensland with fibre-productive species, or establishing healthy, productive and commercial forests on reclaimed mine sites, could deliver multiple benefits[15].

[14] Pascoe, J. *et al.* 2023. Lighting a pathway: Our obligation to culture and Country. *Ecological Management & Restoration* 24(2-3) (Ref) p.153

[15] This weed shrub is much more aggressive than native competitors, and its sheer seed volume and growth rate soaks up available water, making the soil unsuitable for other plants

Costs and revenues

Dealing with the cost of active forest management will be different for plantations and natural forests. In plantations, revenue from harvested fibre, carbon sequestration, and positive biodiversity and other natural capital outcomes[16] will not only cover the active management costs but will provide a return for the plantation investor. In natural forests, revenue from the removal of fibre where it is necessary to improve forest health, along with carbon sequestration, biodiversity and other monetised natural capital improvements will be used to offset the active management costs but will be *part* of the solution, not the *driver*.[17]

Interrelationships

Sustaining adequate timber fibre supplies from actively managed healthy forests will also support Australia's acknowledged sovereign manufacturing imperatives. In Strategy 1 (*Building sovereign timber fibre manufacturing capability and capacity*) consultation with the industry and external stakeholders stressed the importance of strengthening Australia's capacity to deliver the wide range of products and applications using timber fibre as their raw material. These include housing, other construction, furniture, packaging, paper, chemicals, and bioenergy generation. But the industry also sees great opportunities for Australia to develop and utilise new products derived from timber fibre. The Strategic Forest and Renewable Materials Partnership's Forest Resource Security, Access & Management Working Group has recognised the link between a healthy, actively managed national forest estate and the provision of new products and services from those forests (see Figure 20).

Figure 20 – Interrelationships between investment drivers: forest management, resource security, and supply chain

It saw the interrelationships between active forest management, resource security and supply chains in the following terms:

> "*… Active forest management, resource security (Strategy 2) and supply chains (Strategy 1) are all interrelated. Focusing on all components equally reduces risk of perverse outcomes and offers the greatest chance of success for the National Timber Fibre Strategy…*"

Strategy components and actions

Ensuring healthy forests can become the norm across Australia, irrespective of tenure, ownership or management purpose, will require changes in mindset and practice amongst many participants along the timber fibre value chain. Some key components and actions to implement the strategy of the Australian forest products industry sourcing its timber fibre resources from actively managed healthy forests are set out below.

[16] Biodiversity and natural capital outcomes will largely be generated from the unplanted parts of plantation properties/estates.

[17] Strategic Forest and Renewable Materials Partnership, Forest resource security, access & management Working Group.

Embracing objective, knowledge-based management

3.1 Active forest management will be based on science and knowledge, including First Nations' knowledge of forests and Country, and will consider and recognise all the benefits and costs (environmental, social and economic) of each forest management activity.

3.2 All Australian forests will be actively managed in accordance with a sustainability framework which will be independent, transparent and audited (for example, PEFC/Responsible Wood, FSC).

Applying active management to all tenures

3.3 Australia's forest policies will embrace the principle of active and sustainable forest management irrespective of tenure and will support it at all levels of government, promoting it to consumers and the community.

3.4 Private native forest owners and managers will be educated on the forest health benefits resulting from active management.

3.5 Healthy, productive and commercial forests will be replanted on rehabilitating mine sites.

3.6 Governments will recognise, and other supply chain stakeholders will be encouraged to recognise, that forestry certification schemes not only guarantee the sustainable management of forests but also support responsible and ethical supply chains while providing assurance of environmental, social, and economic sustainability.

Utilising all harvested fibre

3.7 Active forest management will be primarily directed at enhancing forest health and resilience, adapting to climate change and mitigating risks, especially from fires and invasive species. In this context it can include the harvesting and utilisation of timber fibre from natural forests only where this activity contributes to the improvement or maintenance of a healthy forest.

3.8 Recognise that, while the utilisation of fibre will not be the driver of active natural forest management, it can contribute to improved forest health and provide revenue to help offset active and healthy forest management costs.

Informed by indigenous knowledge

3.9 The forest and wood products industry will increase its engagement with First Nations people and traditional custodians to utilise their knowledge of actively managed healthy forests, land and Country.

3.10 First Nations peoples/traditional custodians will have a regulatory environment where they can actively manage natural forests to restore them to health whilst providing other benefits including reconnection to Country, employment and income.

3.11 First Nations peoples/traditional custodians will be enabled to heal Country and protect all Australians through fuel management, increased carbon capture and storage and increased forest productivity, creating resilient Country that is less prone to catastrophic fire.

3.12 Active forest management will seek engagement with First Nations peoples as to their preferred ways to manage and maintain healthy forests, including on their Traditional Owner lands.

Incorporating natural capital

3.13 Actively managed Australian forests will be part of national Nature Positive and Nature Repair initiatives, projects under the Australian Carbon Credit (ACCU) Scheme, and will contribute to Australia's Net Zero Target across and within all forest tenures.

Proactively managing risk

3.14 Governments, supported by the forests and wood products industry, will establish and maintain a biosecurity regime which protects all forests from external biosecurity risks.

3.15 The Australian forest industry and governments will invest in technology, infrastructure and the human resources, skills and training needed to protect forests from unplanned high-intensity fires.

3.16 Forest managers will apply active forest management principles toward countering and reversing biodiversity loss, especially of threatened species, and ecosystem fragmentation.

Recognising product and service credentials

3.17 The environmental benefits of the downstream utilisation of timber fibre (for example, in construction and energy generation) from actively and sustainably managed forests will be recognised and this recognition will include consideration of the impact of the use of alternative substitute products (for example, concrete, steel and fossil fuels).

3.18 The industry and governments will work together to ensure the necessary regulatory and business environment exists to ensure all imported wood products only come from certified sustainably managed forests.

Implementation

Specific actions through which this Strategy may be implemented are set out in Table 6, noting which particular actors in the timber fibre value chain have most responsibility for implementation.

Table 6 – Responsibility matrix for actions under Strategy #3: Healthy forests, actively managed

	Commonwealth Govt	State Government	Local Government	Processors / fabricators	Forest owners / managers / contractors	Investors / funders	Industry associations	Trades unions	Builders / architects / designers	First Nations	Harvesting, log haulage & transport contractors	Researchers / R&D institutions
3.1 Active management based on science and knowledge		■			■	■	■	■		■		■
3.2 Forests actively managed within an independent, transparent and audited sustainability framework.					■	■				■		
3.3 Policies embrace the principle of active forest management irrespective of tenure	■	■	■				■	■		■		
3.4 Private native forest owners and managers educated on the benefits of active management	■	■	■		■		■			■		■
3.5 Actively managed forests replanted on rehabilitating mine sites		■				■		■		■		
3.6 Recognise that forestry certification schemes guarantee sustainable management of forests and other sustainability benefits.	■	■	■	■	■	■	■	■	■	■	■	■
3.7 Utilisation of timber fibre from natural forests occurs only where it contributes to the improvement or maintenance of a healthy forest.	■	■			■		■	■		■		
3.8 Recognise that while the utilisation of fibre is not a driver of natural forest management, it may provide revenue to offset forest management costs	■	■		■	■			■		■		
3.9 Increase engagement with First Nations to utilise their knowledge of actively managed healthy forests, land and Country							■	■		■		
3.10 A regulatory environment where First Nations actively manage natural forests to restore them to health and provide other benefits including reconnection to Country, employment and income	■	■	■		■		■	■		■		
3.11 First Nations enabled to heal Country and protect all Australians through fuel reduction, increased sequestration and forest productivity, creating resilient Country less prone to catastrophic fire	■	■	■		■		■	■		■		■
3.12 Utilise the fire knowledge and customs of First Nations peoples	■	■	■		■		■			■		■
3.13 Forests as part of national Nature Positive, Nature Repair and Net Zero Target initiatives	■	■			■		■	■		■		■
3.14 A regime which protects all forests from external biosecurity risks	■	■	■		■		■			■		■

	Commonwealth Govt	State Government	Local Government	Processors / fabricators	Forest owners / managers / contractors	Investors / funders	Industry associations	Trades unions	Builders / architects / designers	First Nations	Harvesting, log haulage & transport contractors	Researchers / R&D institutions
3.15 Investment in technology, infrastructure and the human resources, skills and training to protect forests from unplanned high-intensity fires	■	■	■		■			■		■		■
3.16 Apply active forest management to counter / reverse biodiversity loss and ecosystem fragmentation	■	■			■		■			■	■	■
3.17 Environmental benefits of utilisation of timber fibre from actively managed forests recognised and the impacts of alternatives considered	■	■		■	■		■	■	■	■		■
3.18 Imported products only from certified sustainably managed forests	■						■	■	■			

Strategy 4 – Attracting and engaging people and other industry enablers

The strategy

The Australian forest products industry will attract and engage the best people, the most advanced manufacturing processes, the required investment, and the necessary supporting infrastructure.

Rationale

> *"… good wages and working conditions are always associated with higher-tech processing solutions … the low-paid positions are the ones that involve activities that should no longer be permitted in workplaces – such as workers crawling under saw benches or log carriages to sweep out debris… the much happier, better paid worksites have virtually no manual labour jobs …"*
>
> *"…we are frustrated by the lack of infrastructure and connectivity as essentials for industry support (because) … good infrastructure is essential to lower the cost of getting to markets …"*
>
> *"… investment in bushfire detection and response technology and infrastructure will lead to greater investor confidence that the risk of catastrophic losses is reduced…"*
>
> *"… there's no point in having a forest and wood products industry in Australia unless participants can deliver sustainable profits …"*

Attracting and engaging industry enablers is important for the long-term sustainability of the industry, and it was pointed out during the consultations that getting this right reduces investment risk throughout the value chain, and particularly for investment in sovereign manufacturing capacity (Strategy 1). This is true for all enablers: people, infrastructure, technology, policy, regulation and research (Strategy 6).

What are Industry enablers?

Industry enablers are the people, services, systems, and processes that operate along the timber fibre value chain which spur continuous improvement, drive efficiency, maintain cost competitiveness, support new investment and innovation, engender community support and social licence, and ensure timely and profitable business operations.

In the context of Australia's timber fibre industry, enablers may include:

- Appropriately skilled workforces with modern, safe workplaces,
- Housing and other community services for the workforce, especially in regional areas
- Efficient transport and communications infrastructure,
- State-of-the-art technology,
- Affordable energy, water and waste servicing,
- Committed investors supported by modern finance architecture, and
- Supportive policies and regulatory arrangements.

Box 3 – Dimensions of Australia's comparative and *competitive* advantages in timber fibre

Improving Australia's ***comparative*** advantage in relation to timber fibre will require improving those factors of production (such as land, labour, and capital), and other conditions (such as our regulatory environment, risk management, policies, and investments) that can be deployed in efficiently producing timber fibre-based goods and services compared with overseas competitors.

Increasing Australia's ***competitive*** advantages in timber fibre will require improvements in our ability to generate timber fibre-based goods and services at lower cost and / or of higher value than other countries, which should lead to the sector securing a greater market share for domestically produced timber fibre-based goods and services and improved operating margins leading to increased investor confidence.

The right mix of modern industry enablers, working alongside and within the resource, processing and end-market segments of the timber fibre value chain, will allow the industry to capitalise on and enhance Australia's *comparative* and *competitive* advantages in growing, harvesting, processing, constructing and recycling timber fibre for the benefit of Australia's citizens (see Box 3[1]).

Securing the right combination of effective enablers should result in:

- Reduced reliance on unstable, unpredictable and / or unsustainable import supply chains.
- Increased employment at higher skill levels and pay within safe, regionally located workplaces.
- Delivery of timber fibre feedstock / resources to domestic timber fibre product manufacturers at scale and at internationally competitive cost.
- The maximum value accruing from onshore (domestic) timber fibre products processing and manufacturing.
- The increased use of timber fibre in social and affordable housing, including through pre-fabrication options and the use of modern methods of manufacture.
- New, and improved existing, circular manufacturing opportunities inherent in the wood fibre supply chain.
- An excellent network of timber fibre product and market development services.
- Innovative forest, manufacturing and distribution infrastructure.

Skilled workforce

Ensuring the timber fibre sector has an appropriately skilled workforce, with ongoing training and attractive conditions, is a critical issue with special challenges for the industry's typically dispersed regional workforce, including in the extensive First Nations' forestlands and regions. Importantly this applies to all employed in the industry, direct employees and contractors.

A strong and sustainable timber fibre industry requires a well-trained workforce because training helps build skills, resulting in better qualified workers, more efficient and effective enterprises and high-quality consumer products.

> *"… most jobs in the timber fibre sector have evolved from being "dirty, dumb and dangerous" – a skilled workforce is required to continue this development."*

It's believed that opportunities exist for the timber fibre industry to become a leader in skill development and recognition through a combination of innovative solutions that ultimately build industry capability and address the critical thin market accessibility to VET qualifications whilst uplifting enterprise capacity and improving worker job satisfaction.

Improved engagement with Registered Training Organisations (RTOs) is needed to counter challenges associated with the thin market for training in our industry (and extremely low RTO engagement). There are very few RTOs with these training packages on scope, meaning workers cannot be enrolled in, or subsequently attain, qualifications. This results in low enrolment numbers and RTOs not wanting to place these qualifications on scope as they do not deliver high income volume. Improved engagement must lead to putting the industry's training packages on scope whilst ensuring that the business case for workers and business engaging the formal training system is also attractive. The CFMEU maintains that "*both challenges are achievable*".

Diversity in workforce profiles would be improved through flexible 'work ready' programs to engage with diverse candidates and support them to achieve recognised baseline skills that are desirable to secure employment in

[1] Adapted from Schandl, H., et al. 2023. *Australia's comparative and competitive advantages in transitioning to a circular economy*. A Report to the Office of the Chief Scientist. CSIRO, Australia. (Ref)

timber fibre sector enterprises, focussing on regional communities. This benefits both potential workers by improving their skill base and ensuring they can meet baseline requirements whilst improving the potential candidate pool for regional enterprises.

Other proposed initiatives include:

- Develop virtual reality and online training to improve access to critical skill development and retention. Examples include saw technician training; wood machinist apprenticeships; medical and health related consumer goods.
- Providing an online resource library for training & assessment materials which will create baseline consistency across industry sectors that is contextualised, leading to improved engagement by enterprises and uplifting industry capability via skills and training.
- Capacity building to improve self-sufficiency in training, assessment and skill development so industry can support learning and recognition of skills in a manner that meets the needs of enterprises and workers. This may be via shared assessment arrangements between RTOs and enterprises.
- Embedding environmental credentials associated with the timber fibre based sector into recruitment approaches to attract and increase the candidate pool whilst also benefiting the rejuvenation of regional towns.
- Continuing the increase in R&D capacity (see Strategy 6).

Having growing communities in regional areas is an important component to workforce attraction, retention and development.

However, all rural / regional industries report extreme difficulty finding skilled people, especially in this post-COVID era, evidenced by sometimes fierce competition for recruitment in agriculture, mining, renewable energy, and other higher-tech manufacturing businesses. This competition flows on to the timber fibre sector imposing constraints at all points of its value chain, such as transport (with one business report “needing to pay $140,000 for truck drivers”).

Within the timber fibre sector, however, there is the added pressure of an historic (and still current) lack of forest resource security in many timber fibre regions exacerbating job insecurity. This, combined with the limitations of finding suitable housing in regional areas, tends to work against attracting workers because they fear for their job security and social wellbeing for them and their families.

Another major identified challenge within the skilled workforce enabler is the shifting age demographic of timber fibre sector workers, with many in the later decades of their working lives. As it currently stands, the forestry industry is an ageing one, with a considerable proportion expected to retire over the next five to ten years. At the 2021 Census, more than 59% of forest and wood products employees were over 40 years of age, and 38% over 50. Similarly, in the pulp and paper sector, 71% of workers were over 40 and 45% over 50 in 2021. Specific issues raised during the consultation include:

- in one region the average age of log truck drivers was reported as being 55+, with very few newer, younger drivers being recruited. In that same region, a major processer noted: “we rely on nine harvesting crews / units and there's not been a recent time when they were all fully staffed with the right skill levels”,
- one Queensland processor reported its mill apprentices need to go to Creswick (in Victoria) to do their training,
- although there have been significant advances in the industry, more can be done to introduce greater diversity in the timber fibre industry’s workforce including increasing the involvement and employment of First Nations people, people with disabilities and women, and

- another noted: "there are fewer and fewer young apprentices available due to expectations of staying at school until the end of year 12 and then going to university".

It's clear from these consultations that much more emphasis needs to be placed on trades skills, especially in the regions, and the industry needs to change the perception of these pathways as making valuable contributions to society, recognising that accredited training and career path opportunities exist *at all levels* (i.e. "It's not just about driving trucks and using chainsaws").

Some suggest that due to the industry's "low critical mass" in the workforces, workplaces and businesses of some of the less well-serviced regions, these would benefit from having "Standard Operating Procedures" to guide their employment and operating practices. This will ensure that, notwithstanding the natural variations in skills and workplace types between and within regions, standardised practices can still be adopted and transferred.

Other specific commentary on improvements needed to workforce training and skills development included:

- the clear demand for online training offerings, including virtual reality and other online training to improve access to critical skill development and retention. Examples include saw technician training; wood machinist apprenticeships; medical and health related consumer goods
- the concept of an accessible online resource library for training & assessment materials - to create baseline consistency across industry sectors that is contextualised, leading to improved engagement by enterprises and uplifting industry capability via skills and training
- generic training opportunities to improve overall capability and capacity, including "self-sufficiency" in training, assessment and skill development so industry can support learning and recognition of skills in a manner that meets the needs of enterprises and workers. This may be via shared assessment arrangements between RTOs and enterprises
- utilising the environmental credentials associated with the timber fibre-based sector to attract and increase the candidate pool as a recruitment strategy – whilst benefiting the rejuvenation of regional towns.

The recent announcement of ForestWorks' delivery of elements of the new Forestry Workforce Training Program will assist in advancing overall training access and credentialling for the timber fibre sector and a commitment for the models and resources developed to be scalable and sustainable with long-lasting, industry-wide impact[2].

The modern timber fibre sector increasingly needs a highly technically skilled workforce, including disciplines such as ecology, indigenous engagement and land management practices, stewarding natural capital values, carbon trading, etc. many of which need tertiary accreditation and advanced technology skills and special engagement with First Nations communities and practitioners. There are also shortages of employees in more traditional roles of fitters and diesel mechanics where there is strong competition from other sectors (e.g. mining).

Making this shift may also translate into workforce remuneration because, as one consulted manager noted "good wages and working conditions are always associated with higher-tech processing solutions", and that "the low-paid positions are the ones that involve activities that should *no longer be permitted in workplaces* – such as workers crawling under saw benches or log carriages to sweep out debris", evidencing that "the much happier, better paid worksites have virtually no manual labour jobs".

The modern timber fibre industry can and must promote a more purposeful, technology-driven uplift in skills, jobs and remuneration in a safe industry offering flexible career progression opportunities.

[2] See: Forestworks, 2024. Forestry Workforce Training Program (Ref)

At the fibre-growing end of the value chain – in forestry – Australia suffers from a shortage of professional forestry expertise. This is reflected in the high and increasing demand for forest professionals from, for example, Forestry Australia's Registered Forestry Professionals (RFP) program. These include from companies, individuals and programs delivering mandatory plans for timber harvesting, carbon projects, and biodiversity schemes on private land.

AFPA, and specifically the Growers' Chamber, is currently testing the potential:

> *"… to secure the ongoing delivery of forestry tertiary education Australia. This funding will pay for the coordination of the Graduate Certificate of Forestry, delivered by University of Tasmania on behalf of a consortium of 8 universities…"*

Ways to address this shortage of active forestry professionals across the sector include:

- developing an integrated 'learning ecosystem' that sees micro-credentials providing a "pathway" to higher education courses in TAFE and University
- micro-credentialling providing those forestry practitioners without formal qualifications (and / or those who've graduated from more general environmental / NRM degrees) to advance and develop their forestry-specific knowledge
- incentivising and supporting a revival of forestry science and related post-graduate disciplines at tertiary level to ensure a science-backed "new generation" of foresters can emerge
- better resourcing of the RFP program and similar initiatives to ensure these services are known about and deployed cost-efficiently.

Making High Performance Workplace a feature of the forestry industry.

Industry and workplace representatives noted the opportunities within the timber fibre sector for making our workplaces more highly performing and attractive places to work.

The report of non-government members of the 2012 Prime Minister's Manufacturing Taskforce (*Smarter Manufacturing for a Smarter Australia*[3]) has previously called for "Smarter Workplaces" to be championed, recognising that productivity gains are ultimately realised in workplaces (and firms) and that "high performance workplaces"" are required in order to achieve them.

"High performance workplaces" are characterised by a set of shared values and beliefs where people welcome and seek to introduce change and innovation, where leaders care for their employees and foster collaboration, and where there is an ambition to deliver results and a focus on achieving goals.

The CFMEU Manufacturing Division provided more detailed information about the characteristics of *High Performance Workplaces* which is included in the snapshot on page 139.

The three most significant barriers to high performance workplaces (and all workplaces) have been found to be:

- motivating the workforce to assume greater responsibility,
- being able to retain highly talented individuals, and
- creating a flexible and responsive workplace culture[4].

[3] Prime Minister's Manufacturing Taskforce. 2012. Report of the non-government members (Ref)

[4] Source: Boedker *et al.* 2011. *Leadership, Culture and Management Practices of High Performing Workplaces in Australia: The High Performing Workplaces Index*. Study for the Department of Education, Employment and Workplace Relations, Society for Knowledge Economics, p.57, cited in Prime Minister's Manufacturing Taskforce *Op. cit.*

For high performance workplaces to become a feature of the Australian forest and forest products industry requires a sustained commitment from employers and unions to build the managerial and workforce skills and practices – and the innovation culture – that high performance workplaces demand.

Transport infrastructure

Achieving efficient, cost-competitive freight transport services is an indispensable element of a modern timber

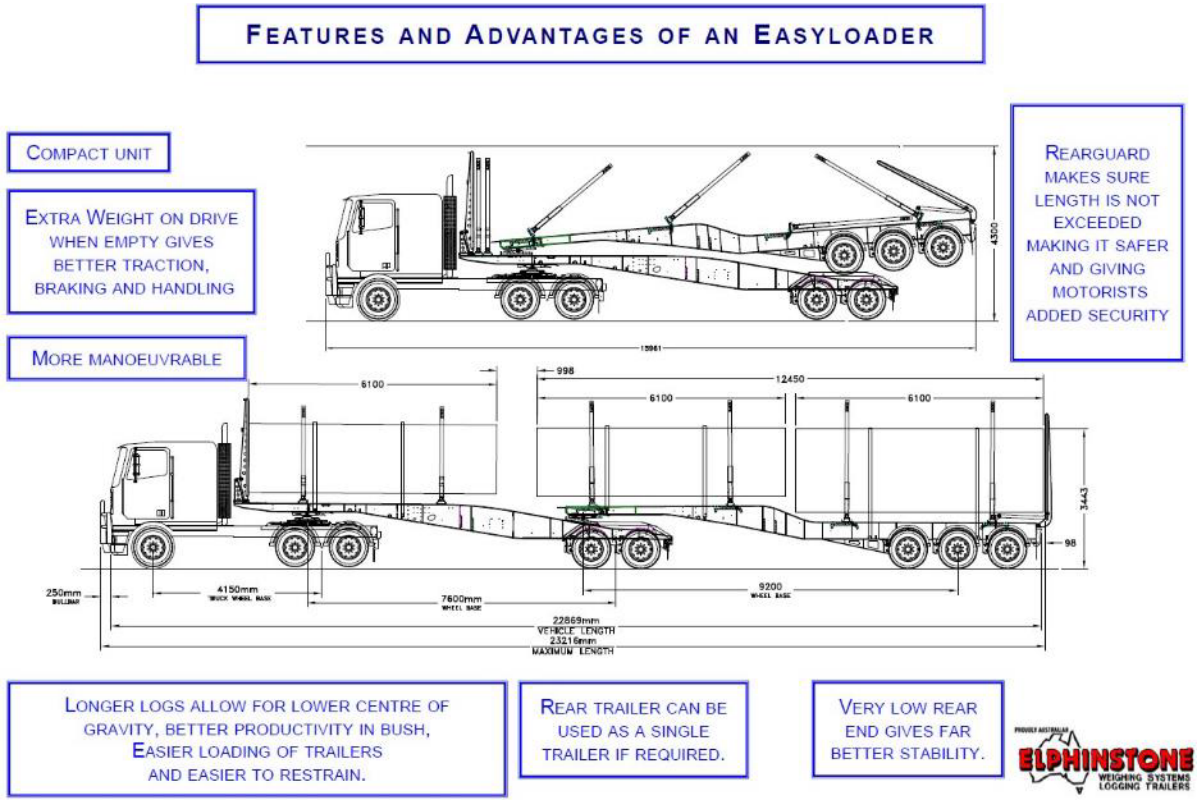


Figure 21 – Example of modern timber fibre resource transport configuration (Tasmania)

fibre sector. This is not only because of its typical high volume / low value characteristics (unprocessed fibre – logs and woodchips), but also because of the highly dispersed, regionalised, and changing nature of the industry where "good infrastructure is essential to lower the cost of getting to markets…"

Haulage from the forest to processing facilities also provides unique challenges because the point of harvest, and therefore the start of the transport task, will have concentrated activity for a relatively short period and then may not be used for many years until the next harvesting operation.

Efficient and robust road networks also allow for an efficient rapid response to fire and other emergencies, serving not only the timber fibre interests, but also other landholders and community interests.

Its highly regionalised nature puts timber at a disadvantage to some of its more city-centric competitor products such as steel framing. This is illustrated by one observation that "timber framing can't compete with steel because of supply chain delays … timber takes weeks or months to supply to the building site, while for steel it's typically six days". Some anecdotes even put it as serious as "steel framing winning the housing framing market" as a result of a sub-optimal timber supply chain.

Commentators from some of the more remote forestry regions, such as in the Northern Territory, express frustration at the chronic lack of infrastructure and connectivity – deemed essential services for proper industry operations. For example, the proper commercial management of the NT African Mahogany estate is reported to

be stifled due to a lack of infrastructure: “Everything costs five times as much here as it does down South”, and “people need to be connected!”.

Efficient transport also relies on high quality well-maintained roads or rail infrastructure, and timely regulatory approval for optimised and continually improved log transport vehicle use (see, for example, Figure 21[5]).

The strategy must comprehend the likely impacts of climate change on forest infrastructure and access. In some of Australia’s most significant forestry regions climate scenarios suggest that in future rain will occur in more intense, heavier episodes. This will require a review of current, conventional forest road designs and maintenance approaches.

For example, consultations reveal the NSW public softwood plantation estate, comprising some 230,000 hectares, includes 15,000 km of forest roads. One NSW forestry management area with 5,800 km of forest roads requires an average of about 1 cubic metre of road gravel for every 28 cubic metres of logs extracted. When ill-designed or unmaintained forest roads cross water courses they can cause significant turbid pollution. In these cases, best practice design ensures overland water flows are kept away from crossings and onto established vegetation areas (except perhaps in the very deep sandy soils of the South Australia Green Triangle area).

Such approaches are a good example of the benefits of applying active forest management principles in operational settings (see more on *active forest management* in Strategy 3 – page 55ff).

Identified ways to secure and enhance efficient freight transport systems within the timber fibre sector include:

- continuous improvement and innovation in enabling higher mass limit vehicles to operate along timber fibre transport routes, with transport regulators resourced to keep pace with the approvals necessary to adopt the most productive solutions (under, for example, “Performance Based Standards”).
- incorporation of climate scenario modelling to ensure roads and related infrastructure can be resilient to climate events (that is, the infrastructure needs to be designed to be able to accommodate more intense climatic events, particularly overland water flows and higher daytime temperatures).
- technologies to optimise transport route decision-making, trailer configurations, and backload opportunities, reducing the number and / or length of trips required for a designated task
- closer and deeper engagement with regional and State authorities and other industries on key logistics matters such as cross border and regulatory approvals, and high mass limit standards.
- examining the concept of strategic industrial processing zones (SIPZ) with, for example, optimised “single destination” infrastructure hubs comprising intermodal transport (rail / road), energy generation (thermal and electrical), water, gas etc. The SIPZ will attract regional employment and benefits local communities
- understand future wood and manufactured products flows so that future infrastructure needs can be planned and constructed in advance *“… plan to solve the problems before they become problems…”.*

Enabling a more efficient and cost-competitive timber fibre freight supply chain instils financial viability of the timber fibre industry’s growing (i.e. plantation investment) *and* processing operations, and hence an improved overall return on investment. It also reduces the products’ scope 3 greenhouse gas emissions because of fewer handling points and an overall smoother transport operation.

Communications infrastructure

Advanced communications technology infrastructure is another crucial enabler of a modern timber fibre sector to provide such business essentials as:

[5] Source: Elphinstone Engineering, Tasmania

- best practice technology for emergency communications and information sharing
- real time data exchange and interrogation
- technologically driven productivity improvements
- information for timely interventions to prevent or mitigate impacts from pests and diseases, fire, and other catastrophic loss risks
- improved safety outcomes for the industry and surrounding communities.

Figure 22 – Enabling technologies for resource processing and manufacturing

Also, the timber fibre sector is itself a key enabler within the communications and energy supply network. For example, it's noted the expansion of the Queensland electricity grid is creating demand for ~35,000 12.5 metre poles a year.

Enabling technologies for resource management, processing and manufacturing

A modern timber fibre manufacturing industry will increasingly adopt digital technologies to (a) protect forest resources, such as A.I.-based bushfire risk detection, (b) track materials, such as for log provenance, quality control, product certification, (c) manage efficient production processes, such as energy efficiency, process control, materials recycling and recovery, and (d) interface seamlessly with markets, for example, e-commerce and computerised freight management.

The schema in Figure 22[6] summarises key places and processes where digital technologies are in use in many modern industries. The same suite of technologies and approaches can and must be deployed within Australia's timber fibre sector to ensure its profitable future. Consumers specifically raised the opportunities available to the industry in utilising big data, artificial intelligence and robotics.

Affordable and reliable energy and other services

The escalating cost of energy has become a major constraint for the viability of many of Australia's timber fibre processing facilities and is hampering growth and competitiveness. Recent public commentary on Australian manufacturing's worrying decline in competitiveness in energy cost[7] is confirmed by industry consultees who variously describe gas and electricity costs as being "crippling".

It's also noted by manufacturers that recently domestic timber price rises have not kept pace with prevailing cost inflation over the same period, particularly for energy and other key inputs such as wages and transport.

The inevitable result is that timber fibre imports become more competitive (and hence more affordable) than domestic products for Australia's domestic consumers.

[6] Source: Schandl, H., *et al.* 2023. *Op. cit.*

[7] See, for example, earlier this year it was noted "Australian manufacturers now pay, on average, 50 per cent more for electricity and 200 per cent more for gas than their competitors in the US. (Eade, B. 2024. Four ways Australia can lift investment in manufacturing. *The Australian Financial Review* 15 April. - Ref)

In fact, some fear that unless manufacturing within Australia can be more cost competitive, more and more of our harvested logs will be exported, and the overseas-manufactured timber products will be imported.

That said, some in the industry believe current conditions present strong emerging opportunities for the wider utilisation of home-grown timber fibre across the Australian economy. For example, with natural gas prices "going through the roof" there are good prospects for utilising our extensive tonnages of plantation and native forest residues for bioenergy generation – not only within the forest and wood products industry but also to capitalise on the increasing enquiries from other industries about the availability of biofuels and / or syngas.

For these opportunities to be realised, changes are required to the way the Commonwealth and several State governments regulate forestry and mill residues when directed toward energy generation options. For example, carbon and renewable energy crediting mechanisms currently discriminate against wood fibre as an energy source on largely political grounds not supported with science.

Similarly, Australia lags significantly behind some competitor countries in relation to Energy from Waste (EfW) policies and incentives. For example, NSW prohibits EfW projects from all but four special "precincts", most of which are not proximate to the State's major forestry regions[8].

Failure to promote, facilitate and / or approve energy generation facilities utilising available quantities of forest and timber processing facility residues for energy feedstock also militates against the industry benefiting from distributed energy opportunities.

Changing this culture and practice would enable the significant cost reductions inherent in distributed and behind-the-meter energy generation systems to flow to existing and new regional timber fibre manufacturing establishments.

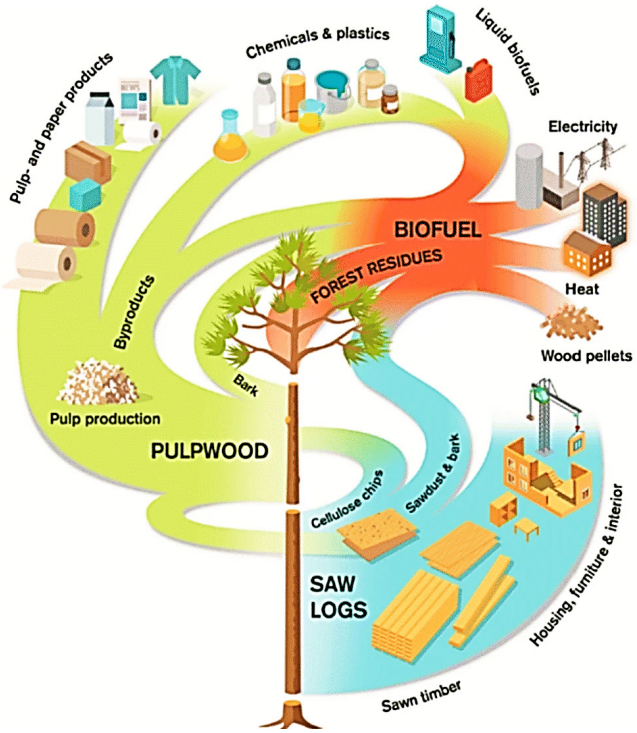


Figure 23 – Bioenergy and biofuels as part of a circular timber fibre cycle

Other forestry-focussed countries, such as Sweden, have well developed, sustainable biomass and bioproducts sub-sectors which leverage the nation's strong timber fibre resource base to generate additional wealth from all available fibre streams (see Figure 23[9]).

Similarly, a well-implemented biofuels / bioenergy strategy hosted by the timber fibre sector would provide an attractive, low carbon, zero-emissions solution for parts of Australia's critical national energy challenge.

[8] NSW Environment Protection Authority. 2024. *Energy recovery facilities* (Ref)

[9] Source: Kumar, A., et al. 2021 Forest biomass availability and utilization potential in Sweden: A review. *Waste and Biomass Valorization* 12:65–80 (Ref)

Materials recovery, recycling and remanufacture

Timber fibre has unique recyclability and waste-avoidance properties which can be harnessed in manufacturing, and hence its wider use provides opportunities for Australia to better promote practical adoption of circular economy principles (Figure 24[10]).

Parts of Australia's timber fibre sector participate in, and benefit from, the use of recovered timber-based fibres from waste streams. For example, Australia's pulp and paper sector is well regarded international as a leader in recovery of wastepaper and cardboard for reprocessing and remanufacture[11].

Nevertheless, more than two million tonnes of wood fibre in the form of discarded paper and cardboard still end up in landfills each year[12]. This represents a significant waste of resources that could be otherwise utilised for feedstock for remanufacture of paper and packaging products domestically. This waste also contributes to landfill emissions and thwarts opportunities for the use of non-recyclable portion of these wastes from being used as fuel in energy from waste facilities. Similar recycling and reuse challenges exist in the solid wood sector and although there are excellent examples of solid wood recovery (for example Borg's waste wood recycling program), there are opportunities for more diversion from landfill. A review of the Recycling and Waste Reduction Act 2020 is currently underway, and it is open the industry to avoid regulation, for example, by establishing an industry led product stewardship scheme. Both the solid wood and the paper sector will need to continue to increase the recovery and use of this important fibre resource stream.

Figure 24 – Example of the circular manufacturing benefits of timber fibre materials

Committed, assured investors

Growth of the Australian timber fibre sector will depend on access to, and confidence from, sources of capital for new forestry and processing investment.

The Strategy should embrace a best-practice model that ensures or maintains investor confidence and attracts new investors. For example, investors will also need to be assured on matters such as low sovereign risk over land use decision-making by government forest owners which can result in uncertain fibre supply and loss of

[10] This Figure 24 has been extracted from Weathertex. 2024. *Building a greener future with people, product and purpose.* Sustainability report 2024-2025 (Ref)

[11] See, for example, Commonwealth of Australia. 2018. *Analysis of Australia's municipal recycling infrastructure capacity*. October (Ref).

[12] Source: Blue Environment. 2023. *National Waste Report 2022*. A report for the Australian Government (Ref)

investor confidence. Other emerging issues of importance to investors are First Nations engagement policies and practice, and modern environmental performance and reporting.

The understanding of and ability to manage investment risk are critical issues which impact all the strategies and particular in Strategy 1 (*Sovereign manufacturing*) and Strategy 2 (*Meeting demand for fibre resources*). Investment capital is available for plantation development provided appropriate risk adjusted returns can be achieved but is more difficult to secure for investments in manufacturing capacity. Plantations fibre resources owners and processors are interdependent (they have been described as "mutual hostages") and these sectors of the industry in particular must work together to ensure that both are comfortable investing with an expectation that they will achieve a return on investment that is commensurable to their risk.

