Business Case for Future FWPA Investments 2013 to 2018

Forest&Wood Products Australia

Knowledge for a sustainable Australia

Contents

1 Executive Summary

Forest and Wood Products Australia Ltd (FWPA) was established in September 2007 following widespread consultation and a poll of levy payers. The private company replaced the existing government statutory authority to create an organisation that could undertake generic marketing as well as R&D investments.

Over the past four years, in response to industry guidance, the FWPA Board has significantly increased activities funded from cash reserves. By June 2012, the company's reserves will be reduced to a prudent level, so a balance between income and expenditure will be needed in future financial years.

The company's first five-year plan of operations and statutory funding agreement (SFA) with the Commonwealth Government finishes in September 2012. To help determine the future (if any) of the company and its operations, an independent review was undertaken as required under the SFA. The consultants concluded:

> *This performance review has found that FWPA is a well-run company that has met its obligations under the statutory funding agreement with government. Stakeholders including DAFF have generally described FWPA as performing its functions effectively. Where there were some areas of relative weakness early in FWPA's existence these have generally been addressed over the review period.*[1]
>
> **SED Consulting (2012)**

The Australian forest and wood products industry (including importers and exporters) has undergone considerable change over the past decade and currently faces a large number of challenges. There is awareness that the sector cannot individually, or collectively, continue in a 'business as usual' manner.

The company convened a Summit in February 2012 of the boards of the four national representative bodies recognised under the company constitution, other key company members and levy payers. The Summit sought specifically to answer the following four questions:

- Are collaborative programs important for the industry's future?
- If so, which programs are higher priorities?
- Which programs should be managed by FWPA on the industry's behalf?
- Which programs is industry prepared to fund?

The overall sentiment from the Summit was:

> *There was clear support for the continued role of FWPA. It was acknowledged that the company was performing well with high levels of governance and credibility … There was also conditional support for increased levies if a business case showed the benefits to levy payers based upon the quantum of increase and the overall benefit to industry from key program investments.*[2]
>
> **Australian Business Class (2012)**

[1] http://www.fwpa.com.au/sites/default/files/FWPA_performance_review.pdf

[2] http://www.fwpa.com.au/sites/default/files/FWPA%20Summit%20Summary%202012.pdf

In addition, the Summit participants prioritised existing company programs and a range of potential future programs. This business case has been developed around six programs, which consist of existing and new activities:

- Enhancing Social Licence
- Growing the Market
- Improving Statistics and Economic Analysis
- Integrating Forest Research and Extension
- Boosting Manufacturing Productivity
- Addressing Skills Shortages.

To assist in the analysis of the proposed programs, consolidated levy categories are used throughout the business case. It is a recommendation that the industry support the consolidation of levy classes to reduce the administrative cost of the accessing the Government's levy collection system.

1.1 Enhancing Social Licence

The term 'social licence' has gained prominence over the past decade to describe the activities that, although legal, require community approval to continue, develop or expand. Social licence is a continuum of community views of an industry or economic activity.

All sectors of the forest and wood products industry, whether associated with native forests, plantations or imports, are confronted with issues and interest groups that could undermine their social licence to operate.

FWPA's existing consumer promotion campaign (Wood. Naturally Better.™) and the partnership with Planet Ark are intended to encourage the use of sustainably sourced wood products rather than other building materials. Increased understanding of the environmental benefits of wood products, especially in a carbon-constrained world, can help support the industry's social licence to operate.

The Wood. Naturally Better.™ campaign was launched in October 2008 with print advertising and has subsequently expanded to include a strategic partnership with Planet Ark and TV advertising.

Performance of the campaign is measured regularly using consumer tracking research. This research clearly demonstrates that the campaign has been very successful in improving consumer understanding of the role and wood and climate change and has also improved consumer perceptions across a wide range of measures. Summit participants were strongly supportive of the continuation of this program.

FWPA's teacher education program, ForestLearning, was launched in June 2011 and is aimed at providing teaching resources for years 3 to 12 aligned to the new national curricula. Use of the online teaching resource is growing steadily and it has the

potential to positively affect the industry's social licence with both teachers and students. At the Summit, industry participants supported the continuation of this program.

A new activity that gained some support at the Summit (Priority 3) was to create a structured, national program to maintain access to native forests. To be effective, this program must develop and promote cogent social, economic and moral arguments that are relevant to a largely urban population, especially opinion leaders.

Enhancing the social licence of the forest and wood products sector is a benefit to all players in the sector as it has a potential impact on market demand, staff morale, recruitment and operating costs.

The proposed annual expenditure for this program is $4.18 million, which includes a nominal 10% corporate overhead cost. Consumer advertising and Planet Ark alliance is allocated $2.5 million per year, while the native forest access program has been allocated $1.0 million per year and ForestLearning $0.3 million per year.

The allocation of investment benefits and required levy rates for the consolidated levy categories is shown below:

	Total Investment	Gov't matching funds	Industry funds required	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper
Investment required ('000)	$4,180	$165	$4,015	$1,221	$1,584	$120	$683	$407	$0
Required levy rates per m3				**$0.05**	**$0.15**	**$0.07**	**$0.47**	**$0.04**	**$0.00**

1.2 Growing the Market

Wood is very highly regarded by consumers and building specifiers. However, owing to a range of factors, this level of goodwill does not automatically translate into increase sales volumes or improved social licence.

There is a real opportunity to grow the market for wood-based construction systems in both traditional and non-traditional markets within Australia. This can benefit the sector in terms of increased market share or value compared to other materials.

