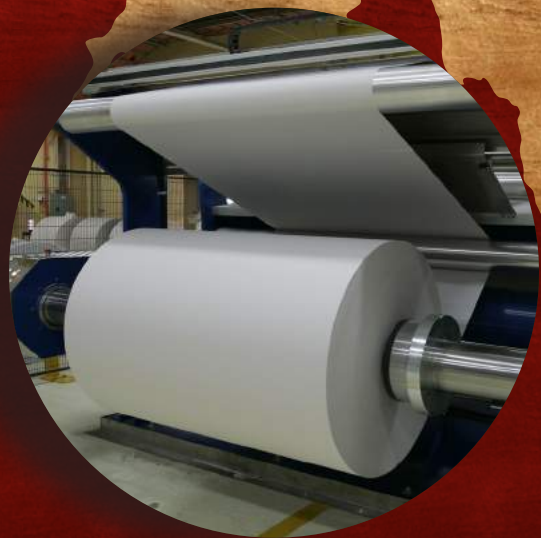


Transforming Australia's forest products industry

Recommendations from the Forest Industry Advisory Council

May 2016



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Forest Industry Advisory Council

Mr Rob de Fégely, Industry co-chair

Members

Mr Ron Adams

Dr David Brand

Ms Karina Coombes

Mr Ian Dickenson AO

Ms Michelle Freeman

Mr Andrew Hurford

Mr Vince Hurley

Mr Nils Koren

Mr Andrew Leighton

Ms Linda Sewell

Observers

Mr Gavin Butcher

Mr Ross Hampton

Mr Michael Hartman

Mr Ric Sinclair

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Eucalypt seedlings

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Abstract wooden wall panel

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Tasmanian Ash

Department of Agriculture and Water Resources

Foreword

On behalf of the Forest Industry Advisory Council (FIAC), I am pleased to present this paper and our recommendations on transforming Australia's forest industry.

In March 2015, FIAC released its issues paper *Meeting Future Market Demand: Australia's forest products and forest industry*. The paper suggested that improving the forest industry's delivery of economic, social and environmental outcomes should be planned to 2050.

The submissions in response to the issues paper were generous and thoughtful. As expected of such a diverse and dynamic industry, the views expressed were robust and invigorating. We are also grateful for the contributions stakeholders have made at forest industry events and to me over the last 18 months. FIAC has drawn on these contributions in drafting this paper.

Our consultations have made it clear that Australia's forest industry and our wood products offer the nation significant benefits. Our sustainably managed production forests provide important environmental outcomes. For example, sequestering atmospheric carbon and using wood products contribute to a low-carbon economy by displacing fossil fuel-intensive materials and providing carbon-neutral fuel. The forest industry also makes an important socio-economic contribution in many regional communities.

Looking to 2050, the goal for the forest industry must be to triple its economic value. To realise this goal, the industry needs to continue to adapt and respond to pressures and seize opportunities arising from globalisation, increasing populations, transformative technologies, climate change and evolving market preferences.

The forest industry must take the lead in determining its future. It must improve collaboration within and outside the industry as it pursues greater productivity through innovation.

This paper outlines a vision and three objectives for the forest industry and government to consider both collectively and individually, that will make the most of the opportunities and address the current and future challenges to 2050.

The objectives cover: economic and sustainable resource availability; opportunities for optimising processing and productivity; and industry promotion; and there are eight strategies and 19 recommendations for industry and government to act on.

FIAC acknowledges that it will be up to industry representatives to accept any recommendations that affect them and determine how to act on them. FIAC also looks forward to the government's response to these recommendations.

FIAC values its role in advising government on issues and policies affecting the forest industry. Working together, the forest industry and Australian, state and territory

governments can build an industry that will endure beyond 2050 and that is recognised and valued as sustainable, economically important and innovative.

It is with great pleasure that I present these recommendations to the Australian Government and we look forward to their response.



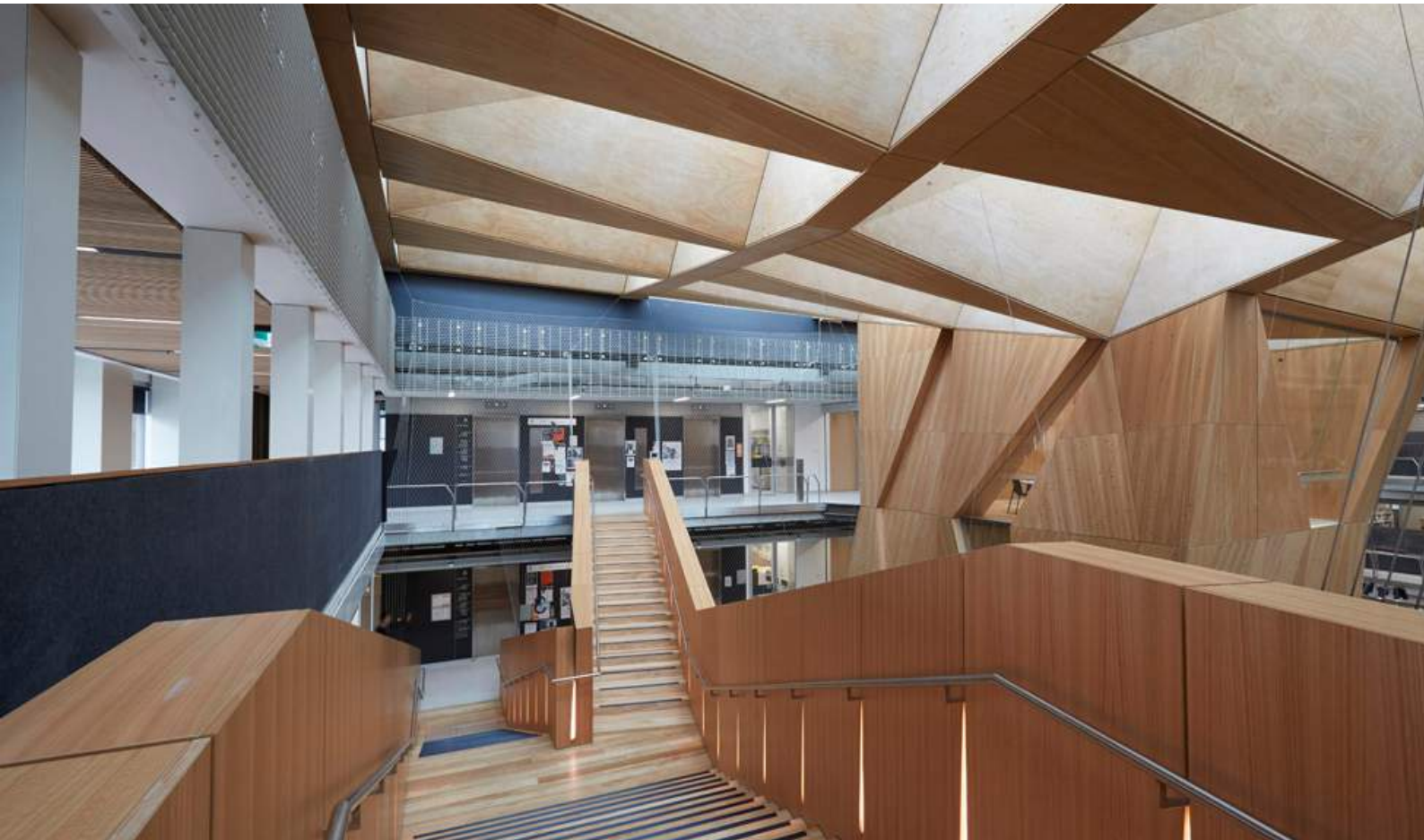
A handwritten signature in blue ink that reads "Rob de Fégely".