Contracting capacity

It's acknowledged that many of the links in the industry's value chain comprise dedicated contractors and these are essential enablers. Silvicultural, inventory, modelling, property management, harvest and haulage contractors are essential for the efficient operation of fibre production. Many processors have a contractor model for certain essential trade skills and for logistics and distribution.

For the industry to continue to function, these contractors must be profitable, have confidence to invest, have access to a skilled workforce and provide well paid and safe jobs for their employees. At times parts of the industry have been guilty of neglecting these essential enablers and which ultimately increase costs and investment risk. It has been demonstrated that successful parts of the industry have ensured that their contractors are well supported and profitable and this must be a part of the strategy for a sustainable industry.

Supportive policies and regulations

It's acknowledged that much of the responsibility for timber fibre sector policy constitutionally rests at State government level.

Accordingly, a national timber fibre strategy needs to be closely aligned with, and be uniformly applicable to, the counterpart strategies and policies of the relevant State and Territory agencies.

Consulted parties asked how a national strategy can properly mesh with and leverage best-practices occurring in the various States, for application at a national level. Two ways are for the national level strategy to:

- assess, articulate and promote the *value and role* of the nation's timber fibre plantations and native forests in delivering on key national priorities and goals, such as sovereign manufacturing, climate response, energy security, biodiversity protection, expansion of housing supply, and our net-zero / carbon commitments.
- promote the harmonious working across state boundaries and with the Commonwealth by designing and implementing a "whole-of-government", integrated approach. An example is in road freight transport regulation, where industry commentators claim the National Heavy Vehicle Regulator management agreement hasn't been signed by all States, and there remain conflicting or varying regulations between local government jurisdictions.

At its highest level, concordance and alignment on timber fibre policies between and across States and nationally should be mediated via the formal forestry ministerial council structure. Here, the chief aim should be reconciling the sometimes disparate and / or conflicting regional, State and national interests in timber fibre matters for national benefit.

State, Territory and regional industry associations have an important role to play in identifying and advocating supportive timber fibre sector policies for adoption by relevant governments and other gatekeepers. An example

of an effective State and national policy development and promotional effort is provided in the Snapshot: *The role of State and Territory industry associations in national policy* (see Appendix 2, page 147).

Other important timber fibre industry enablers are *forest protection* (in terms of fire and disease), the provision of accessible and affordable *insurance services*, and harmonised national "right to harvest" laws to apply uniformly in each State. These aspects are dealt with under Strategy 2: *Meeting demand for timber fibre*.

Consultees pointed out that the role of Governments extends beyond land use and fibre availability issues and the strategic need for "support" from Governments features regularly throughout this strategy document.

> *"… Governments can do much more than offer financial support …"*

Enabling legislation and regulations can support the industry, not only in resource availability issues, but includes manufacturing, employment, industrial relations, transport infrastructure, energy, communications and R&D. But importantly:

> *"… sometimes Governments just need to get out of the way …"*

Strategy components and actions

Strategy components and actions by which the timber fibre industry can attract and engage the best people, the most advanced manufacturing processes, the required investment, and the necessary supporting infrastructure are set out below.

Skilled workforce

4.1 The timber fibre industry will prioritise the provision of practical support for growing vibrant communities in regional areas to attract, retain and develop an excellent workforce and network of local service providers for the timber fibre industry.

4.2 Governments will take effective action to end the historic cycle of forest resource insecurity in timber fibre regions as a means of instilling job security.

4.3 Governments will facilitate the provision of suitable housing in regional timber fibre industry areas to attract and retain workers and underpin their social wellbeing, and that of their families.

4.4 The industry and governments will provide new accredited training and career pathways for trade skills at all levels to make the most valuable contribution to industry growth and flourishing regional communities.

4.5 The industry will collaborate with Forestworks in its delivery of the Forestry Workforce Training Program to ensure it advances overall training access and credentialling, in a scalable and sustainable manner.

4.6 The timber fibre industry will improve diversity in workforce profiles through flexible 'work ready' programs to engage with diverse candidates and support them to achieve recognised baseline skills.

4.7 The industry will resolve the problem of there being "low critical mass" workforces and small scale operations in some regions by adopting a "Standard Operating Procedures" approach to ensure standardised practices can be adopted and transferred.

4.8 The industry will support the training and engagement of highly technically skilled people, including in natural science disciplines supporting healthy forests and modern industry operations. These will include disciplines such as ecology, indigenous land management practices, natural capital management, carbon trading, etc. including skills of engagement with First Nations.

4.9 The timber fibre industry will promote a more purposeful, technology-driven uplift in skills, jobs and remuneration in all its operations.

4.10 The Government will reverse the shortage of active forestry professionals through integrated 'learning ecosystems', including using micro-credentials to provide a "pathway" to higher education courses in TAFE and University, to produce a "new generation" of science-backed foresters supported by a well-resourced Registered Forestry Professionals program.

Transport and communications infrastructure

4.11 Governments will provide and facilitate the development and best-practice management of high-quality road, rail and shipping infrastructure in timber fibre industry regions, taking into consideration the likely new design and maintenance conditions climate change will demand.

4.12 The industry will secure and support an efficient, digitally enabled, and cost-competitive freight transport network within timber fibre regions and into key product markets.

4.13 Governments will ensure its regulators give timely regulatory approval to applications for optimised and continually improved log and other timber fibre product vehicle systems and use, including higher mass limit vehicles and other high productivity solutions.

4.14 Regional and State roads authorities will foster closer and deeper engagement with each other, with industry and adjacent jurisdictions on key timber fibre logistics matters to drive efficiencies, safety performance and competitiveness.

4.15 Governments will examine the concept of strategic industrial processing zones (SIPZ) with optimised "single destination" infrastructure hubs comprising intermodal transport (rail / road), energy generation (thermal and electrical), water, gas and other common-user services.

Enabling technologies for resource processing and manufacturing

4.16 The industry will provide virtual reality and online training mechanisms and an online resource library to improve training materials and access to critical skill development and retention (such as saw technicians; wood machinists; medical and health related roles).

4.17 The industry and government will adopt technologies, implement processes, and engage trained personnel to prevent or mitigate impacts from forest pests and diseases, bushfire, and other catastrophic loss risks, and improve safety for the industry and surrounding communities.

4.18 The industry will deploy advanced digital technologies and communications infrastructure to aid forest management, track materials flows, manage production processes, and interface seamlessly with markets.

Affordable and reliable energy and other services

4.19 The industry will devise systems and technologies to utilise plantation and native forest residues for biofuels and bioenergy generation.

4.20 Governments will amend regulatory barriers to the responsible collection and utilisation of all sustainably sourced forestry and mill residues for energy generation and remove discrimination against wood fibre as an energy source, including the ability to realise renewable energy and / or carbon credits from such uses.

4.21 Governments will review and amend those current Energy from Waste (EfW) policies that may preclude or disincentivise the recovery and utilisation of timber fibre waste materials for energy recovery purposes.

4.22 The Government will engage with the industry to facilitate and promote a national biofuels and bioenergy strategy supported by the timber fibre sector to provide an attractive, low carbon, zero-emissions solution in Australia's critical national energy challenge.

Materials recovery, recycling and remanufacture

4.23 Governments will implement policies and incentive structures that will facilitate investment in the greater recovery of wastepaper, cardboard and other solid wood fibre-based wastes for use as domestic remanufacture feedstock.

Contracting capacity

4.24 Relevant supply chain participants will strive to ensure their contractors are well supported and profitable to enable continuous improvement and success in operating and growing a sustainable timber fibre sector.

Supportive policies and regulations

4.25 The Government will articulate and promote the value and role of the nation's timber fibre plantations and native forests in delivering on key national priorities and goals, especially sovereign manufacturing, climate response, energy security, biodiversity protection, expansion of housing supply, and our net-zero / carbon commitments.

4.26 The Government will ensure the national timber fibre strategy is closely aligned with the counterpart strategies and policies of the relevant State and Territory agencies responsible for timber fibre management and industries.

4.27 The Government will take the lead in promoting harmonious working of industry regulations that might otherwise stifle or conflict with efficient operation of the timber fibre value chain across state boundaries.

Implementation

Specific actions through which this Strategy may be implemented are set out in Table 7 suggesting which actors within the timber fibre value chain have most responsibility for implementation.

Table 7 – Responsibility matrix for actions under Strategy #4: Attracting & engaging industry enablers

	Commonwealth Govt	State Government	Local Government	Processors / fabricators	Forest owners / managers / contractors	Investors / funders	Industry associations	Trades unions	Builders / architects / designers	Harvesting, log haulage & transport contractors	Fire control authorities	Researchers / R&D institutions
4.1 Promote vibrant regional communities to attract, retain and develop an excellent workforce	■	■	■	■	■		■	■		■	■	
4.2 Act to end the historic cycle of forest resource insecurity to instil job security	■	■					■	■				
4.3 Provide suitable housing in regional timber fibre industry areas to attract and retain workers	■	■	■	■	■		■	■	■	■		
4.4 Provide new accredited training and career pathways for trade skills at all levels	■	■		■	■		■	■				■
4.5 Collaborate with Forestworks in its delivery of the Forestry Workforce Training Program				■	■		■	■		■	■	
4.6 Improve diversity in workforce profiles				■	■			■		■	■	
4.7 Deploy “Standard Operating Procedures” matched to skills needs in each region	■			■	■		■	■		■	■	
4.8 Train and engage technically skilled people, including in natural science disciplines	■			■	■		■	■		■	■	
4.9 Promote a more purposeful, technology-driven uplift in skills, jobs and remuneration				■	■		■	■		■	■	■
4.10 Reverse the shortage of active forestry professionals through micro-credentials pathways	■				■		■	■				■
4.11 Apply best-practice management of road, rail and shipping infrastructure in timber regions	■	■	■	■	■		■	■		■		
4.12 Build a digitally enabled, competitive regional freight transport network including into product markets	■	■	■	■	■		■	■		■		
4.13 Give timely regulatory approval for optimised log and other timber fibre product vehicle systems	■	■	■	■	■					■		■
4.14 Foster engagement between roads authorities for efficiency, safety, and competitiveness	■	■	■					■		■		
4.15 Strategic industrial processing zones (SIPZ) with optimised “single destination” infrastructure hubs	■	■	■			■	■	■		■		
4.16 Provide virtual reality and online training mechanisms	■	■			■		■	■		■	■	
4.17 Deploy technologies to prevent or mitigate impacts from forest pests, diseases, and bushfire	■	■	■		■						■	■
4.18 Install communications infrastructure that incorporates advanced digital technologies	■	■	■	■	■					■	■	

	Commonwealth Govt	State Government	Local Government	Processors / fabricators	Forest owners / managers / contractors	Investors / funders	Industry associations	Trades unions	Builders / architects / designers	Harvesting, log haulage & transport contractors	Fire control authorities	Researchers / R&D institutions
4.19 Implement systems and technologies to utilise plantation & native forest residues for bioproducts.				■	■	■	■	■		■		■
4.20 Remove barriers to, and discrimination against, the use of all sustainably sourced forestry and mill residues for energy generation.	■	■					■					
4.21 Review and amend Energy from Waste (EfW) policies that preclude or disincentivise the recovery and utilisation of waste for energy.	■	■					■	■				
4.22 Implement a national biofuels and bioenergy strategy for low cost, low-emissions energy.	■	■					■					■
4.23 Implement policies and incentives to increase recovery of wastepaper, cardboard and solid wood fibre-based wastes for use	■	■	■	■			■	■				
4.24 Ensure contractors are well supported and profitable to enable continuous improvement and success	■	■		■	■		■	■		■		■
4.25 Promote the role of plantations and native forests in delivering on key national priorities and goals	■	■					■	■				■
4.26 Align this national strategy with the counterpart strategies in the States and Territories	■	■					■	■				
4.27 Promote the harmonious working of regulations that otherwise conflict or stifle industry efficiency	■	■	■				■	■			■	

Strategy 5 – Supporting and growing regional communities

The strategy

The Australian forest products industry will provide opportunities within, and support for, regional communities including First Nations peoples and Country.

Rationale

> *"… We now recognise that existing forestry and timber processing activities within small communities, including their employees' skills, keep people and social infrastructure in those towns and centres … and this can attract more social capital…"*
>
> *"… We have been able to develop a new forestry concept … seeking to integrate land uses, especially in relation to First Nations' lands and indigenous management practice. We are now looking at fibre supply opportunities in concert with Traditional Owners' land management aspirations ...".*

The timber fibre sector is arguably the oldest primary industry in Australia. Its activities have always been intertwined with dependant local peoples and their communities.

It's reported that First Nations peoples actively managed their Country's forests for the bulk of their material needs, and for cultural activities, sometimes with remarkable effect. For example, Gammage chronicles, "…*In the 1840s Murrumbidgee flats were 'impossible … to be finer … extensive rich grassland meadows, with a few clumps of trees … a succession of ornamental parks that would vie with the finest forest lands in the world'*"[1]. Similarly, Kartzoff notes: "…*The vital fact remains that the evidence of all early observers indicates that the countryside [around Sydney] was covered by an open forest of very large trees with little undergrowth. This type of vegetation is unlikely to lead to, or result from, the type of major bush fires that occur nowadays…*"[2].

Figure 25 – Some key timber communities in Tasmania

From the early 1800s onwards, European settlers began clearing forest lands for farming and building sawmills which spawned many regional "timber towns". Public forestry agencies were later established to protect timberlands and their resources for ongoing community use.

Today, by its very nature, the timber fibre sector remains a highly regionally based, widely dispersed industry, reliant on and supporting forests and their forestry-related businesses in many areas. Regional Australia has over 8.5 million people – a third of Australia's population and in many places, the timber fibre industry is the dominant primary industry sector in many regions where it supports significant jobs, investment and community infrastructure (see, for example, Figure 25[3]).

---

[1] Gammage, W. 2012. *The biggest estate on earth: How aborigines made Australia*. Allen & Unwin, Sydney, pp193f

[2] Kartzoff, M. 1969. Nature and a city: the native vegetation of the Sydney area. Edwards & Shaw, Sydney (cited in Flannery, T.F. 1994. *The future eaters: An ecological history of the Australasian lands and people*. Reed, Sydney, p220)

[3] Extract from Tasmania's Regional Forestry Hub (Ref)

Accordingly, consultations reveal that a national timber fibre strategy should give recognition and prominence to providing opportunities within, and support for, regional communities including First Nations peoples and Country.

A focus on the human dimension

It's been made clear during the consultations that a national timber fibre strategy needs to speak to the human dimension: the role of people, their interaction with the forests and industries, the ways the sector can serve people's diverse needs and the jobs they provide.

Hence a national timber fibre strategy must acknowledge and consider how to best serve, at a regional level, all of the diverse human needs provided by forests and recognise who the primary beneficiaries and dependants on the timber fibre supply system are. Such human needs are supplied by and through stakeholder groups such as Traditional Owners, harvesters and processors, many and diverse service providers (from florists to engineering firms), and product end consumers (i.e. markets).

Community acceptance / social licence

The importance of "community acceptance" was highlighted by many of those consulted for this strategy development. This term, typically used interchangeably with the term "social licence", speaks to the objective of securing the welcome place and role of the timber fibre sector in the local communities within which it operates. Actions to establish or promote community acceptance were identified, for example:

- industry promoting the real benefits (community and economic) of a *local* forest industry utilising *locally and sustainably grown* timber fibre in *local* processing facilities.
- better articulation of the timber fibre sector's "green credentials". For example, timber's carbon value, renewable nature, sustainable forest management, and available multiple-use forest activities. These credentials also make it a better alternative to using imported timber from unsustainably managed forests, or non-timber building material substitutes such as steel.
- the industry promoting the "best use" of available public lands, and the most socially useful way of utilising the timber fibre growing on them.
- industry striving to locate its activities in areas where there's minimal conflict with other high value regional pursuits (such as tourism). For example, the Bright area in Victoria is now wanting to attract high-value tourism, so having mountain-bike paths through recently harvested forest areas may militate against community acceptance.
- governments and industry promoting the *benefits* of active forest management for wider forest health, nature protection and community safety (see Strategy 3)
- explicitly making and promoting the link between wood supply from local forests (plantations and native) with local processing and value-adding jobs opportunities (also seen as a "crucial ingredient in building our social license")
- communicating the significant contribution, in some communities the primary contribution, of the industry to the prevention, detection, suppression and management of the threat and reality of bush fires.
- in farming / agricultural areas, better recognition of farm forestry as a substantial contributor to the national timber fibre scene, including promotion of:
  - wood fibre being cast as a "normal" farm product and hence instilling greater landowner acknowledgement of the inherent synergies between the forestry and agriculture sectors. Hence, forestry should be viewed as supporting farmer aspirations - more about *enhancing* agriculture rather than *changing* it.

- a better, more community-sensitive balance for on-farm trees, for example and where appropriate, encouraging "100% of farms having 10% of trees, rather than 10% of farms having 100% of trees"

The Regional Forestry Hubs[4] have a potential role to play in promoting community acceptance. To date the Hubs have been restricted to working with industry, state and local governments, and other key stakeholders to prepare and provide the Government with strategic planning, technical assessments and analyses that aim to support growth in the forest industries in their region. Recent changes to the Hubs' role include the expansion into extension services, particularly informing stakeholders about the results of their work and other work undertaken by the broader industry. Recent work by the Central West NSW Forestry Hub highlights the benefits of collecting and disseminating information to community stakeholders (Figure 26)[5].

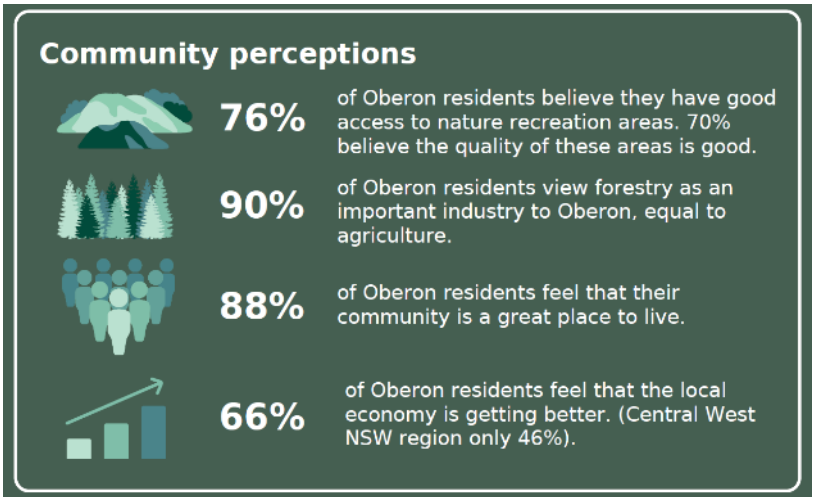


Figure 26 – Community perceptions in Oberon NSW

First Nations' lands and practices

Numerous consultees in this strategy development highlighted the opportunities for greater involvement and enhancement of indigenous communities in the nation's timber fibre sector. They can apply to lands owned or managed by Traditional Owners, or to other lands where indigenous knowledge, employment opportunities and/or investment may apply (see Figure 27[6]).

The opportunities fall into two broad categories: (a) commercial forestry and timber production, and (b) indigenous land management, including fire systems, biodiversity, and nature repair.

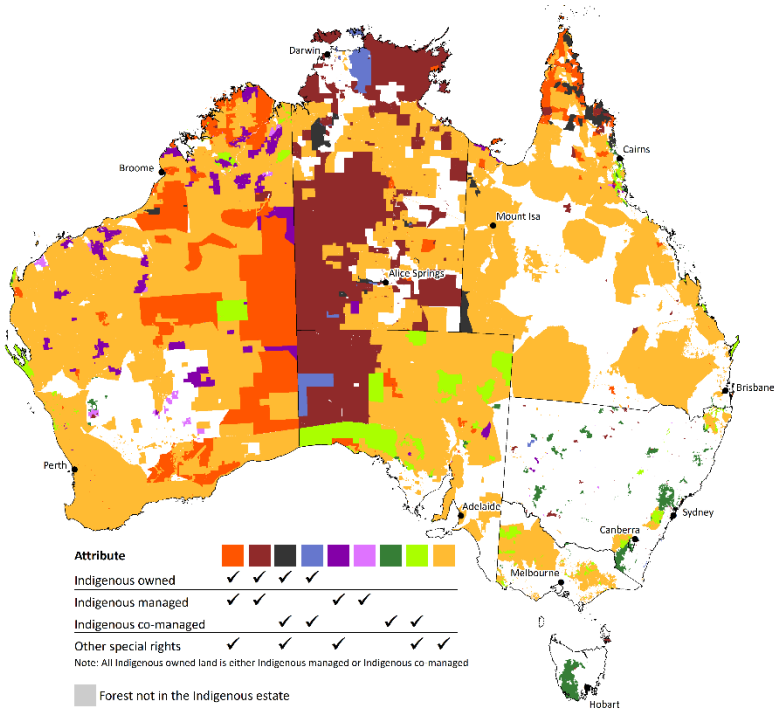


Figure 27 – Indigenous lands by management type & tenure

[4] Commonwealth Government (Ref)

[5] Source: NSW Central West Forestry Hub (Ref) A summary of the CWFH socioeconomic study is included as a case study in Appendix 2 (page 146)

[6] Adapted from ABARES 2024. *Area of land in the Indigenous estate by Indigenous estate attribute*. Australian Government. (Ref)

In some cases, such as the Northern Territory, they can occur seamlessly on the same land, with new indigenous forestry concepts which are "not hampered by forestry's baggage in other States". These are seeking to better integrate active land uses with the multiple aims of producing timber fibre products under Traditional Owners' land management as well as providing non-timber products and functions, such as carbon and nature repair services.

Examples of these opportunities, which the strategy provides a means of supporting and extending, include:

- harvesting poles in the Cape region (Qld), providing strong indigenous job opportunities
- cool burning practices to protect forests from catastrophic wildfire losses.
- trials on Gove seeking to release "sensible" parcels of mined land to Traditional Owners for growing fibre supply or for agriculture (or both).
- a mining / forestry / timber collaboration at Weipa to utilise pre-mining clearing (trees) for local sawmill processing, followed by a mine rehabilitation / replanting to perpetuate the timber fibre cycle.
- investment and a supportive legislative environment to enable designation of new First Nations' land tenures. For example, the Victorian Government is considering a new land tenure class of a 'cultural reserve' to facilitate Traditional Owners being able to develop forest-based enterprises, amongst other things.
- managed timber fibre production from Private Native Forest resources held by indigenous owners (however, it's considered significantly more engagement is needed to confirm the best models, etc.).

It is noted that there are currently no explicit mechanisms (economic or legislated) for First Nations / Traditional Owners to benefit from active forest management on their lands across Australia[7]. Further, several legislative / regulatory barriers to efficient collaboration with miners were identified which the strategy should address. For example:

- When an area is scheduled to be mined for bauxite and the topsoil is stripped off, the mine management plan (MMP) requires the site to be returned to its original state, with no alternative value-adding options permitted for Traditional Owners' use of the land.
- The MMP process effectively precludes other uses, meaning missed opportunities for Traditional Owners to get involved in forestry or other fibre production uses. One consultee noted: "we're spending the money anyway - to spread the topsoil - but this money is wasted by not allowing other land uses".

Consultees also felt it important for the strategy to:

- include protections for Traditional Owners' rights and interests in relation to forest management and related activities through, for example, Free, Prior and Informed Consent (FPIC) procedures, and
- provide that market mechanisms, such as the nature repair market, explicitly include First Nations ecological practises.

These will ensure that when First Nations' people are managing Country, their work in improving that country should qualify them to participate in emerging nature repair markets in the same way as others who participate, including environmental non-government organisations (ENGOs). To achieve this, active forest management must be a qualifying activity within the governments' nature repair market arrangements.

> **Important note**: During the consultation process there was limited engagement with First Nations peoples, and some were contacted but did not respond to requests for input. Most of the input incorporated in the text above has been from non-indigenous industry participants. The relatively low

[7] The ACCU method for savanna burning does not include forests

level of engagement with First Nations People throughout the industry is acknowledged and recognised as a significant weakness. Advances in engagement are recognised by non-indigenous industry participants as the essential first step in working with First Nations peoples to increase their involvement and contribution to the industry, its ongoing strategic objectives, and to benefit from the industry's growth and development.

Additional commentary, input and recommendations on First Nations Peoples' forestry and landscape management expertise and roles are provided in Strategy 3 and in the *Snapshot: Recognising First Nations' knowledge, expertise, and practice* (see Appendix 2, page 135).

The Northern Australian Forestry Hubs have developed Indigenous Engagement Protocols[8] which help provide guidance to the timber fibre industry regarding engagement (see Figure 28). The intent of the protocols is to provide a practical framework including engagement protocols for Northern Australia, specifically for forestry and support knowledge and information sharing.

It provides a mutual starting point in establishing relationships with First Nations people and a foundation from which community development, business initiatives, research and other projects on Indigenous Forest Country can be built – it is not a rigid linear formula.

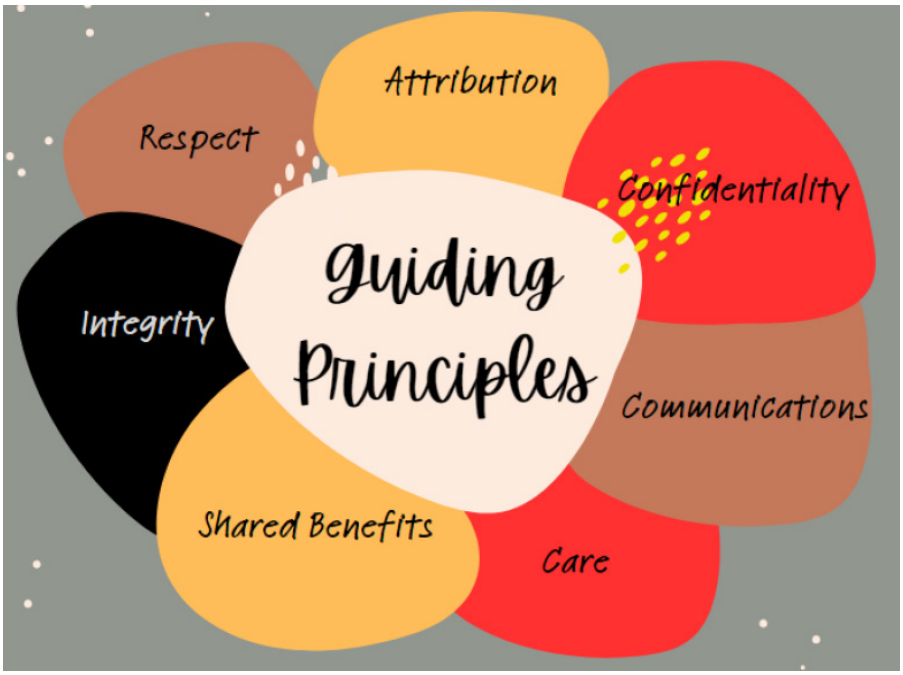


Figure 28 - Principles guiding indigenous cultural protocols

Regional communities

The importance of maintaining the economic and social health of Australia's regional communities features regularly in national political discourse. For example, governments are examining ways to mitigate the closure of bank branches in regional areas (see Figure 29[9]).

Other examples are with schools and road infrastructure. For example, "our regional high school has been losing teachers, which has inhibited young families from wanting to move to the town", and "given that 80% of road fatalities occur in regional areas, the industry needs proactively funded and maintained road infrastructure to manage interactions and minimise the likelihood of high impact incidents".

Industry and community representatives stress that the timber fibre sector provides a strong "social glue" and attractor in many regional towns and centres, a feature that can't be taken for granted and ought not be overlooked in the strategy.

[8] Northern Territory Ord Valley forestry Hub and North Queensland forestry Hub. 2024. *Indigenous Engagement Protocols* (Ref).

[9] Source: *The Australian Financial Review*. 18 November 2024.

Hence, the timber fibre strategy should:

- overtly acknowledge the size and significance of the nation's timber fibre resource – plantation *and* native forest-based – as something worth actively protecting for the good of these communities,
- identify ways to maintain existing forestry and timber processing activities within small communities, including their employees' skills, with the flow-on benefits of keeping people and social infrastructure in those towns and centres. This will recognise the public interest benefits of maintaining such critical mass as a key to attracting even more levels of needed social capital,
- recommend stronger government resolve to provide modern community services for people and families, plus other infrastructure, as a crucial element in overcoming the challenge of getting people to come and work in the regions,
- identify mechanisms by which the timber fibre sector can work with the farming and mining communities to leverage government support for better social and physical infrastructure in the natural resources regions, and
- better promote the benefits that the timber fibre industry delivers to the regional communities in which they operate.


Banks face $350m hit in rural levy

Exclusive

John Kehoe and Joshua Peach

Westpac would pay more than $100 million under a potential new ank levy proposed by Treasury to eep branches open in the bush, as part f a redistribution system enabling anks to trade regional banking service redits like a carbon trading scheme. Industry participants have warned hat a bank levy to promote services in he bush would penalise emerging

System-wide stress test

The super sector destined to beco bigger than the banking system, but it is badly unprepared for retirees drawing down their savings.

Michael Stutchbury p12

Despite a new gov

Figure 29 – Example of measures to maintain regional community services

Housing

The provision of suitable housing for regional workforces and their families has been identified as raising significant challenges to attracting suitably skilled workers and their families to forestry regions.

If, as is acknowledged by many, the "housing crisis" is today's number one issue for governments and the community, forestry and timber fibre products supply can be shown to be the solution. For example, under the strategy, state and local governments could help expand housing stock in target regions, and at the same time stimulate demand for wood products through the housing projects (see Strategy 1).

Housing is just one example of where government policies and investment can support forestry regions. Provision of services such as health, education, transport and communications infrastructure in forestry regions will provide support for workforces, businesses and communities.

An example of the direct and flow-on benefits of a vibrant timber fibre sector to a regional community is provided in the Snapshot: *Regional socioeconomic benefits of the timber fibre sector* (see Appendix 2, page 146), and other important strategies for supporting and growing regional communities are dealt with under Strategy 4: *Attracting and engaging people and other industry enablers*.

Strategy components and actions

Strategy components and actions by which the timber fibre industry can support and help grow regional communities are set out below. In addition to the responsibilities below, the Regional Forest Hubs can play an important role in coordinating actions and supporting those shown as responsible in the matrix below.

A focus on the human dimension

5.1 The industry will acknowledge all the diverse human needs provided by forests and consider how to best serve and recognise the primary beneficiaries of, and dependants on, the regionally based timber fibre sector.

Community acceptance / social licence

5.2 The industry and governments will promote the community and economic benefits of a vibrant local forest and timber fibre industry that utilises locally and sustainably grown resources

5.3 The industry and governments will effectively articulate the sector's "green credentials" (such as carbon value, renewable nature, sustainability, and tourism) to regional communities, the broader public, investors and key markets

5.4 Governments will apply science-based criteria in determining and promoting optimal management of available public lands, including the best social use of their timber fibre resources.

5.5 The industry will strive to locate its activities to avoid or minimise conflict with other high value regional pursuits.

5.6 Governments and the industry will promote the benefits of active forest management and encourage the propagation of more "working forests", as distinct from purely conservation or protected areas.

5.7 The industry and governments will highlight direct and beneficial links between growing timber fibre in local forests (plantations and native) and supplying it to local processing and value-adding centres, especially the jobs and investment opportunities.

5.8 Industry growers and processors will acknowledge and embrace farm forestry as a substantial contributor to the national timber fibre supply and seek to leverage the inherent synergies between the forestry and agriculture sectors.

First Nations' lands and practices

5.9 The industry will identify, facilitate and promote opportunities for the greater involvement and engagement with, and enhancement of indigenous communities in and through the nation's timber fibre sector.

5.10 The industry and governments will work with Traditional Owners and managers to achieve better integration of active management on those lands to produce multiple products (timber and non-timber, such as carbon and nature repair services)

5.11 Governments will enact explicit mechanisms whereby First Nations / Traditional Owners can benefit from active forest management on their lands across Australia and remove regulatory barriers to efficient engagement and collaboration between them and other land users (e.g. miners) for sustainable forestry developments.

5.12 Governments and the industry will include and enforce protections for Traditional Owners' rights and interests in relation to forest management and related activities, such as through Free, Prior and Informed Consent procedures.

5.13 Governments will work with First Nations to ensure that statutory and voluntary natural capital markets, such as the nature repair market, explicitly include First Nations' ecological practices as qualifying activities for crediting purposes.

5.14 Governments will work with First Nations to explicitly include indigenous active forest management as a qualifying activity within their nature repair market arrangements.

Regional communities

5.15 Governments will acknowledge the size and beneficial significance of the nation's timber fibre resources – plantation and native forest-based – as worthy of actively protecting for the good of their regional communities and the nation.

5.16 Governments and the industry will identify ways to maintain existing forestry and timber processing activities within small communities, including retaining employees, and acknowledge the public interest benefits of maintaining critical social capital in the regions.

5.17 Governments will take stronger action to provide and facilitate modern community services for people and families in regional areas, including physical infrastructure and acknowledge such policies as crucial for labour attraction and retention.

5.18 The industry will identify mechanisms by which it can work together with farming and mining communities to secure government support for better social and physical infrastructure in the natural resources regions.

Housing

5.19 Governments and the industry will collaborate to secure suitable housing for regional workforces and their families.

5.20 State and local governments will work to expand housing stock in target regions and seek to link this with demand for local timber fibre products via sponsored housing projects.

Implementation

Specific actions through which this Strategy may be implemented are set out in Table 8 suggesting which actors within the timber fibre value chain have most responsibility for implementation.

Table 8 – Responsibility matrix for actions under Strategy #5: Supporting and growing regional communities

	Commonwealth Govt	State Government	Local Government	Processors / fabricators	Forest owners / managers / contractors	Investors / funders	Industry associations	Trades unions	Builders / architects / designers	Harvesting, log haulage & transport contractors	Fire control authorities	Researchers / R&D institutions
5.1 Acknowledge the diverse human needs forests provide how to best serve main beneficiaries	■	■	■	■	■		■	■				
5.2 Promote community and economic benefits of a vibrant local forest and timber fibre industry	■	■	■	■	■	■	■	■	■	■	■	■
5.3 Articulate the sector's "green credentials" to the public, investors, and markets	■	■		■	■	■	■	■	■			■
5.4 Apply science-based criteria in management of available public lands, including their timber fibre resources	■	■	■				■	■				
5.5 Locate industry activities to minimise conflict with other high value regional pursuits.	■	■	■	■	■		■	■			■	
5.6 Promote the benefits of active forest management and encourage more "working forests"	■	■			■		■	■			■	■
5.7 Highlight the beneficial link between local timber fibre supply for local processing	■	■	■	■	■		■	■		■		
5.8 Acknowledge and embrace farm forestry as a contributor to the national timber fibre scene	■	■	■	■	■		■	■				
5.9 Identify, facilitate and promote opportunities for indigenous communities in the timber fibre sector.	■	■	■	■	■		■	■		■	■	
5.10 Work with Traditional Owners to integrate active management on their lands for multiple products.	■	■	■	■	■		■	■			■	■
5.11 Enact mechanisms for Traditional Owners to benefit from active forest management on their lands	■	■			■		■	■				■
5.12 Protect Traditional Owners' rights and interests in relation to forest management decisions (FPIC).	■	■	■	■	■		■	■			■	
5.13 Include First Nations' ecological practises as qualifying activities for crediting natural capital	■	■					■	■				■
5.14 Include active forest management as a qualifying activity within nature repair market arrangements.	■	■					■	■				■
5.15 Protect plantation and native forest-based resources for the good of regional communities and the nation.	■	■	■		■	■	■	■			■	
5.16 Maintain forestry and timber processing activities to aid social capital in small regional communities.	■	■	■	■	■	■	■	■		■		
5.17 Provide and facilitate modern community services for people and families in regional areas	■	■	■				■	■			■	
5.18 Work with farming and mining communities to secure government support for infrastructure				■	■		■	■				

	Commonwealth Govt	State Government	Local Government	Processors / fabricators	Forest owners / managers / contractors	Investors / funders	Industry associations	Trades unions	Builders / architects / designers	Harvesting, log haulage & transport contractors	Fire control authorities	Researchers / R&D institutions
5.19 Secure suitable housing for regional workforces and their families.	■	■	■	■	■	■	■	■	■			
5.20 Expand housing stock / projects in target regions linked with demand for local timber fibre products	■	■	■	■	■		■	■	■			

Strategy 6 – Innovating the timber fibre value chain

The strategy

The Australian forest products industry will embody a science-informed culture that drives innovation and continuous improvement.

Rationale

> *"… Additional investment in productivity drivers would lead to enhancement of the existing plantation estate that could be equivalent to planting significant hectares of additional trees…"*
>
> *"… Research expenditure and activity … needs to be directed at delivering tangible outcomes for the sustainable growth of the timber fibre sector...".*

Innovation could be described as a *process* by which an industry, a service, or a product is refreshed or rejuvenated through the application of a combination of new thinking, new processes, and new technologies with the aim of adding or creating new value.