The traditional market for wood in the Australian marketplace is for structural or decorative applications in new and renovated detached dwellings. There is an opportunity to increase the use of wood in detached houses. Also, recent developments such as Lend Lease's new cross-laminated timber (CLT) building in Melbourne suggest that timber-based construction systems have the potential to gain market acceptance for multi-residential and non-residential buildings.

This proposed program consists of three ongoing activities (market access R&D investments, building specifier marketing and standards and codes coordination) and one new activity (built environment technical support). All these activities were ranked as a high priority by the attendees at the Summit.

Since 2002, some $21 million has been invested in market access research and extension. An independent assessment concluded that this investment has generated around $68 million in value to the industry, a benefit-cost ratio of more than 3:1.

FWPA has developed three R&D investment plans covering sustainable buildings, commercial and non-commercial construction markets to assist in future investments for market access R&D. These plans identify the key impediments to the use of wood and the knowledge that must be generated to help address these impediments.

FWPA's building specifier marketing activities are undertaken under the WoodSolutions brand. This is a comprehensive program aimed at a wide range of building specifiers (e.g. architects, engineers, building designers, building surveyors, quantity surveyors) to address their education, information, inspiration and communication needs related to using wood products.

WoodSolutions activities include education support for key professional associations, building alliances with professional bodies, international keynote speakers, conferences, an authoritative website, onsite timber tutorials and technical design guides. A number of measures indicate that the WoodSolutions program is well received by building specifiers and is addressing their information needs.

Future activities are aimed at building on the existing strong base with a focus on TAFE and university education, continuous professional development, design and costing tools, and building stronger linkages to international innovations.

Following an extensive process of consultation, FWPA took on the role of standards and building codes coordination in late 2009. This program aims to increase the use of wood-based products through the efficient and effective development and/or maintenance of key standards, codes and handbooks that underpin the manufacture and use of timber and wood products (except forest management standards).

Standards and codes are important to market access. The industry currently has about 150 timber and wood product standards and is exposed to nearly 80 building standards that influence the use of timber and wood products. In addition, there are many building regulations that reference standards that affect the use of timber and wood products.

Proposed future activities include improving control linkages between standards; reducing the number of relevant material standards to a sustainable number of about 30 to 40; increasing the use of other formats, such as industry handbooks or guides; and implementing a training program to increase adoption of key standards.

The new built environment technical support program aims to provide stronger personal support to assist in knowledge transfer and uptake. It is proposed to establish a support team of 8-10 technical people who are experienced building design and building professionals (e.g. structural engineers, architects, building designers, project managers).

The team's activity would be to disseminate timber and wood product knowledge as well as assist in inspiring the design and construction of timber projects, and providing technical advice to all design professionals.

In addition, the team would provide representation on building standards and regulatory committees, be the 'eyes and ears' of the industry on developing issues or opportunities and provide the speakers for the WoodSolutions onsite tutorials and industry-organised seminars and workshops.

The proposed annual expenditure for this program is $6.27 million, of which $1.628 million can be potentially sourced from Government funds because R&D investment and tech transfer are eligible for matched payments. Market R&D investments are allocated $2 million per year. The continuation of the current WoodSolutions activity is allocated $1.2 million and standards coordination is allocated $0.5 million per year. The new technical support team is allocated $2 million per year.

The allocation of investment benefits and required levy rates for the consolidated levy categories is shown below:

	Total Investment	Gov't matching funds	Industry funds required	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper
Investment required ('000)	$6,270	$1,628	$4,642	$757	$2,149	$519	$1,216	$0	$0
Required levy rates ($/m3)				**$0.03**	**$0.20**	**$0.30**	**$0.83**	**$0.00**	**$0.00**

1.3 Improving Statistics and Economic Analysis

FWPA and its predecessor have provided funding to gather, analyse and publish key industry statistics. Industry statistics are of benefit to industry and other parties and are eligible for matching payments from the Commonwealth Government.

FWPA constantly seeks to improve the statistical information about the industry, including, but not limited to, that data which it funds, either in part or completely. In 2010, FWPA commissioned an R&D investment plan following consultation with industry stakeholders. This plan led to a new three-year contract with ABARES and the development of new statistical series related to timber market shares and socio-economics.

A subsequent review was undertaken to determine how to improve the timeliness, accuracy and relevance of the statistics collected. A survey showed that improved data would be used by all industry participants.

The provision and analysis of key forest industry statistics is currently undertaken by a range of organisations, both public and private, with no central coordination or repository of information. As a consequence, there are ongoing concerns about the accuracy and timeliness of statistics. There is also cost duplication. Individual companies are often using third party statistical services to fill gaps, which add to the overall cost to the industry.

A dedicated FWPA statistics and economics service could coordinate the national collection and analysis of key economic statistics and provide a secure and assured interface between government collection agencies such as ABS and ABARES and industry-owned data.

This service was rated a Priority 1 by the participants at the Summit.

The aim is to establish an online statistics hub where data can be centrally entered, accessed and analysed. This model already exists for two key data sets, so it is a matter of implementing the appropriate systems that can provide confidence to maintain commercially sensitive data.

The proposed annual expenditure for this program is $0.88 million, of which $0.44 million can be potentially sourced from Government funds as publicly available statistics and economics are eligible for matched payments.

The allocation of investment benefits and required levy rates for the consolidated levy categories is shown below:

	Total Investment	Gov't matching funds	Industry funds required	Forest growers	Solid wood processor	Engineered wood processors	Importers	Exporters	Pulp and paper
Investment required ('000)	$880	$440	$440	$176	$176	$13	$44	$31	$0
Required levy rates ($/m3)				**0.008**	**0.016**	**0.008**	**0.030**	**0.003**	**0.000**

1.4 Integrating Forest Research and Extension

FWPA runs a broad R&D investment program aimed at improving industry's understanding of, and ability to manage, its forest resources in a productive and sustainable manner. There are currently five areas of priority in forest research: genetics, climate change, water, biosecurity and forest management tools. Each priority is informed by an investment plan.