Rob de Fégely
Forest Industry Advisory
Council Co-chair



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Photos (clockwise):

Plantation Eucalyptus globulus, Department of Agriculture and Water Resources. *Paper manufacturing at Australian Paper (Maryvale)*, Photo courtesy of Australian Paper. *Melbourne School of Design foyer (Melbourne University)*, Photo courtesy of Forest and Wood Products Australia.

Australia's forest industry and its products

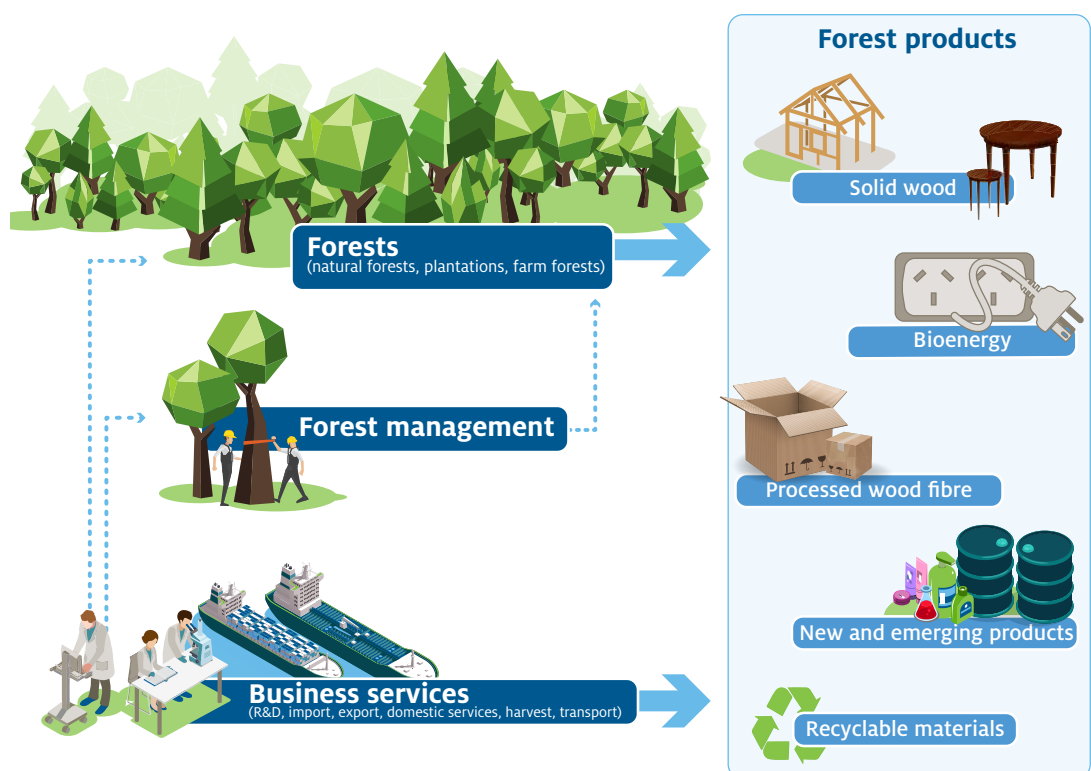
Australia's forest industry is unique in many ways. It is based on a renewable resource that sequesters carbon. The industry employs Australians in rural and regional areas and in major cities.

Australia's forest industry comprises businesses involved in growing and harvesting trees, processing wood and wood fibre, manufacturing pulp, paper and engineered, reconstituted and solid wood products, and businesses that export, import, wholesale and retail forest products (Figure 1). The industry also includes organisations that employ forestry and forest product-related researchers.

The forest industry provides a broad range of essential products and generates export income for Australia from sales to international markets. Forest products include: sawn wood and wood-based panels for constructing our homes; furniture, printing and writing paper for our homes and offices; sanitary paper products for everyday use; and paper and paperboard for packaging many of the products we consume.

Wood-derived products such as cellophane, rayon and ethanol are well known, however the potential from new products is enormous. For example, carbon fibres derived from wood are used to make lightweight parts for motor vehicles and packaging for food and beverages; and solvents made from wood fibre are used instead of petroleum. Wood also has the potential to generate renewable energy through the combustion of wood pellets or liquid biofuels.