The consultation process behind this timber fibre strategy has revealed that the industry is ripe for innovation and continuous improvement initiatives at every point along the timber fibre value chain: in timber resource development (e.g. forest investment and management, landuse allocation), in harvesting (e.g. utilisation, logistics efficiencies), in processing (e.g. energy efficiency, digitisation, residue use, employee upskilling), and in markets (e.g. design, construction systems, certification).

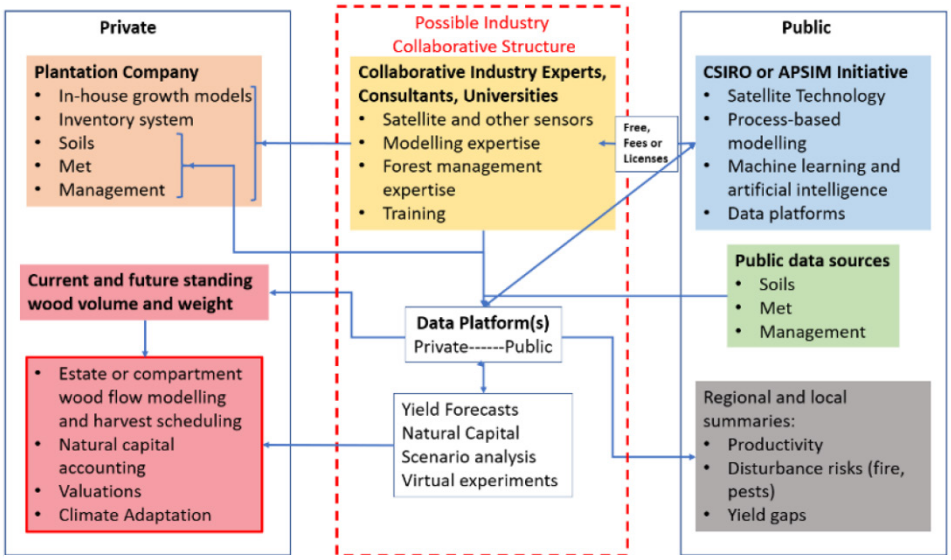


Figure 30 – Example of collaboration model for plantation research & innovation

The timber fibre industry is currently well-served with sector-dedicated research, innovation and professional institutions, with organisations like Forest & Wood Products Australia (FWPA), the new Australian Forest and Wood Innovation (AFWI), Forestry Australia, the Regional Forestry Hubs, and the CSIRO all contributing to the effort. In addition, many of the industry's individual companies have in-house capacity in research, development and innovation.

These variously support the many new product and proprietary process innovations being undertaken within companies, such as pulp and paper, composite wood products, and forestry growing and management systems. Some university-based research and teaching programs that have important touchpoints with parts of the timber fibre value chain also collaborate with parts of the sector.

The industry also recognises that there is a substantial body of relevant data, research and employed innovation in the international forest and wood fibre industry, and that "… reinventing the paper shopping bag …" is not necessary. The industry and its research institutions must leverage international knowledge and experience.

Developing an effective, science-informed innovation culture for the timber fibre sector will require greater coordination and collaboration between these existing research and innovation bodies. The strategy will need to identify the most *efficient* collaboration structures for the coming decades. Figure 30[1] shows a possible collaboration structure for research into optimising productivity of hardwood plantations.

This Strategy 6, and the other five strategies articulated in this document are consistent with the revitalised National Science and Research Priorities[2] which emphasise the science and research collaborations needed for Australia to solve its greatest challenges. The timber fibre industry is uniquely placed to contribute to and advance the national priorities which are:

- transitioning to a net zero future,
- supporting healthy and thriving communities,
- elevating Aboriginal and Torres Strait Islanders knowledge systems,
- protecting and restoring Australia's environment, and
- building a secure and resilient nation.

An overarching theme that that emerged during consultations was that the industry must do more with the fibre resources it currently has access to. This must result in continual increases in growth and yield from the existing estate, particularly the areas of current timber plantations.

Specific issues raised relevant this strategy included:

- The nature of, and funding structures for, research and innovation
- Tree genetics
- Silviculture and nutrition
- Fibre utilisation
- Bioenergy
- Forest protection / fire
- Other damage agents
- Silvo-pastoral / agroforestry
- Active forest management, including in protected areas
- Industry data
- Digitisation and communications

Important note: The list above and the discussion below reflect ideas raised during the consultation process and are therefore far from exhaustive. There are many more potential new timber fibre products (for example plastic substitutes), processes (for example unification of national and state-based standards, codes and regulations) and areas of innovation, including areas covered in other Strategy themes and commentary in this document, that demand the attention of the industry, governments and the institutions that support innovation.

[1] Source: McGrath, J. *et al.* 2024. Optimising productivity of hardwood plantations: yield gap analysis for Eucalyptus globulus plantations in southern Australia. Forest & Wood Products Australia Project number: VNC516-1920 (Ref)

[2] Department of Industry, Science and Resources. 2024. *Australia's National Science and Research Priorities* (Ref)

A Snapshot: *Innovation in timber fibre utilisation and value-adding* is included in Appendix 2 on page 139, which touches on some aspects of innovation and the timber fibre circular economy. Again, however, this represents just a subset of the areas that need the attention of the industry, researchers and governments.

The nature of, and funding structures for, research and innovation

Consultations revealed a desire for research expenditure and activity in the timber fibre sector through organisations like AFWI need to be directed at delivering "tangible" outcomes for the sustainable growth of the timber fibre sector, while facing nationally important demands and needs. The desire for a priority on "applied research" (as distinct from "basic research") was noted, however it's observed that this rather subjective distinction may be misunderstood and can be difficult to navigate in practice. In reality, both broad styles of research and innovation are likely to have a place in underpinning the sector's future culture and growth.

Comments on the rather "stop-start" nature of research funding over recent decades reflected a need for a new emphasis on *continuing* support and a *long-term* funding commitment to research and innovation that will yield multiple benefits, including:

- "de-risking" investment
- unlocking new potential forestry areas (such as the dry tropics)
- uncovering novel uses of timber fibre
- expanding forest species options, and
- improving fibre recovery and utilisation.

There have been concerns raised about the number of bodies responsible for investing in and managing timber fibre research in Australia and that there is a lack of coordination between the bodies. For those who do not have concerns, there is an acknowledgement that these bodies may not have communicated their roles clearly enough to industry. For clarity, some details are included below.

Forest and Wood Products Australia (FWPA)

FWPA is an industry-owned, not-for-profit Rural Research and Development Corporation (RDC) for the forest and wood products industry. Partnering with the Australian Government and industry stakeholders, FWPA invests in research and development and marketing to improve the profitability, productivity, competitiveness, and sustainability of the industry. Its vison is that the *"Australian forest and wood products industry will grow in value as a result of increased demand for its innovative, sustainable and competitive products and services"*, and its mission is that *"FWPA collaborates with government and industry to deliver transformative RD&E initiatives and market development programs to drive growth in the Australian forest and wood products industry."*

FWPA is funded by the Federal Government through matching expenditure on research, development and innovation, industry levies, voluntary member contributions and research grants. The Government and FWPA have a 10-year Statutory Funding Contract through to December 2034[3].

FWPA's strategic plan[4] has 5 outcome areas which are summarised below with each having objectives and KPIs:

> **Outcome 1 – Consumers:** Improve perceptions of forest and wood products through the development and promotion of their economic, environmental and social advantages.
>
> **Outcome 2 – Supply chain customers:** Increase the demand for, and value of, wood products in the built environment and industrial markets.

[3] Currently awaiting signing by the Minister.
[4] FWPA Strategic Plan 2023–2028 (Ref)

Outcome 3 – Growers and processors: Improve the resource base, reduce risk and increase productivity and utilisation along the value chain.

Outcome 4 – Industry capability and decision making: Attract and retain people to the industry and enhance workforce capability and decision-making.

Outcome 5 - Foundational platform: Provide leadership as the industry services company.

FWPA's Research Development and Extension (RD&E) supports members through a focus on adoption of new tools to increase estate productivity and reducing risk, as well as increasing conversion of forest resource to highest value-added wood products. FWPA supports increased use of wood-based products across construction and other applications through the development and maintenance of key standards, codes, and handbooks. The growth and success of the forest and wood products industry is supported by providing unique data driven insights and analysis to inform member and industry business planning and decision making. The FWPA brand WoodSolutions is an industry initiative designed to provide independent, non-proprietary information about timber and wood products to professionals and companies involved in building design and construction.

Australian Forest and Wood Innovation (AFWI)

Australian Forest and Wood Innovations (AFWI) is based in Launceston and is a collaboration between the Australian Government and the University of Tasmania, dedicated to advancing research and innovation in forestry and wood products. As a national initiative, AFWI's goal is to address climate change challenges, enhance the resilience and sustainability of the forestry and forest product industries, and cultivate the research talent crucial for the growth of these vital sectors. AFWI will receive over $100 million in funding from the Australian Government between 2022-23 and 2026-27 and will have three regional research centres.

AFWI has a draft strategy[5] which sets out the direction and priorities of the AFWI's research investments and impact targets. Its mission is to drive solutions-based research and innovation that diversifies and improves the resilience of a sustainable and profitable forest and forest products sector. The strategy has three areas of focus, and associated outcomes, which align to industry need to drive innovation and profitability in the coming decades:

1. **Climate change solutions:** Drive the nation's net zero transition through integrated forest and forest product solutions.
2. **Sustainable forests for our future:** Forest management that delivers multiple outcomes for profitability, a healthy environment and society.
3. **Making the most of our wood fibre:** Enhanced value-adding and opportunities to drive the new circular bioeconomy and bolster domestic manufacturing

The Regional Forestry Hubs

There are 11 Regional Forestry Hubs across Australia, which were established under the National Forestry Industry Plan 2018. The Regional Forestry Hub regions were chosen to represent existing concentrations of wood supply resources, combined with significant existing processing and/or manufacturing operations, established domestic and/or international transport links, and strong potential for growth[6].

Each Regional Forestry Hub has a steering committee of industry stakeholders, and these committees determine the priorities for their region. The Hubs work with industry, state and local governments, and other key stakeholders to prepare and provide the Government with strategic planning, technical assessments and analyses that aim to support growth in the forest industries in their region. In addition to continuing this work the role of the Hubs is being expanded to include extension services. This will enable the Hubs to inform local industries and landholders

[5] AFWI Draft Strategic Plan 2024-2030 (Ref)
[6] See: Regional Forestry Hubs website (Ref)

of the outcomes of the research and innovation work, in particular from the Australia-wide NIFPI (AFWI). The Hubs will not provide individual business advice.

Industry was unanimous in its views that the funds available for research, development and extension must be allocated and expended:

- with a high level of industry direction, planning and oversight,
- in such a way that the various research bodies optimise their specific skills and areas of expertise,
- so that there is no overlap or duplication,
- efficiently, with overheads minimised and direct expenditure RD&E maximised, and
- with clear objectives and planned outcomes which will be effectively communicated with the industry.

Tree genetics

There is a general view across the industry that a greater focus on forest tree genetics innovation would enable Australia to do a better job with the management and utilisation of the forests currently available for industry's use.

This would require an increase in the annual investment in organisations like Tree Breeding Australia. However, some considered it important that such funding occurs in regular, smaller investments over the long-term rather than in one-off "large lumps" of investment. This approach would align with the natural timeframe of tree breeding outcomes which are a *long-term* prospect requiring *long-term* continual investment.

Others have pointed out that investments in genetic research and development by FWPA exceeds $10 million over the last 4 years with further commitments and a plan to spend at least $16 million by 2028.

A current perceived shortcoming with Australia's investment in tree genetics (tree-breeding) is that all, or a large majority, of the funds come from the forest *grower* sector. This is despite the clear evidence that processors receive significant value from tree genetics improvement. Accordingly, the strategy should consider how the industry can ensure other players in the timber fibre value chain industry who are beneficiaries of such research investments can contribute to this funding and support further work towards outcomes that meet their manufacturing and market needs.

Stable, long-term investment also opens opportunities to onboard new technologies, and economies of scale dictate that a doubling of this form of investment would produce more than twice the outcomes and benefits of the research.

It was noted that research and innovation can be a tool to achieve other strategic outcomes. Genetic research is expensive and not without risks however it is generally accepted that a) ongoing investment is required, b) growers and processors benefit and should therefore contribute to the cost, c) tree breeding objectives and outcomes must be informed by growers, processors and markets, and d) tree breeding objectives and outcomes need to look beyond current timber fibre uses and markets.

For example, in the context of calls for an expansion of the timber plantation footprint (under, for example, Strategy 2) some felt additional investment in tree genetic improvement and other productivity drivers could lead to an enhancement of the *existing* plantation estate equivalent to planting significant new hectares trees.

One flow-on benefit of such innovation in productivity which might include to the prospect, for example, of shorter rotations, could improve the investment calculus and prospects for the Australian plantation estate.

A second flow-on outcome could be enhancing forestry's ability to help meet some national priorities. For example, the additional growth in the existing estate alone (with no new trees required) could be shown to potentially offset the greenhouse gas emissions from one of Australia's other emitting sectors by 2050 (e.g. the

national transport sector) and / or generate additional ACCUs with the associated revenue. Importantly, the methods in the ACCU scheme must recognise improvements in productivity by regularly updating assessment tools such as FullCAM.

Fibre utilisation

Research and innovation efforts are needed to apply advanced technologies that will improve the productivity of the timber fibre sector by helping reduce resource wastage, supported by advances in environmental monitoring and reporting systems. For example, programs to identify and test new options for utilising low-quality or otherwise underutilised timber fibre residues would deliver wide profitability and sustainability payoffs for the industry.

Product options may include plywood, oriented strand board (OSB), glue laminated timber (GluLam), Laminated Veneer Lumber (LVL) and Engineered Wood Flooring (EWF). This product class could be used in functions which is currently served by imports of those products and be encouraged under the Future Made in Australia initiatives and/ or the National Reconstruction Fund outlined in Strategy 1.

Further examples of innovation in timber fibre supply, utilisation and recycling are provided in the Snapshot*: Innovation in timber fibre utilisation and value-adding* (Appendix 2, page 141).

Bioenergy and bioproducts

The potential for extracting bioproducts and generating bioenergy from timber fibre remains largely untapped by the Australian industry. Generally, the industry is good at utilising the fibre available to it but many of the uses of residues are relatively low value. Research is required to identify products, processes and market opportunities for timber fibre based bioproducts. Examples of new products, processes and markets for underutilised timber fibre resources are bioenergy production, biochar, and other non-traditional reconstituted fibre products.

The scale of required investments required to exploit new bioenergy opportunities may call for new co-investment models such as private-public partnerships for regional bioenergy developments.

Forest protection / fire

Given the increasing threat to Australia's forestry resources from unplanned / uncontrolled bushfires, there's wide consensus that a significant effort must be put into innovation in advanced fire detection, early response, prevention, and cost-effective suppression mechanisms. This will provide critical new tools and approaches for ensuring the forest estate is protected from the unintended impacts of fires.

Flow-on benefits from this area of research and innovation will accrue to forestry-adjacent landholders, including extensive areas of public conservation only lands in the vicinity of plantations and actively managed native forests. Relevant fire protection and management strategies are included in Strategy 2 – *Meeting demand for timber fibre resources* and Strategy 3 – *Healthy forests, actively managed*.

Silviculture

Ongoing research is also required in silvicultural techniques and applications. These apply equally to native and plantation forests and cover the full cycle from nurseries and seedlings/cuttings through establishment, nutrition, competition control, thinning and harvesting. The industry cannot sit still as changes in climate, processing technology, products, markets and investor requirements will require continual development and adaption of silvicultural techniques. The industry is committed to ensuring that its knowledge of silviculture will enable it to adapt to these changes and will support the funding of the research and development required.

Biosecurity and damage agents

The risks and losses from damage agents, and biosecurity threats are seen as serious and needing on-going attention from the research sector. Damage agents include factors that are already impacting on the forest estate, including invasive weeds, vertebrates, invertebrates and fungal pathogens. The industry recognises the need to continually monitor and control these damage agents, some of which do not yet have effective controls (e.g. blackberry, a weed impacting large parts of the agricultural sector and conservation lands, not just productive forests) and others that may become more significant in a changing climate (e.g. fungal diseases such as *Dothistroma*). Similarly, biosecurity is seen as a major risk to an industry which is exposed largely to a single genus in native forests and a small number of species in Australia's plantations. Recent outbreaks in European *Pinus radiata* plantations highlight the risk where small climatic changes can significantly impact plantation survival, growth and yield. The industry recognises that ongoing research funding is required to ensure that damage agents and the biosecurity threat – the industry understands its role in funding and undertaking research and looks to Governments to assist.

Productivity

Productivity is an overarching issue and each of the forest management issues above impacts on productivity: genetics, utilisation, fire protection, silviculture, biosecurity, damage agents. Innovative thinking and its application are required to increase productivity which, in this context, is the process of continually increasing the sustainable yield from each hectare of forest from which timber fibre is sourced.

Silvo-pastoral / agroforestry

In light of the realisation that embracing agroforestry and silvo-pastoral systems will be one of the realistic ways the timber fibre industry can expand its resource base in coming decades, research and innovation into all aspects of agroforestry will assume increasing importance. This will include aspects such as:

- Assembling and evaluating evidence from around the world on these systems, including their contribution to economic, biodiversity, and livestock production.
- Research to develop and evaluate agroforestry and silvo-pastoral models for different climates, soils and species.
- Socio-economic aspects of the forestry-farmer interface, including optimising co-benefits for the respective collaborators in agroforestry investments.

Ecological thinning

Strategy consultations have revealed a shifting of attitude amongst some public protected / conservation lands managers towards active vegetation management. For example, "ecological thinning" trials are currently underway in 24,000 hectares of forested protected areas in Western Australia (see commentary on Strategy 3 - *Healthy forests, actively managed*, and in the Snapshot: *Ecological thinning* (Appendix 2, page 133). This would involve a relatively new application of classical forestry science and practice combined with traditional indigenous land management practices. It will require innovation and research to tailor and test approaches to steward protected area values while identifying acceptable, feasible markets for timber fibre that is removed during these processors that improve forest health. While a primary purpose of this intervention is not timber harvesting *per se*, where timber may be extracted from any tenure for any purpose it should be required to be put to its "highest and best use".

Industry data

Some consultees suggested that there is a lack of current timber fibre value chain data, and a lack of integration and cross-tabulation of existing data sets and that a targeted research and innovation program could help

remedy this. For example, there's a stated need for more rigorous data sets to inform an understand of "what's going offshore and what is coming in, and what are the needs of the domestic industry".

It's believed that more "usefully integrated" data on timber fibre imports, exports and domestic availability will help solve the apparent dysfunction between the clear need for more housing (including social housing) and the current low demand for house-building timber from domestic producers.

Others have stated that the data are available but they are not easy to access or integrate.

> **Important note:** The new FWPA data dashboard was launched concurrently with the development of this strategy and has not yet been accessed or investigated by many industry participants. Early feedback is positive, that the data dashboard contains information that addresses some of the issues raised in this section and that the structure of the dashboard will allow industry to advise FWPA on additional data required.

Another growing area of research and innovation is in relation to the private native forest (PNF) estate across the nation. This includes much better data on the timber fibre volumes available in PNF on a State-by-State and region-by-region basis.

Communications and digitisation

Underinvestment in communications technology infrastructure is widely identified as an urgent reform need. This calls for innovation, research and development into the best technology and practice in communications and communications-sharing for regional Australia. Key objectives include providing the timber fibre sector with real time data for operational decision-making, technological solutions to increase productivity (e.g. detecting and diagnosing the nutrient status of forests so that timely interventions can produce greater outputs or mitigate losses from pests and diseases). These innovations will also lead to improved safety outcomes for the industry and its surrounding communities.

Details on the research work undertaken by FWPA, AFWI and the Regional Forestry Hubs are provided above. Other organisations are and / or have undertaken valuable research including CSIRO and Forestry Australia, however there is currently no single source for the storage of this research nor is it easily searchable. FWPA has recently rebuilt its website and there has been wide industry acknowledgement that FWPA research reports and publications are significantly more searchable and therefore accessible. Several consultees suggested that FWPA should undertake a program to incorporate all relevant timber fibre industry research data and reporting into this system.

Understanding the supply chain

As identified in Strategy 1, the timber fibre industry's supply chain is complex and this complexity can put the industry at a competitive disadvantage compared with alternative products where the supply chain is simpler and more tightly controlled (for example, the steel industry). For timber to be a predominant material used in MMC, inefficiencies in the supply chain must be understood and remedied. One consultee pointed out that for improvements in the supply chain to occur, industry participants at various points along the chain (particularly forest growers, harvesting contractors, and processors), must be prepared to share data to allow optimisation.

Two actions to address this are recommended. The first is research to understand and thoroughly map the supply chain. Second is implementation of innovative technological and other solutions to overcome the current weaknesses and inefficiencies in the timber fibre supply chain.

Other Strategies

Other important actions by which the industry can embody a science-informed culture that drives innovation and continuous improvement are dealt with under other strategies, notably Strategy 1 - *Building sovereign manufacturing capability and capacity*, Strategy 3 - *Healthy forests, actively managed*, and Strategy 4 - *Attracting and engaging people and other industry enablers*.

Strategy components and actions

Strategy components and actions by which the timber fibre industry can embody a science-informed culture that drives innovation and continuous improvement are set out below.

Nature of, and funding structures for, research and innovation

6.1 The industry will maximise coordination and collaboration between existing research and innovation bodies and mechanisms.

6.2 Research investment will be directed at delivering tangible outcomes and at the sustainable growth of the Australian timber fibre sector, seeking to align these with collateral national priorities.

6.3 The industry and governments will commit to providing research and innovation funding to nominated institutions on a continuing, long-term basis.

Tree genetics

6.4 The industry will give greater focus to forest tree genetics innovation directed at enabling Australia to better manage and utilise forests currently available for industry's use.

6.5 Governments and the industry will increase their respective annual investments in tree breeding and genetics research and innovation organisations, bearing in mind the long-term nature of this research

6.6 The industry will broaden its funding base for genetics and tree breeding research to other beneficiaries in the timber fibre value chain, such as processors.

Fibre utilisation

6.7 The industry will increase research and innovation effort, including funding, on timber fibre waste avoidance and recovery technologies to improve the productivity of the timber fibre sector.

Bioenergy and bioproducts

6.8 The industry and governments will apply innovation and research effort toward new bioenergy and bioproducts products, processes and markets for underutilised timber fibre resources.

6.9 The industry will capture new bioenergy opportunities through new co-investment models such as private-public partnerships.

Forest protection / fire

6.10 The industry and governments will boost research and innovation into advanced fire detection, early response, prevention, and cost-effective suppression mechanisms.

6.11 The industry and fire authorities will collaborate to ensure the benefits from new bushfire technologies can accrue to forestry-adjacent landholders, including public protected areas.

Silvo-pastoral / agroforestry

6.12 The industry will collaborate with kindred rural research bodies to develop agroforestry and silvo-pastoral systems that will deliver mutually beneficial timber fibre-based products and services and sustainable farm and landscape outcomes.

6.13 The industry will develop, measure and report on optimum forestry-farmer cooperation models that deliver co-benefits from trees-on-farms investments.

Active forest management, including in protected areas

6.14 Forest managers and researchers will develop the optimum combination(s) of forestry science and traditional indigenous land management practices to inform the best ways to ecologically thin actively managed forests, including protected forest lands.

Industry data

6.15 The industry and governments will mount a targeted research and innovation program to improve forestry and timber fibre materials flow data sets to inform decision-making to help solve the housing crisis, and for the industry's sustainable growth.

6.16 Governments will sponsor research and innovation on the private native forest (PNF) estate, including data on available timber fibre volumes.

Digitisation and communications

6.17 Governments will fund research and innovation into the best communications technology, infrastructure, and communications-sharing mechanisms to provide the timber fibre sector with real time data for operational decision-making and increased productivity.

6.18 FWPA will undertake a program to incorporate all relevant timber fibre industry research data and reporting into its new website to enable research reports and publications to be accessible and searchable by more users and stakeholders.

Understanding the supply chain

6.19 The industry in all its parts will improve its understanding and efficiencies in the timber fibre supply chain by sharing critical data required for supply chain optimisation. This action will require research to understand and thoroughly map the supply chain and coordinated implementation of innovative technological and other solutions to overcome the current weaknesses and inefficiencies in the timber fibre supply chain.

Implementation

Specific actions through which this Strategy may be implemented are set out in Table 9 suggesting which actors within the timber fibre value chain have most responsibility for implementation.

Table 9 – Responsibility matrix for actions under Strategy #6: Innovating the timber fibre value chain

	Commonwealth Govt	State Government	Local Government	Processors	Forest owners / managers / contractors	Investors / funders	Industry associations	Trades unions	Builders / architects / designers	Harvesting, log haulage & transport contractors	Fire control authorities	Researchers / R&D institutions
6.1 Maximise coordination and collaboration between existing research and innovation bodies and mechanisms.	■	■					■	■				■
6.2 Direct research and innovation to deliver tangible outcomes for the sustainable growth of the Australian timber fibre sector.	■	■		■	■		■	■				■
6.3 Provide research and innovation funding to nominated institutions on a continuing, long-term basis	■	■					■					
6.4 Increase focus on forest tree genetics innovation to enable Australia better its manage and utilise timber fibre resources	■	■			■		■					■
6.5 Increase annual investments in long-term tree breeding and genetics research	■	■			■		■					■
6.6 Broaden the funding base for genetics and tree breeding research to all beneficiaries in the timber fibre value chain				■				■		■		
6.7 Increase research and innovation on timber fibre waste avoidance and recovery technologies	■	■		■	■		■	■	■			■
6.8 Apply innovation and research on new bioenergy / bioproducts products, processes and markets for underutilised timber fibre	■	■		■	■		■					■
6.9 Capture new bioenergy opportunities through co-investment models such as private-public partnerships.			■	■	■							
6.10 Boost research and innovation into advanced fire detection, early response, prevention, and suppression.		■	■		■						■	■
6.11 Collaborate with fire authorities to ensure new bushfire technologies can serve forestry-adjacent landholders		■	■		■						■	
6.12 Collaborate with kindred rural research bodies on agroforestry and silvo-pastoral systems	■	■	■		■							■
6.13 Develop, measure and report on optimum forestry-farmer cooperation models that deliver co-benefits from trees-on-farms.			■	■	■			■			■	■
6.14 Develop optimum forestry science and traditional indigenous management practices for ecological thinning		■			■		■	■			■	■
6.15 Target research and innovation to improve forestry and timber fibre materials flow data sets to inform decision-making	■			■	■		■					■
6.16 Sponsor research and innovation on private native forest (PNF) estate data including available timber fibre volumes.		■	■		■							■
6.17 Fund research and innovation into the best communications technology, infrastructure, and communications-sharing mechanisms	■	■		■	■					■	■	■

	Commonwealth Govt	State Government	Local Government	Processors	Forest owners / managers / contractors	Investors / funders	Industry associations	Trades unions	Builders / architects / designers	Harvesting, log haulage & transport contractors	Fire control authorities	Researchers / R&D institutions
6.18 Incorporate all relevant timber fibre industry research data and reporting into FWPA's new website for wide accessibility.	■	■					■				■	■
6.19 Improve the understanding and efficiencies in the timber fibre supply chain by coordinating data for its innovation				■	■		■	■	■	■	■	■

LIST OF APPENDICES

1. Consultation report
2. Snapshots of some identified issues and themes
3. Carbon markets and production forestry

Appendix 1: Consultation report

The Department acted as the secretariat working group meetings, including taking detailed meeting notes. It was determined that Partnership consultations on the Strategy development were to be allocated amongst four Partnership Working Groups:

1. Forest resource security, access, and management
2. Infrastructure, transport, and supply chain
3. Processing efficiency
4. People, communities, and workplace development

Partnership working groups

Working Group domain	Contact	Company / Affiliation
Forest resource security, access, and management	Michelle Freeman	Forestry Australia
	Michael O'Connor	CFMEU Manufacturing Division
	Ian Telfer	WAPRES
	Frank Miller	NT Ord Valley Forestry Hub, NT Farmers Association; Rio Tinto
Infrastructure, transport, and supply chain	Carlie Porteous	Murray Valley Forestry Hub
	Brad Coates	CFMEU Manufacturing Division = Greater Green Triangle
	Cameron McDonald	One Forty One
	Ian Telfer	WAPRES
Processing efficiency	Jim Snelson	BORG
	Sharon Musson	NSW CFMEU Manuf. Div.; AKD, Tumut
	Travis Wacey	CFMEU Manufacturing Div
People, communities, and workplace development	Denise Campbell-Burns	CFMEU Manuf. Division, ForestWorks
	Harry Burrows	Aust. Workers' Union – WA Branch
	Brad Coates	CFMEU Manufacturing Division - Greater Green Triangle
	Amber Seehars	Aust. Workers' Union; Hyne Timber, Tuan
	Gina Castelain	Wik Timber; Wik Projects

Jurisdictional and national consultees

Although the tables below have been organised by State / Territory, in most cases we have not doubled up on senior consultee names if they operate in more than one State or Territory.

Queensland

Table 10 – Queensland – Invited consultations

Company	Contact
AAM	Ben Edser
AKD	Shane Vickery
Allied Timber Products	Richard Galley
Austral Plywood	Stuart Matthews (joint CEO)
DTM Timber	Ian Haines (GM)
Hyne Timber	Jim Bindon
Laminex (Tin Can Bay)	Justin Burgess
North Qld Forestry Hub	Hulton King
Parkside	John McNamara
QCE (Brisbane)	Tony McKenna (Midway)
South & Central Qld For. Hub	Kerry Fullarton
Superior (Hoop pine)	Skene Finlayson
Timber Queensland	Mick Stephens
HQP	Jason Wilson

NSW / ACT

Table 11 – NSW / ACT– Invited consultations

Company	Contact
AFPA NSW	James Jooste
AKD	Shane Vickery
Big River Timber	John Lorente
BORG	Jim Snelson
Capital Battens	Brad Jackson
Central West NSW For. Hub	Heath Molden
CFMEU Manufacturing Div	Alison Rudman
Dongwha Australia	Glen Hampshire
Grants Sawmilling	Richard Grant
Hurford Timber	Andrew Hurford
Hyne Timber	Jim Binden
Koppers	Richard Lyons / Colin Skead
Murray Region Forestry Hub	Carlie Porteous
North East NSW Forestry Hub	Nick Cameron
Pentarch	Steve Dadd
Ryan and McNulty	Greg McNulty
South East NSW Forestry Hub	Rob de Fégely
Visy Pulp and Paper	Jean Nouazé
Weathertex	Paul Michael
Agriwealth	Hugh Dunchue
Forestry Corp NSW	Anshul Chaudhary
Southern Cross Forests	Jake Lazarus
New Forests	Matt Crapp
NSW DPI	David McPherson

Victoria

Table 12 – Victoria – Invited consultations

Company	Contact
Alpine MDF	James Anderson
Australian Sustainable Hardwoods	Vince Hurley
Carter Holt Harvey	Craig Stratford
Forest One Group	Justin Tonks
HVP	Melanie Cook
Midway	Tony McKenna
Mitsui Bussan Woodchip	Daniel Revie
Opal	Sarah Harvie
Pentarch	Malcolm McComb
Radial Timber	Jon Lambert
Victorian FPA	Andrew White

Tasmania

Table 13 – Tasmania – Invited consultations

Company	Contact
Artec	Scott Arnold
Britton	Shawn Britton
Forico	Ange Albertini
Neville-Smith Timbers	James Neville-Smith
Norske Skog	Rod Bender
Reliance Fibre	Owen Hoffman
ST Tasmania	Steve Whiteley
Ta Ann	Robert Yong
Tasmanian FPA	Nick Steel
Tas. Dept. of State Growth	Anne Chuter

Company	Contact
Timberlink	Paul O'Keefe
Torenius	Matt Torenius

South Australia

Table 14 – South Australia – Invited consultations

Company	Contact
Aust. Bluegum Plantations	Russ Hughes
CFMEU Manufacturing Div (GGT)	Brad Coates
Forestry South Australia	Ric Sinclair
Green Triangle FP	Odette Lubbe
One Forty One	Cam McDonald
South Australian FPA	Nathan Paine

Western Australia

Table 15 – Western Australia – Invited consultations

Company	Contact
FIFWA	Adele Farina
FPC WA	Stuart West
Simcoa	Kees Visser
WAPRES	Ian Telfer
Wesbeam	James Malone
Wespine	Charlie Perkins

Northern Territory

Table 16 – Northern Territory – Invited consultations

Company	Contact
Didcot Pty Ltd	Frank Miller
Midway Plantations Pty Ltd	Hamish Little
NT Ord Valley Forestry Hub	Hanna Lillicrap

Peak, research and other national groups

Table 17 – National or other stakeholder entities – Invited consultations

Company / organisation	Contact
Australian Forest Contractors Association	Tim Leister
AFPA	Diana Hallam
AFWI	Bob Gordon
EWPAA	Gavin Matthew
Forestry Australia	Michelle Freeman
FWPA	Andrew Leighton
ANU Forestry	Peter Kanowski
Healthy Forests Foundation	Monique Dawson
University of South Australia	Jim O'Hehir
Melbourne University	Patrick Baker
CFMEU Manufacturing Division	Michael O'Connor
PF Olsen	Nathan Windebank
SFM	Andrew Morgan
Timberlands Pacific	Steven Brown
Frame & Truss (FTMA Australia)	Kersten Gentle
Master Builders Australia	Alex Waldren

Roundtable participants

Table 18 – Participants at the Hobart roundtable - 5th December 2024

Organisation (alphabetical order)	Roundtable participant
ACT Government (EP&SD Directorate)	Bren Burkevics
AFCA, JCH Harvest	Lauren Carter
AFPA	Diana Hallam
AFPA	Stephen Dadd
AFWI	Julianne O'Reilly-Wapstra
AFWI; CMFEU	Michael O'Connor
Agriculture Victoria	Phuong Tram
AKD	Shane Vicary
Australian Bluegum Plantations	Russ Hughes
Australian Forest Contractors Association	Tim Lester
Australian Sustainable Hardwoods	Vince Hurley
AWU, Hyne Timber	Amber Seehars
Borg Manufacturing; Green Triangle For. Hub	Jim Snelson
Britton Timbers	Shawn Britton
CFMEU Manufacturing - Greater Green Triangle	Brad Coates
CFMEU Manufacturing Division	Travis Wacey
CFMEU; ForestWorks	Denise Campbell-Burns
Department of Agriculture, Fisheries & Forestry	Matt Lowe
Department of Agriculture, Fisheries & Forestry	Graeme Wood
Department of Agriculture, Fisheries & Forestry	Sarah-Jane McCormack
Department of Agriculture, Fisheries & Forestry	Guy Bursle
Department of Agriculture, Fisheries & Forestry	Luke Bulkeley
Department of Agriculture, Fisheries & Forestry	Sarah Blyton
Department of State Growth	Tom Byrne
DTM Timber	Ian Haines
Forest Products Commission WA	Stuart West
Forestry Australia	Matt de Jongh
Forestry Corp NSW	Anshul Chaudhary
Frame & Truss (FTMA Australia)	Kersten Gentle
Hancock Victorian Plantations (HVP)	Rob Hescock
HQ Plantations	Shona Heading
Hyne Group	Joe Trevaskis
Master Builders Australia	David Clerk
Midway Limited	Tony McKenna
Minister for Agriculture, Fisheries and Forestry	Julie Collins
Neville-Smith Timbers	Andrew Walker
New Forests	Gordon Mansfield
Northern Territory Ord Valley Forestry Hub	Frank Miller
NSW Primary Industries & Regional Devel.	David McPherson
OneFortyOne; Green Triangle Forestry Hub	Cameron MacDonald
Opal	David Jettner
Opal	Sarah Harvie
Parkside	Ross Lakin
QLD Department of Agriculture and Fisheries	Barry Underhill
SA Primary Industries and Regions	Rob Robinson
Softwood Working Group; FSC Australia and NZ	Carlie Porteous
STT, FCNSW, Southeast NSW Hub	Rob de Fégely
Sustainable Timber Tasmania (STT)	Steve Whiteley
Ta Ann	Robert Yong
TAS State Growth	Anne Chuter
The Fifth Estate	Craig Taylor
The Fifth Estate	Bill Hurditch
The Pentarch Group	Malcolm McComb
Timber Queensland	Mick Stephens
Timberlink	Paul O'Keefe
VIC Energy, Environment and Climate Action	Beth Jones
VIC Energy, Environment and Climate Action	Kelly Crosthwaite
Visy Pulp and Paper	Dean Hawkins

Organisation (alphabetical order)	Roundtable participant
WA Plantation Res.; SW Hub; FIFWA, AFPA	Ian Telfer

Summary of conversations and themes

Comments made by consultees during one-to-one or group consultations are summarised by themes and details can be located according to the following index.

During the Hobart roundtable on 5th December 2024, participants were asked to nominate the one word that describes what they would most want to see covered in the national timber fibre strategy. The pooled results were assembled into a word cloud to indicate the relative rankings of the words from the group. The word cloud is reproduced in Figure 31.