Over the past 12 months, FWPA has had a focus on improving the uptake and understanding of existing R&D findings (i.e. extension activities) through electronic newsletters, regional seminars and other communication opportunities.

The changing structure of the Australian forest and wood products sector requires a new approach to the funding of R&D and encouraging the use of R&D findings by the industry.

The current arrangements for R&D investments in forest resources and uptake of R&D findings are under considerable stress due to the imminent closure of the CRC for Forestry and de-investment by companies and government agencies.

The sector is confronting a large number of challenges related to its ongoing viability such as policy initiatives (e.g. climate change, water), changing environmental conditions and low (or stagnant) productivity growth. The situation is further complicated by a high degree of regionalism (e.g. species, environments, markets) that require local solutions.

The opportunity is to develop a nationally coordinated program of R&D investments and regional extension activities that have strong industry 'ownership' and engagement across several key disciplines. If established, this would be an important step in building a new approach to forest research and extension in Australia.

FWPA is an active participant in the national RD&E process and is hopeful that an overarching solution can be developed for the sector. However, in the interim, there is a need for ongoing investment in the current priority R&D areas as well as five additional priorities identified at the Summit:

- Sustainable resource R&D (*ongoing – to continue*)
- Herbicide and pesticide trialling consortia (*ongoing – to be expanded*)
- Forest Health Surveillance network (*new priority 1 program*)
- Genetic deployment network (*new priority 1 program*)
- Forest Harvest and Haulage Network (*new priority 1 program*)
- Private native forest grower extension (*new priority 2 program*)

The CRC for Forestry has played a key role in funding research related to harvest and haulage, genetics and forest health, but a lesser role in herbicide development. Neither

the CRC nor FWPA has previously had a significant role in private forest extension, as this has been directly funded by the Commonwealth or state agencies.

The rationale for these activities to be undertaken by FWPA is that they are truly a public good, eligible for matching payments from the Commonwealth Government and provide value to the whole sector.

The proposed annual expenditure for this program is $8.14 million, of which $4.07 million can be potentially sourced from Government funds as R&D investment and tech transfer are eligible for matched payments. Continuation of the current R&D investments program is allocated $2 million per year. The remainder is allocated the new programs: herbicide and pesticide trialling ($600,000 per year), genetics deployment ($1 million per year), forest health surveillance ($600,000 per year), harvest and haulage research ($1.2 million per year) and private forest extension ($2 million per year). There is a nominal 10% allowance for corporate overhead.

The allocation of investment benefits and required levy rates for the consolidated levy categories is shown below:

	Total Investment	Gov't matching funds	Industry funds required	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper
Investment required ('000)	$8,140	$4,070	$4,070	$3,143	$482	$74	$0	$371	$0
Required levy rates ($/m3)				**$0.13**	**$0.04**	**$0.04**	**$0.00**	**$0.03**	**$0.00**

1.5 Boosting Manufacturing Productivity

Funding of pre-competitive research in wood processing has historically been undertaken by CSIRO and various state agencies, but this has now mostly ceased. Research capacity for wood processing, properties and performance is extremely limited with much of the expertise now limited to one facility.

Given the scale of the Australian wood processing industry compared to other forest-growing regions, it is unrealistic to expect that Australia will be a leader in basic wood processing research or in the development of new processing technology.

However, Australian plantation species and native forests have some unique properties that will require optimisation of processing technology for local conditions.

FWPA's investment in the Solid Wood Innovations research consortia shows that incremental cost savings are achievable without capital expenditure, such as optimised kiln schedules and reduced steaming times, which could reduce costs by $2.60/$m^3$ and $2.30/$m^3$ respectively. If applied across the existing solid wood processing sector, this could represent $20-$30 million per year in savings.

A future program of activity has been identified in two R&D investment plans. Key activities include:

- optimising production grading systems
- improving product durability
- improving mill productivity
- improving in-mill processing logistics and material handling systems.

There are concerns about the ongoing viability of domestic manufacturing in the face of high foreign exchange rates and low demand in North America and Europe. Governments are unlikely to reintroduce tariffs or other trade barriers to assist manufacturing, so the onus will be on industry to adjust to the new trading conditions through innovation in business practices. A decline in domestic manufacturing will affect forest growers, especially those in regions without ready access to export ports or other alternative markets.

Previous analysis of FWPA's investment in manufacturing productivity, using the combined RDC methodology for benefit-cost analysis, has shown that the weight average return is 5.0 over a 20–year period.

The proposed annual expenditure for this program is $2.2 million, of which $1.1 million can be potentially sourced from Government funds because R&D investment and tech transfer are eligible for matched payments.

The allocation of investment benefits and required levy rates for the consolidated levy categories is shown below:

	Total Investment	Gov't matching funds	Industry funds required	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper
Investment required ('000)	$2,200	$1,100	$1,100	$220	$770	$110	$0	$0	$0
Required levy rates ($/m3)				**$0.01**	**$0.07**	**$0.06**	**$0.00**	**$0.00**	**$0.00**

1.6 Addressing Skills Shortages

Over the past decade, there have been investigations and initiatives to address the workforce skills needed for the sector. FWPA developed an education investment plan to address some of the gaps that have been identified.

One of the specific skills shortages identified by Forestworks and the FWPA review relates to tertiary-trained professional foresters. Under the education investment plan, FWPA has undertaken some limited activity to help promote professional forestry as a career opportunity to 18-35 year olds.