FIGURE 1 Australia's forest industry and outputs



A new vision and objectives for the forest industry

The forest industry contributes to the nation's economic, environmental and social wellbeing. However, it also has the potential to support Australia's transition to a bio-based economy. This paper proposes a vision, objectives and recommendations that will help ensure Australia's forest industry has a sustainable and vibrant future to 2050.

To achieve this vision, Australia's forest industry needs to recognise that it is at a crossroads. Minor adjustments to the current forest industry will not be enough for a sustainable future. The industry must capitalise on emerging product and market opportunities, improve its productivity and competitiveness, and secure a sustainable supply of forest resources. The industry must be innovative and collaborative if it is to benefit from an emerging global bioeconomy that will revolutionise the way wood and wood fibre are used.

Vision and goal

The forest industry will lead the transition to a bioeconomy of which Australians can be proud

This new vision represents the industry's aspirations for the forest industry and a desire to resonate with the wider community. It recognises the significant contribution that our forest industry makes to our society by emphasising that Australia's forests are a strategic and sustainable resource for the future.

To triple the economic value of the forest industry by 2050

Government will have a role in helping industry position itself for a viable and vibrant future. However, industry representatives must work together to realise FIAC's vision and our goal to triple the economic value of the forest industry by 2050.

Objectives

FIAC's vision is underpinned by three objectives that will guide the forest industry to 2050. The objectives cover: optimising resource availability; expanding on opportunities offered by the emerging bioeconomy; and promoting the social and environmental credentials of the industry.

FIAC has identified eight strategies and 19 recommendations that will enable industry and government to realise these objectives.



Eucalypt seedlings

Vision: The forest industry will lead the transition to a bioeconomy of which Australians can be proud

Goal: To triple the economic value of the forest industry by 2050

Objective: We will have the right trees in the right place at the right scale

Strategy: Preserve the existing productive forest estate

Recommendation 1: That the Australian Government immediately implements its commitment to rolling 20-year Regional Forest Agreements.

Recommendation 2: That the Australian Government commits to a \$300 million 10-year programme of mechanical fuel reduction as a bushfire mitigation measure for forest and community protection.

Strategy: Optimise forest management by focusing on strategic regions

Recommendation 3: That the Australian Government uses industry's strategic regional hub approach for setting government policy.

Recommendation 4: That the Australian Government funds infrastructure within hubs as prioritised by industry.

Strategy: Expand the productive forest estate in strategic regions

Recommendation 5: That industry develops a strategy for expanding the productive forest estate in strategic regional hubs through farm forestry, and identifies the role for government.

Recommendation 6: That the Australian Government provides support for the economic development of the forests on land owned or managed by Aboriginal or Torres Strait Islander people.

Objective: We will produce bioproducts using all parts of the tree to a cellular level

Strategy: Discover new and enhanced ways to use wood fibre

Recommendation 7: That the Australian Government provides \$40 million to establish a National Institute for Forest Products Innovation.

Strategy: Develop technologies to commercial scale

Recommendation 8: That the Australian Government establishes an innovation fund to support early-stage commercialisation of leading edge technologies.

Recommendation 9: That the industry's levy contribution for industry research and development is maximised by:

- industry ensuring all sectors of the industry are contributing
- industry agreeing to an increase in the levy rate
- the Australian Government removing the cap on its matching of voluntary contributions to Forest and Wood Products Australia.

Strategy: Promote and enable market adoption

Recommendation 10: That the Australian Government works with all levels of government to remove regulatory and other barriers to using forest biomass and promotes its use as a renewable energy source.

Recommendation 11: That the Australian Government immediately produces methods that enable the inclusion of commercial forest and harvested wood products in the Emissions Reduction Fund auction process.

Recommendation 12: That the Australian Government immediately amends the Renewable Energy Target scheme to ensure that thermal energy from wood biomass is eligible for Renewable Energy Certificates.

Recommendation 13: That industry identifies skills gaps for transitioning to the bioeconomy and develops a strategy for addressing them.

Objective: We will distinguish ourselves by being environmentally friendly, socially responsible and valued by the community

Strategy: Promote the industry as being environmentally friendly and socially responsible

Recommendation 14: That industry establishes and reports on its environmental and social credentials by:

- developing a code of conduct
- developing a scorecard to report on its credentials
- promoting its performance.

Recommendation 15: That Australian forests and forest products are certified to international standards by:

- industry ensuring that all Australian production forests and forest products obtain certification under an internationally recognised certification scheme
- the Australian Government ensuring that all forests obtain internationally recognised certification of their forest management
- the Australian Government requiring all imported forest products to be sourced from forests covered by internationally recognised forest and chain of custody certification schemes.

Strategy: Broaden community support for the industry

Recommendation 16: That industry establishes a panel of subject matter experts to speak on issues associated with the forest industry.

Recommendation 17: That industry uses strategic alliances to broaden community support for the forest industry.

Recommendation 18: That the Australian Government develops procurement policies that support the Australian forest industry and its broader contribution to the Australian economy.

Responding to the recommendations

Recommendation 19: That the Australian Government convenes a meeting of state and territory ministers responsible for forestry to discuss issues raised in this paper.



We will have the right trees in the right place at the right scale

Australia's forest industry will continue to be based on plantations and natural forests. However, it will have to increase the area and productivity of the plantation estate and maintain the available natural forest estate to meet future domestic and international demand for forest products.

The establishment of future plantations must be based on matching the ideal species to the right location and for plantations to be at the appropriate scale. Considerations include matching species with soil and climatic conditions, deciding whether to grow short or long rotation plantations, and proximity of infrastructure for processing.

However, the market must drive industry—the types of trees being planted must reflect market demand for particular products. This can be difficult for an industry with up to 30 years or more between planting and harvesting. This highlights the need for research and development on using all parts of the tree to the cellular level.