Figure 31 – Word cloud from Hobart roundtable reflecting priority issues

Table 19 – Compilation of consultation comments arranged by themes

Theme	Detail
Active forest management	• "Active management" of the forestry resource is essential. It ensures cost-effective fire management, implementation of cool burning and other indigenous management options • Harvesting and active management provides for sustainable *financial* management of the nation's forests – avoiding the unnecessary drain on State Treasury funds.
	• Forest managers need to be able to capture and monetise the triple-bottom-line benefits of active plantation projects (including ACCUs) • The strategy need to give greater focus to "cross-tenure management" (as highlighted by the "single-use" Great Koala National Park issue). • We should apply a problem-solving framework to make this possible (i.e. there is so much wasted fibre in all tenures, calling for an audit of where there is wasted fibre on public lands, producing a "by-products regime" that makes the best use of the fibre is there.
	• There should be Government recognition that an actively managed Native Forest is the best outcome for the community and Forest health and habitat (see other of his comments under *Sustainable Native Forest Management*)
	• Prioritising active forest management provides opportunities to deliver on other sectoral and national priorities, some of which can help incentivise and / or offset direct forest management costs. These include: - Nature repair market participation - Carbon credits - Crucial fire risk mitigation - Maintaining a skilled native forest contractor workforce - Revenues from recovering and selling the fibre - Leading roles for First Nations managers and practitioners.
	• A factor limiting the plantation expansion in the Territory is that only a very small portion of the NT has been cleared, so attractive plantation establishment opportunities are rather limited. We don't have a clear solution in mind, but developing a methodology for ACCU creation from the active management of native forest would help. It would also allow and attract many Aboriginal communities to manage forests on their land.
	• Production from native forests is not a "pure play" and one size does not fit all. • Revenue cannot be the only driver – forest health, fire protection, regeneration must be considered alongside revenue from harvesting. • There are different types of native forests that require different types of management which will range from stand management in single species/single age stands to single tree management. • Product mix needs to be considered – ideally there will be a market for all harvested products.
	• In the absence of a nationally agreed forest monitoring framework there are few incentives for forest managers to embrace sustainable forest management practice. Australia's criteria and indicators of sustainable forest management continue to be ignored by environmental conservation agencies and not treated as seriously as they might by those engaged in public native forestry. Well-designed cross forest monitoring systems, essential for generating objective scientific data, have failed to get traction in any State. In the absence of scientific forest monitoring the way Australia evaluates and reports upon the environmental, social and economic performance of forests remains simplistic and superficial. The absence of good data and an agreed approach is driving Australia to set more forest aside in reserve without knowing if this is leading to better outcomes. The review of the National Policy Forest Statement represents an opportunity to get broader agreement and introduce a national forest monitoring system that is tenure blind.
Alternative, competitive materials	• Steel framing is winning the housing framing market (and now is 20% of the housing market) • Timber framing can't compete with steel because of supply chain delays (timber: weeks or months to supply to site; steel: typically, 6-days)
	• Steel framing is being promoted as the framing of the future. • Already has 15-18% market share and plans to be the predominant framing material in Australia. • Our environmental and carbon advantages will be overcome by steel – green steel will be a reality • The steel framing industry is aware of the limitations of the timber framing sector: - Limited supply and dependent on imports - Fragmented industry for supply and manufacture • Difficult to achieve industry wide best practice
Best practice	• The Strategy should embrace a best-practice model that ensures or maintains investor confidence and attracts new investors. • These investors will also need to be assured on things likes First Nations engagement, environmental performance, etc.
Bioenergy / biochar	• There are strong emerging opportunities for use of forest residues for bioenergy • With natural gas prices "going through the roof", many enquiries about biofuels / syngas, etc. • We have a solution for the nation's energy challenges
	• There is demand for biomass to produce biofuels and biochar however at the moment the industry cannot pay competitive prices – the biomass/biofuel/biochar industries are looking for low cost "waste" which there is very little of. • Very short rotations would be possible if ACCUs and green energy credits can be generated from the same product/hectare.
Biosecurity	• Active forest management to support landscape resilience and forest health can benefit timber and fibre supply through reducing fire and biosecurity risks to the plantation estate.
	• If imported timber is to increase (due to a reduction in domestic supply), this could raise biosecurity risks of forest pests and diseases and impact severely on the native and plantation estate (as has occurred with Avian Influenza in native bird populations)
Carbon farming	• There are complicated and uncoordinated rules and procedures between the Commonwealth and the States around carbon farming with plantations

Theme	Detail
	• We need to properly coordinate and leverage the ACCU Scheme in support of carbon values in timber plantations, and embedded carbon in building materials. • Generating plantation-based ACCUs can support other hard-to-abate industries such as cement, iron & steel, mining and manufacturing industries etc. by supplying them with nature-based offsets (ACCUs), avoiding the risk of them closing and leaving the country due to high emissions taxes. • All the ACCU methods, which to date seem to have been developed in isolation, need to be integrated to solve for major national challenges, like housing. • A recommendation of the Strategy could be to develop ACCU methods that "join up" to meet multiple national objectives: achieving our net-zero targets, climate-smart housing, regional jobs and investment, etc.
	• There is a solid bipartisan platform for plantation expansion, so there's fertile ground for further incentives (e.g. $2,000 per hectare grants) • Need for better coordination of State + Fed programs
	• There is currently no ACCU Scheme method for projects that involve harvesting of timber in native forests, but rather only for "avoided" harvesting. A national Timber Fibre Strategy should include the development of appropriate carbon crediting methods that incentivise sustainable management of our native forests for carbon, other natural capital, *and* for timber production.
	• A challenge for national timber fibre supply is the preponderance of environmental planting / biodiversity 'credits' compared with managed timber plantation investments, and the higher relative carbon credit (ACCU) value of the former
	• I have noticed that there are various groups like GreenFleet who are purchasing large properties in high rainfall areas then planting them in what is classed as "mixed environmental planting' for carbon. • The Commonwealth should intervene and suggest that if properties are in one of the National Plantation Inventory regions, then there should be strong justification required for these groups to be planting them to non-forestry species. • It is the case that any forestry carbon project must get approval from the Minister of Agriculture and Water prior to undertaking so that they can be sure it doesn't negatively impact farming. • I cannot see why environmental planting shouldn't have to justify the same in forestry regions where land is difficult to find and the country in dire need of timber, which would also store more carbon than mixed environmental plantings anyway.
Carbon value in timber fibre	• There are big opportunities for maximising carbon value throughout the timber fibre value chain • Timber as a carbon sink / store is a unique material attribute within the building industry, but it's not yet recognised in any monetary sense. • The strategy should address ways to maximise the monetisation of carbon's value along the entire timber fibre value chain.
	• We're not doing a very good job of capturing and communicating timber's carbon story and its benefits • This is a media challenge because "people don't link pine plantations with carbon benefits … they think plantations are 'just another crop'. • If we can win on this point, we can win the social licence battle
Climate change risks & opportunities	• Climate change impacts need to be comprehended in a future timber fibre Strategy. These include: - Heat and cold changes affecting plantings / survival in plantation project areas - Increase in the number of high fire risk days (see, for example, DPI's *Climate Vulnerability Assessment Scenarios* out to 2050 – see here for Forestry) - The intersection of climate and biosecurity risk changes.
	• The strategy should recommend listing plantation timber on the Australian Strategic Materials List as it is essential for moving toward Net Zero and is a sustainable natural resource and key export. This may require launching an argument that the strategic materials list needs to expand past minerals.
Community / social licence	• We should aim to locate our industry activity in areas where there's minimal competition with other high value regional industries (such as tourism). For example, the Bright area in Victoria is now wanting to attract high-value tourism, so having mountain-bike paths through clearcut areas is a problem.
	• The industry's social licence needs can be addressed by promoting the best use of available (public) lands, and the fibre growing on it.
	• Given our existing national timber fibre shortage, the strategy needs address protecting the timber fibre resources we already and avoid further losses. • This includes roles for governments and industry in promoting the benefits of active forest management, encourage the propagation of more "working forests"
	• Linking wood supply from our forests (plantations and native) with local processing is a crucial ingredient in building our social license
	• How do we guard against over-competition for timber fibre production from other emerging uses, such as bioenergy. Conflict and competition for land and investment can threaten prospective timber plantation / fibre investors' confidence / security.
	• "I get a sense that the industry is losing the (community / social licence) battle. Native forestry is all over"
	• The forestry industry is losing the argument about the benefits of a local forest industry utilising locally grown fibre (natural and plantation) when it should be winning the "green" argument because: - It is an inherently good green story (carbon, renewable, sustainable, multi-use) • It is much better than the alternative which is imported timber from unsustainably managed forests, or non-green substitutes such as steel.
	• The industry suffers from a poorly articulated and coordinated strategy to develop its social licence, the story of carbon sequestration and community value (environmental, social and economic) has not been effectively embraced by our community, particularly in cities, regional communities without forestry or where forestry is seeking to expand. A social licence is developed over time and requires sustained support with industry to reinforce the value proposition.

Theme	Detail
	• Forestry and wood products training programs are needed to build a skilled and safe workforce that can support sustainable forestry goals • Educating the public on sustainable products helps build demand and supports businesses • Continue public awareness campaigns • Implement workforce training programs
Competitiveness	• Overall, the strategy and resulting policy must be focused on improving competitiveness
	• With the monopoly log supply situation in some regions, log buyers should be able to get exemption from competition rules to collectively negotiate with the supplier. • Similarly, the dominant timber buyers (big box retailers) have an undue influence on the market and are able to use their size to manipulate buying prices (similar to the dominant grocery chains). There should be incentives for the dominant timber buyers to purchase Australian manufactured timber products.
Costs of forestry regulation	• Mandatory koala management requirements are currently costing as much as $8-10 per hectare in eucalypt plantations the Green Triangle, which costs all fall on the forest owner / manager. Hence, by afforestation companies creating key vulnerable species habitat, they are inadvertently making problems for themselves by continuing commercial management in those plantations. If this principle is extended to other species (such as gliders and owls), additional costs and restrictions will be inevitable, especially as opposition moves away from native forests and focuses more attention on plantation forests.
Ecological thinning	• The current ecological thinning trials in WA are too close to commercial thinning regimes to be credible (i.e. could be perceived as being commercial harvesting in another guise). A new proposed FWPA project will identify optimal appropriate ecological thinning regimes and impacts. • The Strategy needs to identify how to best utilise timber fibre derived from ecological thinning activities. At present, under the WA pilot, 24,000 hectares of forest will be thinned and “left by the side of the road”. This is a lost opportunity to innovate with this additional timber fibre.
Energy	• All wood fibre sources should be recognised as renewable/carbon neutral energy including the heat energy generated and this should be credited as renewable energy which is currently done in Europe. If this does not change then residue fibre from the forest and from mills will continue to be exported.
Exports	• We need a strategy to establishing a more flexible spot market where pricing floors are not fixed by benchmarking. This would require discussion with the biggest export companies and customers.
	• A better knowledge of the lower quality and smaller diameter part of the softwood resource will result in less log export. • Assistance in developing small log processing capacity will keep more fibre in Australia
Farm forestry	• We must move away from the idea of "block planting" (i.e. “wall-to-wall” trees) in active farming areas • There needs to be much more RD&E and innovation in agroforestry, such as: - New configurations for harvestable trees on farms (like "pasture alleys" with just 2-3 tree rows at various places across a farm property) - Addressing the common criticism that agroforestry “doesn’t allow sufficient scale for efficient timber fibre investments”. This doesn’t ring true. After all, we've only gone backwards over the last 20 years! - Structured, purposeful collaboration with farmer organisations (Timber Queensland's strategy over the next 5 years is to be very “farmer-focussed” (including with MLA, Cattle Australia, AgForce, etc), with need to be partnerships with industry itself, with coordinating committees - Information for landholders on the mechanics and technicalities of trees on farms, with on-farm, "peer-to-peer" programs - “Strength-based” case studies on the financial and other returns to farmers (carbon, trees, and farming productivity uplift…). For example, Phil Thompson (Dubbo-based) is actively thinning Cypress, in association with Roger Fletcher’s lamb farming, delivering forest health outcomes plus grazing, plus oil extraction. - Investigate the USDA’s National Agro-Forestry Center model, which feeds projects down to the States • The Strategy should map out the best structure and model for this farmer-focussed extension program • Outcomes from such a program could lead to a real culture change among landholders, because "seeing is believing"
	• Farm forestry can only be a small part of the answer. The NZ experience, where farmers planted woodlots, has fuelled the boom and bust cycle where woodlot owners only want to harvest when prices are high and only supports a log export market, not domestic manufacturing.
	• Plantations and Private Native Forestry sectors have really “dropped the ball” on education and extension with farmers • Some individual companies are doing their own thing in this area, but there's no collective promotional effort into timber plantations as a legitimate land use. Because, when farmers *understand* plantations, they become our strongest advocates. • Hence, the Strategy needs to include a new, palpable extension / engagement program for farmers and other land managers. This should include things like: - Field days - Online advisers - Extension officers - Real, on-ground engagement with farmers and other rural community representatives
	• The continuing “disconnect” between farming and forestry is a glaring issue. Forestry is still seen as being inimical, and a threat, to farming / grazing. • The dysfunctional dynamic between farming and forestry is still very apparent. It manifests in debates and rulemaking around things like plantation establishment in various rainfall zones & catchment areas. • This contrasts with the Scandinavian model of a mosaic rural landscape with multi-benefits in all parts and means we shouldn't aspire to having massive swathes of timber-only plantations across the rural landscape. • The farming <-> forestry polarisation thus needs to shift to more of a “mosaic rural landscape” approach where trees deliver various benefits to all landowners and the community, including timber supply

Theme	Detail
	• The Strategy should seek to better recognise farm forestry as a substantial contributor to the national timber fibre scene, including: - Wood becoming a "normal" farm product (which may enhance social license through greater landowner knowledge and synergy between forestry and agriculture sectors) - 100% of farms having 10% of trees (not 10% of farms having 100% trees) - Forestry becoming seen as about enhancing (not changing) agriculture (driven by farmer aspirations, rather than forestry industry aspirations)
Fire / fire risk	• Sustainable timber fibre supply regions require effective fire risk mitigation and management systems. A three-pronged approach to fire risk mitigation should include (a) Technology for early detection and response, (b) Extreme Red day total bans on all rural machinery operations, and (c) expert local fire teams established and trained • Forest managers and dependent industries need to be able to put fires out really fast, calling on technology to detect and deal with fires before they become catastrophic. Technologies include drones, A.I. generated vision systems, and low-orbiting satellites • Regional timber fibre centres need specialist fire brigades, especially give volunteer brigades are in decline. This could include mill workers with adequate fire training • From an investor point of view, more trees will be established if there's confidence in mitigating the increasing risk of catastrophic fire losses. • The Strategy could recommend implementing a national major farm, forestry and mining machinery and harvesting ban to apply on all Extreme Red days.
	• Fire systems technology (reliant on communications and data infrastructure) will lead to more rapid detection and situational analysis. Investment in such infrastructure will lead to greater investor confidence that the risk of catastrophic losses is reduced. • It will instil investment confidence – both growing and processing, carbon credit security and net zero policy ambitions.
	• Australia needs a *national* bushfire strategy. The loss of plantation areas is currently not recognised as being a material "loss" in most people's minds
	• Investment in advanced fire prevention, detection and suppression mechanisms is critical to ensuring the forest estate is protected from bushfires. • Advances fire detection capabilities are likely to provide additional benefits to land in the vicinity of plantations.
	• Protecting forests from megafires. The NENSW Region boasts 9.6 million hectares of forest and has over 60% forest cover. The megafires of 2019-20 had a devastating impact on all forest values with eight fires exceeding 200,000 hectares. 830 million tonnes of C02-e were emitted, and millions of cubic metres of commercial timber was damaged. Impacts on wildlife and their habitat were incalculable. A proactive and preventative strategic approach is needed to avoid future megafires. Megafire risk can be effectively addressed by enabling the creation of strategic low fuel zones using mechanical means and cool burning as practiced by Aboriginal people for thousands of years. State based legislation and a national policy that deals directly with this issue is missing and is urgently needed.
	• Fire Prevention and Detection: Fire is a critical risk for the Forestry Industry and surrounding communities; continued investment in capabilities (technical and management practices) to reduce risks, early detection, fire prevention, and quick response is critical to ensuring this risk is managed so that the forest industry's capabilities become an asset in reinforcing its social licence within communities.
First Nations' lands and practices	• Harvesting poles in the Cape region (Qld) provides strong indigenous job opportunities • Cool burning practices protect forests from catastrophic wildfire losses
	• The Northern Territory has been able to develop a new forestry concept not hampered by forestry's baggage in other States. We are seeking to integrate land uses, especially in relation to indigenous / First Nations' lands … how to look at fibre supply in concert with indigenous / Traditional Owners' land management. • There are lots of federal and state regulations affecting Traditional Owners' use of their lands. For example: - When you go and mine an area for bauxite and strip off the topsoil, etc, the MMP (mine management plan) requires the site to be returned to its original state, with no alternatives or value-adding for Traditional Owners' use of the land. - The MMP is completely restrictive against other uses, meaning missed opportunities for Traditional Owners to get involved in forestry or other fibre production uses ("we're spending the money anyway - to spread the topsoil - but this money is wasted by not allowing other land uses"). • Some opportunities include: - A trial site on Gove is seeking to release "sensible" parcels of mined land to Traditional Owners for growing fibre supply or for agriculture (or both) - A collaboration with Gina Castelain, a contractor to Rio at Weipa to spread post-mining topsoil. She's an influencer with a real "can do" mentality, who wants to "go big" with a $30m sawmill and spread this knowledge to other areas.
	• The Strategy should recognise and commit to: - Traditional Owner (TO) and Indigenous-led forest management opportunities (both as a significant stand-alone item but also integrated into all other aspects). - Free, Prior and Informed Consent (FPIC) - investments and a supportive legislative environment for First Nations' land tenures (e.g. Victoria is considering a new land tenure class of a 'cultural reserve to facilitate TOs being able to develop forest-based enterprises, amongst other things).
	• A fundamental problem is the lack of motivation and action from governments to amend legislation to allow Traditional Owners access to Traditional Owner land for forestry and other commercial activities
	• There is a big opportunity with the Private Native Forest resource among indigenous owners, but a lot more engagement is needed • The Strategy should highlight indigenous landowners' opportunities for forestry and sawmilling (for example, Gina Cassegrain case study – part of Timber Queensland's Northern Strategy) • ABARES has produced an excellent map of forests that are co-owned / managed by indigenous people – see here

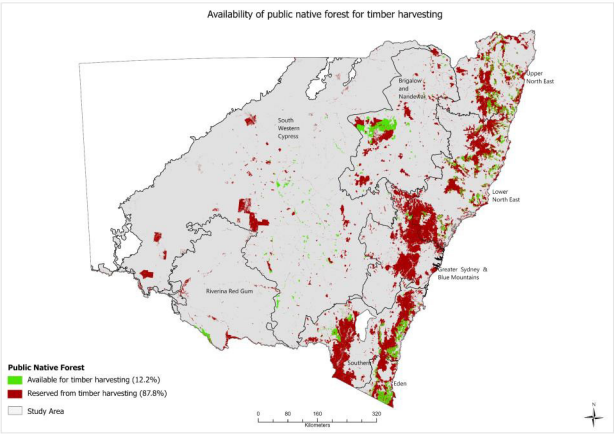
Theme	Detail
	• There are currently no economic of legislated mechanisms for First Nations / Traditional Owners to benefit from active forest management across Australia. • The Strategy should provide that market mechanisms, such as the Nature Repair Market, explicitly include First Nations ecological practises as a part of a Nature Positive Strategy. This will ensure that when First Nations' people are managing country, their work in improving that country should qualify them to participate in the Nature Repair Markets in the same way as other people who participate, including Environmental Non-Government Organisations. However, this requires that *forestry* needs to be a qualifying activity within the Nature Repair Market arrangements.
Forest ownership	• Does the government need to own the forest? Not necessarily.
	• The (NSW) Government still has ownership of a lot of the State's plantation and native forest resources. This renders the timber fibre industry vulnerable when the government is unable to meet commitments (e.g. due to fires, native forests), and also carries a lot of major risks for the government that other States don't need to worry about • The NSW Government has stated it does not intend to divest itself of the plantation assets. So, given the budget constraints, we need to think about how the additional required wood will be produced.
Forest protection (disease)	• As climate change progresses, the incidence of fungal attack in pine plantations is increasing (with greater humidity). The models indicate a greater prevalence of significant fungal infestations, most likely for the more Northern areas like Bathurst and Moss Vale but quite possibly for all of the Radiata estate. It may be more economical and risk mitigating to forsake faster growing families for more *Dothistroma* tolerant tree families. Given that the highest risk period is between crown closure (at about age 6) up to first thinning, we need to be about 10 years ahead of the change in climate in making our decision. We need new (statistical) models to predict the likelihood of increased fungal attack, and the optimal time to take protective action.
	• Government needs to support and encourage genetic modification of organisms (GMOs) to build climate resilience in our important crops and ecosystems, and challenge those, including product certification bodies, that resist this based on outdated thinking on the risks of GMOs.
Future Made in Australia	• There is plenty of practical, continuous innovation in fibre processing with proven and prospective timber fibre processing technologies. The *Future Made in Australia* policy should support existing low emissions processing, rather than just looking for "bleeding edge", "media-intriguing" things.
	• Unless manufacturing in Australia can be more cost competitive, all logs will be exported, and the manufactured wood products will be imported. • Cost inflation (wages, energy, transport costs) has not been matched by timber price inflation resulting in imports being more competitive.
Government role / support	• We mostly focus on getting new policy or new incentives from government – I think we should have some text on saying don't do bad policy (policy that directly hurts industry or has unintended consequences) – classic current example is the Safe Work Australia proposals for workplace exposure limits (WELs) for formaldehyde and wood dust. • We mostly focus on getting new policy or new incentives from government – I think we should have some text on saying don't do bad policy (policy that directly hurts industry or has unintended consequences) – classic current example is the Safe Work Australia proposals for workplace exposure limits (WELs) for formaldehyde and wood dust.
	• Must stimulate demand through wood encouragement policies but need to be careful not to over-stimulate demand and make supply impossible. For example, if WA moved to timber house frames now, all the require timber framing would need to be imported. • WA is the most progressive and prosperous State, and the Government has the financial capacity to support new manufacturing investments.
	• Need to support entrepreneurs • Governments need to influence demand by prioritising timber construction, ensuring stored carbon in construction is recognised and rewarded, and domestically made and sustainable timber products are favoured.
Hardwood plantations	• In NSW, 7,000 ha of hardwood plantations will be needed "immediately" to offset resource losses to be incurred in the Great Koala National Park.
	• If the native forestry sector doesn't survive, can hardwood plantations fill the void? • The NSW North Coast hardwood plantation estate is ~35,000 ha. But the hardwood sector has significant challenges that are political (i.e. focussed on government policy). • So, no-one in the hardwood sector is investing right now and we need a more *stable policy environment to* enable investment and reinvestment. • For successful expansion in hardwood plantations, we need the economics to work: at least returning the cost of capital.
	• We need more hardwood plantations but the current carbon regime favours replacing hardwood plantations with softwood. Eucalyptus grandis from Uruguay is competing with Australian Eucalyptus products and they have the advantage of having their sequestered and stored carbon recognised.
	• The Strategy should help governments find ways to stimulate hardwood plantation investments other than putting up with just more imports. Potential models could include: - Carbon crediting arrangements, such as the government underwriting a "contract for difference" between the prevailing carbon price and what's needed from carbon to make the project economically feasible - Biodiversity certificates / offsets - Specific regulatory interventions to attenuate risks (risk, revenue and regulation) - Utilising State Government low-cost insurance for private plantation investors • Some of these could be supported by the NSW Treasury's office of social impact, which offers bonds and other instruments to achieve social outcomes.
	• Guaranteed offtake agreements with processors will help pull investment in hardwood plantations for solid timber products
	• Need to better "steward" the available land for establishing higher-value hardwood products (cf. export woodchips) and not "squander" the productive land base.
	• Hardwood plantations have been tried in Queensland with very limited success.

Theme	Detail
	• Our (Weathertex's) fibre supply is critically dependent on log supplies to sawmills, pole plants, etc. because we use their residues, and also harvest residues from their forestry operations • The NSW sawmillers' contracts with SFNSW run out in 2028, so we have no real resource security beyond that time. • PNF will be a way to add some security …
Housing	• NSW needs to plant 18,000 ha per annum to satisfy housing demand alone
	• At the moment, the Government's housing construction target is falling well behind expectations.
	• We will be lucky to see 0.5 million of the pledged 1.2 million new houses built by 2030[1] (actually, the Govt has only set the target, it's not laid out how to achieve it!)
	• Australia needs 400,000 ha of new softwood plantations by 2050 to make up timber demand for housing targets (FWPA statistic)
	• State Governments can stimulate demand for wood products through their need and ability to build housing.
	• Governments shouldn't bother planning for the *bottom* of the market, but rather at the *average and the top* of the market. So, we need to be able to supply the average level of housing starts in any year
	• If the housing crisis is the number one issue for government and the community, forestry must be shown to be the solution
	• The Central West manufactures a broad range of timber products traditionally utilised in housing. Providing an opportunity for the strategic development of a modern manufacturing precinct focused on producing a full range of housing solutions for the market. The strategy should focus investment to develop new industries in locations that are well suited to maximise their potential.
Imports of timber fibre	• If we rely on world trade, we don't need a timber fibre strategy at all to fix supply problems. • But, if another COVID-type event happens, we do need some risk-attenuation. This should be in the form of an assured "base load" of domestic resource, with imports as "top-up" mechanism
	• There is clearly an imbalance between imports, exports and domestic timber fibre availability, but we need a more rigorous set of data to understand what's going offshore and what is coming in, and what are the needs of the domestic industry. • Solving this will speak more usefully into addressing the need for housing (including social housing)
	• Our current domestic fibre shortage, plus the value-adding imperative, means we should consider importing more of our commodity timber needs and focus our domestic processing industry on higher-value production
	• Import competition has an unfair advantage due to: - Lower fibre, energy and labour costs - Australian manufacturers pay a premium for energy due to GHG policies - Importers should pay a carbon tariff for the transport fuel they use getting wood here
	• AFPA's proposed 'Country of Origin' labelling scheme for timber is a positive initiative, that readily leads into 'buy local' campaigns and supports Australian industry through enhanced community knowledge.
Imports	• Dumping, although rare, have a long lasting impact on the market – industry and Governments must be vigilant. • Speed and accuracy of import data is essential.
	• Timber imports are part of the solution, not the problem. The local manufacturing industry must work cooperatively with the importers.
Industry growth	• The key strategy objective and starting point needs to be all about industry growth
	• The Strategy needs to focus on *policy enablers* that allow step-changes in industry growth: (i) resource expansion, (ii) security for a long term investment, and (iii) fire management / mitigation
Infrastructure	• Climate change suggests rain will occur in heavier down bursts. If so, we need to review our current forest road designs. FCNSW sells "access" just as much as timber volume and none of our customers could store adequate log volumes for a fully seasonal operation. The FCNSW softwood estate of 227,500 hectares (net plantable) has 15,000 km of forest roads. In Tumut Management Area there are 92,400 net plantable hectares and 5,800 km of forest roads. Here, about 1 m^3 of gravel is required per 28 m^3 of logs extracted. Forest roads crossing water courses is the greatest source of pollution, so it's critical to get water away crossings and onto vegetation frequently. The same issue applies to most timber plantations and native forests across Australia (except perhaps the sands of the Green Triangle)
	• Efficient freight transport is essential because the timber freight task continues to grow across the forestry landscape. • Efficient transport solutions will assist the financial viability for growing (investment) and processing. However, innovation in higher mass limit vehicles is often challenging the regulator to keep pace with the approvals necessary to adopt more productive solutions.
	• The benefits of a more efficient timber fibre freight supply chain include: - Improved overall return on investment - lower scope 3 emissions - resilience to climate events (but the infrastructure needs to be designed to be able to accommodate more intense climatic events, particularly overland water flows and higher daytime temperatures). • Strategy elements for freight include: - consider the unique freight task of the industry and take practical steps in reducing the number of trips as well as the location of the forest resource relative to the processing facilities (e.g. task the Hubs or regionally significant processing and growing regions to conduct a supply chain and fibre basket mapping exercise to optimise supply chains in these regions). - consider how to engage with other strategies / policies in other departments and industries, cross border and regulatory bodies to develop a unified approach to efficient freight or supply chain tasks at a regional level. The Hubs or a similar model would be an appropriate way to achieve this.

[1] See ABC Report (21 Oct) on the shortfall and BCA's new stimulus plan here

Theme	Detail
	• Consider establishing strategic industrial processing zones (SIPZ) to include a single destination that optimises infrastructure needs such as transport (rail/road), optimisation facilities, energy (thermal and electrical), water and gas etc. The SIPZ will be a centre for attracting regional employment and the benefits of more vibrant communities.
	• We are frustrated by the lack of infrastructure and connectivity as essentials for industry support. Good infrastructure is essential to lower the cost of getting to markets. For example, the African Mahogany estate I managed really struggled due to a lack of infrastructure. "People need to be connected". • "Everything costs five times as much to do in these remote (NT) areas as it does down South"
	• Improved communications technology infrastructure (including innovation and R&D, uptake of best practice technology for communications sharing) could: - provide the timber fibre sector with real time data technological increases to increase productivity (e.g. the nutrient status of crops / forests where timely intervention can lead to greater output or mitigate losses from pests and diseases). - improve safety outcomes for the industry and surrounding communities.
	• Enabling infrastructure in terms of roads, digital coverage, port capability etc is a pressing need in the Top end. Only main arterial roads are sealed which means that vast areas of the NT are inaccessible during the monsoon season. Year-round guaranteed access and digital connectivity not only de-risks investment from an economic viewpoint but enhances safety, allows for modern technology to be used in operational management and increases the attractiveness of remote regions to a modern workforce.
	• The current transport infrastructure is not fit for purpose, leading to inefficiencies and social tensions • Local communities are concerned about safety and road quality due to high truck movements. A survey indicated that 87% of residents believe the industry negatively impacts road quality, and 67% believe it affects traffic. • Invest in improved regional transport networks to enhance haulage efficiency and reduce community impact. • Invest in transport infrastructure to provide safe, reliable, and efficient routes to major markets, addressing issues like route unreliability and unsuitable routes for high-mass vehicles.
	• The continued lack of integrated planning on optimising freight routes and incentivising asset maintenance and upgrades to facilitate uses such as high-productive vehicles continues to be an issue; there is a failure to assess the opportunity costs and externalities in prioritising investments properly.
	• Coordinating the infrastructure task: develop an industry-wide Tasmanian freight action plan to clearly document log and manufactured product movements, capture and describe key transport infrastructure problems and provide a framework for the industry and local and state Government to work together to secure funding for solutions.
Insurance for plantations	• It's almost impossible to get insurance for timber plantations to cover catastrophic fire loss (since the 2019-20 NSW/Vic fires, plantation insurance has gone up 700% (for a small 40-ha block)
	• Insurance costs for plantations can be prohibitive. State Governments could offer their ability to secure low-cost insurance to private plantation investors.
	• The inability to get an adequate insurance payout has led (Agriwealth) to not replant a 600 ha block lost in the Oct 2023 Stockdale fire in Victoria
	• We can no longer get public liability insurance to cover us for windrow burns, so windrows now don't get burnt, which increases the fire risk
	• We need a *national* insurance scheme
Integration of hardwood & softwood	• NSW has a "complete" industry with the capability of both softwood and hardwoods complementing each other in supplying the same market
	• By 2027, Tasmania's timber fibre sector will be transformed and led by the plantation sector, with a very much plantation-based industry • So, we need to be able to get more from 25-40cm s.e.d. plantation-grown logs such as by better sawing / processing, rotary peeling from younger wood (but more difficult than slicing large logs), supplying better markets. • If the current large plantation companies (like Forico, etc.) can shift their focus from chip exports to longer rotations, this will produce the new solid wood required. This will entail a shift from short rotations to longer rotations (with ACCUs generated), with some areas replaced with Radiata pine. • But we need to maintain the public forest estate, with the current native forest resource base becoming a "top up" prospect, operated on a 65-85 year rotation. In 30-35 years' time, if we can "hold the line" the native estate will again begin to yield more volumes of valuable native species for new and different applications.
Investment / feasibility	• Our timber fibre investments need to adopt appropriate technology for appropriate markets (mentioned Bob Gordon's NT sawmill work) • Social context, issues and generational disadvantage needs to be factored into the economic model • "The Government needs to promote local timber products" - our city decisions are stopping us using our own timber resources (note, for example, the perverse implications of the Victoria native forestry ban).
	• The Strategy should highlight the opportunities to stimulate more timber fibre investment / supply through regional "catalyst developments" (such as occurred with Visy and BORG), with governments sponsoring, facilitating or investing in such catalysts (perhaps in the downstream housing sector).
	• Our domestic superannuation funds should be made more aware of the opportunities to invest in *productive* plantation developments - especially with biodiversity and carbon as added outputs.
	• Provide investment certainty: for growers and current and potential processors, including resolution of the carbon credits anomaly and actions which drive on-island processing and value adding.
Labour shortages	• The high competing demand for labour in the (Wide Bay) Region is imposing constraints on the timber industry, with competing with industries building trains, solar panels and other high tech manufacturing • There's a huge difficulty in attracting people from the cities to the regions to work in the timber sector (currently paying $140,000 for truck drivers, and above-award mill wages)
Land competition	• It's important to promote the timber fibre industry to rural landholders • Trees on farms can be seen as "money in the bank" for later years and generations

Theme	Detail
	• The Black Summer Fires have shown us that security of fibre is really important. Competition for plantation land means the cheapest land is the land we already own. So, we need to get much better fibre use - more from less.
	• Particularly in the light of native forestry bans / closures in most states, prioritising all remaining land for plantation expansion in strategic wood zones is crucial • Scarce land resources should be protected and made available for plantation expansion. For example, it's not acceptable for mining exploration licences to allow compulsory land clearances to eat away at plantation lands • State laws and regulations for the protection of strategic timber plantation lands should be harmonised for national application
	• The Government needs to take a "whole of country" view as to how to balance the competing needs to ensure that the country as a whole can deliver both food and forest products. This will require an understanding that, given the existing locations of plantations and processing facilities, timber may require preferential treatment for water access to preserve our sovereign capability in this area.
	• Consideration should be given to "highest and best landuse" zoning for strategic plantation investment. This needs to be led by a competent working group that can consider all the pros and cons of where zones might best be located … avoiding unintended backlash from special interest groups.
Local government road levies	• In Victoria, the local government planning scheme (clause 52.18) requires forest owners and managers to make-good all roads used for harvesting to standards prior to the harvesting commencing. However, forestry is the only primary production industry where this rule applies. • This restraint on investment needs to go, and the Vic Govt should instead look after its roads properly ("they're too busy spending their infrastructure money in the cities and ignoring regional industry needs")
Loss of State Forest areas	• In NSW, the Great Koala National Park will, at its maximum likely size of 176,000 ha, reduce the North Coast industry's supply by 28% to 40%. This area also supplies 70% of Australia's power poles.
Modern Methods of Construction	• What we need is a *major* finance package to attract private investment in *world-scale* modular housing construction, targeted to regions requiring affordable housing on lower-cost land (typically in outer suburbs and regional growth centres). • The Strategy should include a major nation-building initiative that links up the ministers for Housing, Industry, Skills/Trades, Finance, and Forestry to supply and build Australia's housing needs from local Australian timber fibre resources. • The Government's role could be to provide or underwrite an offtake agreement for, say 200,000 modular houses which would provide the investment security for private investors to launch a major new modular housing enterprise in multiple locations, producing flat-pack houses and components (maybe this could be akin to the national Electricity Capacity Investment Scheme, but for modern housing construction). • This would be a paradigm shift in modern manufacturing (and not just a "stick-build" mentality inside a big shed - which is the current idea!) utilising the best of Scandinavian / European high-tech modular construction technology – a truly revolutionary housing supply solution.
	• We should be applying more creative approaches to the housing crisis, such as modular construction methods that enable the utilisation of a wider range of timber fibre types. • Modular housing developments in the regions will stimulate regional employment; we should be targeting new MMC housing into "workforce areas", giving then favoured status for new housing. • This can channel housing into regional showcase areas and align this with regional workforce retention. (See AWU and MD FIAP Submission - FINAL.pdf)
	• There is a huge opportunity – with government playing a helping role – in encouraging new industries and new ways of doing things in the built environment, especially around modular construction. This fits so well with the recognised need for more house construction (i.e. the National Housing Accord's 1.2 million new well-located homes over 5 years from mid-2024 … [See here where "… The Commonwealth and states and territories agreed to update this target at National Cabinet in August 2023 to 1.2 million new well-located homes over 5 years from mid-2024…]. • Given that trades / skills availability is a big limiting factor or "bottleneck" for the timber fibre and construction sector, a move to factory production (i.e. modular) methods will improve labour productivity. It will also reduce the timber fibre wastage that's more prominent in on-site, stick construction, further extending the timber fibre resource base.
	• There is much more innovation overseas (in multi-storey timber buildings) than in Australia. Here, only ~1% of Australia's timber is being utilised in major, mass timber construction projects. • If we can *marginally* increase the use of timber at the construction end, we will "pull" the timber through the supply chain. This will require lobbying at the front of the market to drive or cross-pollinate timber use. • Without government, it will be difficult to achieve this, but with the twin political pressures of "cost of living" and "affordable housing" there is definitely a role for government to expand timber supply.
	• There is a huge opportunity for engineered timber in prefab and modular housing, medium-density housing and mass timber construction
	• Japan had MMC solved in 1994 with their modular systems. • There are no real *government* impediments to the uptake of MMC in Australia right now. In any case, "technology (should) drive government policy rather than the other way around".
	• Trees are being bread and planted for traditional sawlog/sawmilling uses but these will not be harvested for 30+ years. Development and management of the plantation resource must be cognisant of the potential/likely changes in the log characterises that will be needed for the new timber products that will be used in MMC and be in a position to adapt to these changes.