The sector has a proud tradition of professional education with the 100th anniversary for Australian forestry education celebrated in 2010. Over that time, locally trained professional foresters and researchers have created a strong cohort, focused on solving local problems and expanding the forest sector.

Internationally trained foresters and researchers have made a major contribution to the sector. However, locally based education has the ability to forge strong interpersonal relationships and to inoculate key knowledge that may be specific to the Australian political and physical environment.

Collectively, the breadth of forestry training and the focused discipline of postgraduates have helped reinforce the strong scientific credentials that underpin the sector.

FWPA and FWPRDC have been investors in postgraduate scholarships for candidates undertaking research topics related to forest growing, processing and market access. To date, 39 postgraduates have been funded. FWPA has had no major role in forestry education.

Attendees at the 2012 FWPA summit acknowledged the importance of skills development but gave it a Priority 3 due to more short-term pressing issues.

The proposed annual expenditure for this program is $1.21 million, of which $0.605 million can be potentially sourced from Government funds as R&D investment and education are eligible for matched payments.

The allocation of investment benefits and required levy rates for the consolidated levy categories is shown below:

	Total Investment	Gov't matching funds	Industry funds required	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper
Investment required ('000)	$1,210	$605	$605	$328	$157	$30	$39	$52	$0
Required levy rates ($/m3)				**$0.01**	**$0.01**	**$0.02**	**$0.03**	**$0.005**	**$0.00**

1.7 Funding implications

The total funds required for the six programs is $22.88 million per year. It is estimated that $8.008 million may be available from the Commonwealth Government through matching payments. The remaining $14.872 million would need to be funded through levies.

The allocation of the investment benefits to each levy category and total levy required is shown below:

	Total Investment	Gov't matching funds	Cash reserves and other income	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and Paper	TOTAL LEVIES
Source of funds - 2011/12 ('000)	$13,380	$4,773	$3,373	$1,037	$2,723	$191	$985	$297	$0	$5,234
% of total levy income				20%	52%	4%	19%	6%	0%	100%
Current levy*				$0.05	$0.29	$0.15	$0.715	$0.035	$0.00	
Funds required for business case ('000)	**$22,880**	**$8,008**	**$0**	**$5,845**	**$5,318**	**$868**	**$1,981**	**$860**	**$0**	**$14,872**
% of total funds required				39%	36%	6%	13%	6%	0%	100%
Required levy per m3				**$0.25**	**$0.50**	**$0.50**	**$1.36**	**$0.08**	**$0.00**	

Note: * This the maximum current levy for the consolidated levy categories

1.8 Implementation

If the industry wishes to support this business case, a formal poll of levy payers would be needed, leading to a simple majority of support for the change(s). The process for changing levies is laid out in DAFF's document, *Levy Principles and Guidelines*. Ultimately, the change would require a change of Commonwealth regulations and is thus subject to the political process.

There are currently 12 levy classes, which have been consolidated in this business case into six categories. The current levy classes create an additional burden on administration and compliance costs associated with levy collection. There is also the potential for leakage of levies due to misclassification.

In allocating the investment benefits, the resultant levy for the solid wood processor and engineered wood processing categories were both approximately $0.50 per cubic metre. Therefore, there may be an opportunity to consolidate these two categories.

The future programs identified at the Summit, and further developed within the business case, will require a significant investment by industry that will be reflected in increased levies. The Board recognises that the current economic climate for the industry is extremely tough and the proposed levy increases may need to be phased in.

There a range of ways that the increase in levies could be implemented such as the following:

1. Immediate implementation as of 1 July 2013.
2. Staged implementation over a number of years (say, three years).
3. Implementation in response to an independent market trigger such as national housing starts.

A possible staged implementation could take the following form:

Source of funds ('000)	2011/12 (f'cast)	2012/13 (budget)		Year 1	Year 2	Year 3
Industry levies	$5,234	$5,371		$8,000	$11,000	$14,872
Gov't matching funds	$4,773	$3,079		$6,000	$7,000	$8,008
Total	$10,007	$8,450		$14,000	$18,000	$22,880
Cash reserves	$3,373					
Total investment	$13,380	$8,450		$14,000	$18,000	$22,880

The FWPA Board is confident that the company has the governance and business systems in place to deliver the projected benefits in accordance to any implementation pathway chosen by industry.

2 The Need for a Business Case

2.1 Background

Forest and Wood Products Australia Limited (FWPA) was established in September 2007 following widespread consultation and a poll of levy payers. The industry supported the establishment of a private (Industry owned not for profit) company as a replacement for the existing government statutory authority[3] so there could be an organisation to undertake generic marketing as well as R&D investments.

The company's vision and mission are:

VISION:

To ensure that forest and wood products are the preferred, sustainable material that meets the Australian market needs.

MISSION:

The vision will be achieved through FWPA investing strategically in R&D, knowledge transfer, education and generic promotion to gain community support and market acceptance for forest and wood products.

Over the past four years, in response to industry guidance, the FWPA Board has significantly ramped up activities funded from the company's cash reserves. This gave the organisation the critical mass for the generic promotion program focused on both consumers and building specifiers. It also provided the resources to launch new education initiatives.

In 2010/11, FWPA invested $12.4 million on behalf of industry, with an operating deficit of $2.2 million. This deficit represents about 40% of the $5.2 million revenue collected from industry levies. Income received from Commonwealth matching funds was $5.0 million. By June 2012, the company's reserves will be reduced to a prudent level, so a balance between income and expenditure will be needed in future financial years.