Safeguards are needed to prevent plantation establishment on unsuitable sites. This could involve industry developing a technical review mechanism that examines site locations and species for their links to harvesting, transport and processing capacity; and an assessment of soil and rainfall suitability. Any reviews should be undertaken by qualified and registered forestry professionals.

Strategy: Preserve the existing productive forest estate

Natural forest estate

About 8 per cent of Australia's 123 million hectares of natural forest are designated as 'multiple-use forests'. These forests are managed for a range of values, including wood harvesting, water supply, conservation, environmental protection and recreation. Each year around 1 per cent is harvested for wood production, representing about 0.06 per cent of Australia's total natural forest area (MIG & NFISC 2013). Harvested areas are then regenerated. The main products obtained from natural forests are hardwood sawlogs.

Plantation forest estate

The total area of Australia's plantation estate is about 2 million hectares, roughly half softwood and half hardwood (Gavran 2015). The plantation estate is the major wood resource for Australia's forest industry.

Wood supply from plantations is growing, but Australia may be approaching peak plantation wood supply. Under current planting scenarios, the total log availability from softwood plantations is expected to plateau by 2030 at 17.2 million cubic metres a year. Total log availability from hardwood plantations is expected to peak at around 13.7 million cubic metres a year by 2030 (Burns et al. 2015).

In the coming decades, Australia's forest industry will require wood from a number of domestic sources, including large-scale plantations, state and territory owned natural forests, private plantations and farm forests (natural or planted). Each of these resources features particular strengths: the economies of scale achieved from large-scale plantation forests, the unique qualities of wood sourced from natural forests and the landowner benefits available from farm forests.

Ensuring sustainable access to plantation and natural forests is vital to the future of the forest industry. Government needs to provide industry with certainty about natural resource access and supply, and appropriate forest management regimes to minimise the risk of fire in natural and plantation forests.

Regional forest agreements

Central to forest management in Australia are the Regional Forest Agreements (RFAs) signed between the Australian Government and the Victorian, Tasmanian, New South Wales and Western Australian governments from 1997 to 2001. The RFAs are intended to form the basis for balancing wood production, nature conservation and other forest values and uses, while ensuring the sustainability of forest management practices.

Some industry representatives believe the RFAs have not delivered the intended resource security to the industry. The agreements, however, have delivered conservation outcomes, particularly through the transfer of many thousands of hectares of multiple use forest to the conservation estate.

In some states, governments have increased the amount of public natural forest in conservation reserves above the levels agreed in the RFAs, putting added pressure on the sustainability of the forest industry. The reduction in the area of forests available to the industry often affects the volume, quality and size of logs that can be harvested. It also adds uncertainty and risk to the investment environment for industry.

The 20-year RFAs are due to expire in the coming years and the Australian Government has made a commitment to extend them and establish a 20-year rolling life for each agreement. The RFAs are an important part of Australia's forest management framework and it is vital that they continue to provide for areas of productive forests in the coming decades.

Recommendation 1: That the Australian Government immediately implements its commitment to rolling 20-year Regional Forest Agreements.

Mechanical biomass removal

Climate change and increased fire risk may affect the resources available for the forest industry in coming decades. In recent years, bushfire in Australia has increased in frequency and severity (CSIRO & BOM 2015). In many regions of Australia, harsher fire weather is predicted, especially for southern and eastern Australia, which have the highest projected increases in the forest fire danger index and number of days with severe fire danger (CSIRO & BOM 2015).

According to a study, mechanically removing fire fuel (such as trees and other combustible biomass) from forested areas, combined with prescribed burning, could significantly reduce the incidence and degree of devastation caused by fire (Deloitte Access Economics 2014). An added benefit of this approach is that industry could use removed biomass as a resource for wood or fibre products.

The National Bushfire Mitigation Programme is an Australian Government initiative aimed at implementing long-term bushfire mitigation strategies and improved fuel reduction activities. Through this programme, the Australian Government has allocated \$1.5 million to undertake mechanical fuel load reduction trials as a bushfire mitigation measure. The trials will

gather scientific, cost-benefit and social attitude evidence from a variety of forest types across Australia. Trials are scheduled to begin in late 2016 and final results are due at the end of 2017.

On completion of the trials, all parties involved should assess the impact of the trials on residual fuel loads and evaluate the potential for the project to be expanded across high fire-risk areas in Australia.

Recommendation 2: That the Australian Government commits to a \$300 million 10-year programme of mechanical fuel reduction as a bushfire mitigation measure for forest and community protection.

Strategy: Optimise forest management by focusing on strategic regions

Regional hubs

Australia's forest industry varies regionally in terms of resource type, productive capacity, proximity to markets and place in the value chain. Encouraging the establishment of forest industry hubs could strengthen regional development of the forest industry and improve its productivity, profitability and competitiveness.

The forest industry hub model envisages a group of closely located businesses that are connected through their value chains, use of resources, technology, complementary products and workforce needs (Aguilar et al. 2009). The hub model seeks to encourage collaboration and positive competition among businesses and improve research, innovation, productivity, resource use and business development outcomes (Aguilar et al. 2009).

Forest industry hubs are suitable in regional areas with varied, high-quality wood resources that are close to wood processors, pulp and paper mills or export facilities. Hubs will develop where there are existing

forest industry facilities and innovative businesses wanting to use local and regional wood resources.

The forest industry can identify appropriate sites for developing forest industry hubs by understanding the unique characteristics of a region such as its wood resources, species type, growth rates, supply forecasts, wood processing facilities, markets, value chains and quality of infrastructure. For such a model to succeed, industry will have to engage with complementary industry groups and local communities in the hub area.

Recommendation 3: That the Australian Government uses industry's strategic regional hub approach for setting government policy.

Quality infrastructure networks and cost-effective access and usage charges are vital for the forest industry to be productive and competitive. The local, regional and national infrastructure assets and networks that the forest industry requires include domestic road, rail and sea networks, communication and data networks, energy grids and ports for international trade.