Theme	Detail
	• The Strategy should recommend examining how home building is done in other parts of the world. We need a wholesale cultural shift in construction thinking. • Housing construction must transition from on-site construction to pre-fabrication models • Note: there's an important distinction between "pre-fabrication" and "modular" house construction: - Pre-fabrication can still be "stick built", but in a factory, when the whole house is fabricated and then "flat-packed" for transport to site (effectively 'plug-and-play' houses). Then, the assembly on site takes only a couple of days, with no on-site waste or delays. - Modular houses are pre-built and pre-assembled 3D modules that are transported and joined together on site. A cost drawback is they are effectively "transporting air". • A big blockage in wider and more rapid uptake of factory-built housing is certification and regulatory approval. This new method is unfamiliar with builders and regulators. On-site assembly is also a new skill area. • The banks and other funders will need more support to make the shift. However, the prefab model will enable more funding flexibility, such as the separation of the land from the house (the house can be disassembled and taken away!)
National forestry policy	• The strategy should emphasise Australia's need for a broad-based, cross-party commitment to strengthening the forest and timber fibre resource supply as a nationally good thing. Strengthening the resource supply in this way will more "enabling structures" to foster a policy environment that supports tree growing for wood, fibre and other benefits. • The original Landcare movement was successful for the farming community during its early years because farmers and conservationists were united around a common goal. The forestry / timber fibre sector needs something like this to change the narrative.
Native forests	• There's no strategy for the replacement of natural forest areas (as they are withdrawn due to government decisions) with hardwood (sawlog) plantation resources • To meet our future fibre needs, we will need *all* our resources - we cannot get all our needs from timber plantations • So, the Strategy *must* include native forests. • Based on what has already occurred in WA and Victoria, we should anticipate similar closures of current approaches to eucalypt timbers being harvested from public native forests in Tasmania and NSW. • A vision for long-term sustainable public native forest timber production is that it transitions to a niche / boutique industry limited to high-value timbers and value-added fibre products sold only into local industry (as, for example, is intended with WA's ecological thinnings pilot) and/or is an Indigenous-led enterprise. • Plantations are, and will continue to be, the source of industrial scale timber and fibre supply. • Native forest regrowth thinnings are essential for forest health, the protection of biodiversity, fire risk management and carbon storage. • Alternative uses for biomass from native forests should be encouraged (not discouraged) for the manufacture of, for example, biofuels, activated carbon, biochar. • Native forests should move towards being a boutique industry providing the highest value fibre for high end and value hardwood products. • This should be the driver but then the who harvested tree should be utilised for, for example, renewable energy. • Stored carbon in manufactured hardwood products from native forest should receive a carbon credit and the energy generated receive renewable energy credits. • Retaining twelve percent of public native forest for sustainable hardwood timber supply. Most native State forests in NSW have been dedicated for more than 100 years and over that time have been the subject of considerable public investment in silviculture, roading infrastructure, and sophisticated forest management planning systems. This has enabled the estate to be a dependable and sustainable source of hardwood timber for the State while still providing a high standard of environmental protection. When State forests are transferred to National Parks and Reserves much of this historic investment is lost. Over the last three decades State forests have been a soft target for political opportunist seeking green votes in inner city electorates. In NSW this has seen the size of the estate whittled away to a small fraction of its former size. The political benefits are short lived while the cost of losing 100 plus years of public investment is borne by many generations to come. Today, State forests are sustainably managed with more than half the estate managed exclusively for environmental protection. In fact, 88% of all NSW public native forest is now managed exclusively for environmental protection (Figure 1). With so much forest set aside there is marginal benefit in creating more National Parks from remaining State forests. A national commitment to protecting timber supply from multiple-use State forests is needed. If this is achieved, it will address sovereign risk which has plagued the hardwood industry for many decades. In turn this will provide a secure platform for much need investment in wood processing and sustainable forest management.  •
Nature positive	• The Strategy should promote accelerating the strategic use of forestry / plantings as a nature positive opportunity across vast areas of degraded lands (e.g. replacing areas of prickly acacia infestations in North Queensland with better fibre-productive species. This weed shrub is much more aggressive than native competitors, and its sheer seed volume and growth rate soaks up available water, making the soil unsuitable for other plants).

Theme	Detail
	• The new Biodiversity methods being developed need to be complementary with (and not compete with) private native forest management. • Similarly, plantings in the specified Hub Regions must be commercial plantings and not *environmental* plantings • Strategy idea: "In natural capital and nature repair markets, implement a mix of public policy measures and private investors incentives to promote timber fibre production on all lands - public and private…"
	• Active management must be a key concept driving the Strategy. The primary purpose of active management is to support landscape resilience and forest health, which can benefit timber and fibre supply through reducing fire and biosecurity risks to the plantation estate. It can also enhance outcomes for small-scale private forest managers / growers. • The Strategy should emphasise the real opportunities actively managed forests can play for Australia's "nature positive" priorities. Getting this right can deliver many benefits, but getting it wrong poses a real risk of significant negative unintended consequences for timber and fibre supply. • While active management's primary purpose is not the supply of timber fibre *per se*, this may be an outcome. However, timber fibre yield may be of and unknown and uncertain quantity, depending upon the specific management objectives, etc. (for example, see the Western Australian ecological thinning pilot project). • An impediment to "Nature Positive" policies being applied in actively managed forests is the requirement to report on results, which disincentivises plantation owners from participating, for fear they may not be able to harvest them in the future ("Green hushing")
	• There's an entrenched "disconnect" between commercial and non-commercial interests in forestry and landscape policy and management, with "environmental services and conservation" sitting in one silo, and "production" in a separate one. • Conservation measures mainly focus on conservation and preservation zones (such as national parks), rather than integrating commercial and non-commercial interests. • The new Nature Positive initiatives aren't cognizant of the multiple purpose imperative - especially for forestry. This policy needs to be integrated into forestry / timber fibre landscapes (See FAO papers by Kanowski, Keenan, *et al.* 2022 and 2024). • A robust timber fibre strategy should leverage national "Nature Positive" and "Nature Repair" initiatives for application across and within all forest tenures.
Planning rules	• Planning rules (zoning, etc.) should enable plantations to be established as close as possible to where they're needed by processors. • Political / regulatory stress on the forest resource needs to be dealt with via the strategy. For example, NSW EPA rules are applied over-zealously for the wrong reasons; it needs to be balanced with more meaningful engagement (cites Bill Jackson's writings on the concept of "integrated landscape management")
Plantation expansion	• Australia is close to a critical point, whereby plantation resources are declining in real terms, to a point where timber supplied from our own plantations will become subservient to imported timber. • Solving the "plantation resource gap" must be a key strategy priority. • But the solution must be something different from what we've been doing to date, because we have failed with the old solutions (e.g. MIS, grants, etc.). • The plantation expansion task should be handled as a "nation-building" project, speaking into our need to provide sovereign resources for the nation's use.
	• There is a strong, long-term demand for timber fibre that is / will outstrip supply. So, expansion of the plantation base is critical for price / cost management, sovereign capability, etc • How do we compete for land with other users? We need some sort of incentive to break this barrier. FCNSW is seeing successes in expanding the estate for timber fibre whilst also securing other revenue on their land from wind turbines (especially the requirement for the energy company to replace the land on a 2-for-1 basis)
	• The public forestry estate is "fully occupied", so the only other available land is farmland. • This means we must include *Agriculture* in the Strategy, with input from the likes of NFF and State bodies, who need to be able to see the benefit of trees on farms
	• Greater support toward establishment of plantations is needed from State and Federal governments when dealing with challenging local governments. This would require discussion of land access rights and an approach similar to developing mineral / petroleum deposits on state land.
	• Current economics don't support plantation development so need to think about how to get more value out of what we already have. • Grants need to change investment decision from "no" to "yes", not just subsidise what would have already happened. Therefore, grants may need to be bigger and more targeted – Government support will need to pick winners (regions/companies/managers)
	• We always focus on new trees - I think we should have an equal focus on precision management of what we already have (i.e., doing more with what we already have in the ground and replanting brownfield with better trees and optimally tend them for products and future markets). This goes for forestry as well as manufacturing, and modern methods of construction etc. • Related to above is utilising more of each plantation hectare – we only utilise around 60% with roads, easements, exclusion zones, riparian zones etc. How does regulation change to access more of each hectare.
	• Support and reduced complexity for small lot plantations (often called trees on farms), the different state and national programs are complex for inexperienced landowners to navigate and are barriers to small lot plantation development. Simplification of processes and systems (whole of plantation life system) to allow small lot plantations to develop are critical if these developments are included in the mix for sustaining and growing our plantations.

Theme	Detail
	• We need more trees in the ground, but we do not tell our story well enough. The mining industry has a poor product in terms of land management and carbon but somehow they have community acceptance. The story for production plantations is much better. Similarly, the industry needs to show how productive plantations are better than environmental plantings for carbon, economics, jobs and the community. The promotion of the benefits needs funding. • Telling the forestry story better will also convert builders away from less sustainable and carbon friendly products. • The forest industry needs to better connect with emitters, so they understand the benefits of productive plantations. • More transparency of the actual B2B ACCU transaction prices for forestry credits will encourage investment. • Carbon is essential for new plantation establishment (and to ensure reestablishment), so investors need to know there is a clear and safe process for generating ACCUs which is not subject to policy change sovereign risk. • National standards re right to plant and harvest – local governments cannot have the power to intervene.
	• The strategy should address the regulatory barriers to plantation establishment on mine leases on Aboriginal land once mining is complete. There is little incentive without the access to the carbon markets and participation in certification schemes. The current practice of mining companies being required to rehabilitate to pre-mining condition is not working. • There should be incentive to encourage mining companies to hand mined land back to TOs for rehabilitation (obviously only TOs should have access to carbon credits).
	• We need to get trees in the ground to support and attract processing investment
	• Plantation expansion would be good but there is a more immediate need to stop the decline in the current estate. • The market should decide what the highest and best use is for land. Incentive will not be required if all land uses are treated in the same way. Plantation forestry and agriculture should be treated identically6 – a right to plant and harvest without government interference. • Current regulations are a disincentive to short rotations which provide the best opportunity to provide the fill the housing and construction wood products shortage. Water and carbon regulations are a disincentive to short rotation crops. • Without stopping the decline in plantation area, Australia will be dependent on imports and/or non-green substitutes. • There is ample money available to be deployed in new plantations if the impediments are removed. • Community support (not opposition) to plantation expansion is required: governments need to publicly support plantation expansion on suitable land. • Industry needs to better tell the story about the social and environmental benefits of wood and plantations. • Meaningful plantation expansion will still only use a small fraction of land currently used for other agriculture.
	• Need to be careful not to push all plantations towards softwoods – there is lots in the ground now and hardwood is declining due to pressure from softwood and from agriculture. • There is a lack of market signals for long rotation hardwood log pricing which is hampering investment.
Plantation investment case	• The money is not in plantation investments • Only those companies who are vertically integrated are investing in plantations
	• Investors need reliable data on biomass, yield by product, and Australian Carbon Credit Units (ACCUs). • Ensure all forestry regions have access to comprehensive landscape-level data for potential investors. • Create publicly accessible indicative cost and price assumptions for forestry investments at a regional level. • Enable Forestry Hubs to engage with potential investors and act as knowledge brokers to support plantation expansion.
	• Government intervention and financial support is working in WA. Would like to move quicker but land availability, price and community issues require a steady approach. • Must have plantation scale to support markets but they must provide a reasonable return. • The ESG benefits of plantations are their strongest attribute to attract investment – people/corporations want to do "good" investments. • Good data on future supply and demand are needed to support plantation investment – investors need to understand capacity and demand now and for the future. • Carbon markets could potentially distort supply – we need to be careful that carbon values don't encourage not productive/no harvest plantations as is the case in New Zealand.
	• We need to focus on: - What we leave behind in the forest is something we need to focus on - Haulage, transport costs and logistics have been barriers to utilisation - Even if we don't show a financial return for the harvest residue per se, it may give higher value to utilise it • What strategy for this? … - Renewable energy - de-fossilization option for big emitters - Carbon credits
Private Native Forest	• There's a growing demand for PNF hardwood and hardwood plantation supply in the face of reductions in natural (State) forest resource availability. • This demand will dramatically increase if there is an "exit out of native forests from State Forests" in NSW
	• We need much better data on the timber fibre volumes available in PNF • The strategy should advocate removal of dual consents of State and local governments for PNF operations (for example, in NSW Kyogle Council has relinquished its local approval powers to the State authorities)
	• Government support should be given to private native forest managers to restore their forests to a healthy state and for their ongoing management to be certified to international standards. AgForce would be a good organisation to provide this service in Queensland.
	• The Strategy should recognise the need for funding to provide more / better government extension programs and services to private forest growers to support them to grow / manage / harvest timber. For example, as piloted by NSW Local Land Services' private forest stewardship project and Tasmania's PFT.

Theme	Detail
	• Support and resource security for private native forestry. The decline in hardwood supply from publicly owned native forests is increasing reliance on private native forests. For private native forests to meet the growing demand for Australian hardwood focused effort and considerable investment is needed over many decades. Private landholders currently lack the skills, knowledge and experience needed to sustainably manage their forests for timber and other values. Marketing platforms and information about timber values is also lacking. Most forest landholders are disengaged while those who are engaged and inclined toward short-term exploitative practices because resource security is lacking. A legislative framework and support system like the one that operates in Tasmania would help address these issues.
Profitability	• We need strategies for optimising and maximising total gross margin in the cellulose fibre industry
Promotion of timber use	• The timber industry doesn't have the cash to market its product like the steel industry does. • Timber should be able to market itself, but it's not doing this • While we complain about resource shortage, market *demand* is going to be the big problem. • We aren't sending the right signals about timber to the construction market. For example, after the Black Summer fires, we said "All our forests burnt down, so we need more plantations" - but this was a disastrous media message, because people are instead turning to other, more reliable alternatives such as steel framing.
Protecting the resource	• More attention needs to be paid to protecting the existing resource base from fire and other threats • The concept of "no net loss" of timber resources should be replaced by "no physical loss"! • Resource lost to infrastructure developments such as roads, power and communication lines, renewable energy, and urban development must be replaced with at least the equivalent area. • The loss softwood plantations because of fire has had a significant impact on the industry including closure of some mills and increasing the production costs of others due to the loss of scale efficiencies.
Recycled wood	• The Strategy should include Initiatives and incentives for recovery and recycling of wood products currently going to landfill from building demolitions, or timber from mining leases that is going to waste. This is a key element of seeking to "do better with what we've got".
Regional communities	• The Strategy should recognise that *existing* forestry and timber processing activities within small communities, including their employees' skills, keep people and social infrastructure in those towns and centres … and this can attract more social capital. • The timber fibre sector provides a strong "social glue" and attractor that needs to be protected and valued. This aspect risks being overlooked if the Strategy doesn't overtly recognise its importance and can't be taken for granted (e.g. Tumut High School has been losing teachers, which then inhibits young families from wanting to move to the town, etc.). • Governments don't really comprehend the size and significance of the native fibre resource - it's not front-of-mind as a thing worth protecting, compared with the "noise" created by the other side • It's thought the native forest timber fibre resource is replaceable with other sources, and it may be … but at what cost? • Local jobs and communities are important, but they're not important enough for governments to care • The Strategy should recognise the need to strengthen the attractiveness of rural communities to attract and retain timber fibre industry employment. Providing better community services for people and families, plus other infrastructure, is crucial in overcoming the challenge of getting people to come and work in the regions (e.g. Mount Gambier is a long way from Adelaide or Melbourne). • The timber fibre sector should take the opportunity to work with the farming and mining communities to leverage government support for better social and physical infrastructure in the natural resources regions • Given that 80% of road fatalities occur in regional areas the industry needs to proactively manage Industry & community road interactions to minimise the likelihood of high impact incidents. • One of the biggest challenges we have is attracting and retaining skilled staff to our industry and to live in our regions. While not exclusively a Forest Industry issue it is a significant regional issue, we expect this challenge to become more pronounced as our need for higher-level expertise continues to increase. Specific barriers include: - Lack of adequate health care and the high direct and indirect costs for people in regions to access essential services. - Lack of housing and poor housing stock prevents people from taking up opportunities in regional communities. Incentives to increase investment in regional housing stock is critical • Lack of affordable supporting systems such as childcare is a barrier for people locating in regions or returning to work once they have children.
Regional development	• Forestry and wood products sector provide jobs in rural areas and a sustainable timber industry can boost local economies and support long-term rural development. The regional opportunities should be promoted and development programs supported.
Regional Forest Industry Hubs	• The Green Triangle has benefited significantly from the GTFIH as we have become a vehicle for region-specific research and projects but also as a vehicle for industry and state funded projects and supporting industry committees. The value of Hubs to amplify value within their region is significant and shouldn't be under estimated, in addition to the work on our approved work program, we also facilitate investments from members and the State Government for AI Fire Fighting Camera's, Helicopter fire services and Workforce Development programs which have resulted in new vocational qualifications to support our processors, support for apprentices and trainees and positioning within the education department and independent schools to promote careers in Forestry and processing. For example, the linked video https://vimeo.com/1003857930 was developed with the State Government, who made the investment in the development (with our input) of this career education program for SA Students.
Research & innovation	• Research expenditure and activity in the timber fibre sector (such as through AFWI) needs to be directed at delivering tangible (i.e. applied research) outcomes for the sustainable growth of the timber fibre sector, meeting nationally important demands and needs.

Theme	Detail
	• A greater focus on forest tree genetics innovation would enable Australia to do better with what forests we've got. • Additional investment in tree genetic improvement and other productivity drivers would lead to enhancement of the existing plantation estate that could be equivalent to planting significant hectares of additional trees. Such productivity enhancements of the existing estate has the potential to change the investment prospect for the plantation estate, such as leading to shorter rotations. • Meeting some national priorities through these efforts could be articulated (for example "the additional growth in the existing trees alone (with no new trees required) would be enough to offset emissions from the entire transport sector by 2050…") • Increasing the annual investment in organisations like Tree Breeding Australia is needed, and it's important that this is through regular, smaller investments over the long-term, as distinct from one-off big investments (because tree breeding outcomes are a long-term prospect requiring continual long-term investment). Long-term investment also opens up opportunity to onboard new technologies. Economies of scale mean that doubling of this form of investment can produce more than twice the research outcome / benefit. • Currently, investment in tree breeding is primarily from the forest grower sector, with processors not tending to invest despite receiving significant value from tree genetics improvement. The Strategy could consider how we ensure other parts of industry who are beneficiaries of such research investments contribute to this funding.
	• Underutilised timber residue can be transformed into bioenergy, biochar and provide renewable energy sources • Advanced technologies can improve productivity and environmental monitoring and help reduce resource waste. • Establishment of private-public partnerships for bioenergy.
	• Continuing support and long term funding commitment to R&D that will de-risk investment, unlock new potential forestry areas (e.g. dry tropics), novel uses of timber & fibre, expand species options, improve recovery & utilisation etc. • Agroforestry / silvo-pastoral systems is one of the few realistic ways to expand plantation area in Australia. There is ample evidence from around the world that these systems are beneficial from economic, biodiversity and livestock production point of view. More research is needed to develop model for different climates, soils and species. Government funding for research and incentives for particularly farmers/pastoralists should drive this.
Resource security	• Although the (Qld) government has "promised" no reduction in log *volumes*, it's the location of those volumes that can impose extra transport costs due to far distances • Long-distant log volumes require fuel subsidies to compensate for excessive transport costs
Right to harvest	• Sovereign risk exists around delayed native forest decisions, creating a virtual freeze on investment pending decision-making. • In plantations, there is perceived risk to the right to harvest, even with the Plantations and Reafforestation Act (PRA) in place. This involves the PRA requiring the regulator to "adaptively assess and manage" threatened species risks. This works against certainty, raising sovereign risks concerns and needs to be resolved • The Strategy should recommend a uniform PRA-type approach across Australia. The case for national harmonised legislation is supported by the fact that plantation investors and owners are large, cross-state entities; supply zones go across State borders, carbon and energy supplies are national. • Continuing challenges will likely occur with local councils (on, for example, road and traffic issues such as size of logging trucks, noise, etc, threatened species issues and needs, land use conflicts with farmers) • The Strategy could point out that an orchard or a vineyard is a 30-40 year crop, but with no barriers to planting or replanting. Councils don't have rolling consent requirements for orchards or vineyards. So, why can't this apply to timber plantations?
	• One of the biggest impediments to new plantation establishment (in Victoria) is the fear that, once the plantations are established there will be regulatory or other legal-action impediments to harvesting them. For example, adversarial groups can appeal to the Supreme Court under the (Vic) Wildlife Act and attempt to prevent harvesting in Victoria's native forests under appealing to, for example, the "precautionary principle". • Where endemic tree species are used for plantation stock, regulators may question whether this is a plantation at all. • Plantations investors must have the right to plant and the right to harvest that cannot be overridden by Local Government.
Scale	• We typically invest a lot of money into a very big, centralised processing facility, and then everything revolves around supply to that mill. And that needs huge, industrial-scale plantation areas. Which alienates farmers and landholders ("word association tests with rural communities: when they with think of industrial plantations, they respond are 'garbage dumps' and 'suicides'!") • In contrast, Jon Lambert (Radial Timbers) says they have no social licence issues - "the farmers see us as neighbours". • A more effective alternative scenario is to have smaller, distributed "nodes" of timber fibre processing units that can handle all that the forest can deliver (e.g. Radial Timbers can produce solid timber, veneers, biochar, etc.) • Can we replicate this model throughout Australia? If so, how could the Strategy facilitate this? • A project proposal for submission to AFWI ("Integrated Forest Landscapes") seeks to identify a regionally specific solution to integrated, small-to-moderate-size processing facilities - focussed on Gippsland as a case study. • Can this be done on such a scale as we could supply Australia's domestic timber fibre needs? • The transition will need to be an incremental, but should see a progressive decline in imports • Strategy recommendation: Encourage investment in small-to-medium scale capacity, because the big plantation estates are no longer going to happen, or be supported, and farm forestry alone can't do it. • We currently have either "farm forestry" or "industrial plantations" … we are missing the "middle ground"
	• The current (relatively small) scale of timber fibre processing within Australia is a challenge that reduces the competitiveness of the industry. This requires greater fibre resource security, and other policies and technologies that will encourage the capital investment that will increase the scale of processing in key regions.
Showcase opportunities	• Governments have an opportunity to lead new markets and methods through "big project thinking". For example, with the Olympics coming to Queensland in 2032, there's a huge opportunity to work with timber fibre growers and processors on a major national "startup" in the modular construction space with the Olympic Athletes' Village. This could later morph into social housing for further showcase opportunities. • This type of "big project thinking" can spur a whole change of sector emphasis.

Theme	Detail
Softwood plantation expansion	• Softwood expansion options are best identified around "available land" (i.e. what is practical?) • The identified needs are (a) in NSW SW Slopes: 30k ha for replacement of lost areas, plus +30k ha for footprint expansion, and (b) in Bathurst/Oberon: 30k ha for expansion.
	• We need to attract new plantation expansion into "clumps" to stimulate world-scale processing and competitiveness (analogy of our mega iron ore bodies "clumped" in local areas that has enabled world scale investment in iron ore) • Because of the long investment planning cycles, we need to specify the resource requirement to, say, 2060. We need to say how many trees or what type we need, and where they are best located. • This will mean we don't need to worry about where the processing plants are located because the market will sort that out (based on resource location, etc.)
	• Softwood plantation expansion should happen close to existing plantations and existing markets. For example, the majority of SE Queensland softwood trees are grown, processed and used in a local market. This increases the efficiency and competitiveness of the grower and the processor and creates efficient supply chains. • The plantation estate and the sustainable yield needs to expand ensure the processing capacity can continue to expand. The processors must expand just to remain internationally cost competitive. Processors need to get big or get out. • Ideally, plantation expansion should occur consistently. For example, it is better to expand a regional estate by 1,000 ha per year for 20 years than by 20,000 ha in one year. This will allow for wood flow planning and sustainable yield increases. Regular smaller areas of establishment will create less social/community disruption and reduce the risk of loss of social licence. However, this approach only works if there is certainty for the 1,000 ha per year, and certainty requires secure access to land and ongoing government funding support. • The upfront costs, and particularly land costs, are prohibitive for superannuation and pension funds who need positive early cash flow from their investments. Government support is needed, most likely in the form of grants, equity and/or low cost debt to solve the early cash flow challenge. Governments may need to get back into plantation establishment and treat plantations in the same way as they treat the development of other emissions reduction infrastructure. • Plantation expansion using the tax system (MIS) results in big areas in a short time (causing wood flow and social/community issues), sub-optimal locations and sub-optimal silviculture
	• Some existing plantation regions will never get to scale and/or be appropriate for traditional log growing, for example, North Queensland. These areas need to "specialise or demise", probably by focusing on maximise fibre volume (not quality) growth and identifying/developing suitable fibre markets.
	• The estate must expand to allow mills to expand – if mills don't expand their unit cost of production will increase and their competitiveness against imports will decrease. • We need more trees, but we also need more suppliers. Many regions are dominated by a single supplier. We need to investigate ways to increase the attractiveness of new plantation investors/owners. • Increased competition will lead to efficiency and more commercial behaviour
	• The industry needs to play the long game, and the plantation resource base needs to expand with new participants including possibly a role for government to get back into investing in plantations. The concentration/monopoly power of some log suppliers is being abused so there is a need for new participants in any expansion.
	• The Strategy should help governments find ways to stimulate softwood plantation investments other than putting up with just more imports. Potential models could include: - Carbon crediting arrangements, such as the government underwriting a "contract for difference" between the prevailing carbon price and what's needed from carbon to make the project economically feasible - Specific regulatory interventions to attenuate risks (risk, revenue and regulation) - Utilising State Government low-cost insurance for private plantation investors • Some of these could be supported by the NSW Treasury's office of social impact, which offers bonds and other instruments to achieve social outcomes.
Sovereign capability / manufacturing	• Why and when is it the national interest to worry about fibre? Our sovereign capability in timber supply must be targeted at addressing the average timber fibre demand of the construction (housing) cycle. That is, we need to be able to supply the average level of housing starts in any year. This should inform our fibre planting strategy, i.e. there must be enough fibre being planted to supply this projected demand.
	• Our first priority should be ensuring we can provide sovereign capability / capacity. • Then, work backwards from there to identify what resources we need, and where, to satisfy that sovereign capability
	• The core of that sovereign capability should be high-value local processing for national construction and low emissions materials (bioeconomy). • Decision criteria will be: - Close to markets - Alongside existing infrastructure - Productive land - In communities where the sentiment is higher for timber industry support - Where there is available skilled labour
	• "Sovereign manufacturing" should be read as "sovereign resource production, sovereign processing capacity, and sovereign markets". These are all parts of the supply chain, and all must be part of our national capability
	• We need to demonstrate our sovereign processing capacity to encourage and justify the planting of more trees - it's a type of "demand-pull" from the manufacturing end. • We need to ensure our manufacturing capacity and processing is modern and innovative enough to make the types of products our communities need and want. • Manufacturing must occur where the jobs are (this will be more politically attractive as well)

Theme	Detail
	• Traditional users of forest and mill residues (in the Queensland case, wood panels) are being squeezed out as genetics and silviculture drive increased sawlog yield percentages and mills' sawn timber recoveries improve causing less volume of pulpwood and woodchips. • Alternative uses for residues (e.g. fuel) are also reducing fibre supply to traditional industries. These industries will be lost unless additional fibre becomes available.
	• Sovereign manufacturing capability has been lost in plywood and LVL because of increasing costs, inability to expand and achieve economies of scale, and the lower cost of imports. This capacity will not be regained. The same will happen with hardwood and smaller and/or specialised softwood mills. • Australia has a greater reliance on imports which are very cost competitive because freight costs are no longer a disadvantage • Australian timber manufacturing is uncompetitive due to factors such as (in order of impact) the cost of energy, labour cost, and raw fibre cost. NZ's Red Stag, China and Europe are particularly competitive in the Australian structural softwood market. • Labour costs can be reduced, and labour productivity increased by investment in new plant, although that usually means more energy cost inputs.
	• Timber is essential for house building and if the native industry is shut down, the native timber used in house construction will be imported from sources with questionable forest management practices. • Energy and labour costs are squeezing out Australia manufacturers. • Export of hardwood sawlogs should be stopped and processing in Australia encouraged.
	• The Strategy should prioritise matching the nation's needs / demand for timber fibre with the sustainable timber fibre resource available from all forest tenures. This will require flexibility in forest management in different regions, aligned with the specific regional forest types and their management requirements to produce and maintain "healthy forests"
	• The nation will eventually regret its policies of closing down native forests, because it will exposure Australia to sovereign risk (via over-reliance on timber and other fibre imports). • The Strategy should encourage governments to be smarter in terms of retaining our native resource base while
	• Australia's cost of production is making us less and less competitive. For example, unprocessed sawn wood can be value added in Vietnam which has a labour cost of AUD 2.12 per worked hour compared to Australian labour cost of AUD 36.50 per worked hour. Although labour productivity is not as high in Vietnam (mainly due to a lack of mechanisation), it is catching up quickly. It is more cost efficient to ship unprocessed timber to Vietnam and have it processed there and then ship it back to Australia or to international markets. • Energy costs are increasing unsustainably. Subsidies are needed to assist timber industry participants with the capital cost of installing renewable energy (burning plantation timber waste) capacity. Wind and solar is subsidised so why not carbon neutral wood based fuel. The renewable energy status of heat energy generated from burning wood residues must also be recognised. • As a result of high input costs (other costs include insurances and payroll tax), domestic manufacturing will be lost.
	• With the international move towards protectionism in terms of tariffs and geopolitical tensions between our political allies and trading partners the chance of our exports being caught up in trade wars and/or tariffs is an increasing threat and requires careful monitoring and scenario planning. Key opportunities: - Reducing reliance from imports to supply domestic markets, ensuring externalities from imported timber are properly accounted for in the context of the Australian market - Fully understand the strategic and economic value of forestry (direct and inclusive of externalities) is critical to inform policy decision-making (including factors such as the opportunity cost from carbon sequestration (not just the ACCUs)). - Invest in improving the Forestry supply and value chain productivity – research, technology, genetics and scale. AFWI supports large programs but there should be provisions to support small scale local innovations and research. - Co-invest to grow markets to diversify risks (support industry to access new international markets or to grow developing markets) - Support wood fibre substitutes for other energy-intensive products (concrete and steel in housing, for example). - Address regulatory or knowledge barriers to using timber products within the industry as a viable substitute. This includes educating intermediaries such as builders and architects and ensuring regulations and standards are current regarding timber fibre opportunities. This could include demonstration sites and education programs. - Include Timber First (ideally Australian) as a priority in government procurement and design standards.
	• Need to manufacture plantation wood in higher value products, e.g. CLT, GLT. It is currently hard to make money in Australia with these products, so innovation and use of new technologies is required. • Need to get institutional investors to go further downstream from plantations.
	• We must learn from other countries – the Scandinavians are world leaders and can help us achieve best practice • Manufacturing sector needs to have closer and better relationships with the building sector • Take-or-pay doesn't work for anyone • Need to manufacture more structural products out of the fibre we have available, e.g. OSB and strand lumber. • Need to lower the cost base in Australia: - better cooperation between growers and processors • solve the insurance cost problem
	• Tasmania has a scale problem because it is an island – removing native regrowth from the available fibre source will have a negative impact on the ability to invest at scale in manufacturing. If scale is lost, Tasmania will export logs to places that have the necessary scale. • Regional manufacturing jobs are important. • Ideally move away from woodchip export.

Theme	Detail
	• Today's plantings will be for long term future markets which may not currently exist. Need to identify future products and plan for them now – and it will not just be stick timber. • The new products manufactured in Australia will drive the forest management. • We can't just "give away" pulpwood – we need to look at new products that can use the quantity of pulpwood produced.
	• Inform hardwood manufacturing: develop a detailed understanding of the requirements of Tasmanian hardwood sawmillers and manufacturers and undertake a targeted study of the hardwood resource which provides information back to processors and improves certainty and willingness to invest.
	• The industry, with the support of Governments, need to take a long term view, invest in world class infrastructure, have the ability to achieve scale – international competitiveness will only occur where this is done. • There are opportunities to take advantage of vertical integration to maximise utilisation and recycling. As much fibre as possible must be extracted from the waste stream. • Alternative forms of energy must be explored and utilised and all forms of renewable energy need to be recognised as such.
	• Without stopping the decline of the resource base (plantation and natural) there will be no processing industry and Australia will be a hostage to imports.
	• Governments may need to support the development of new, smaller scale processing capacity (close to resource) to ensure suitable fibre is utilised in Australia
Strategy horizons	• The strategy needs to account for issues and opportunities in both the short term (that is the < 25 year horizon) and the long term (that is 25-50 years and beyond).
	• Although new plantations will take many years to yield useful fibre, establishment needs to start now to provide the timber fibre stock required to meet the 25-50 year + horizon.
	• Where will sawn timber be utilised in the decades to come? So, working backwards from there, we should identify what trees we should be growing now to suit that prospect…
Sustainable forest management	• The "self-thinning rule" governs the optimum ecological stocking density of natural forests, and thinning management can reduce fire risk, improve the provision of habitat for fauna, and reduce the damage to the overall *ecological health* of the forest. Combining thinning with prescribed burning is a potentially useful management tool to achieve multiple forest health outcomes. (see Meta-analysis of forest thinning)
	• All areas currently sustainably managed for timber fibre production (along with all the other values derived from sustainably managed forests) should remain as "production forests" (Note this applies equally to plantations).
	• Hardwood plantations are *not* the answer to natural forest resource withdrawals. (Qld) history shows that risks having the wrong trees in the wrong places. • For a healthy forest and good biodiversity, nature does a much better job than plantations ("we have been harvesting timber for from the same native forest for >120 years")
	• Good forest health is the key to sustainable forest management. The language needs to be all about ensuring "healthy forests". In contrast, the old term of "forest preservation" is a non-concept – because *all tenures* need "active management" • There are new dimensions possible with the healthy forests concept. For example, "ecological thinning" will enable new groups to do their new thing with their new language, while the processing industry can still utilise the fibre produced *with the permission* of previously antagonistic groups. Managing fuel loads is a key issue here.
	• The poorly informed and purely political decisions regarding the WA and Victorian native forest harvesting cannot be allowed to be repeated in Queensland, NSW and Tasmania. The principles of well managed and healthy native forests must prevail to ensure that there is resource available in the future. • There should be Government recognition that an actively managed Native Forest is the best outcome for the community and Forest health and habitat. • Native Forests management should be recognised in the carbon methodology scheme to allow registration for carbon credits. • There are large dry areas in Australia that should be planted with Native Forests to improve the lands and have a significant effect on the environment • Only the very delicate forests should be excluded from harvesting (but there it is recognised that people will define delicate differently).
	• First nations peoples are onboard with the need to manage native forests to keep them healthy and this involves harvesting. • Properly managed native forests enhance biodiversity. • Governments need to recognise that there is a cost to managing native forests if it is available for harvesting or is locked up. • Industry has a good story to tell in relation to native forest management (with harvesting) because it provides answers to climate change, addresses the housing crisis, reduces the reliance on imports. • The success of the native forest industry's opponents has been based on Government funding. Government funding should be made available to the industry to promote its positive story. • The native forest sector is incredibly good at managing wastes from harvesting and log utilisation including for generating carbon neutral energy which should be recognised by Government and supported financially by them. • Note that many of John's comments apply to private native forest management.
	• The Strategy should recommend national adoption of the "healthy forests" concept for all tenures, uses and jurisdictions. • The historic model of carving off large areas of forest into non-productive tenures has failed, producing unhealthy forests in all contexts (overstocked reserves and over-harvested fibre production areas), ecologically depauperate forests, with increasing catastrophic fire, disease, and feral animal risks.
	• "Because of the complexity and ecological diversity of a nation's forests, a *national* timber fibre strategy cannot adopt a 'one-size-fits-all' approach. It needs to be flexible enough to comprehend the large range of forest types and landscapes" • "We made mistakes in Canada by trying to manage all our forests with the same approach … keeping fire out of places we shouldn't have and using inappropriate harvesting methods in others…."