The company's first five-year plan of operations and statutory funding agreement (SFA) with the Commonwealth Government finishes in September 2012. To help determine the future (if any) of the company and its operations, an independent review was undertaken as required under the SFA. The consultants concluded:

> *This performance review has found that FWPA is a well-run company that has met its obligations under the statutory funding agreement with government. Stakeholders including DAFF have generally described FWPA as performing its functions effectively. Where there were some areas of relative weakness early in FWPA's existence these have generally been addressed over the review period.*
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> **SED Consulting (2012)**

[3] Forest and Wood Products Research and Development Corporation (FWPRDC)

The company convened a Summit in February 2012 of the boards of the four national representative bodies recognised under the company constitution, as well as other key company members and levy payers. The Summit sought specifically to answer the following questions:

- Are collaborative programs important for the industry's future?
- If so, what programs are the highest priority?
- What programs should be managed by FWPA on the industry's behalf?
- What programs is the industry prepared to fund?

The overall sentiment from the Summit was:

> *There was clear support for the continued role of FWPA. It was acknowledged that the company was performing well with high levels of governance and credibility … There was also conditional support for increased levies if a business case showed the benefits to levy payers based upon the quantum of increase and the overall benefit to industry from key program investment.*
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> **Australian Business Class (2012)**

In addition, the Summit participants prioritised existing company programs and a range of potential future programs (see Figure 1).

Figure 1 – Summit ranking of potential programs

Potential programs	Priority	Comments
Herbicide trialling consortia	1	Currently partially funded by non-matched funds
Genetics deployment	1	Currently partially funded by non-matched funds
Forest Health surveillance network	1	
Build environment technical support	1	
Industry statistics and economics	1	Currently partially funded by non-matched funds
Forest harvest and haulage	2	
Private forest grower extension	2	
Shared services	2	May be in conflict with SFA
Native forest access program	3	
Forestry education	3	

This document has been developed in response to the Summit and to form the basis of another meeting of the Summit participants in July 2012.

2.2 Situation Analysis

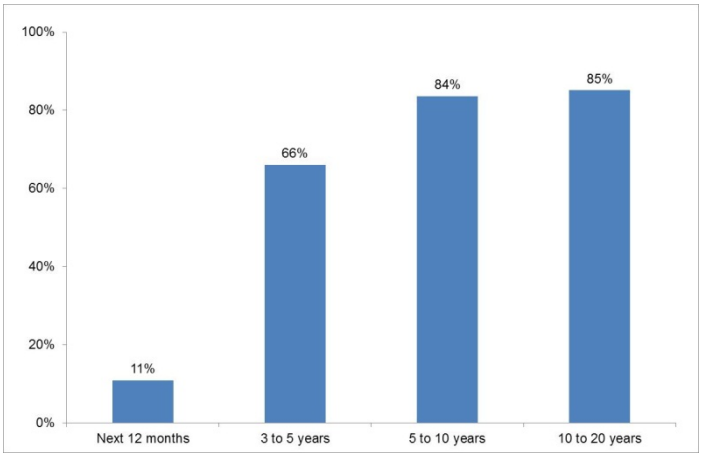
The Australian forest and wood products industry (including importers and exporters) has undergone considerable change over the past decade and currently faces a large number of challenges, including:

- low profitability and return on investment
- impact of exchange rates on trade-exposed sectors
- low housing starts in Australia and key international markets
- increased competition from other nations supplying forest products
- changing ownership of the resource and manufacturing sectors
- reduced investment in R&D (and the resultant collapse in R&D capacity)

- reduced investment in industry associations (and the resultant collapse in capacity)
- continued concern about the industry's social licence to operate
- impact of adverse government policy settings.

Despite these pressures, the participants at the Summit generally were optimistic about the longer-term future as shown in Figure 2.

Figure 2 – Summit respondents who rate the future period 'slightly better' or 'significantly better' compared to last year



While the reasons for individual responses are unknown, there is a widely held view within the industry that its products will be the beneficiaries in a carbon-constrained economy. Other factors that often contribute to optimism in the longer term include the support of the industry's materials by consumers and specifiers, the growth in the Australian population and the belief that the scientific underpinnings of the sector will result in favourable government policy settings.

A positive future for the sector is not guaranteed. Other material groups, such as concrete, steel and plastic composites, are repositioning and redesigning their products to improve environment credentials and performance. The sector also has entrenched critics that continue to oppose industrial-scale forestry in native forests and the conversion of agricultural land to industrial plantations.

More recently, as a consequence of the historically high foreign exchange rates and low housing starts in North America and Europe, there is growing concern about the viability of the domestic manufacturing sector due to lower-priced imports.

Unlike other higher-profile manufacturing sectors (e.g. car manufacturing, aluminium smelting), the potential closure of forest and wood products manufacturing, as well as the downstream secondary and tertiary manufacturing, has failed to gain public or political attention.

There is awareness that the sector cannot individually, or collectively, continue in a 'business as usual' manner. However, given its low profitability, there is the question of whether the sector can make the necessary investments to change its cost structure, products or markets.

The sector faces a classic 'Catch 22': it cannot afford not to change but may not have the funds to change. This conundrum applies to both individual corporate and collaborative activities.

2.3 Current FWPA Levies and Income

The levies to FWPA are established by Commonwealth Government legislation and regulation, and have remained largely unchanged since they were enacted in 1994.

The major changes have been the incorporation of the National Timber Market Development levy, the increase in the hardwood levy from 22 cents to 29 cents, and the introduction of a new forest grower levy class at 5 cents/m^3. The current levy rates for the 12 levy classes are shown in Figure 3.