The infrastructure requirements of the forest industry in each hub region should be examined to ensure they will meet industry needs over the coming decades. Industry representatives are best placed to identify the infrastructure gaps that affect the functioning of their businesses. Once identified, it should be up to industry to articulate these infrastructure gaps to government.

This should not be done in isolation. Forest industry representatives would benefit from pursuing partnerships with other regional industries that have similar infrastructure needs or deficiencies, such as agriculture, transport, tourism and other service industries. Collaboration would strengthen bids for additional or upgraded infrastructure and contribute to government and industry prioritising expenditure.

Recommendation 4: That the Australian Government funds infrastructure within hubs as prioritised by industry.

Strategy: Expand the productive forest estate in strategic regions

Farm forestry

Some landholders located in or near hub regions engage in farm forestry from natural or planted forests. It provides an opportunity to contribute to the industry's resource needs through increasing the volume of wood.

Landholders can derive financial returns from farm forestry through improved land values and on-farm benefits. Benefits include: shade and shelter for stock or crops; soil and water protection; erosion control; reversed salinity; and increased biodiversity, landscape and amenity values. A strong farm forestry resource could improve community awareness of the qualities of forestry and the benefits of forest products. Increasing the ability of regional communities to have a commercial stake in the industry could improve engagement with consumers and the broader community.

Several barriers exist to harnessing the potential wood supply from farm forestry. For example, much of the existing natural forest estate has not been managed to produce forest products. It may also be difficult to obtain information about the commercial potential for farm forestry, such as the species planted or managed, its quantity, proximity to wood processing facilities and markets, or whether harvesting is operationally feasible. Private landholders often lack the tools and resources required for best practice forest management.

Many of these barriers could be overcome if farm forestry was located and promoted in or near a hub region. Strategies for increasing

the viability of farm forestry in hub regions could include: improving transparency about harvest and transport logistics and costs; improving knowledge of forest product markets and forest management practices; promoting an enabling regulatory environment for establishing and managing on-farm plantations; and fostering a cooperative marketing approach to optimise financial returns for landholders.

Recommendation 5: That industry develops a strategy for expanding the productive forest estate in strategic regional hubs through farm forestry, and identifies the role for government.

Indigenous forestry

Aboriginal and Torres Strait Islander people have always been involved in the forest industry. However, Native Title and Indigenous entrepreneurship are providing new opportunities in forest growing and processing.

The forest industry can provide realistic economic development opportunities for Aboriginal and Torres Strait Islander people across Australia, including in Cape York (Queensland), the Tiwi Islands (Northern Territory) and the Barmah Forest along the Murray River (New South Wales and Victoria). Support from government and industry is needed to establish capacity in such areas.

The Australian Government has an agenda to promote Indigenous employment and regional development, including in northern Australia. Such support can include culturally appropriate training programmes to transfer skills and raise Indigenous understanding of, and participation in, forest management.

Recommendation 6: That the Australian Government provides support for the economic development of the forests on land owned or managed by Aboriginal or Torres Strait Islander people.



We will produce bioproducts using all parts of the tree to a cellular level

The emerging global bioeconomy offers opportunities to use all parts of the tree to create innovative bioproducts. Maximising wood use and adding value to wood residues will help the industry unlock the potential of wood in the emerging and lucrative global bioeconomy.

The forest industry must understand how to produce these emerging bioproducts from the range of species grown in Australia. Development and commercialisation of emerging bioproducts will be driven by effective research and development (R&D), investment, innovation and entrepreneurship within the forest industry.

Strategy: Discover new and enhanced ways to use wood fibre

Australia has the forest resources to contribute to an emerging bioeconomy, however, it lacks investment in R&D and coordination and collaboration between research organisations and industry. In other countries, research centres focus on transforming their industry from one that produces traditional wood and sawn timber products to one that produces a variety of innovative products and processes. In Australia, there are opportunities for the industry to move towards producing more innovative products and to maximise all parts of the tree. There is also scope for industry to participate in emerging global biomarkets, however, industry needs to increase its capacity to capitalise on domestic and international R&D outcomes.

The R&D needs of Australia's forest industry are diverse and complex. All sectors of the forest industry, research providers and research institutions need to convene to identify opportunities for progressing forest industry R&D, set priority areas for all parts of the value chain, reduce duplication in R&D efforts and maximise R&D adoption rates.

National Institute for Forest Products Innovation

In 2013, the Australian Forest Products Association (AFPA) proposed the establishment of a National Institute for Forest Products Innovation. AFPA envisaged this central organisation would coordinate research at several institutions and sites. It would link all the major research providers and entities into a single strategic framework that rationalised funding arrangements, strategic priority settings and decision-making between key stakeholders (primarily industry and governments).

A national institute would provide a coordination point for R&D, help identify R&D needs for Australia's forest industry, and promote adoption of R&D outcomes by Australia's forest industry.

The national institute would collaborate with other Australian industries to ensure that maximum value is obtained from the research undertaken.

To be effective, the institute would require a long-term funding commitment, a national R&D focus and research integrated across the value chain. Any new model also needs to recognise roles for Australian and international research.

All state and territory governments have indicated in-principle support for the national institute. If the industry wishes to establish such a centre, it could achieve this in several ways. It could establish a new national institute with a significant injection of funds upfront. Alternatively, a more gradual process of establishment would enable industry to better align resources.

This institute would complement rather than replace activities of universities or the CSIRO. It would not prevent the need for a future cooperative research centre or similar institution. Establishment of the institute should focus on building and maintaining relationships between researchers and industry.

The institute could be funded using an endowment model, with a principal amount from establishment funds kept intact and the interest earned on this amount used for operating expenses. This would maximise the financial impact of establishment funds over a greater period and remove the need for ongoing funds.