Theme	Detail
	• When properly managed the forest industry has a positive carbon story and good sustainability credentials. The industry is essential to the delivery of Australia's climate targets. This needs to be communicated to all stakeholders as a key part of the timber fibre strategy. • Without replanting young trees, timber resources will become scarce. Reforestation will ensure a continuous supply of timber and maintains ecological balance. • Recognising Indigenous and local community development will help sustain traditional ecological knowledge, which can be essential for sustainable forest management. • Incentive programs should be developed and benefits promoted, and regional digital tools developed and implemented.
The human dimension	• A national timber fibre strategy must consider how to serve all of the diverse human needs provided by forests (e.g. TOs, industry, regional communities, markets, etc.). Who are the real beneficiaries and dependants on the timber fibre supply system?
The need for a strategy	• Do we really need a national Timber Fibre Strategy at all? • If so, it should primarily be directed at addressing sovereign capability, especially in times of major disruption (such as another global pandemic) • This Strategy offers a big opportunity to not only fix the big hardwood plantation problem, but also to get back some of our lost social licence • There is a problem with the CFMEU being associated with the strategy. The CFMEU brand is irreparably damaged and its association with the Timber Fibre Strategy significantly diminishes the strategy's value. I was reluctant to participate in the process because of the CFMEU involvement. • All sectors of the supply chain should be represented in the Strategy, alongside each of their respective government agencies / departments / ministers e.g.: Dept of Industry, Science & Resources; DCCEEW; Treasury; Transport & Infrastructure; Finance. • This will enable the industry to communicate relevant information to each government stakeholder (size / value / impact of the industry). For example, David Fredericks (DCCEEW) will be interested in forests having the greatest area of photosynthetic surface. See also AFPA's "Greener Future" document's carbon cycle diagram. • Otherwise, the "biodiversity debate" will decimate available forestry land. • We need a *national* Strategy, because we're trying to steer a ship that's not being supported by many governments around the country - not only in relation to fibre supply, but also in forestry management. • A national Strategy needs to *play to regional differences*. This is something the Commonwealth can actually help to facilitate. • The strategy should have a purpose, and that purpose should be future looking, not looking at the current situation. • There's a danger that we keep dealing with *symptoms* and not looking properly at *causes*. • "Forestry is a solution, not a problem" but we need to reframe the national arguments in this tone. • The industry structure is hampering development, innovation and competitiveness • Look at other industries and other using natural materials and adding value for local markets. • Australia is at a crossroads – if action is not taken now there will be no forestry industry in 20 years as there will be no access to native forests and plantations will have been converted to Agriculture.
Timber Poles	• Energy Queensland is chasing 35,000 poles a year of >=12.5m length
Tree breeding / genetics	• More effort required to refine genetics to match hardwood species to available plantation sites – such as lowland areas in norther NSW (incl. frost resistance) • Investment in hardwood tree breeding. Phasing out native forest harvesting remains a risk in all States where native forestry continues to operate. The cost, time and effort needed to develop a replacement timber resource remains grossly underestimated. Investment in hardwood plantation programs in North East NSW and South East Queensland in the late 1990s did not deliver on expectations. The poor performance of these plantations can be attributed to many factors, however, limited investment in tree breeding was a key issue. If hardwood plantations are to progressively replace or supplement timber supply from publicly owned native forests, there needs to be a commitment to long term investment in hardwood tree breeding. The breeding program should focus on key durable eucalypt species that can be successfully grown on the NSW north coast.
Uniform national legislation	• The Strategy should seek to implement *national* "forestry right to harvest" regulatory arrangements modelled on the best current practice (i.e. the NSW Plantations and Reafforestation Act), to be adopted by the forestry ministerial council. This could include a parallel program of public funding (perhaps from biodiversity credits) of the wildlife assessments and management practices required – alongside the right to harvest assurance. • A lot of the responsibility for the timber fibre sector (policy) rests at State government level, so a *national* Strategy must be closely aligned with the various State strategies and issues. • So, how can the national strategy mesh with and leverage best-practices occurring in various States for application at a national level? • We could explore the concept of applying exemplar policies and practices in various states to a national level (such as the NSW Plantations and Reafforestation Act) • At a national / federal level the Strategy should emphasise the value plantations have for climate goals – such as sequestration and the generation of ACCUs • The Strategy should promote the harmonious working across state boundaries and with the Commonwealth – adopting a whole-of-government, integrating approach. For example, in road transport, National Heavy Vehicle Regulator management hasn't been signed on to by all States, and there remain conflicting or varying regulations between local government jurisdictions.

Theme	Detail
	• For the Northern Territory to meaningfully contribute to the production of construction and other wood products, there is a need for policy / regulatory support. Regulatory alignment between the commonwealth and state/territories would reduce bureaucratic complexity and foster investment. The federal government also needs to have the remit and resources to monitor compliance with the federal legislation (e.g. the EPBC act) – the Territory government does not do it, and it is another risk for potential investors. • NT doesn't have a Forestry Act, rather the industry is governed by multiple acts with no mechanism to selectively harvest timbers from native forests. This is a pressing issue because most of our native forests/timbers are un(der)utilised, would present opportunities for First Nations communities and reduce reliance on timber imports. Developing an act is most likely not high on the NT government's agenda because of significant time and resource requirements. It would require broad consultation with First Nations and a significant amount of inventory to determine sustainable harvest levels. A policy and /or permit system to allow native harvest could be an achievable start – particularly with support and pressure from the Commonwealth.
Value-adding / utilisation	• In the short term (i.e. 25 yrs) the nation is limited by timber fibre availability. Hence, we must extract every dollar of value from every cellulose fibre available.
	• We need to move the domestic timber fibre processing industry up the value chain as far as we can … shifting from "commodity timber production" toward engineered wood products.
	• We really need to learn from what's happening overseas. For example, glulam has peaked in Europe and is being replaced in market volume terms with mass LVL • This makes sense, because *sawing* of small logs for glulam products will only recover 25% of the wood, whereas the latest rotary veneer mills can recover ~50%. • This could enable Australia to replace our wood chip exports by diverting the small logs they rely on into domestic mass-production LVL systems. • For example, modern Raute machines can recover much more wood than the current old technology. A top of the range Raute system can process 150,000 m^3 of small logs a year (on a single shift basis), producing 100,000 tonnes of veneer. • Australia could establish a series of world-scale modern rotary veneer mills to feed major new LVL plants. There is capacity for 7 new plants around Australia (1 in WA, 3 in the Green Triangle (or 1 running 3 shifts), 2 in Tasmania and 1 on the NSW North Coast) plus more feasibility work on further plants. The returns from these projects could include: - The produced veneer, - ACCU-generation through longer forest rotations, - Carbon credits from the carbon stored in constructed (modular) buildings, and - Bioenergy through combined heat and power systems.
	• The Strategy needs to drive action in better utilising our *existing* timber fibre resource basket. We need to do much better than "traditional" fibre usage and production • We need to ask what are the products we can produce in Australia versus importing them (e.g. engineered timber in regional areas)?
	• The development and use of new and appropriate technology to do much more with the available forest resource. • The industry of the 80s and early 90s was dominated by self-interest: short-sighted greed on one side, and industry opponents were equally naïve, ignorance or deliberately manipulative. The industry has long since changed its ways and all but a few of the old school have moved on. But that polarisation has left a legacy that's difficult to change. The difficulty now is having the scale to make the investment in equipment to achieve greater utilisation. • The cure to this is to eliminate "economic terrorism" by the industry's opponents (both the fringe and the political powerhouses), stabilising wood supply and rewarding companies that achieve greater utilisation. • However, all this must be done in the context of a well-managed landscape where the perpetuity of the forest environment is secured.
	• Solid timber is important, but "fibre" needs to be the more important focus of the Strategy. Because, if we just talk about timber, we miss a lot of the market opportunity, such as: - Modular homes can utilise "fibre" as distinct from timber - Learning from places like NZ and Finland, which are doing completely different things with the fibre (chemicals, solvents, etc.) • Big volumes of Tasmanian woodchips are being exported that could alternatively be directed into other, more valuable bioproducts • We need to ensure we utilise all of the tree (as with livestock – we must process and sell more than just the filet steak)
	• Our forest industry is not nimble or flexible enough to handle all the timber fibre that comes from the forest - except for chipping it. For example, in Maine (USA) a 2-inch top log is used for dimension sawnwood, but in Victoria, anything less than 60cm is chipped (such as demonstrated by the Powelltown sawmill, which is set up around big logs) • In reality, Australia can't compete at the 'low value' end of the global fibre market, particularly on labour costs compared with China, Uruguay, Brazil, etc. (e.g. The Tiwi Islands' *Acacia mangium* is not wanted by China, so this is a losing proposition to try to compete in that space). Eucalypts for wood chips will never be competitive • This situation can't be turned around via the Strategy because of the combination of high labour and carbon costs (which will apply to future exports)
	• Incentivise the development of plantations for and production of solid wood products form them (long term carbon storage) as opposed to short lived paper etc products. • Incentivise processing in the NT – we import all our timber apart from a small volume produced in East Arnhemland for predominantly local construction.
	• Timber utilisation from land clearing should be incentivised or made mandatory to encourage local timber use and reduce imports – not to mention carbon emissions as current practice is to burn everything.
	• Explore new markets for low-quality residual fibre, including energy production, biochar, and other non-traditional fibre markets.
Value chain	• The Strategy should adopt a "Triple Bottom Line" approach", including processing and recycling with recycling located proximately to infrastructure.

Theme	Detail
	• Value chain alignment: apply the convening power of the Hub to ensure that all value chain actors can contribute to and benefit from actions to increase the value and contribution of the sector to Tasmania.
	• The use of big data – how do you share that along the supply chain between companies is the harder question then if it is technically possible.
	• Vertical integration has benefits including processors better understanding the quality, quantity and timing of resources. A better flow of information between non integrated growers and processors will facilitate investment and lead to mutually beneficial long term log sale agreements.
Woodchip exports	• There will be a big prize if we can reorient our woodchip export resources toward domestic value-adding to make more from these fibres
Workforce, trades and skills	• Workforce skills and training are critical issues with special challenges for a dispersed workforce (with low critical mass). We need a "Standard Operating Procedures" approach in each region that can be matched to the required skills in each region and industry type. • The lack of resource security generates a lack of job security. This, with a need for housing in regional areas works against attracting families and workers.
	• The availability of skilled (and semi-skilled) labour is a huge issue. For example, all the truck drivers operating now will likely all retire at around the same time, with a very few newer, younger drivers. • The average age of log truck drivers in our area is probably 55+, with very little recruitment in this sector. • We rely on 9 harvesting crews / units and there's not been a time when they were all fully staffed with the right skill levels
	• More emphasis needs to be placed on trades skills, especially in the regions
	• Coordination of Workforce Development including skills and training. The NENSW timber industry is dominated by an aging workforce that is lacking in diversity. Most businesses are either small and medium sized businesses and geographically dispersed. Funded coordinated collaboration is essential to support workforce development and provide career pathways to attract the next generation of workers.
	• Our (Qld) mill apprentices have to go to Creswick (Vic) to do their training! • There are fewer and fewer young apprentices available due to expectations of staying at school until the end of year 12, and the going to university. • We need to change the perception of these pathways as making valuable contributions to society.
	• Having growing communities in regional areas is an important component to workforce attraction, retention and development. • We must provide accredited training at all levels, with career path opportunities identified ("It's not just about driving trucks and using chainsaws" – we have and need a highly technically-skilled employment base, including in things like ecology, land use management, natural capital values, carbon, etc. These all needs skills and top people.
	• Good wages and working conditions are always associated with higher-tech processing solutions. • The low-paid positions are the ones that involve activities that should no longer be permitted in workplaces (such as workers crawling under saw benches or log carriages to sweep out debris). The much happier, better paid worksites have virtually no manual labour jobs. • We need a purposeful, technology-driven uplift in skills, jobs and pay.
	• There is an increasing shortage of professional forestry expertise in Australia. This could be partly addressed by developing an integrated 'learning ecosystem' that sees TAFE and University courses, supplemented by micro-credentials that play a core role in providing a pathway for TAFE. • Micro-credentialling could also serve forestry practitioners without formal qualifications, and/or people who have graduated from more general environmental / NRM or other degrees to advance and develop their forestry-specific knowledge. • There is a large and increasing demand for forest professionals from Forestry Australia's Registered Forestry Professionals (RFP) program. Agencies, individuals and programs are looking for support to deliver timber harvesting projects on private land and also in connection to requirements for plans under carbon methods. • This is a real gap in current support services needed to deliver high integrity forestry projects. The Strategy should therefore allocate resources to deliver the RFP program effectively and build it up to what it needs to be.
	• Everyone is struggling to find skilled people in the regions, especially post-COVID. This is due to competition from agriculture and mining. • The Strategy needs to incentivise and support a revival of forestry science post-graduate training (most foresters are getting quite old, so we need the science-backed new generation of foresters coming through) • A post-graduate program can harness the existing pool of undergraduates in various science-based degrees and specialise them.
	• A strong and sustainable timber fibre industry requires a well-trained workforce: Training helps build skills and results in better qualified workers, more efficient and effective enterprises and high-quality consumer product. Opportunities exist for our industry to become a leader in skill development and recognition through a combination of innovative solutions that ultimately build industry capability and address the critical thin market accessibility to VET qualifications whilst uplifting enterprise capacity and improving worker job satisfaction.
	• Online training demand: develop virtual reality and online training to improve access to critical skill development and retention. Examples include saw technician training; wood machinist apprenticeships; medical and health related consumer goods.
	• Online resource library: for training & assessment materials to create baseline consistency across industry sectors that is contextualised, leading to improved engagement by enterprises and uplifting industry capability via skills and training.
	• Developing capability and capacity: to improve self-sufficiency in training, assessment and skill development so industry can support learning and recognition of skills in a manner that meets the needs of enterprises and workers. This may be via shared assessment arrangements between RTOs and enterprises.
	• Embedding environmental credentials - utilising the environmental credentials associated with the timber fibre based sector to attract and increase the candidate pool as a recruitment strategy – whilst benefiting the rejuvenation of regional towns.

Theme	Detail
	• Improve diversity in workforce profiles: create flexible 'work ready' programs to engage with diverse candidates and support them to achieve recognised baseline skills that are desirable to secure employment in timber fibre sector enterprises, focussing on regional communities. This benefits both potential workers by improving their skill base and ensuring they can meet baseline requirements whilst improving the potential candidate pool for regional enterprises.
	• National dispersal of the timber fibre industry naturally results in a thin training market for our industry. However, our industry is critical to the national economy and long term sustainability of regional communities. Challenges with recognising skill needs, and meeting them, will exist until we are provided with the capacity and scope to reshape the vocational education & training (VET) system to meet the unique needs of our industry.
	• Vet system reform – to reduce the singular focus on volume of students and provide flexibility to support and retain a nationally critical industry and provide equitable access to training and skill recognition.
	• Improved Registered Training Organisation (RTO) engagement – due to the challenges associated with the thin market for training in our industry, RTO engagement with timber related training is extremely low. There are very few RTOs with these training packages on scope - meaning workers cannot be enrolled in, or subsequently trigger, qualifications. This results in low enrolment numbers and RTOs not wanting to place these qualifications on scope as they do not deliver high income volume.
	• Invest in training packages – to modernise and reflect current & emerging production needs
	• Retention of regional infrastructure – attracting and retaining new entrants to industry in regional areas will benefit from the retention of key infrastructure in regional centres.
	• Improve diversity in workforce profiles – candidate pools (particularly in regional communities) can be limited by lack of innovation around creation of work ready programs targeted at recruitment to improve diversity in the workforce.
	• Ensure the availability of training and skills development opportunities to support the forestry industry's ongoing operation and expansion. This should include formalising informal training, offering traditional courses, and developing modern courses to support contemporary practices.
	• Continuing and expanded support for education and employment pathways – from school to vocational training, apprenticeships and higher education, and including tailored approaches to First Nations. Skills and workforce shortage are well known and will lead to less than optimal outcomes for the industry, e.g. sub-optimal forest management, lack of technology development and adoption, lack of top research talent. • The Forestry Workforce Training program is a start to address this, but it needs to be a longer term investment commitment, particularly in First Nations context.

Additional background documents and submissions

Some additional background documents, written feedback and submissions were received from representative groups and other consultees. These have been compiled into a separate document entitled "*Timber Fibre Strategy Working Papers - Compilation of additional feedback from stakeholders*".

Appendix 2: Snapshots of some identified issues and themes

The following sections provide more detailed commentary, data and analysis on several of the issues, opportunities, and themes impacting or interfacing with the timber fibre sector of relevance to this Strategy.

They are:

- Australia's housing crisis – implications for domestic timber fibre dynamics
- Ecological thinning
- Recognising First Nations' knowledge, expertise, and practice
- Forest Australia's Position Statement on Ecologically Sustainable Forest Management
- Making High Performance Workplaces a feature of the forestry industry
- Innovation in timber fibre utilisation and value-adding
- Land use decisions affecting timber supply – the NSW Great Koala Park
- Modern Methods of Construction
- Regional socioeconomic benefits of the timber fibre sector
- The role of State and Territory industry associations in national policy
- The right settings for successful timber plantation expansion
- The impacts of sudden policy change – closure of Victoria's native timber industry
- Trees on farmland

Snapshot: Australia's housing crisis – implications for domestic timber fibre dynamics

Under the National Housing accord, the Commonwealth Government has set an aspirational target of constructing 1.2 million well located homes over five years, starting from mid-2024[1].

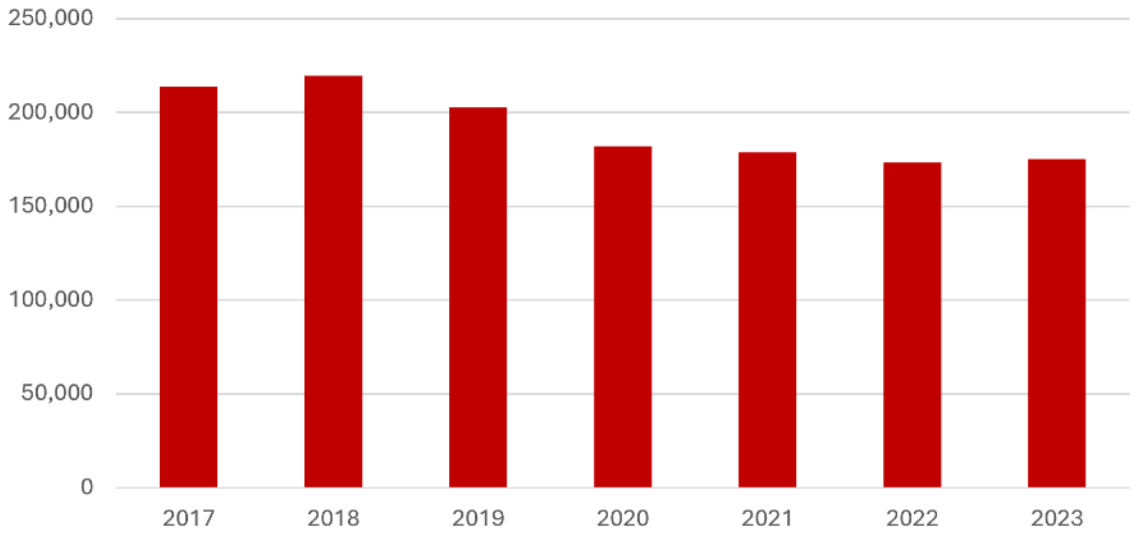


Figure 32 – Trajectory of national dwellings completions (seasonally adjusted)

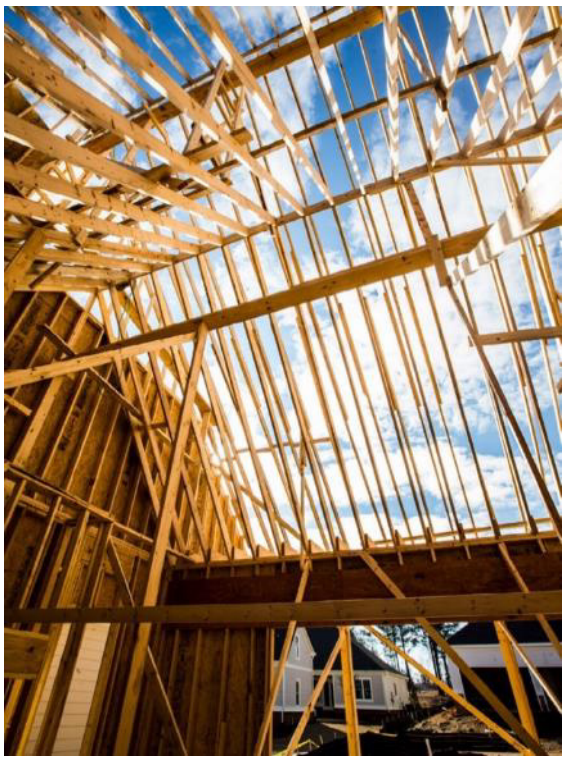
This requires an average completion rate of 240,000 houses per year until the end of the decade.

Given the average completion rate over the last 4 years of approx. 175,000 dwellings p.a. (see Figure 32[2]), a 37% average increase in completions is needed to meet the Government's 5-year aspirations.

According to recent work by Forest and Wood Products Australia, the current demand for houses exceeds 183,000 dwellings per year and will exceed 258,000 by 2045[3].

Current dwelling completion rates fall short of housing demand and targets.

However, due to the downswing in construction activity since mid-2021, it's estimated that manufacturers have sufficient surplus wood to construct an additional 50,000 frames for houses[4].



[1] Australian Government Increasing Housing Supply (Ref)
[2] Source: ABS Building Activity, Australia
[3] FWPA Future market dynamics and potential impacts on Australian timber imports (Ref)
[4] How Timber Can Help Australia's Housing Crisis, AFPA 2024 (Ref)

Snapshot: Ecological thinning

Some Australian native forest stands have developed very high tree density due to factors such as the long-term exclusion of fire, very intense bushfires, or past intensive timber harvesting practices and regeneration standards. Such conditions militate against the maintenance of healthy forests (Box 4[1]).

Mechanical thinning of forest stands can "… *allow the remaining trees to grow more quickly, accelerate the development of improved fauna habitat characteristics, store more carbon over time in large trees and improve their resilience to drought and bushfire events*…"[2].

Ecological thinning is a class of thinning that's primarily aimed at promoting forest health and resilience to conserve biodiversity.

Burrows *et al.* (2022) provide a comprehensive summary of the term, viz: "…*Ecological thinning is typically defined by its objectives. Specific definitions vary, but all are based on the core idea that ecological thinning is a reduction in stand density to improve ecological values in a forest. In the broadest sense, it is focused on delivering benefits that are not related to commercial wood production. However, this includes many potential objectives, not all of which are specifically 'ecological'. These include restoration of pre-European forest structures and fire regimes, accelerated development of hollow-bearing trees, increased resilience of forests to drought and disease, but also increased water availability for catchments and for riparian ecosystems, improved aesthetics for recreation, and carbon sequestration. Ecological thinning is also often proposed as a potential tool to improve the 'ecological health' or 'ecological vigour' of forests, particularly trees; however, these terms are often poorly defined and measures of success difficult to quantify…*"[3].

Features of a healthy forest

"To some, forest health may be about maintaining tree vigour, high growth rates, and a sustainable yield of merchantable timber or wood products. To others, forest health may be about maintaining a diverse assemblage of flora, fauna and fungi. However, a common feature of any vision of forest health is that forests are not static.

Natural disturbances impact forests at various scales and lead to changes in communities and populations. Tree mortality occurs but within the bounds of past natural variability at the landscape or regional scale. Indeed, dead and dying trees are often an important resource for other organisms within an ecosystem and disturbances may ameliorate soil conditions by promoting nutrient cycling and water infiltration.

Management activities within forested landscapes do not necessarily make the forest less healthy, just as the absence of management activities does not necessarily make the forest healthier…"

Box 4 - Ecological dimensions of forest health

The most recent Western Australia Forest Management Plan notes:

> "*… Native forests at risk of significant tree mortality often have substantial dense regrowth of woody vegetation and a pre- dominantly even-aged structure. While dense regrowth will naturally self-thin, the timeframe for this to occur can be decades. Additional active management approaches will be required to maintain forest health and improve resilience of forests in a changing climate context…*"[4]

Ecological thinning is thus a form of active forest management that can help forests survive and continue to provide their multiple ecological services, particularly biodiversity protection, and also water yield in the face of a changing climate.

In regrowth forest areas with a high stocking rate and even-aged tree distribution (stands comprised of a single age class), ecological thinning can enhance forest health, including the growth and health of the remaining trees.

[1] Burrows, N. *et al.* 2022. *A report on silvicultural guidelines for the 2024-2033 Forest Management Plan*. Western Australian Department of Biodiversity, Conservation and Attractions (Ref) p.8

[2] Conservation and Parks Commission. 2023. *Forest Management Plan 2024-2033*. Conservation and Parks Commission. Perth, Western Australia (Ref)

[3] Burrows, N. *et al.* 2022. *Op. cit.*

[4] Conservation and Parks Commission. 2023. *Op. cit.*

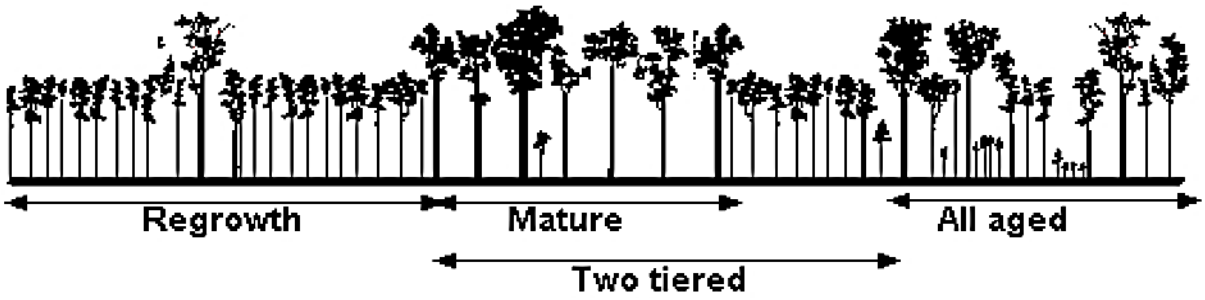


Figure 33 – The structural variation of the jarrah forest

It can accelerate the improvement of fauna habitat and improve resilience to drought and bushfire risks. Managing the forest to balance economic and environmental outcomes is a delicate task with changing demands over time.

Western Australia has three regrowth forest types that could be thinned, jarrah, karri and wandoo (see, for example, Figure 34[5]). In this region, traditional commercial timber harvesting ceased in 2024[6].

Even-aged jarrah forests have been identified as most suitable for ecological thinning with a focus on the even-aged regrowth stands of which there are currently, some 126,000 hectares in the public forests of Western Australia[7].

The other two main tall forest types, karri and wandoo, are not recommended for routine ecological thinning because the former has the capacity to self-thin, and wandoo forests can be sensitive to this type of intervention. Even there, however, occasional well-targeted interventions are demonstrated to still deliver forest health benefits.

The selective thinning of regrowth stands of jarrah forest can deliver better overall forest health and water yield.

The forest industry supports the active management of all forests, irrespective of tenure or management intentions.

Figure 34 – Example of WA's pre- and post-ecological thinning activity

In this context, even where decisions may preclude routine timber harvesting as a management objective, the concept of ecological thinning is well established as a way to enhance forest health and resilience. It should be recognised by State forest management agencies as normal forest management activity and could be funded through provisions for threatened species recovery, nature repair and carbon markets, and fire management budgets.

[5] Bradshaw, F.J. 2015. Reference material for jarrah forest silviculture, *Forest Management Series* FEM061, Department of Parks and Wildlife, Perth (Ref)

[6] WA Dept of Jobs, Tourism, Science and Innovation. 2024. Native Forest Transition: This plan supports workers, businesses and communities in the native forestry areas (Ref)

[7] Burrows, N. *et al.* 2022. *Op. cit.*

Snapshot: Recognising First Nations' knowledge, expertise, and practice

Brenda McDermott and Monique Dawson[1]

Institutional structures and legislation should formally recognise that First Nations' People are the experts in determining their own futures and their on-going spiritual and cultural obligations as custodians of their ancestral lands. Formal mechanisms should be established to enable First Nations' People to fulfil their obligations to their People and Country throughout Australia. These mechanisms would accommodate the varying levels of capacity of First Nations representative organisations but set a minimum expectation of involvement in Government decision-making about the use and management of Country. This would include:

- equal First Nations' seats at the table for shared knowledge and decision-making
- processes to protect and embed First Nations' inherent cultural values
- funding to support First Nations people to develop capability and skills to realise economic development opportunities including through the delivery of programs on Country
- establishment of sustainable commercial partnerships to bring the best outcomes for the agriculture, fisheries and forestry sectors across Australia.

All Governments should be required to account for their decisions and management of Country through formal reports about the condition of these places, measures they are taking to protect them, and the evidence underpinning decisions to restrict access to resources. This would be conceptually similar to the obligations of a trustee to the beneficiaries of a trust. If any of these places are areas that have been set aside as part of the CAR reserve system, these reports should include measures to monitor and protect key environmental values.

Decisions to exploit or restrict the resources on public land (e.g. mining, hunting, forestry, leases) should require the payment of a share of revenue or compensation based on the true value of the resource that has been exploited or denied as this is the continuation of colonisation and a breach of the right to self-determination. If there is no First Nations Group with the capacity to manage these payments, or if Traditional Ownership is unclear or contested, these funds should be jointly managed for the collective good of local First Nations People.

Regulatory mechanisms underpinning markets in nature – including carbon and nature repair – should respect and value Indigenous ecological knowledge.

The potential value of forestry licences throughout Australia would be measured in billions of dollars in a supportive policy environment. A reasonable share of these licences would provide a game changing economic asset for First Nations People. The potential of this asset has largely been denied or removed under current Government policy settings.

In any event, groups who have not been able to meet the test of Traditional Ownership have very limited ability to be involved in decisions - due to the deficiency of legal obligations of the State of Victoria - and limited capacity due to the on-going effects of the denial of access to the resources of their Country.

Another key dynamic is the attitude of some environmental organisations and scientists towards decision-making by First Nations organisations. Some groups and individuals advocate for "free and informed consent" until First Nations People express a view that is contrary to theirs – or shop around for someone who agrees with them outside of established governance and decision-making systems within First Nation's organisations. This reflects the paternalism prevalent in more extreme environmental organisations (and demonstrated by some eminent scientists). The backlash in some Indigenous communities caused by these attacks has been appalling - and has

[1] Brenda McDermott [MSW(Qualifying) (Monash), EMPA (ANZSOG) (UniMelb), MEd (Monash)] is the Aboriginal Cultural Advisor & Director of Education, and Monique Dawson [LLB, Grad Dip Leg Prac (QUT) FIPAA (Vic), MAICD] is CEO and Managing Director of the Healthy Forests Foundation (Ref).

caused lateral violence. First Nations organisations are highly vulnerable to these kinds of attacks and will need to be strongly supported by Government and other partners including supportive ENGOs.

Formal government commitment to the principles of resurgent Indigenous conservation have been implemented in other jurisdictions – with Canada at the forefront. This has meant that conservation approaches have become decolonised.

Current approaches to conservation in Australia (particularly the South-East) are still largely entrenched in the protectionist ethos that emerged in Northern America in the late 1800s – including the colonial (and racist) disrespect for the role of Indigenous People in land management. This reflects the impact of political campaigning and agitation by key environmental advocacy organisations and the Australian Greens over the last 50 years.

Some current Governments have been unprepared to explain the balanced approach to resource management that underpins the Australian economy and have not responded to increasing demands from the emboldened environmental lobby. Any policy that supports First Nations' People to participate in agriculture, fisheries or forestry needs to be strongly and overtly backed by all Governments.

Snapshot: Forest Australia's Position Statement on Ecologically Sustainable Forest Management

This is a verbatim extract from Forestry Australia's Position Statement on Ecologically Sustainable Forest Management (Box 5). The additional supporting notes for the Statement are accessible online[1].

Context

In Australia, forested landscapes are likely to have been actively and adaptively managed by Aboriginal and Torres Strait Islander peoples for over 60,000 years. The 1992 National Forest Policy Statement established the vision of achieving ecologically sustainable forest management of all of Australia's forests: public and private native forests and plantations, which requires maintaining ecological processes and biodiversity within forests and optimising the benefits to the community from all forest uses within ecological constraints. The United Nations Forest Instrument defines sustainable forest management as a dynamic and evolving concept that aims to maintain and enhance the economic, social and environmental values of all types of forests, for the benefit of present and future generations. This requires analysis of data on all forest uses and values to determine a balanced but sustainable management regime for forests. At the national level, Australia uses the international Montréal Process Criteria and Indicators for Sustainable Forest Management to measure how well our forests are being managed. At the local level, production forest managers can demonstrate sustainable forest management through accreditation and regular audits under independent internationally recognised forest certification systems. Likewise, the managers of protected and conserved forests can become certified under the IUCN Green List Standard thereby recognising that these areas are managed for people and nature in a fair and effective way.

POSITION STATEMENT

JUNE 2023

ECOLOGICALLY SUSTAINABLE FOREST MANAGEMENT

CONTEXT

In Australia, forested landscapes are likely to have been actively and adaptively managed by Aboriginal and Torres Strait Islander peoples for over 60,000 years. The 1992 National Forest Policy Statement established the vision of achieving ecologically sustainable forest management of all of Australia's forests: public and private native forests and plantations; which requires maintaining ecological processes and biodiversity within forests and optimising the benefits to the community from all forest uses within ecological constraints. The United Nations Forest Instrument defines sustainable forest management as a dynamic and evolving concept that aims to maintain and enhance the economic, social and environmental values of all types of forests, for the benefit of present and future generations. This requires analysis of data on all forest uses and values to determine a balanced but sustainable management regime for forests. At the national level, Australia uses the international Montréal Process Criteria and Indicators for Sustainable Forest Management to measure how well our forests are being managed. At the local level, production forest managers can demonstrate sustainable forest management through accreditation and regular audits under independent internationally recognised forest certification systems. Likewise, the managers of protected and conserved forests can become certified under the IUCN Green List Standard thereby recognising that these areas are managed for people and nature in a fair and effective way.

FORESTRY AUSTRALIA ADVOCATES THE FOLLOWING:

- Ecologically sustainable forest management should be the primary objective for managing all forests regardless of land tenure, with its application and balancing of economic, social, cultural and environmental values determined by the nature and ownership of the forest.
- To guide future implementation of ecologically sustainable forest management, the 1992 National Forest Policy Statement needs to be reviewed and broadened to better address contemporary issues, such as climate change, biodiversity decline, forest restoration, forest product shortages and increased occurrence of bushfires. Regional Forest Agreements should be revised to provide an improved framework for the holistic management of all forest values across all land tenures within a region.
- The application and monitoring of ecologically sustainable forest management in Australia should continue to be consistent with internationally recognised principles, criteria and indicators, including those in the *Montréal Process for the conservation and sustainable management of temperate and boreal forests*; for which Australia is a signatory member.
- Ecologically sustainable forest management should continue to be underpinned by a Comprehensive, Adequate and Representative (CAR) conservation reserve network, complemented by conservation measures both within and outside protected and conserved areas.
- Ecologically sustainable forest management must recognise and respect the culture, knowledge and rights of Aboriginal and Torres Strait Islander peoples. In public native forests it should facilitate more meaningful partnerships with and leadership by Traditional Custodians enabling incorporation of traditional knowledge into decision making, use of Country for traditional cultural practices and protection of tangible and intangible cultural heritage.
- Under ecologically sustainable forest management, active management practices are required to maintain resilient and healthy forests that can withstand the impacts of threats including bushfires, invasive species and climate change. Guided by Traditional Custodians and forestry professionals, silvicultural practices which may include sustainable timber harvesting and ecological thinning of forests can enhance forest resilience and reduce the impacts of identified threats while maintaining water yield and productivity as well as biodiversity.
- Implementation of ecologically sustainable forest management is best managed by trained forestry and environment professionals, including those certified by Forestry Australia's Registered Forestry Professional (RFP) scheme, as well as Traditional Custodians.
- The application of internationally recognised forest management certification schemes, with applicable sustainable forest management and chain of custody standards and independent audits, is the best way to provide consumer confidence that forest products have been sourced from sustainably managed forests.

SUPPORTING NOTES

Ecologically Sustainable Forest Management is an internationally recognised term which describes an approach that aims to maintain ecological processes, preserve biological diversity and provide the full range of social, economic and environmental values of forests. Unfortunately, not all of the world's forests are managed in accordance with these principles.

Forests are dynamic ecosystems that undergo successional processes over time rather than existing permanently in one growth stage and species composition. Given ongoing threats to forests across all tenures, and the impacts of and interactions with human activity, passive management may not be the best way of protecting forests and ensuring that they remain healthy and resilient. Forest 'management'

The Institute of Foresters of Australia trading as **Forestry Australia** | ABN: 48 083 197 586
03 7065 4250 | admin@forestry.org.au | www.forestry.org.au

Box 5 - Forestry Australia's Position Statement

Forestry Australia advocates the following:

- Ecologically sustainable forest management should be the primary objective for managing all forests regardless of land tenure, with its application and balancing of economic, social, cultural and environmental values determined by the nature and ownership of the forest.
- To guide future implementation of ecologically sustainable forest management, the 1992 National Forest Policy Statement needs to be reviewed and broadened to better address contemporary issues, such as climate change, biodiversity decline, forest restoration, forest product shortages and increased occurrence of bushfires. Regional Forest Agreements should be revised to provide an improved framework for the holistic management of all forest values across all land tenures within a region.
- The application and monitoring of ecologically sustainable forest management in Australia should continue to be consistent with internationally recognised principles, criteria and indicators, including

[1] See: Forestry Australia's website (Ref)

those in the *Montréal Process for the conservation and sustainable management of temperate and boreal forests;* for which Australia is a signatory member.