Figure 3 – Statutory levies by class

Levy class	Levy category	Unit	Current levy rate
Private grower levy	Grower	m3 round log	$0.050
Gov't grower levy	Grower	m3 round log	$0.050
Hardwood sawlog	Solid wood processor	m3 round log	$0.290
Softwood sawlog	Solid wood processor	m3 round log	$0.290
Softwood low grade/roundwood	Solid wood processor	m3 round log	$0.080
Cypress	Solid wood processor	m3 round log	$0.220
Hardwood woodchip	Exporter	m3 round log	$0.035
Softwood woodchip	Exporter	m3 round log	$0.000
Wood panel	Engineered wood processor	m3 round log	$0.100
Ply & veneer	Solid wood processor	m3 round log	$0.150
Importer charge	Importer	m3 finished product	$0.725
Pulp and paper	Pulp and paper	m3 round log	$0.000

Note: importer charge is currently calculated at 2.5 times the highest domestic levy

Compared to other RDCs, the forest and wood products sector has a more complex administrative arrangement, with 12 levy classes varying with product type. This increases the administration for companies and the government, and offers the potential for mis-classification (e.g. softwood sawlog versus softwood low grade/roundwood).

A comparison of levies compared to other commodities (see Figure 4) shows that the levies within the sector are relatively low as a proportion of the estimated commodity price.

Figure 4 – Comparison of levies to other commodities

Organisation	Commodity type	Levy rate ($)	Estimated commodity price ($)	Levy as a proportion of selling price
Forest and Wood Products Aust	Round log	0.050	55	0.09%
	Softwood sawn timber	0.290	400	0.07%
Cotton RDC	Cotton	2.250	425	0.53%
Australian Egg Corporation Ltd	Chick x 2d old	0.460	4.5	10.22%
Dairy Australia	Milk	0.004	0.396	0.89%
Australian Pork Ltd.	Pig	2.525	200	1.26%
Grapes and Wine RDC	Grapes	2.000	400	0.50%
	Wine	4.980	1010	0.49%
Rural Industries RDC	Honey	0.023	3	0.77%
	Bees	0.100	20	0.50%
	Rice	3.000	275	1.09%

The estimated production volume of the levy class products (i.e. excluding softwood woodchips and pulp and paper) are shown in Figure 5, which is based on forecasts developed by URS Forestry.

Figure 5 – Estimated volumes by levy class

LEVY TYPE	CATEGORY	2012/13 '000 M3	2013/14 '000 M3	2014/15 '000 M3	2015/16 '000 M3	2016/17 '000 M3	2017/18 '000 M3	5-year Average '000 M3
Grower levy	Grower	10,584	11,459	12,527	11,810	11,728	12,022	11,688
Voluntary grower levy	Grower	10,584	11,459	12,527	11,810	11,728	12,022	11,688
Woodchip	Exporter	8,911	10,661	12,761	10,915	10,752	11,476	10,913
Wood panel	Engineered Wood Processor	999	999	999	1,105	1,105	1,070	1,046
Ply and veneer	Engineered Wood Processor	624	624	624	737	737	699	674
Cypress	Solid Wood Processor	165	165	165	165	165	165	165
Hardwood	Solid Wood Processor	2,076	2,076	2,076	2,151	2,151	2,126	2,110
Softwood sawlog	Solid Wood Processor	6,983	6,983	6,987	7,184	7,184	7,118	7,073
Softwood low grade/roundwood	Solid Wood Processor	1,409	1,409	1,441	1,362	1,362	1,388	1,395
Importer charge	Importer	1,412	1,431	1,447	1,479	1,504	1,477	1,458
Pulp and paper	Pulp and paper	n/a	n/a	n/a	n/a	n/a	n/a	n/a
TOTAL		43,748	47,267	51,554	48,719	48,416	49,563	48,211

Note: This analysis used historical trends for estimating the importer charge and does not take in account changes in the exchange rate.

The forecast income at the current levy rates is shown in Figure 6.

Figure 6 – Estimated income by levy class

LEVY TYPE	CATEGORY	2012/13 $'000	2013/14 $'000	2014/15 $'000	2015/16 $'000	2016/17 $'000	2017/18 $'000	5-year Average $'000
Grower levy	Grower	529	573	626	591	586	601	584
Voluntary grower levy	Grower	529	573	626	591	586	601	584
Woodchip	Exporter	312	373	447	382	376	402	382
Wood panel	Engineered Wood Processor	100	100	100	111	111	107	105
Ply & Veneer	Engineered Wood Processor	94	94	94	111	111	105	101
Cypress	Solid Wood Processor	36	36	36	36	36	36	36
Hardwood	Solid Wood Processor	602	602	602	624	624	617	612
Softwood sawlog	Solid Wood Processor	2,025	2,025	2,026	2,083	2,083	2,064	2,051
Softwood low grade/roundwood	Solid Wood Processor	113	113	115	109	109	111	112
Importer charge	Importer	1,024	1,037	1,049	1,072	1,090	1,071	1,057
Pulp and paper	Pulp and paper	n/a	n/a	n/a	n/a	n/a	n/a	n/a
TOTAL		5,364	5,526	5,722	5,709	5,713	5,715	5,625

2.4 Allocating the Benefits

FWPA was established to provide benefit to the whole of the domestic industry, including importers and exporters, and also to the Australian community in general. This is an explicit requirement of its statutory funding agreement with the Commonwealth Government, which provides access to levy funds and matching funds for eligible activities.

While individual programs or projects may benefit some sectors more than others, the overall portfolio of activities and investments is structured to deliver benefits roughly in proportion to the source of funds.

This is not an exact science. To simplify the analysis, the levy classes have been consolidated into six categories: growers, solid wood processors, engineered wood processors, importers, exporters, and pulp and paper. The pulp and paper sector have historically voted their levies to zero and, as a consequence, the company has not provided any programs for their direct benefit.