Existing institutions bring R&D together under one roof. In contrast, the proposed institute could have a hub and spoke operating model. Existing institutions would remain where they are but be badged as part of the national institute. This model would help maintain institutional knowledge and reduce the high costs associated with the establishment of a new institution. It would bring new money to the sector.

Any new R&D arrangements should build upon the range of R&D strategies that have been developed for the forest and wood products sector (FWPA 2010). Future strategies should be designed to ensure that R&D meets the needs of the forest and wood products sector and the Australian public.

Recommendation 7: That the Australian Government provides \$40 million to establish a National Institute for Forest Products Innovation.

Strategy: Develop technologies to commercial scale

Bringing forward the range of opportunities presented by the global bioeconomy will require research across a range of disciplines—from foresters to chemists, computer engineers, designers and architects.

Collaborating with other industries on innovative technologies is likely to be mutually beneficial. Considerable work has already been done internationally. Australia must recognise and build on this knowledge and adapt it to local conditions.

Innovation and the bioeconomy

Internationally, significant research and technological advancements have resulted in the development of innovative applications for wood fibre. Innovation is enabling producers of emerging products to gain scale and improve cost-effectiveness in overseas markets.

In Australia, forest products that could form part of a bioeconomy are at varying stages of research, development and commercialisation. These range from small domestically established bioenergy markets for heating and electricity generation to high-value innovative emerging product markets such as biomaterials and biochemicals. Collectively, they offer opportunities to produce higher returns on lower-quality fibre such as wood residues.

Industry would benefit from the establishment of an innovation fund to support 'first-movers' and enable companies to develop innovative and emerging technologies from prototypes to viable commercial products.

Recommendation 8: That the Australian Government establishes an innovation fund to support early-stage commercialisation of leading edge technologies.

Forest and Wood Products Australia levy arrangements

Similar to other primary industries, Australia's forest industry has a levy system that collects funds from the industry. These levies help fund Forest and Wood Products Australia's (FWPA's) R&D, marketing and other forest industry service activities. The Australian Government provides funding to FWPA to match its spending on eligible research and development activities up to a cap of 0.5 per cent of the forest industry's gross value of production (GVP).

In the five years to 2014–15, the Australian Government's contribution to FWPA was slightly more than 0.2 per cent of the forest industry's GVP. The forest industry could leverage more funding from the Australian Government if FWPA increases its expenditure in research and development.

In order to maximise the amount of industry funding available for FWPA to invest in R&D, all parts of the industry value chain should contribute to FWPA levies. FWPA could also explore increasing levy rates from industry and increasing the proportion of their income allocated to R&D activities eligible for matching funding.

In December 2015, the Australian Government announced funding of \$4.6 million over four years for government to match voluntary contributions to FWPA for eligible research and development activities (Commonwealth of Australia 2015). This funding provides for additional R&D that will benefit the forest industry.

Industry could also leverage more funding if the Australian Government removed the cap of 0.5 per cent of GVP to maximise the amount that could be matched by government on voluntary contributions. The government should allow FWPA to claim matching payments for voluntary contributions up to the 0.5% of GVP per annum rather than the specific dollar amounts that have been set in the Regulation.

Recommendation 9: That the industry's levy contribution for industry research and development is maximised by:

- industry ensuring all sectors of the industry are contributing
- industry agreeing to an increase in the levy rate
- the Australian Government removing the cap on its matching of voluntary contributions to Forest and Wood Products Australia.

Strategy: Promote and enable market adoption

Governments need to recognise the potential role of wood biomass when developing policies that aim to increase the amount of renewable energy in Australia.

Australia generates considerable volumes of wood processing and forest harvest residues that could be used to develop our bioeconomy.

Using forest biomass as a renewable energy source offers Australia's forest industry the potential to use or sell residues. This would help meet environmental, social and economic challenges associated with energy production.

Removing regulatory barriers and promoting the use of biomass

Several existing regulatory and policy measures may be constraining adoption and implementation of bioenergy projects. These policy measures include national and state level regulations, targets, mandates, incentives, tax rules and standards. They relate to vegetation removal, water, forestry, electricity, transport, infrastructure, regional development and sustainable planning.

Industry representatives need to identify the regulatory constraints that they face in adopting and promoting bioenergy in the marketplace and make recommendations to government on changes that would benefit them.

The Australian and state and territory governments should recognise and promote bioenergy as a renewable energy fuel source and engage with industry to identify and remove regulatory barriers.

Recommendation 10: That the Australian Government works with all levels of government to remove regulatory and other barriers to using forest biomass and promotes its use as a renewable energy source.

Emissions Reduction Fund

In an increasingly carbon-constrained world, forests and forest products are important as carbon sinks and stores, and as substitutes for more carbon-intensive materials and fossil fuels. Sustainable forest management and the increased uptake of forest products should play a greater role in efforts to reduce greenhouse gas emissions.

Forest products can also contribute to 'avoided' greenhouse gas emissions because a relatively small amount of energy is used in their production, compared with other building materials such as brick, concrete, steel and aluminium.

Sustainability rating systems for buildings, such as the Green Building Council of Australia's Green Star rating system (GBCA 2015), are becoming increasingly important to large consumer groups, including building developers and specifiers looking to reduce their environmental footprint.

The Green Star rating includes life-cycle assessments, which compare the whole-of-life performance of building products. This presents an opportunity for forest products to demonstrate their environmental credentials, particularly with respect to avoided greenhouse gas emissions.

Government climate change policies need to recognise the carbon sequestration capability of commercial forestry and harvested wood products. Industry would benefit from the introduction of a pricing mechanism that recognises the contribution that forestry makes to avoided emissions.

The Emissions Reduction Fund (ERF) is the Australian Government's primary mechanism for meeting Australia's greenhouse gas emissions reduction target. Through a reverse auction, the government purchases emissions reductions and carbon sequestration of eligible activities at the lowest price from across the economy.

Currently the ERF does not have a method for including commercial forestry. However, the Australian Government has developed a list of new methods for future scoping and development. The list includes a method for estimating potential abatement from new commercial plantations and converting short-rotation plantations to long-rotation plantations (Australian Government Department of the Environment n.d).