- Ecologically sustainable forest management should continue to be underpinned by a Comprehensive, Adequate and Representative (CAR) conservation reserve network, complemented by conservation measures both within and outside protected and conserved areas.
- Ecologically sustainable forest management must recognise and respect the culture, knowledge and rights of Aboriginal and Torres Strait Islander peoples. In public native forests it should facilitate more meaningful partnerships with and leadership by Traditional Custodians enabling incorporation of traditional knowledge into decision making, use of Country for traditional cultural practices and protection of tangible and intangible cultural heritage.
- Under ecologically sustainable forest management, active management practices are required to maintain resilient and healthy forests that can withstand the impacts of threats including bushfires, invasive species and climate change. Guided by Traditional Custodians and forestry professionals, silvicultural practices which may include sustainable timber harvesting and ecological thinning of forests can enhance forest resilience and reduce the impacts of identified threats while maintaining water yield and productivity as well as biodiversity.
- Implementation of ecologically sustainable forest management is best managed by trained forestry and environment professionals, including those certified by Forestry Australia's Registered Forestry Professional (RPF) scheme, as well as Traditional Custodians.
- The application of internationally recognised forest management certification schemes, with applicable sustainable forest management and chain of custody standards and independent audits, is the best way to provide consumer confidence that forest products have been sourced from sustainably managed forests.

***

Snapshot: Making High Performance Workplaces a feature of the forestry industry.

The material in this snapshot was provided by the CFMEU Manufacturing Division

Context

The Committee for Economic Development of Australia (CEDA) has emphasized the significant impact of management practices on business dynamism and national prosperity. The Committee argued that Australian firms have been lagging in productivity growth, partly due to suboptimal management practices, citing international studies suggesting that management capabilities may account for up to half of the productivity gap between Australia and leading nations like the United States[1].

By adopting best practices, firms can not only enhance their performance but also contribute positively to the broader economy.

Strategies for the development of Higher Performance Workplaces include:[2]

1. Enhance Management Capabilities
    - Leadership Development: Invest in training programs that equip managers with skills to identify competitive advantages, seize opportunities, and drive innovation.
    - Benchmarking Best Practices: Regularly assess and compare management practices against industry leaders to identify areas for improvement.
2. Foster a Culture of Innovation
    - Employee Empowerment: Encourage staff at all levels to contribute ideas and participate in decision-making processes.
    - Collaborative Environment: Promote cross-functional teams to work on innovative projects, leveraging diverse perspectives.
3. Invest in Workforce Development
    - Continuous Learning: Provide ongoing training opportunities to help employees adapt to new technologies and methodologies.
    - Skill Diversification: Encourage employees to acquire a broad set of skills to enhance flexibility and adaptability.
4. Leverage External Expertise
    - Research Partnerships: Collaborate with academic and research institutions to integrate cutting-edge knowledge into business operations.
    - Industry Networks: Engage with industry associations to stay informed about emerging trends and best practices.
5. Implement Robust Performance Metrics
    - Data-Driven Decision Making: Utilize analytics to monitor performance and inform strategic choices.
    - Regular Reviews: Conduct periodic assessments of processes and outcomes to ensure alignment with organizational goals.

[1] CEDA 2021. Opinion article: Better managers can narrow the productivity gap (Ref)

[2] Sources: *Smarter Manufacturing for a Smarter Australia* and other sources including:

- CEDA - Why Australia needs a training boost
- CEDA - How better managers can boost Australia's business dynamism
- CEDA - Train dynamic managers to boost Australia's productivity

By embracing these strategies, enterprises can transform into smarter workplaces, leading to improved productivity, enhanced innovation, and a stronger competitive position in the market.

In the key areas identified above of fostering a culture of innovation and investing in workforce development a joint commitment by employers and their employees is required to facilitate an engaged and consultative working environment where:

- Skills uplift is a continuous business as usual activity.
- Formal qualifications and skill recognition is supported by the employer.
- Leaders are fostered and provided with structured career development.
- Shared responsibility is encouraged, and by extension, decision making is collaborative.

For the above, a strategic program should be developed to:

- Identify critical steps in creation of High Performance Workplaces.
- Engage key industry stakeholders to create a high performance framework for timber industry workplaces.
- Develop supporting infrastructure that industry employers can adopt to facilitate uplift.
- Implement targeted, measurable pilot programs across representative industry cohorts.

Snapshot: Innovation in timber fibre utilisation and value-adding

A national timber fibre strategy will leverage Australia's research, technology, and innovation culture to optimise timber fibre utilisation. Examples of innovations can be found in manufacturing methods that add value to sawn timber, and that best utilise available timber fibre resources.

Manufacturing methods that add value to sawn timber

Cross-laminated timber (CLT), Glue-laminated timber (Glulam), and Laminated-veneer-lumber (LVL), contain layers of timber, glued together to maximise strength and functional versatility. CLT panels and Glulam beams can replace much heavier and emissions-intensive materials like concrete and steel (Figure 35[1]).

CLT has been found to be 75% less emissions intensive than reinforced concrete, accounting for raw material extraction, transportation and manufacturing stages of production[2].

Figure 35 – Australian National University's Marie Reay Teaching Centre

LVL is manufactured by gluing and pressing layers of peeled or sliced veneer together[3]. This method allows small, traditionally lower-value logs, typically assigned for wood chipping, to be manufactured into high-value structural wood.

For example, Wesbeam is a Western Australian manufacturer of LVL beams and I-joists, supplying 95,000 m^3 of LVL per year[4]. CLT, Glulam and LVL provide attractive alternatives to concrete and steel in major construction by appealing to the human predisposition to natural and bio-based materials.

These products are used in architecture as an aesthetic feature, with research suggesting that timber-rich environments improve human health outcomes by reducing stress-levels for occupants[5].

---

[1] Australian National University's Marie Reay Teaching Centre is a six-storey building used for teaching, learning and research, and was largely constructed using CLT and GLT. The facility is the ACT's first 'mass-timber' educational building. Images sourced from woodsolutions.com in the article titled "Inspirational Case Studies Using Timber: Marie Reay Teaching Centre" (Ref).

[2] Jae-Won Oh, Keum-Sung Park, Hyeon Soo Kim, Ik Kim, Sung-Jun Pang, Kyung-Sun Ahn, Jung-Kwon Oh (2023). Comparative CO2 emissions of concrete and timber slabs with equivalent structural performance. *Energy and Buildings*, Vol 281 (Ref).

[3] Source: Wood Solutions. *Laminated Veneer Lumber (LVL)* (Ref).

[4] This statistic was reported in November 2022. Source: video by Wesbeam Pty Ltd, titled "Australia's Only Manufacturer of LVL Beams & LVL I-Joist" (Ref).

[5] A critical review and assessment by Kremer and Symmons (2015) summarised research findings about the effects of timber on human health, with a focus on mass timber construction. See, Kremer P. D., and Symmons M. A. 2015. Mass timber construction as an alternative to concrete and steel in the Australia building industry: a PESTEL evaluation of the potential. *International Wood Products Journal* **6(3)** pp. 138-147 (Ref).

Manufacturing methods that best utilise available timber fibre resources

Innovative manufactured wood products such as particleboard and medium density fibreboard can make use of by-products such as sawdust, woodchips, and recycled wood products, to manufacture new timber products.

Australian Panels, a wood products manufacturer in NSW, has the capacity to process up to 300,000 tonnes of timber construction and demolition waste annually, which is then re-supplied to the construction industry in the form of new products (Figure 36[6]).

These can be used instead of solid wood products in applications such as flooring, furniture, and cabinetry.

This increases the utility of otherwise wasted forest resources and extends the storage period of sequestered carbon within the wood.

Additionally, the collection of dust, bark, and waste-biomass can be used to create biofuel (feedstock), whilst wastewater from the woodchip process can be used to create steam-energy, all powering the manufacturing process[7].

Figure 36 – Examples of timber fibre utilisation innovation

[6] Source: Central West NSW Forestry Hub Inc (14 June 2022). *Oberon to Tarana Rail Line: Strategic Options Assessment* (Ref). The top image is construction waste timber collected for Australian Panels; picture sourced from reDirect's Facebook page (Ref). The middle and bottom images are of Australian Panels' manufacturing facility in Oberon, NSW, and Australian Panels' MDF products used in high-end construction. Images are sourced from Polytec's website (Ref). Both reDirect and Polytec are sister companies to Australian Panels, which create a circular economy via innovation and vertical integration.

[7] Source: Australian Panels website: Environment & Sustainability (Ref).

Snapshot: Land use decisions affecting timber supply – the NSW Great Koala Park

Ensuring that suitable land is available for timber production is of critical importance to the continued operation and expansion of the timber fibre industry in Australia. The recent exclusion of native forestry operations from public forests in WA and Victoria has highlighted the issue of sovereign risk for the forestry industry. In NSW a controversial process informing the creation of a new national park is underway.

The NSW Government has committed to creating the 315,000 ha Great Koala National Park (GKNP) on the state's mid-north coast. The park will be comprised of up to 176,000 hectares of state forest with the remainder to come from existing reserves and national parks. The final area of the GKNP has not yet been determined; the current draft map is a strong indicator of what may be taken out of production (Figure 37[1]). It has been estimated that the establishment of the park and removal of 176,000 hectares from the forest estate will result in an annual loss of 415,000m^3 of harvested hardwood timber products[2]. ABARES forest and wood products statistics show that for the 2022-2023 harvest year NSW harvested 840,000m^3 of logs from the combined plantation hardwood and native estate[3].

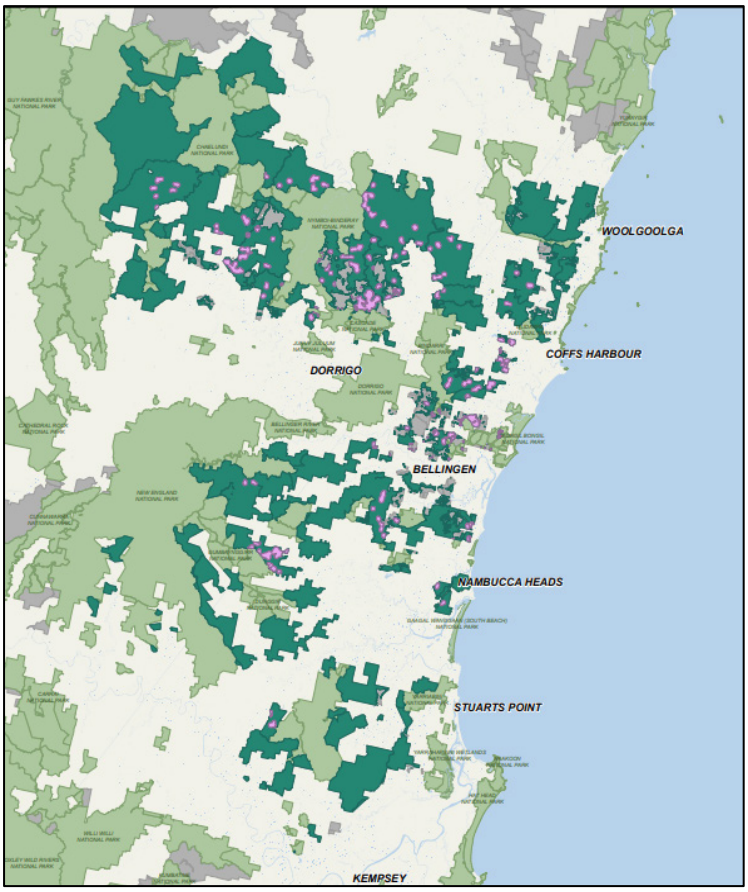


Figure 37 – Map of the planned Great Koala National Park area

Allocating actively managed forestry land to the GKNP will reduce all harvested hardwood volume by an estimated 49.4%[4]. This reduction could induce a $570m loss in economic outputs from the region and eliminate nearly 1,400 jobs on the North Coast[5]. This does not include the flow-on effects; the true impact on the economy will likely be more significant.

At the same time, recent scientific studies are showing that managed timber harvesting and the protection of koala populations can be compatible with the types of prescriptions currently applied in these forests[6].

[1] NSW EPA (Ref). Note, the dark green sections on the map represent State Forest areas proposed to be removed from the forestry estate and repurposed as National Park.

[2] AFPA EY 2019.The economic impact of the cancellation of NSW North Coast Wood Supply Agreements due to the creation of the Great Koala National Park 2019 (Ref)

[3] ABARES Forest and Wood products Statistics data tables (Ref)

[4] Source: AFPA NSW

[5] AFPA EY The economic impact of the cancellation of NSW North Coast Wood Supply Agreements due to the creation of the Great Koala National Park 2019 (Ref)

[6] See, for example, Law, B., *et al.* 2022. Regulated timber harvesting does not reduce koala density in north-east forests of New South Wales. *Nature Scientific Reports* 12:3968 (Ref)

Snapshot: Modern Methods of Construction

Utilising modern methods of construction (MMC), particularly with prefabricated products, is an opportunity to decarbonise and increase the efficiency of Australia's manufacturing and construction sectors through the vertical integration of growing, processing and manufacturing wood fibre resources into the highest-value products – pre-made sections of houses, buildings and other infrastructure.

Figure 38 – Assembly of prefabricated mass-timber

This vertical integration can lead to the optimisation of capital-flows, provide security throughout the value-chain, reduce the overall cost of housing and reduce carbon emissions compared with existing construction methods.

MMC can deliver significant improvements in construction related emissions.

"The carbon emissions generated during the construction process are the second largest contributor to overall embodied carbon, particularly for materials requiring substantial onsite assembly. As a result, low emission offsite construction and prefabrication practices are being strongly advocated by many governments and voluntary rating schemes throughout Australia. It is recognised that these practices will yield benefits such as construction time savings, enhanced construction productivity, project cost savings and lower overall lifecycle costs, improved build quality, and reduced environmental impact in the key areas of both carbon emissions and waste."

The Australian Federal and State governments have set aspirational targets around two important policy areas[1]:

- Climate Change and Emissions Reduction - Net-Zero by 2050, and
- National Housing Delivery – 1.2 million new, well-located homes over 5 years from 2024 – National Housing Accord

These objectives are interlinked, as increased construction inherently leads to higher emissions unless we adopt innovative building practices aligned with agreed net-zero targets.

Emphasising the impact of embodied carbon and increasing the utilisation of low carbon emission materials and construction techniques represents a transformative shift from traditional practices, offering substantial carbon reduction benefits that resonate on local, state, national, and global scales.

Federal and state governments recognise Modern Methods of Construction as vital to achieving these goals. The communiqué from the March 2024 Building Ministers meeting highlighted the significant potential to address Australia's housing supply crisis by fostering the growth of prefabricated and modular housing, while also addressing the need for decarbonisation in the construction sector, focusing on reducing embodied emissions in construction materials.

The carbon emissions generated during the construction process are the second largest contributor to overall embodied carbon, particularly for materials requiring substantial onsite assembly. As a result, low emission offsite construction and prefabrication practices are being strongly advocated by many governments and voluntary rating schemes throughout Australia. It is recognised that these practices will yield benefits such as construction time savings, enhanced construction productivity, project cost savings and lower overall lifecycle costs, improved build quality, and reduced environmental impact in the key areas of both carbon emissions and waste.

> "*Embodied Carbon in residential building stock can be reduced by implementing strategies such as using lightweight materials and wood products… and adopting offsite manufacturing methods."*[1]

Timber provides a unique low emission building material and construction solution, widely available through existing national supply chains.

For the residential and low-rise construction markets, Australia has over 280 Frame & Truss manufacturers, distributed nationally, supplying a range of high-quality, factory built, lightweight prefabricated timber elements that serve to provide for their customers (builders), improved onsite productivity, speed of construction, and output.

For larger buildings including mid-rise apartments, and offices, a range of lightweight and mass timber systems are also available.

"Australia has over 280 Frame & Truss manufacturers, distributed nationally, supplying a range of high-quality, factory built, lightweight prefabricated timber elements that serve to provide for their customers (builders), improved onsite productivity, speed of construction, and output."[1]

While different materials can be utilised in the process, timber products are highly suitable. Timber is widely available through existing national housing supply chains with existing forests, processors and factories distributed across the nation and close to major population centres.

Prefabricated homes are typically constructed in a factory, transported in large sections to a building site, and then pieced together on-site. In Sweden, 80% of homes are built using such techniques[2]. Australian wood products can play an important role. Indeed, prefabrication methods provide an opportunity to increase the efficiency with which forest and wood products can meet the national target for housing, with one Australian business suggesting they can construct and install a four-bedroom family home within just 12-16 weeks[3].

[1] FTMA Australia, 2024. Modern Methods of Construction – The Important Role of Australia's Timber Frame & Truss Sector (Ref).

[2] According to Pete Morrison, CEO at Green Timber Technology, in a television interview (Ref).

[3] Source: comments made by Ed Callanan, Managing Director at Fab Prefab, in the Real Talk podcast by Realestate.com.au (May 2024) (Ref).

Snapshot: Regional socioeconomic benefits of the timber fibre sector

The Central West NSW Forestry Hub evaluated the socioeconomic benefits of the softwood plantation industry in the region, particularly in the Oberon Local Government Area.

The study revealed that the forestry industry is a significant economic driver, contributing substantially to the region's gross regional product (GRP), employment, and household income.

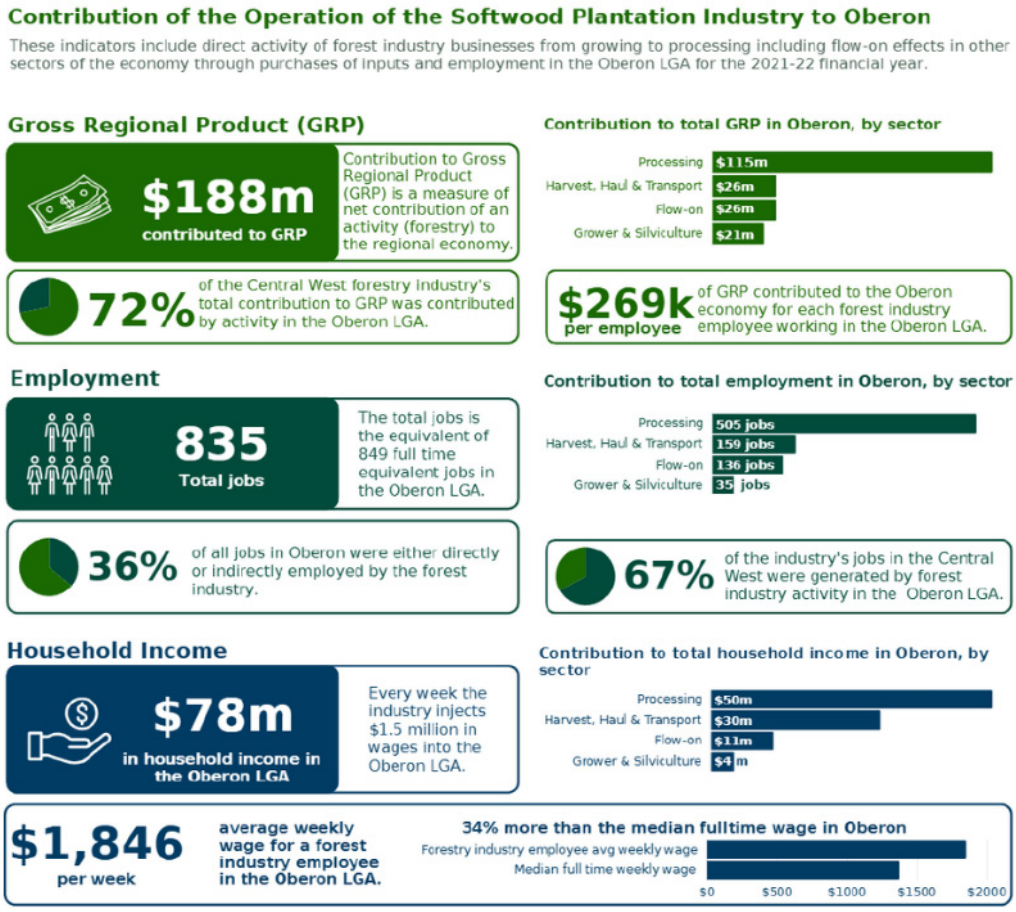


Figure 39 – Socio-economic impacts of the softwood plantation industry

Specifically, the industry's GRP reached $199 million. The direct value of output was $459 million, up 61% since 2016, and the industry provided 851 full-time jobs with a GRP per employee of $234,000, a 97% increase over 2016.

Household income generated by the industry was $79 million, a 68% increase since 2016.

The community views the forestry industry positively, recognising its importance and the quality of life it supports. Additionally, the industry is environmentally beneficial, acting as a net sink of atmospheric CO2.

A summary of the Central West NSW Forestry Hub socioeconomic study is provided in Figure 39[1].

[1] Source: BDO EconSearch 2023. *Socio-economic Impact of the Softwood Plantation Industry in the Central West NSW Forestry Hub Region, 2021-22*. Available on the Central West NSW Forestry Hub website (Ref)

Snapshot: The role of State and Territory industry associations in national policy

In framing a national timber fibre strategy, it is important to comprehend the diversity of opinions and recommendations from state and territory timber fibre industry advocates and other stakeholders. The following example is from the State of Queensland; a similar policy has been released in Western Australia[1].

Timber Queensland, the peak forest and timber industry body in QLD, issued a State Election Policy in October 2024 with a vision to deliver *"essential timber supply chains to meet Queensland's housing and building needs"* (Figure 40[2])[3]. Queensland's timber industry contributes $3.8 billion to the State's economy each year and provides over 23,000 jobs across the supply chain: from forest growers, harvesters and haulers through to processors, treaters and sawmillers, as well as manufacturers and building fabricators, timber wholesalers and traders[4]. According to Mick Stephens (CEO at Timber QLD),

> "*… with the right policy settings and provision of resource security, the industry can invest in more forest resources and new plant and equipment together with skilled jobs to meet the rising demand for building materials … [whilst helping] governments and the private sector to reduce their carbon footprint through the use of wood products which have far lower emissions than other materials such as steel and concrete.*"[5]

Figure 40 – Timber Queensland's 2024 State Election Policy

The policy is underpinned by five '**key themes**', with recommended actions for the QLD State Government:

1. **Resource security for the native hardwood sector**. Recommendations include long-term wood-supply agreements for industry, no conversion of state forest to other tenures, "right to harvest" legislation, best-practice education and extension for landowners and farmers.
2. **New investment drivers for plantations and farm forestry.** Recommendations include R&D and extension services to educate farmers about farm-forestry practices, protecting the softwood estate from land-use changes, and increased incentivisation of new plantation on state and private land.
3. **Wood processing innovation and supply chain efficiency.** Recommendations include delivering a "local wood resource processing and innovation grant scheme", reducing red-tape and input costs, improving key infrastructure (e.g. transport routes), promoting wood-related bioenergy, and implementing End of Waste (EOW) codes for treated wood waste.
4. **Workforce development and training.** Recommendations include working with Australian Government and State agencies to secure funding for required skills and training, and developing an industry-level, state-wide initiative for workforce development.
5. **Indigenous forestry opportunities.** Recommendations include working with indigenous peoples and industry to support effective engagement, knowledge sharing and capacity building, and expanding indigenous ranger programs across crown forest land tenures.

[1] The Forest Industries Federation of Western Australia released a similar five-point strategy ahead of the 2025 WA state election. See the FIFWA's 'Five Key Industry Asks' document for details (Ref).

[2] Source: screenshot from Timber Queensland's 2024 State Election Policy (Ref).

[3] See Timber Queensland's 2024 State Election Policy for further details (Ref).

[4] Source: Timber Queensland's 2024 State Election Policy on page 2 (Ref).

[5] Source: Timber Queensland's media release from the 3rd of October 2024 (Ref).

Snapshot: The right settings for successful timber plantation expansion

Having the right policy settings and conditions can facilitate greater investment to develop greenfield plantations. A case in point is the expansion of the softwood estate in Central West NSW.

The timber industry in Central West NSW is comprised of four major processing facilities and a primary wood supply source from the region's 90,000+ hectare *Pinus radiata* plantation estate.

The plantation estate in the Central West is expanding. Since 2020, the NSW Department of Primary Industries has approved 8,909 ha of new plantation (greenfield plantation) in the area; a rate of nearly 2,000 ha per year (Figure 41)[1].

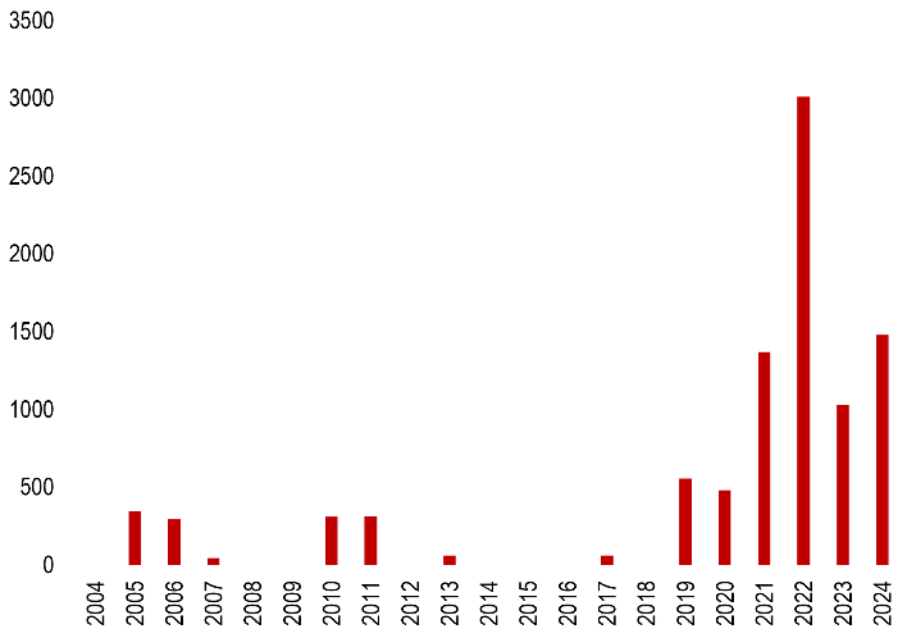


Figure 41 – Central West NSW greenfield plantation approvals (ha)

The Commonwealth Government's current support via plantation establishment grants have been used heavily in Central West NSW with 63% of all approved projects being in the Central West region[2].

The Central West Timber Industry processes more than 1 million tonnes of logs annually, with additional fibre sourced from recycled materials. With this, the region manufactures structural timber, particleboard, medium density fibreboard (MDF), treated timber products and packaging products. It utilises all components of the logs harvested from the plantation area; ensuring that the wood resource is utilised to its maximum potential.

The Central West region benefits from experienced foresters and corporate managers willing to work with smaller landholders, making it easier and more affordable to establish plantations. The concentrated forest estate allows local service providers to spread fixed costs over more customers, reducing prices and encouraging forestry opportunities.

This advantage is not seen in other regions, where engaging specialist managers is more challenging. In addition, existing landowners and potential investors have access to free, high quality productivity estimates for plantations in the Central West through the Commonwealth Government funded Central West Forest Industry Hub (The Hub). The Hub identified more than one million hectares of suitable plantation land in the region[3].

Expanding the estate in small annual increments does not appear to impact the social licence of the industry to operate in Central West NSW. Community support for forestry is high, as shown by the recent regional wellbeing survey which found 90% of residents in the Oberon LGA view forestry as an important industry in their community. Additionally, 97% of residents in the Central West Region believed forestry has a positive impact on local employment, greater than agriculture at 90%[4].

[1] DPI NSW Authorised Plantation Public Register (Ref)
[2] Support Plantation Establishment program (Ref)
[3] Central West NSW Forestry Hub CWFH003 Plantation Capability mapping (Ref)
[4] Central West NSW Forestry Hub Socioeconomic Study (Ref)

Snapshot: The impacts of sudden policy change – closure of Victoria's native timber industry

When implementing large-scale changes to the forest and wood products industries, it is important to consider the impacts that a sudden change in policy can have.

In November 2019, the Victorian State Government announced a "gradual phase-out of all logging in native forests by 2030"[1] via an industry transition plan[2]. However, in May of 2023 the State Government brought forward the phase-out completion date to January 2024 – six years earlier than originally planned[3]. This unexpected change in policy timeframe raised immediate challenges for stakeholders within, and connected to, the industry. Two key challenges included: the sudden reduction in hardwood timber supply, and the loss of work opportunities for regional businesses / communities. Even before the revised closure date was announced, native timber harvesting in Victoria had declined significantly due to media controversies surrounding VicForests' management.

Between the years of 2021-22 and 2022-23, total harvest of native hardwood logs in Victoria dropped by 78% (750,000 m^3), representing a 23% reduction in Australia's national native harvest volume[4]. This existing reduction in hardwood availability, followed by the official closure of native harvesting in Victoria, led Pentarch Forestry to close its South Gippsland hardwood pallet mill in June of 2024. That mill was responsible for manufacturing over 40% of Australia's hardwood pallets[5]. Other native hardwood-reliant manufacturers, such as Australian Sustainable Hardwoods, have had to look offshore for timber to supply their domestic customers. For example, it was reported that Australia's import volume of American Red Oak increased 15-fold because of the domestic supply constraints[6].

It's predicted that the suddenness of the policy change will mean industry cannot sufficiently transition to a plantation forestry base, affecting over 4,000 jobs[7] (Figure 42[8]). This sudden shift will likely flow on to native timber-dependent towns, such as those in East Gippsland, where over 25% of jobs are linked to the native timber industry.

Figure 42 – Workers affected by the policy change at the Australian Sustainable Hardwoods' facility in Heyfield, Vic

In the Wellington Shire, it is reported that the closure will directly affect over 600 families, not including the local businesses, clubs, churches and community groups which may lose members, customers, and community volunteers[9].

[1] Source: Victorian State Government media release from November 7, 2019, titled 'Securing the future for forestry industry workers' (Ref).
[2] Source: Florence, E. and Tonkin, A. 2023. *Victoria's timber industry in a time of transition*, Parliament of Victoria, October (Ref).
[3] Source: Florence and Tonkin 2023 *Op. cit.*
[4] Source: ABARES, July 2024. Australian forest and wood products statistics: production to 2022-23 (Ref).
[5] Source: Wood Central 2024 '*It's Official: VicForests is Dead, What's Next for Aussie Timber?*' (Ref).
[6] Source: Wood Central 2024. *Op.cit.*
[7] Source: Wood Central 2023. '*Workers Respond to 2024 Victorian State Native Forest Ban*' (Ref).
[8] Source: Wood Central 2023. *Op. cit.*
[9] Source: Wood Central 2023. *Op. cit.*

Snapshot: Trees on farmland

Opinion: Mick Stephens – new investment pathway for trees on farms is a sweet spot[1]

30 September 2022

As a resource economist I have spent the best part of three decades of my professional life working either on applied economic research, Government policy or industry advocacy related to plantation development in Australia. From that experience, I thought it timely to impart some observations about the challenges and potential solutions to getting more wood production trees in the ground.

Over this time there have been a number of lessons, as well as individual success stories and new market drivers, that I believe provide a recipe as to how we can begin to formulate a new wave of sustainable investment in wood production trees on farms.

In shorthand I am calling this the triple-scoop path to planted wood investment. More on this in a minute.

Most of us working in the sector understand the economics of wood plantations, with high up-front costs and long time periods until tree harvest returns. This has made it difficult for farmers to commit large tracts of land to a long-term crop such as wood plantations, when compared to the annual returns from farming activities such as cropping or grazing. Typically, rotations for wood plantations vary from around 25 to 35 years.

The challenges and lessons for future investment in wood production in Australia can also be learnt from historical policy and operational experience. This experience included large scale state intervention in the development of the early softwood plantations in Australia from the late 1960s to the 1980s.

In this model, governments wore the risks of initial investment and reduced one of the most significant cost factors – being the cost of land. State governments, with low interest loans from the Commonwealth, were able to generate economies of scale and sufficient returns by focusing solely on crown land including the clearing of naturally vegetated areas. This avoided the higher relative costs from using private agricultural land. The target rates of return were also lower than for a commercial operator, given broader regional development and 'self-sufficiency' goals by Government.

While this intervention did help to generate the high-quality softwood plantation resource of around one million hectares we have today, the drivers and conditions to emulate this model are no longer applicable.

Concerns over the environmental impacts of land clearing for plantation development, and the role of Governments in investing directly in new plantations, has changed substantially since the 1960s. Hence new solutions that require the participation of private landowners and farmers on cleared land need to be found.

Another major lesson is the rise and fall of Managed Investment Schemes (MIS) which were used as an investment instrument for over a decade from the 1990s to early 2000s. These schemes were able to utilise taxation treatment advantages and pooled capital to fund the planting of land for mostly short rotation pulpwood plantations. Problems with the schemes soon became apparent in terms of their sole focus on the tax advantages and block plantings to maximise economies of scale for only one primary product being wood fibre.

This in effect alienated many landowners and farmers from any complementary agricultural activities. The structure of the taxation arrangements also led to the collapse of many MIS companies in the wake of the Global Financial Crisis, given a focus on pooled capital and planting rules dictated by taxation provisions rather than the underlying market fundamentals for each site.

[1] Reproduced verbatim from *TimberBiz* 30 September 2022. (Ref)

While there have been a few small-scale MIS success stories, these examples have largely incorporated some of the principles of integrated farm management. This principle for sustainable investment is discussed further below.

Economists have also long recognised that part of the challenge of investing in wood plantations on private land is that many of the public benefits from tree planting are not fully captured in markets, such as environmental amenity, biodiversity, water quality and carbon sequestration. We all know this has changed in recent times for some public benefits, most notably with the global development of carbon markets.

The evolution of carbon markets now provides an opportunity to gain an additional income stream from wood production and address an important market failure. By their inherent nature, trees producing wood also sequester and store large amounts of carbon as they grow as well as through the service life of the harvested product. Access to carbon markets goes some way to improving the rate of return from wood plantations, through more regular early to mid-rotation carbon income.

In a carbon constrained world, farmers are also looking at opportunities to reduce or offset their emissions footprint as 'carbon neutral' agriculture. Planted forests can provide effective carbon sequestration and a means for reducing the impact of fossil fuel inputs for agriculture and other emissions such as methane from livestock production.

The growing consumer trend for low carbon food products provides a market driver for wood plantations to provide on-farm offsets for cropping and livestock outputs while at the same time as generating future timber income for the farmer. The combination of wood and carbon values does start to improve the rate of return for planted trees in the landscape, and address some of the challenges of a long-time period until tree harvest returns.

Figure 43 – An example of a silvopastoral trials research site with pasture alleys

Finally, I would argue that the third critical ingredient for successful investment is the role of trees in delivering agricultural productivity and other land management benefits such as climate resilience in times of drought or flood, wind protection for crops, erosion control, shade and shelter for livestock with reduced climatic stress (either heat or cold) and improved calving rates.

A number of local champions and agroforestry networks have real farm examples demonstrating the agricultural benefits and other important values from planted trees such as amenity, recreation and biodiversity. The paradigm thinking for investment is the agricultural enterprise and what wood production trees can do to deliver whole farm benefits rather than simply focusing on how much land is needed to produce maximum plantation wood stocking.

Planting designs can vary depending on the objectives and conditions of each individual farm, such as windbreaks, woodlots, riparian buffers, silvopastoral systems (trees with livestock) and alley cropping to name a few. In 2009, I was lucky enough to undertake an international study tour of agroforestry practices and related R&D in North America and Europe with a Churchill Fellowship.

The tangible benefits of agroforestry were clearly evident from a global perspective, but also some of the challenges in terms of raising awareness of the holistic benefits to the wider farming community. Since that time there has been an ever-growing body of international R&D on the joint benefits of integrating agricultural production and other land management values with forestry.

Without this third principle of farm productivity, planted investment for wood production will likely fail to provide a long-term sustainable investment. By not taking into account the needs of the farmer and the broader role of trees in the farming enterprise, most investments will suffer the pitfalls of large opportunity costs.

A prime example would be a dominant focus on broad acre plantations rather than a mix of planted trees and farm production. In this scenario the farmer has limited alternative income and other land use options, with a lower long-term commitment and passion to replant in successive rotations.

Here is where I'd like to make an analogy with an ice-cream parlour which we can all enjoy and appreciate on a hot summer day. Depending on our appetite and flavours on offer, we usually grapple with an internal dilemma as to whether to go for the one-, two- or three-scoop cone. In those few seconds we are weighing up the relative costs and sizes (or benefits) from the extra scoops, where each extra scoop will usually cost marginally less than the previous scoops, making the double or triple always an attractive option.

In the case of a new path for investment in planted wood production trees, I would say we should always go for three flavours and the triple-scoop cone!