The estimated benefits derived from the 2011/12 programs and allocated to the levy categories compared to source of income is shown in Figure 7. This analysis suggests that growers and engineered wood processors are getting a greater benefit than their contribution would indicate.

Figure 7 – Estimated benefits and source of levies by levy category

	2011-12 Forecast expenditure	GROWERS		SOLID WOOD PROCESSORS		ENGINEERED WOOD PROCESSORS		IMPORTERS		EXPORTERS		PULP AND PAPER	
		Est. % benefit	$ benefit	Est. % benefit	$ benefit	Est. % benefit	$ benefit	Est. % benefit	$ benefit	Est. % benefit	$ benefit	Est. % benefit	$ benefit
Generic Industry Promotion													
Consumer campaign	2.53	20%	0.51	45%	1.14	3%	0.08	25%	0.63	7%	0.18	0%	-
Specifier marketing program	1.28	20%	0.26	45%	0.58	10%	0.13	25%	0.32	0%	-	0%	-
Trade partner program	0.09	0%	-	65%	0.06	5%	0.00	30%	0.03	0%	-	0%	-
Program management	0.26	13%	0.03	52%	0.13	6%	0.02	27%	0.07	2%	0.01	0%	-
Research and Development													
Forest growing	2.42	65%	1.57	20%	0.48	3%	0.07	0%	-	12%	0.29	0%	-
Processing	0.96	15%	0.14	75%	0.72	10%	0.10	0%	-	0%	-	0%	-
Market access	1.87	10%	0.19	45%	0.84	15%	0.28	30%	0.56	0%	-	0%	-
Program management	0.48	30%	0.14	47%	0.22	9%	0.04	10%	0.05	4%	0.02	0%	-
Technical Transfer and Education													
Tech transfer	0.42	40%	0.17	40%	0.17	5%	0.02	10%	0.04	5%	0.02	0%	-
Education	1.16	50%	0.58	35%	0.41	5%	0.06	5%	0.06	5%	0.06	0%	-
Program management	0.13	45%	0.06	38%	0.05	5%	0.01	8%	0.01	5%	0.01	0%	-
Standards coordination													
Development	0.25	10%	0.03	55%	0.14	10%	0.03	25%	0.06	0%	-	0%	-
Program management	0.16	10%	0.02	55%	0.09	10%	0.02	25%	0.04	0%	-	0%	-
Corporate costs	1.37	25%	0.35	47%	0.65	7%	0.10	17%	0.23	3%	0.04	0%	-
TOTAL EXPENDITURE	**13.38**	**30%**	**4.04**	**42%**	**5.67**	**7%**	**0.95**	**16%**	**2.10**	**5%**	**0.62**	**0%**	**-**
Source of 2011/12 levies	**5.23**	**20%**		**52%**		**4%**		**19%**		**6%**		**0%**	
Difference		**10%**		**-10%**		**3%**		**-3%**		**-1%**		**0%**	

To assist in the analysis of the proposed programs, the six levy categories are used throughout this business case. It is a recommendation that the industry support the consolidation of levy classes into these six categories to reduce the administrative cost of the levy system.

2.5 The Role for FWPA

FWPA is a vehicle for industry collaboration. However, unlike other industry service companies or associations, its funding mechanism ensures that that there are no 'free riders'. It receives matching funds from the Commonwealth Government for eligible activities such as R&D, tech transfer and education.

FWPA's funding mechanism comes with a high compliance and governance cost compared to other industry structures, and requires the company to address recognised market failures in the provision of public goods. A public good is a benefit that a private investor would be unable to exclusively capture or to exclude others from (e.g. generic marketing, pre-competitive research, standards development).

Therefore, the industry's criteria to invest in FWPA should be (in order):

- Will the proposed investment benefit the whole sector (i.e. is it a public good)?
- Can the proposed activity be interpreted as a political activity (i.e. not agri-political)?
- Are the proposed benefits or outcomes realistically achievable?
- Are the benefits significantly higher than the investment, including compliance and governance costs (say, a benefit-cost ratio of at least 2:1 over a 5-year period)?
- Are the costs of doing nothing acceptable (i.e. the counterfactual)?

The following sections deal with the specific business case for the provision of the following industry services:

- Enhancing Social Licence
- Growing the Market
- Improving Statistics and Economic Analysis
- Integrating Forest Research and Extension
- Boosting Manufacturing Productivity
- Addressing Skills Shortages.

The services presented within this business case are a combination of existing FWPA programs and the potential programs identified at the Summit. The level of investment for each service is the same as presented at the Summit, but presented inclusive of a nominal 10% corporate cost.

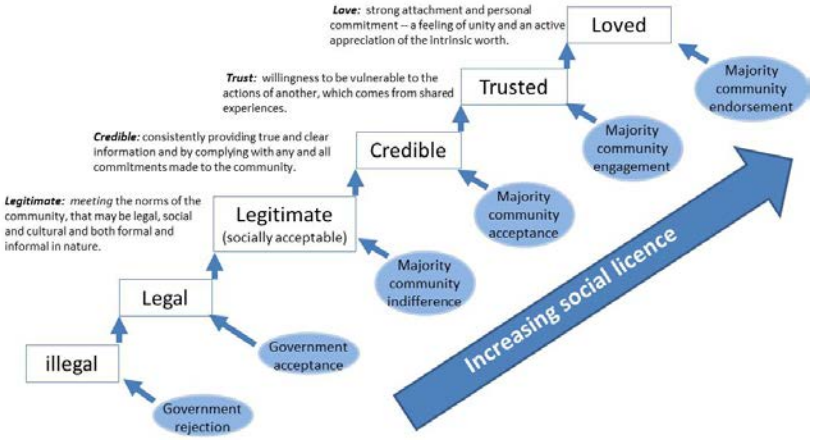
3 Enhancing Social Licence

3.1 Current Situation

The term 'social licence' has gained prominence over the past decade to describe the activities that, while legal, require community approval to continue.