Inclusion of new methods in the ERF could benefit plantation forest development in regional hubs. It could also provide an incentive for investment and reduce risk associated with establishing long-rotation plantations.

Recommendation 11: That the Australian Government immediately produces methods that enable the inclusion of commercial forest and harvested wood products in the Emissions Reduction Fund auction process.

The Renewable Energy Target scheme and thermal energy

The Australian Government's Renewable Energy Target (RET) scheme aims to reduce greenhouse gas emissions in the electricity sector. The scheme recognises wood waste as an eligible source of renewable energy in the production of electricity. However, it does not recognise wood waste as an eligible source of thermal energy (heat).

Under the ERF (which operates alongside the RET scheme), the use of biomass as a source of thermal energy is recognised—but only in fuel switching projects. For example, a switch from using coal to biomass for generating renewable heat would be eligible under the ERF's industrial electricity and fuel efficiency method. However, current use of wood biomass is excluded.

Australia has wood processing facilities that use biomass (derived from processing wood waste) for thermal energy in applications such as kiln drying. Many other countries maximise the use of thermal energy from wood biomass through policy instruments (such as tradeable renewable energy certificates and subsidies) that are driven by domestic renewable energy policies.

Industry needs to encourage the Australian Government to include thermal heat from wood waste in the RET scheme and increase the methods available for its use under the ERF.

Industry should also urge the Australian Government to extend the eligibility parameters of the RET scheme to include all forms of wood biomass, rather than just wood waste.

Recommendation 12: That the Australian Government immediately amends the Renewable Energy Target scheme to ensure that thermal energy from wood biomass is eligible for Renewable Energy Certificates.

Skills and training


A highly skilled workforce enhances the quality and efficiency of businesses in the forest industry. The industry draws on a broad range of skills, including heavy vehicle operations, forestry, timber engineering, wood harvesting, specialist product development and manufacturing, market development and scientific research. A shortage of skilled workers across the forest industry will affect its viability, productivity and competitiveness.

The forest industry obtains many of its skilled workers from tertiary education institutions and frequently provides employment-based and in-house training. Tertiary education is provided through Vocational Education and Training institutions and universities.

In Australia, availability of courses relevant to the forest industry is limited because of low enrolments, particularly in regional areas.

A key challenge for the industry is to address these skill development and training shortfalls. In some regions, shortages of available skilled staff have emerged as a consequence of an ageing workforce exiting the industry, a downturn in new recruits entering the industry, reduced capacity for educational institutions to deliver skills and training programmes economically, and negative perceptions of careers in the forest industry.

Recommendation 13: That industry identifies skills gaps for transitioning to the bioeconomy and develops a strategy for addressing them.



We will distinguish ourselves by being environmentally friendly, socially responsible and valued by the community

Strategy: Promote the industry as being environmentally friendly and socially responsible

The strength of Australia's forest industry lies in the high quality of our natural and plantation forest management and the environmental benefits of using forest products. Australia has a framework for forest management that ensures our forests are managed for the full range of economic, social and environmental values that they provide. However, the industry needs to address poor community perceptions of the role that forest managers and industry play in protecting forest biodiversity through auditable forest planning systems, codes of practice and sustainable forest management certification schemes. This is a significant factor affecting market demand for forest products.

Industry code of conduct and scorecard

Setting standards throughout the value chain, including the certification of forests and forest products, is an important step to establishing a credible and reliable brand that can be marketed as a sustainable and socially responsible choice.

An industry scorecard would be a useful, measureable and transparent way of reporting industry data and trends. It would tell consumers, investors and purchasers where environmental and socially responsible benchmarks are being met and ensure that best practice outcomes are achieved for workers, communities and the environment.

A voluntary industry scorecard would help the industry improve business practices and provide assurance to consumers that the products they are purchasing meet high environmental and social standards. The scorecard must be developed by industry for industry, be supported by the majority, be defensible, administered appropriately and subject to regular review.

Establishing a code of conduct for the forest industry would support the standards to be included in the scorecard. Industry must be held accountable to uphold the standards set by the code of conduct and reporting must be mandatory and transparent.

Industry could improve community perceptions of its activities through an education campaign focusing on Australia's forest management practices, the carbon sequestration capability of forest products and their ability to provide low embodied energy solutions.

The forest industry should also take the opportunity to promote products that reflect changing consumer preferences and an increasing awareness of environmental issues associated with manufacturing, consuming and disposing of fossil fuel-based products. For example, the industry could promote the environmental advantages of using paperboard packaging over plastic.

The industry also needs to be more proactive in its communication by soliciting, listening to and responding to consumer and community questions about forest management and forest products.

Recommendation 14: That industry establishes and reports on its environmental and social credentials by:

- developing a code of conduct
- developing a scorecard to report on its credentials
- promoting its performance.

Achieving full certification

Forest management and chain of custody certification are valuable tools for demonstrating and providing assurance about the sustainability of forest management and forest products. Certification schemes can also provide an incentive for continual improvement in forest management and form a foundation for measuring a range of forest values.

Australia has around 10.6 million hectares of certified natural and plantation forests (Australian Government Department of Agriculture and Water Resources 2015). This provides a competitive advantage for Australia's forest industry, but one which is limited by a lack of awareness of the value of certified forest products by those consumers who make purchasing decisions based on price.

Industry and government should encourage and promote certification of all forest and wood products. The campaign should encompass all forest growers and processors, including small growers, and include conservation reserve estates.

The inclusion of all forests in Australia in internationally recognised forest certification schemes would allow for a complete assessment of Australia's forest management credentials. Currently, we know more about the production forest estate than we do about the forest area outside production. Certification of all forested areas would provide an opportunity to better understand the conservation estate and help inform a whole-of-landscape approach that would include water quality and catchment, biodiversity, invasive pests, weed and disease risk, and the potential effects of future climate and fire regimes. It would ensure equitable treatment of forests in a tenure-blind manner, and measurement and monitoring of management objectives for all forests.