In essence, the early state intervention and MIS models for wood plantation investment were like focusing on single-scoop ice creams to satisfy a large appetite. There was only one objective being wood production (one flavour) and with a subsidised land cost or tax incentive there was an ability to spend lots of money to achieve that set goal. However, once those subsidies or incentives are removed, this is no longer feasible. It just doesn't feel right to keep buying single-scoop ice creams at a higher relative cost to satisfy your overall craving when there may be better alternatives (like a double-scoop).

With the advent of carbon markets, a farmer or landowner can now invest in planting trees for both wood production and carbon sequestration outcomes. This is like buying a double-scoop ice cream with two flavours (outputs), generating a higher rate of return than producing either one or the other product on its own. In terms of the ice-cream parlour, you are getting a double-scoop with two flavours at a cheaper price than if you had to buy a single-scoop of each flavour. By purchasing the double-scoop, we are going some way to maximising our enjoyment within our available budget.

However, if we are to take a truly long-term view to grow and sustain more wood production trees on farms, we need to look at a third scoop. By having a triple-scoop, we are able to satisfy a larger appetite (i.e. demand) but with the added bonus of three delicious flavours and an even lower average cost per scoop.

This triple-scoop pathway to new investment makes more sense for a farmer and revolves around maximising the joint benefits from wood production, carbon mitigation and on-farm agricultural productivity. By focusing on the combined benefits from all three factors, farmers are likely to generate higher long-term benefits than focusing on any single goal. It also provides a diversified income base to withstand market volatility and build enterprise resilience with an ongoing connection with farming the land for food production.

The agroecological functions of trees on farms are also an obvious ally of the new thinking around 'regenerative agriculture', being the latest label for sustainable farming practices.

We should also recognise the ice-cream cone that holds the triple-scoop together and stops the whole treat from ending up on the floor. The cone can be thought of as the bedrock needed to deal with any issues of sovereign risk, such as providing a policy environment to ensure a future right to harvest from private investment in farm forestry.

Taking these lessons and historical perspectives on board, future policies for wood production investment need to focus on promoting these complementary outcomes. This emphasis on multiple outputs need not detract from the principle of comparative advantage, whereby the landowner should still assign activities to the most relevant parts of the farm that generate the highest returns. This can be achieved by mixing activities at a paddock or stand level (i.e. on the same unit of land) to larger zoned areas across the farm to generate holistic benefits and diversified income.

In addition to putting in place appropriate carbon methods and activities in relevant markets such as the Emissions Reduction Fund to effectively generate carbon credits, farm forestry needs to be brought into the mainstream rather than treated as a cottage industry. This would entail more effort into farm level education and awareness and applied R&D to better quantify and demonstrate the benefits of the triple-scoop pathway to planted trees on farms.

I would argue that many of the recommendations from my 2009 Churchill Fellowship remain just as relevant today, and even more so, given the challenges described above when focusing on only single output objectives. It is worth reflecting on some of these recommendations, which go some way to getting to that desired sweet spot for new tree investment:

- that researchers, land use planners and policy makers develop better cross-sector linkages between traditional 'forestry' and 'agricultural' research and policy departments. This requires acknowledgement of the multiple benefits from agroforestry and its role in broader land use planning and research programs such as bioenergy, climate resilience and carbon sequestration.
- consideration be given to the United States Department of Agriculture (USDA) National Agroforestry Centre (NAC) model, as a means of establishing a policy leadership role and implementation of strategic extension with resource professionals, given the significant scope for these activities.
- while the universal principles of tree-crop-livestock joint production are generally well known, more applied research is required for site specific and regional conditions, including identification of appropriate genetic and species combinations and the direct benefits to producers.
- greater investment in research and demonstration sites and extension activities into farm forestry in key regions, to promote the benefits to landholders of novel or improved management practices; and
- research and extension to focus on the economic as well as the environmental and carbon benefits to promote commercial uptake and adoption, including the involvement of existing practitioners to reach out to other landholders.

While these recommendations seem self-evident, the historical experience has been ad hoc and piecemeal over the past few decades when it comes to applied research into farm forestry and wider extension services by governments and research providers. However, on the positive side, there is an emerging trend with some forestry companies and researchers, and a number of pioneering forest growers and agroforestry networks, who are actively implementing and promoting the integrated benefits of a triple-scoop approach to planted trees on farms.

Some of the concerns over the role of farm forestry in helping meet our national aspirations for greater wood production relate to issues of lack of scale, the dispersed nature of many small-scale plantings and the planting of species not generally suited for major processing and end-use markets.

I would argue that these challenges are precisely the reason we need to actively grow and promote farm forestry with a triple-scoop pathway. The challenge for us is to build greater awareness and uptake one paddock and one farm at a time, which would simply diminish any diseconomies over time. Experience from overseas does provide some examples of achieving economies of scale for the timber industry from many small landowners in Scandinavia and parts of the United States.

By not doing so, we may simply consign ourselves to the policy challenges of the past two decades where new plantation investment has stalled or gone backwards in some regions through conversion back to other land uses. This lack of investment and decline can be partly explained by a lack of focus on the triple-scoop pathway. And for the record, my favourite flavours for a triple scoop are chocolate (wood), mint (carbon), and hazelnut (farm productivity).

The views in this article are my own and should not be attributed to any company or organisational level affiliations.

Mick Stephens is the CEO of Timber Queensland and a non-Executive Director of Forestry Australia.

Appendix 3: Carbon markets and production forestry

One of the Partnership's nominated considerations in framing and developing the Timber Fibre Strategy is "*promotion of the sector's contributions to carbon sequestration and emissions reduction*". This aligns with the larger national priority of "*transitioning to and sustaining Australia's net zero emissions future".* An important aspect, therefore, of the Strategy is identifying and facilitating the opportunities for forestry and timber to support Australia's national emissions-reduction and net-zero objectives, including forestry and timber's participation in robust carbon markets.

The following overview of how production forestry can participate in Australia's carbon markets was produced for the NSW Forestry Minister and was considered at an early meeting of the Partnership as an important technical reference. It is reproduced below for that purpose, with the caveat that some of the technical content may not now be completely up to date.

Forestry's contribution to climate change mitigation

The Australian forestry industry can contribute to climate mitigation by three key pathways: carbon sequestration in growing trees; carbon storage in wood products and emissions reduction by the use of wood displacing the use of more emissions-intensive products. Forest industry participation in the carbon market can result in additional benefits, including providing a key source of income, economic and employment opportunities in regional communities; provision of a renewable product type and the ability to contribute to the housing supply challenge while supporting the growth of a thriving bioeconomy.

A variety of vegetation management methods is in place providing opportunities to participate in the domestic carbon market[1]. Commercial plantation managers have access through the existing Plantation Forestry method. While there are some methods already available, there is strong interest in exploring further opportunities for forestry proponents to generate carbon credits and method development is active across Australia.

The Australian Government has changed the model for method development from the previous approach where the Clean Energy Regulator (CER) centralised all activities related to new method development, with limited 'external' opportunities to influence the process. The soon to be established "proponent-led methodology" approach will provide industry with an opportunity to propose additional methodologies or to suggest variations to existing methods to increase uptake. Under the new process, anyone will be able to propose new ideas for methods or changes to existing methods and will be responsible for developing those methods.

During the interim process, the Emissions Reductions Assurance Committee (ERAC) will be responsible for recommending new method priorities to the Minister for Climate Change and Energy. This will be based on an expression of interest (EOI) process for new method proposals. The ERAC will assess whether draft methods meet the legislated Offsets Integrity Standards (OIS) and make recommendations to the Minister about which methods should be made. The EOI process has been launched and closes on 12 July 2024.

This brief discussion paper focuses on opportunities for the forest industry sector within the Australian Carbon Credits Units Scheme ("ACCU" Scheme), both in terms of variations to existing methods as well as opportunities for new method development, under the new proponent-led approach.

Brief description of the ACCU Scheme

The first national mechanism for carbon abatement introduced by the Australian Government was the Carbon Farming Initiative, in 2011. It was superseded in 2014 by the Emissions Reduction Fund, with a new governance

[1] See: DCCEEW. 2024. (Ref)

structure, process and framework for the development of methods and for selling ACCUs through a government reverse auction rather than the pre-existing 'cap and trade' market-based approach.

Participation in projects to earn carbon credits through abatement activities is enabled through the development of methodologies. Methodology determinations ('methods') contain a set of rules and conditions for the implementation of a project activity that results in emission abatement. The methods establish the eligibility rules for projects – such as where a project can be implemented, the types of activities that are accepted as increasing sequestration or reducing emissions, as well as the baseline and monitoring elements of how abatement is quantified and monitored, as well as reporting processes.

In 2022, following concerns around the integrity of carbon offsets, the Australian Government commissioned the Independent Review of Australian Carbon Credit Units (ACCUs), led by Professor Ian Chubb AC. The Australian Government committed to implementing all the recommendations outlined in the Chubb Review, including expanding the fund to encompass a broader range of activities. This process will move away from the previous approach where the Clean Energy Regulator (CER) centralised all activities related to new method development. The recently established "proponent-led methodology" approach was developed to provide stakeholders the flexibility to develop or adapt new approaches to carbon abatement.

There are many tools that can be deployed to estimate Carbon values that could be utilised to assist in developing and understanding potential projects in the ACCU scheme including (but not limited to):

- Carbon Estimator – a farm carbon footprint estimator from the Tasmanian forestry hub[2].
- The GTFIH Plantation Suitability Web App[3] – A spatial analysis study of suitable land areas for trees into farming, produced by the Green Triangle Forest Industries Hub, which aims *"to underpin support of expansion of the planted forest resources of South Australia, with an emphasis on integrating forestry enterprise into the existing productive farming environment."*

Changes to existing methods

Changes to existing methods will be referred to as modules. Currently, changes to methods are implemented as variations to the primary legislative instrument. Under a modular approach, the Integrity Committee will be able to independently approve method modules that meet the OIS. Modules are proposed to differ from method variations by having a shorter development process which may involve 'minor' method variations with streamlined consideration processes.

Modules may include:

- Activity/technology modules: introducing a new way to undertake an activity in a method.
- Measurement approach modules: introducing a new type of measurement approach, such as a new measurement technology or estimation model to an existing method.
- Abatement methodology factors module: changing the value used in a calculation or calculations in a subset of scenarios to increase the accuracy of abatement estimates.

New method development

The first step taken by the Integrity Committee upon submission of an EOI for a new method is to assess its potential via a triage process. In assessing EOIs, the Integrity Committee could consider:

[2] See here
[3] See here

- whether the EOI provides sufficient evidence the proposed method will be able to meet the OIS when fully developed, including whether the abatement is eligible.
- the abatement potential of the proposed method.
- the likely uptake of the proposed method.
- whether the proposed method is likely to incentivise industry innovation and address opportunity gaps for a sector.
- the relationship to current methods and other EOIs, for example, overlap or duplication.
- the skills and resources available to the method developer to develop the proposal, or whether additional requirements or funding is needed to support the proposed method's development.
- opportunities for generating environmental, social, economic, and cultural co-benefits and/or increasing participation by First Nations people or regional communities.
- what is required to maintain proposed method tools.
- current workload and capacity of the department or the Integrity Committee to assist with method development and assess method proposals.

Following this assessment, the Integrity Committee will decide which EOIs are prioritised for development. Where there are multiple EOIs with a similar idea it is proposed the Integrity Committee would connect those stakeholders and ask them to collaborate on developing a single method.

Changes to existing methods: barriers and opportunities for forestry

When it was first introduced, the Plantation Forestry method primarily provided incentives to increase carbon sequestration through the establishment of new plantation forests and increase sequestration in existing plantation estates through transition from short-rotation plantation forests to long-rotation plantation forests. However, uptake of the method was limited, partly due to limitations for new plantation establishment for regions that receive greater than 600mm average annual rainfall (subsection 20AB (5) - the "water rule"). This rule was removed in 2023 with the Australian Government noting "applications to register new plantations and tree planting projects in the ACCU scheme with a start date after 1 June 2024 will now be assessed without being subject to the water rule". Further, the government included four new regions where plantations, farm forestry and other specified tree planting projects are not excluded projects in relation to the "water rule"[4].

The 2017 method was superseded in 2022 by a revised method with the aim to increase uptake. In addition to relaxing the water rule to allow for new plantation establishment in specified regions, it also provided more options for project establishment.

Those included two new activities: "continuing rotational harvest cycles in a plantation forest" and "transitioning a plantation forest to a permanent forest, in situations where that plantation is at risk of being converted to non-forested land). These four activities are described as Schedules 1, 2, 3 and 4:

1. Establishing and maintaining a new plantation forest for commercial harvesting of wood products (Schedule 1).
2. Converting an existing short rotation plantation forest to a long rotation plantation forest for commercial harvesting of wood products (Schedule 2).
3. Avoiding conversion of an existing or recently harvested plantation forest (Schedule 3).
4. Transitioning a plantation forest to a permanent forest, in situations where that plantation is at risk of being converted to non-forested land (Schedule 4).

[4] See specified regions maps for Section 20AB here

In a recent workshop organised by Forest and Wood Products Australia (FWPA) with participation from forestry carbon experts in Australia, a range of potential variations to the Plantation Forestry method were discussed. These are summarised in Table 20.

There were varying levels of support for pursuing the various suggested method changes. Many of the suggestions would require further analyses to demonstrate the likely impact of the changes on method uptake and additional abatement.

Table 20 – Potential variations to the Plantation Forestry Method

Variation	Description
Development of standard tools / templates to assist proponents developing a project	The Plantation Forestry method requires the proponent to write a forest management plan, conduct independent financial assessments and land valuation, offset reports amongst other requirements. There are currently no standard templates or tools for project proponents to follow. It is suggested that making standard templates and tools available would streamline the process, making it easier for both the proponent and the CER in the review of the applications.
Audit costs – remote sensing techniques	Audit costs are an impediment for some plantation growers to consider a plantation forestry carbon project. A move to a remote sensing-based approach is proposed. As an incentive, landholders could be given access to spatial-based project planning, reporting and monitoring tools. Freely available satellite imagery or time stamped aerial imagery could be provided as proof the trees exist
Addition of species to FullCAM	Following the recent review of FullCAM there was a reduction in the number of species available for selection compared to the previous version. Some species were grouped into generic categories (e.g. “other eucalypts”) due to limited growth data. Issues of regional suitability/relevance for certain regions have also been identified. As a result, there is a risk of non-sensical carbon estimates.
Compressed crediting for all forest methods	Currently compressed crediting is limited to Schedules 2, 3 and 4 of the Plantation Forestry method (equal 15-year crediting); Schedule 1 and other forest methods award credits as the plantations grow. It is proposed to make compressed crediting available to all forest-based methods, or at least for Schedule 1 activities on the plantation method.
Allowance for direct measurement options	Project proponents are required to use FullCAM to estimate project carbon abatement. The carbon abatement as derived from FullCAM may be inconsistent with inventory-based estimates, potentially leading to inaccurate estimates. It is proposed for verified, privately owned inventory-linked tools to be allowed for use to estimate carbon abatement.
Inclusion of soil carbon	Soil carbon abatement is not considered in any of the ERF forest type methods, likely due to difficulties in accurately and cost-effectively measuring and monitoring it. Soil carbon is included in the “Measurement of Soil Carbon Sequestration in Agricultural Systems” method, using a combination of field measurements and modelling. If plantation forestry leads to soil carbon increases, that potential benefit is not currently realised in the Plantation Forestry method. Work would need to be done to ascertain actual benefits.
Inclusion of carbon storage in wood products in landfills	Currently in the Plantation Forestry method it is assumed that carbon in wood products placed in landfills is oxidised at the time of disposal. This does not reflect the reality that carbon in wood products is in fact stored in landfills indefinitely. The proposal is to include estimates of carbon storage in landfills as part of the total abatement estimated for plantation forestry projects
Inclusion of short-rotation woody crops	There is significant opportunity to consider establishment of short-rotation woody crops in marginal, less productive land, to supply the growing needs of a bioeconomy. One option would be to consider including short-rotation woody crops (3-5 yr rotation cycles) as an eligible plantation type within the Plantation Forestry method. Data is now available on the carbon sequestration achievable for a range of native woody species grown in a range of locations in NSW under such regimes. For other regions of Australia, the data primarily relates to mallee species
Inclusion of other planting options (environmental plantings; continuous forestry, farm forestry)	There may be benefits in amalgamating a range of plantation options (both production-based and environmental only) under the same method. This would provide landholders with more options, reducing the costs of participation. Also currently there are no provisions for rewarding carbon abatement from continuous forestry options; i.e. non-clearfell silvicultural treatments.
Change in land use requirements prior to establishment	Currently the Plantation Forestry method rules state there must not have been a plantation forest or native forest on the land in the 7 years prior to the project. The suggestion is that this is too long and may be hampering new project development. An alternative 5-year period was suggested

The management and use of wood products is well recognised, for example from the IPCC in 2019 where they state: "*a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fibre, or energy from the forest, will generate the largest sustained mitigation benefit*"[5]. This includes carbon being stored in timber products and in landfill, especially in the majority of Australian conditions.

The clear priority action agreed by the group was to pursue the inclusion of carbon stored in wood products in landfills. Provisions would need to be in place to ensure the continued carbon storage due to placement of wood in landfills does not result in adverse environmental impacts, such as due to the potential leaching of chemicals from preservative-treated wood. The continued benefit of carbon storage post service may be best termed as "end of life storage", to capture the continued storage represented by the two most likely end of life pathways for timber – landfill and re-use/recycling. A more in-depth assessment of the impact of this change on carbon abatement levels would be required – previous analyses, contained in a 2019 FWPA report (Smith & Ximenes), suggest that the benefit can represent up to 15 per cent of the total abatement value.

New method development: opportunities for forestry

The Australian Government is seeking proposals for new ACCU Scheme methods as part of the new proponent-led process recently launched. This new process will see ACCU Scheme methods developed outside of government – any interested individual, group or organisation can now submit a method proposal for carbon abatement that would be achieved by avoiding emissions or storing carbon in natural systems. A current Expression of Interest process closes on 12 July 2024. The independent ERAC will assess all proposals for new methods and advise the government on which proposals should be prioritised for development.

This represents an opportunity for the forestry sector to submit ideas for new methods. Experts at the FWPA workshop referenced above identified a range of potential forestry carbon abatement activities, which are summarised in Table 21. These represent activities that may in isolation be considered as a new method proposal or combined in one method framework. Alternatively, some of the concepts may be best considered as a variation to existing relevant methods. For each of the concepts below compliance with OIS would need to be demonstrated.

Table 21 – Potential new forestry carbon dioxide abatement activities

Abatement activities	Description
Thinning regimes	There are a range of forest types that may be degraded or overstocked, which may benefit from thinning activities. Thinning activities involve the removal of individual trees to achieve certain management outcomes. Those can be production driven (traditional forestry) or driven by ecological and or cultural outcomes. Although thinning initially reduces forest carbon stock, it can stimulate compensatory growth, A potentially more attractive model may include any abatement associated with the use of the thinned biomass (e.g. in long-lived engineered wood products).

[5] Note from The Fifth Estate: Commentary on the source and currency of this quote has included earlier in this Strategy report (see page 55)

Abatement activities	Description
Resetting areas dominated by invasive native species / weeds to healthy, production forests; and Restoring areas of native forest in areas that have been burnt past their tolerable fire interval and have not regenerated as native eucalypt forest (i.e., grass or understory species or acacia spp.).	There are large areas of land currently dominated by invasive native species, with stunted growth. Resetting options which may include use of cleared biomass for abatement solutions and restoring a healthy native forest may result in a carbon benefit. Areas impacted by fire where natural regeneration has not occurred may also benefit from intervention, with abatement benefits.
Fuel load management – cool burns in temperate forests	Cool burns may have positive impacts on reducing bushfire risks (reducing emissions from bushfires) and on soil carbon levels. Greater application of indigenous cool burn techniques across relevant forest types may lead to abatement. The experience from the savanna burning method development may be useful.
Soil carbon increase	There are a range of activities that can lead to an increase in soil carbon levels in the forest. For example, harvest residues may be used to produce biochar, which can then be applied to increase forest soil carbon levels. Carbon levels in the forest soil may be increased over time by managing residues (e.g. mastication techniques in pine forests following harvest).
Extending rotation cycles in native forests	Extending rotation cycles is one of the activities already included in some voluntary international offset programs involving forest management. In some native forest types with well-defined age classes there may be an opportunity to consider extending rotation cycles to increase the amount of carbon stored in the forest.
Changing mix of logs to longer-lived products	There may be an opportunity in some forest types to change the composition of the wood products derived from the tree biomass to those that may result in clear abatement benefits. For example, non-sawlog grade logs that may have been destined to a pulp and paper market could be diverted to alternative products where the carbon is physically stored for longer periods of time (e.g. engineered wood products).
Use of residues for bioenergy (e.g. hard to abate sectors)	Residue management refers primarily to the use of a proportion of harvest residues that would have otherwise been left to burn or decay in the forest in applications that displace the use of fossil fuels. It is important to retain certain residue fractions (e.g. leaves, bark, hollowed out stem and branch sections) for nutrient retention and biodiversity needs. There may also be opportunities for using wood-processing residues, such as sawdust and offcuts. For example, residues may be used to displace fossil fuels used for the transport sector (e.g. aviation fuel). Those options have an advantage of resulting in immediate climate benefits – by directly reducing the amount of fossil fuels used. Residues may also be used to produce engineered wood products that can displace concrete or bricks in construction and store carbon for a long period of time. Similarly, use of residues to produce biochar can lead to very long timeframes of carbon storage.
Avoided clearing for production	There are substantial areas of largely degraded forests in the private native forest estate that are currently cleared for agriculture or grazing purposes. It is estimated that 59 million hectares of Australian woodlands (forests with canopy cover 20-50%) that lie outside of conservation protection or other protected tenures are likely to be degraded. The aim would be to provide landholders with an opportunity to manage those areas so that they can become more productive over time while achieving abatement, instead of clearing.
Less intensive silviculture options	Less intensive timber harvest may lead to higher levels of carbon stored in the forest. For example, this could be achieved by changing silvicultural regimes from clear-felling to selective harvest systems; or from a more intense selective harvest regime to a less intense one.
Carbon storage/substitution in wood products used in buildings, in sectors dominated by alternative products	Wood products used in the building sector have a dual benefit of physically storing carbon and displacing emissions from alternative construction materials with a higher greenhouse footprint. A methodology that accounts for either or both of those benefits would likely encourage greater adoption of wood products in buildings, with an associated reduction in emissions. The potential role of storing carbon in timber structures and use in structures is recognised (e.g., the Green Building Council of Australia) and inclusion in potential abatement methodologies could increase value along the supply chain.

Abatement activities	Description
Use of wood processing residues for hard to abate sectors	There are large volumes of wood processing residues that are currently under-utilised and that could be used for applications where fossil fuels are displaced. This concept is similar to the one outlined for forest harvest residues earlier.
Note: The above is a list only of the possibilities identified at the workshop and should not be considered to necessarily be exhaustive. The proponent-driven approach allows for independent initiative in developing methods and it is understood that a wide range of potential methods are being researched across Australia. The outcomes of the current EOI process should be revealing in this regard. A submission from the NSW Government for a new Improved Native Forest Management carbon method is one example of a proposal expected to be submitted for consideration under this process.	

It is notable, however that the following method concepts were recommended by the attendees to be prioritised for further development:

- Integrated forest method
    - Where a number of the abatement activities identified can be grouped.
- Carbon in wood in the built environment
    - Using engineered timber can reduce construction-related embodied carbon emissions by as much as 75 per cent when compared with conventional steel and concrete.
    - This benefit has been recognised by the Clean Energy Finance Corporation (CEFC), which established a $300m program in 2023 aiming to accelerate the use of mass timber construction across Australia.
- Residue use
    - Particularly in the generation of liquid biofuel and heat, and as a source for future bio-based products that can either be substitutes displacing emissions-intensive products or by storing carbon.

There was strong support for considering a methodology focused on a range of activities for carbon abatement that could be generated in lands managed by indigenous groups. A “Cultural Forestry” method may encompass many of the production-orientated activities described above, as well as protection-based activities.

Paramount to any method development process is to ensure the proposed method can achieve genuine and additional abatement and can withstand the highest level of scrutiny. While there is significant benefit in realising and valuing forestry’s role in carbon abatement activities, there is a real risk that methods that are not robust or fail basic integrity expectations will result in considerable reputation damage to the sector, as has been witnessed in other methods as part of the Chubb Review process. And the opportunities to increase the value proposition of plantations, by increasing the consideration of carbon values, needs to be considered in relation to respective government outcomes (across jurisdictions) and could balance multiple needs including regional development opportunities and increasing habitat values/opportunities.

Conclusion and recommendation

This brief discussion paper has summarised current activities and opportunities for the forest industry sector within the Australian Carbon Credits Units Scheme (“ACCU” Scheme), both in terms of variations to existing methods as well as opportunities for new method development, which the new proponent-led approach will facilitate.

It is considered that no immediate action is required from Forestry Ministers at the present time, given that the market appears to be providing sufficient incentive for innovation in new method development proposals. Continued monitoring of the situation is recommended, especially as new method proposals are considered by the Australian Government following the outcomes from the current proponent-led Expression of Interest process.

SOURCES AND REFERENCES

ABARES. 2024. *Area of land in the Indigenous estate by Indigenous estate attribute*. Australian Government. (Ref)

ABARES. 2024. *Australian forest and wood product statistics datasets*, Sept-Dec 2023

ABARES. 2024. *Australian forest and wood products statistics*, Production to 2022-23, ABARES series report, Canberra, July, Ref CC BY 4.0.

ABARES. 2024. *Australian Forest and Wood Products Statistics*: Production to 2022-23 (July) (Ref).

ABARES. 2024. *Australia's State of the Forests Report*. Web-based version, accessed on 5 March 2025 (Ref).

ABARES. 2024. *Farmland Price Indicator: July 2024 update – key findings* (Ref).

AFPA / EY 2019.The economic impact of the cancellation of NSW North Coast Wood Supply Agreements due to the creation of the Great Koala National Park 2019 (Ref)

AFWI. 2024. Draft Strategic Plan 2024-2030 (Ref)

Australian Bureau of Statistics. 2022-23 financial year: Overseas migration (Ref).

Australian Government. 2024. *Nature Positive Plan: better for the environment, better for business* (Ref)

Australian Government. 2024. *Support Plantation Establishment program* (Ref)

BDO & University of Canberra. 2023. *Socio-Economic Impact of the Softwood Plantation Industry in The Central West NSW Forestry Hub Region, 2021-22*, A Report for the Central West NSW Forestry Hub. (Ref)

Bennett, L.T., Fairman, T.A, Ford, R.M., Keenan, R.J., Fletcher, M.-S. and Nitschke, C.R. 2024. Active management: a definition and considerations for implementation in forests of temperate Australia. *Australian Forestry* 87(3) – Ref

Blue Environment. 2023. *National Waste Report 2022*. A report for the Australian Government (Ref)

Boedker *et al.* 2011. *Leadership, Culture and Management Practices of High Performing Workplaces in Australia: The High Performing Workplaces Index*. Study for the Department of Education, Employment and Workplace Relations, Society for Knowledge Economics.

Bradshaw, F.J. 2015. Reference material for jarrah forest silviculture, *Forest Management Series* FEM061, Department of Parks and Wildlife, Perth (Ref).

Build Offsite. 2024. $900 Million Fund to Boost Modular construction with policy Incentives (Ref)

Burrows, N. *et al.* 2022. *A report on silvicultural guidelines for the 2024-2033 Forest Management Plan*. Western Australian Department of Biodiversity, Conservation and Attractions (Ref) p.8

CEDA 2021. Opinion article: *Better managers can narrow the productivity gap* (Ref)

Central West NSW Forestry Hub Inc. 2022. *Oberon to Tarana Rail Line: Strategic Options Assessment* (Ref).

Climate Change Authority 2023 *Annual Progress Report* (Ref)

Commonwealth of Australia. 2018. *Analysis of Australia's municipal recycling infrastructure capacity*. October (Ref).

Conservation and Parks Commission. 2023. *Forest Management Plan 2024-2033*. Conservation and Parks Commission. Perth, Western Australia (Ref)

Department of Agriculture, Fisheries and Forestry. 2023. Strategic forest and renewable materials partnership. Terms of reference (Ref)

Deloitte 2024. *Australia's housing crisis: hardship and hope* (Ref).

Department of Agriculture, Fisheries and Forestry – Purpose and objectives (Ref)

Department of Agriculture, Fisheries and Forestry. 2024. *New Vision and Objectives of the Strategic Forest and Renewable Materials Partnership's Timber Fibre Strategy*. 6 August 2024 Partnership meeting - Agenda Item 6, Document supplied on 25 September 2024.

Department of Finance. 2024. *Buy Australian Plan* (Ref)

Department of Industry, Science and Resources. 2024. *Australia's National Science and Research Priorities* (Ref)

Eade, B. 2024. Four ways Australia can lift investment in manufacturing. *The Australian Financial Review* 15 April. - Ref)

FAO. 2022. Global forest sector outlook 2050: Assessing future demand and sources of timber for a sustainable economy – Background paper for The State of the World's Forests 2022. FAO Forestry Working Paper, No. 31. Rome. (Ref)

Flannery, T.F. 1994. *The future eaters: An ecological history of the Australasian lands and people*. Reed, Sydney, p220

Florence, E. and Tonkin, A. 2023. *Victoria's timber industry in a time of transition*, Parliament of Victoria, October (Ref).

Forest Fire Management Group. 2014. *National Bushfire Management Policy Statement for Forests and Rangelands*.

Forest Industries Federation of WA. 2024. *Native forestry ban* (Ref)

Forestry Australia. 2022 *National Bushfire Management Policy Statement – Objectives and KPIs* (Ref)

Forestry Australia. 2023. *Position Statement on Ecologically Sustainable Forest Management* (Ref)

Forestworks. 2024. *Forestry Workforce Training Program* (Ref)

FTMA Australia, 2024. *Modern Methods of Construction – The Important Role of Australia's Timber Frame & Truss Sector* (Ref).

FWPA. 2023. Strategic Plan 2023–2028 (Ref)

Gammage, W. 2012. *The biggest estate on earth: How aborigines made Australia*. Allen & Unwin, Sydney, pp193f

Industry Edge. 2023. Pulp & Paper Industry Guide for Australia and New Zealand (Ref)

Kartzoff, M. 1969. *Nature and a city: the native vegetation of the Sydney area*. Edwards & Shaw, Sydney

Kremer P. D., and Symmons M. A. 2015. Mass timber construction as an alternative to concrete and steel in the Australia building industry: a PESTEL evaluation of the potential. *International Wood Products Journal* **6(3)** pp. 138-147 (Ref).

Kumar, A., et al. 2021 Forest biomass availability and utilization potential in Sweden: A review. *Waste and Biomass Valorization* 12:65–80 (Ref)

Langridge, M. *et al.* 2023. Australian forestry and forest products outlook and opportunities - A strategic review prepared for Australian Forest and Wood Innovations (AFWI). Tasmanian Policy Exchange July.

Law, B., *et al.* 2022. Regulated timber harvesting does not reduce koala density in north-east forests of New South Wales. *Nature Scientific Reports* 12:3968 (Ref)

McGrath, J. *et al.* 2024. Optimising productivity of hardwood plantations: yield gap analysis for Eucalyptus globulus plantations in southern Australia. Forest & Wood Products Australia Project number: VNC516-1920 (Ref)

Nabuurs,,G -J., *et al.* 2007. *Forestry*. In Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [B. Metz, *et al.* (eds)], Cambridge University Press, Cambridge, UK & New York, NY, USA. (Ref)

Nabuurs, G-J., et al. 2022. *Agriculture, Forestry and Other Land Uses (AFOLU)*. In IPCC, 2022: *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [P.R. Shukla, *et al.* (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA. - page 781 (Ref)

National Reconstruction Fund Corporation. 2023. *Value-add in agriculture, forestry and fisheries* (Ref)

Department of Industry, Science and Resources. 2024. National Science and Research Priorities 2024 (Ref)

Department of Industry, Science and Resources. 2024. National Science Statement 2024 (Ref)

Northern Territory Ord Valley forestry Hub and North Queensland forestry Hub. 2024. *Indigenous Engagement Protocols* (Ref).

NSW Department of Environment & Heritage. 2024. *Great Koala National Park*. (Ref)

NSW Department of Environment Protection Authority. 2024. *Energy recovery facilities* (Ref)

Pascoe, J. *et al.* 2023. Lighting a pathway: Our obligation to culture and Country. *Ecological Management & Restoration* 24(2-3) (Ref) p.153

Prime Minister's Manufacturing Taskforce. 2012. Report of the non-government members (Ref)

Schandl, H., et al. 2023. *Australia's comparative and competitive advantages in transitioning to a circular economy*. A Report to the Office of the Chief Scientist. CSIRO, Australia. (Ref)

Scion. 2024. Livestock with forestry is the best of both worlds. *TimberBiz* 9 December. (Ref)

Stephens, M. 2022. New investment pathway for trees on farms is a sweet spot. *TimberBiz* 30 September (Ref)

The Treasury. 2024. *Future Made in Australia – National Interest Framework supporting paper* (Ref)

TransGrid. 2024. *HumeLink project* (Ref)

WA Dept of Jobs, Tourism, Science and Innovation. 2024. *Native Forest Transition* (Ref)

Weathertex. 2024. *Building a greener future with people, product and purpose.* Sustainability report 2024-2025 (Ref)

Woods and Houghton (2022). Future market dynamics and potential impacts on Australian timber imports: Final Report. FWPA (Ref).

World Wide Fund for Nature. 2024. *Nature Positive - What does it mean and why is it so critical for Australia and our future?* (Ref)

INDEX TO FIGURES AND TABLES

List of figures

List of tables

Comprehensive table of contents

LIMITATIONS

The Fifth Estate Consultancy Pty Ltd ("The Fifth Estate") has prepared this report from information in the public domain, information held within and known by The Fifth Estate and not subject to confidentiality, and data and opinions obtained from consultation with industry, government and other parties.

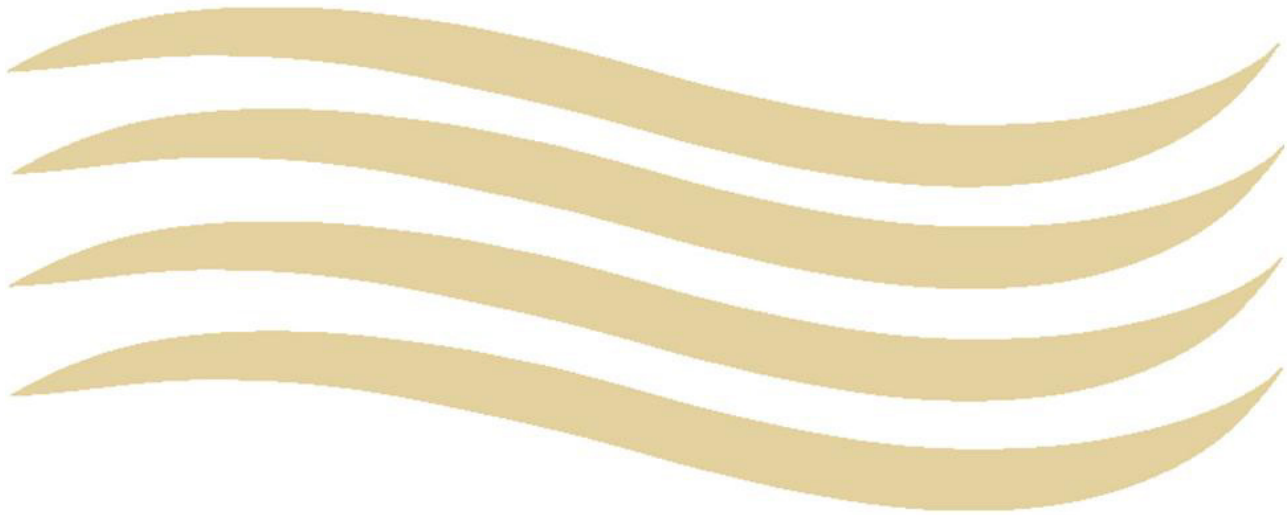
This report contains the opinions of the Fifth Estate and has been prepared in good faith and subject to the scope and timeframe of the engagement.

The information upon which this report is based, or draws for its conclusions, contains various assumptions about prevailing circumstances, market conditions and policies, and if those circumstances, market conditions or policies change, the conclusions and opinions expressed in the report may change.

The report relies upon some personal opinions of consultees, assumptions, projections and other interpretations which have been influenced by many factors, some of which may be contradictory. Such is the nature of combining objective data with subjective interpretation. Actual results, conclusions and details may be different from the information presented in this report, as future events may not occur as expected and the variation may be significant. The Fifth Estate therefore makes no representation or warranty that the information in the report is accurate, complete or up to date.

This report is provided solely for the use of the client and for its purposes. The data and other content of the report are selective, and the report does not purport to be comprehensive or conclusive. Nothing in this report constitutes legal, financial, investment, accounting, tax or other advice. The report should not be relied upon as a promise by The Fifth Estate as to future markets, growth, prices, costs, or prospects.

The Fifth Estate disclaims any responsibility or liability whatsoever (in negligence, contract or otherwise) in respect of any errors, misstatements or omissions in this report and in respect of any claims which may arise out of any reliance on its contents or its use for any purpose.



FIFTH
ESTATE