Production forest certification would have costs and impediments, especially for small growers. These must be recognised and addressed by industry-led solutions. Solutions may take the form of group certification for small growers (where appropriate) or development of alternative mechanisms to decrease the cost burden of attaining and maintaining certification. Educating consumers to demand sustainably produced certified wood would drive forest growers and processors to achieve certification under a credible internationally recognised certification scheme.

The high levels of internationally recognised, independently certified wood products being supplied and manufactured in Australia are a competitive advantage for Australia's forest industry. FIAC supports and encourages the work of major global independent forest certification

bodies, including the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC). In Australia, forest managers and owners can certify their forests under either the FSC or the Australian Forest Certification Scheme (AFCS), which is recognised under the PEFC. While certification does not necessarily deliver a price premium to either forest growers or wood product producers, it can help producers and processors to maintain and/or grow their market share.

Typically, production costs are lower in trading nations with lower standards than those in Australia. This often results in domestic purchasing choices that support poor environmental management. Purchase of such products can result in degraded forest environments, reduce biodiversity, increase deforestation and deprive local communities of opportunities to improve their income and quality of life.

Ecosystem services from forests include climate regulation, biodiversity, water, soil and carbon values. These services are taken into account in the development of science-based forest management plans and harvesting practices. The associated cost is usually met by forest managers from the revenue generated from wood sales.

Nationwide measures are required that balance the global environmental outcomes at the border. This would involve products imported from trading nations with lower standards being constrained (by access or price mechanisms) until these nations successfully amend their forest management, ownership and harvesting regimes to a standard that PEFC and FSC recognise and certify.

Recommendation 15: That Australian forests and forest products are certified to international standards by:

- industry ensuring that all Australian production forests and forest products obtain certification under an internationally recognised certification scheme
- the Australian Government ensuring that all forests obtain internationally recognised certification of their forest management
- the Australian Government requiring all imported forest products to be sourced from forests covered by internationally recognised forest and chain of custody certification schemes.

Strategy: Broaden community support for the industry

Community criticism of the forest industry contributes to a poor perception and misunderstanding of the industry. Negative community perceptions are often influenced by high-profile anti-forestry campaigns that focus on the short-term effects of forest management practices and rely on a level of community ignorance about forest management to achieve their objectives.

Many people equate permanent land clearing with forestry, even when the clearing is done for urban expansion or agriculture or to remove native vegetation that isn't in a production forest. The establishment of new trees in a forest after harvesting is a fundamental part of production forest management. State governments require the regeneration of harvested multiple-use public natural forest to specified standards (MIG & NFISC 2013).

Industry needs to be able to respond to misinformation in a timely manner, drawing on industry spokespeople from all parts of the value chain for support.

Sourcing subject matter experts

Industry collaboration with reputable subject matter experts could help overcome public scepticism and promote the industry.

Industry needs to identify subject matter experts who are able to provide balanced commentary to counteract misleading claims about controversial aspects of the forest industry.

Government employees at the state and Commonwealth level also have in-depth knowledge of issues pertinent to the forest industry. The industry should be afforded access to these experts and they should be allowed to speak freely on their field of expertise.

Recommendation 16: That industry establishes a panel of subject matter experts to speak on issues associated with the forest industry.

Forming strategic alliances

The forest industry would benefit from developing alliances with credible organisations that produce similar products or services for similar target audiences. Such alliances would enable the forest industry to increase its competitive advantage through access to the innovation, credibility, marketing, customer base, technology and capital of other organisations.

Strategic alliances could also change perception and generate awareness of the forest industry. For example, the 'Wood. Naturally Better.' consumer programme—a joint initiative of FWPA and Planet Ark—was supported by television commercials that aired from 2011 to 2014. Tracking research showed the commercials increased

consumer understanding of the advantages of wood. They were also thought to have indirectly improved 'the social licence for the industry to operate' (FWPA 2014).

Recommendation 17: That industry uses strategic alliances to broaden community support for the forest industry.

Demonstrate confidence in the industry through procurement policies

National government pro-wood procurement policies exist in Japan, France, Canada, Finland, the Netherlands, New Zealand and the United Kingdom. Many have originated from environmental regulations and mandates that seek to respond to climate change. In Australia, Victoria's Latrobe City Council adopted its Wood Encouragement Policy in 2014, with mandatory guidelines for the use of wood in new council projects (Latrobe City Council 2014). The use of pro-wood procurement policies is an effective way for governments to show leadership and promote awareness of the benefits of forest products.

Government procurement policies could also encourage the use of Australian made paper products. This approach to procurement should recognise the high environmental standards of Australian paper manufacturers, as well as the significant economic and social benefits to regional communities from manufacturing paper products in Australia. Any pro-wood procurement policies should be consistent with Australia's obligations established by the World Trade Organization and free trade agreements.

Recommendation 18: That the Australian Government develops procurement policies that support the Australian forest industry and its broader contribution to the Australian economy.

Responding to the recommendations

FIAC has developed this paper with the aim of creating a more sustainable and vibrant future for Australia's forest industry to 2050.

The recommendations contained in this paper are directed to industry and the Australian Government. FIAC requests that the Australian Government respond to this paper by providing its views and acting on the recommendations.

FIAC also requests that the Australian Government collaborates with state and territory governments to progress those recommendations that require regional, state and territory cooperation.

The forest industry is best placed in many areas to achieve the vision that we have proposed. We are optimistic that industry will play an active role in developing and implementing the recommendations.

We believe that the recommendations will form a solid foundation for Australia's forest industry to successfully lead the transition to a bioeconomy in a way that Australians can be proud of.

Recommendation 19: That the Australian Government convenes a meeting of state and territory ministers responsible for forestry to discuss issues raised in this paper.



Pinus radiata seedlings

Department of Agriculture and Water Resources

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