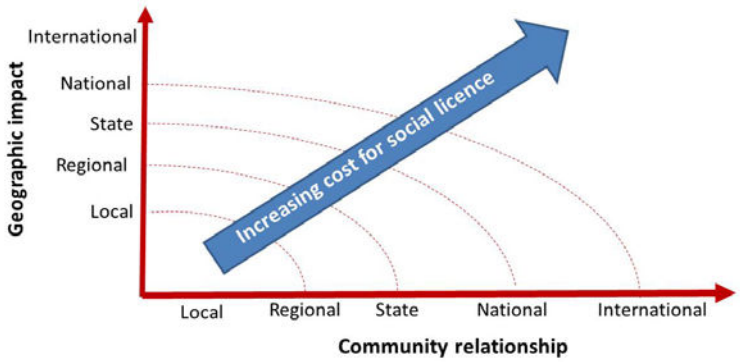
Social licence is not a simple stop-or-go ticket. Rather, it is a more of a continuum of community views of an industry or economic activity (see Figure 8).

Figure 8 – Social licence continuum



There is a strong geographic dimension to social licence with an escalating cost impost, especially due to the expanding scope of community of interest (see Figure 9).

Figure 9 – Geographic dimension to social licence and costs



Some other general observations can be made:

- increasing social licence requires a lot of work, but losing it can be easy
- social licence for an industry/sector is affected by the 'weakest link'
- social licence is provided by the silent majority not the vocal minorities (but the latter can influence the former)

All sectors of the forest and wood products industry, whether associated with native forests, plantations or imports, are confronted with issues and interest groups that could undermine their social licence to operate.

FWPA's generic promotion campaign and the partnership with Planet Ark are intended to encourage the use of sustainably sourced wood products rather than other building materials. Increased understanding of the environmental benefits of wood products, especially in a carbon constrained world, can help support the industry's social licence to operate. However, this campaign is pre-competitive and has not addressed specific sector issues.

The program was launched in October 2008 under the *Wood. Naturally Better.™* brand with a focus on the benefits of wood in tackling climate change. Over the past three years, the program has evolved from the initial print advertising campaign to include a television commercial (TVC) and a partnership with Planet Ark.

The role envisioned for generic promotion was similar to the 'Intel Inside' program, which could be leveraged by individual sectors or companies.[4] To date, more than 800 companies and organisations within the sector have taken up the *Wood. Naturally Better.*™ branding through the free licensing scheme.

The performance of the consumer program is measured through regular consumer tracking research. There is clear evidence that prompted advertising awareness has increased significantly since the program started (see Figure 13).

The principal message of the campaign has also been successfully delivered. At the start of the campaign, only 38% of consumers thought that wood products in the home continued to store carbon. This has now risen to 62% (see Figure 14). The campaign has also significantly increased consumers association of wood with the term "environmentally friendly" (see Figure 15).

Consumers also rate the current TV commercially quite highly in terms of key metrics (see Figure 16).

[4] Rob de Fegely 'A Proposal to establish a New Entity to deliver Marketing & Promotion and Research & Development to the Australian Forest and Wood Products Industry'

Figure 13 – Prompted awareness of advertising

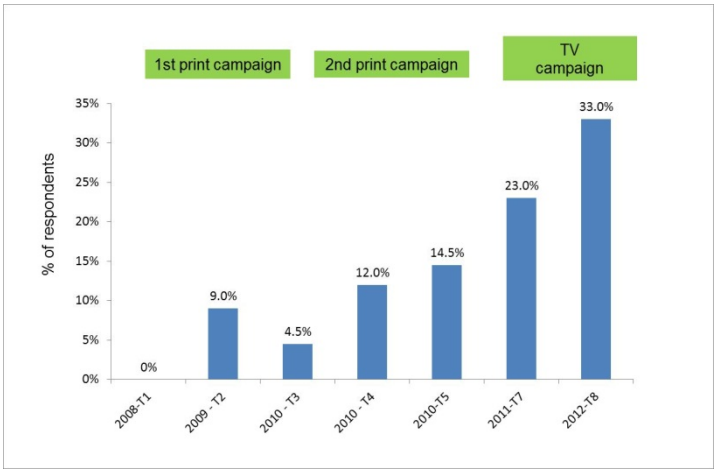


Figure 14 – Consumers' understanding of wood and carbon

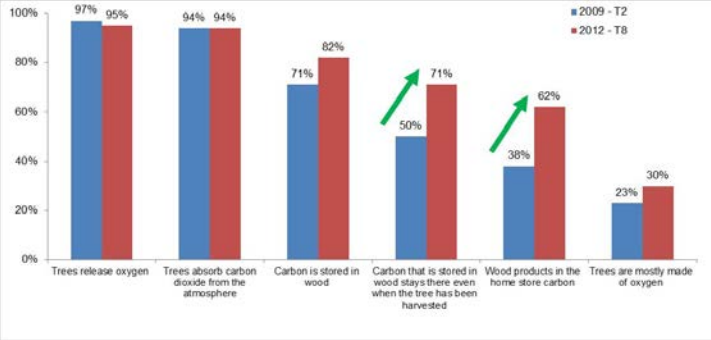


Figure 15 – Consumers' association with environmentally friendly

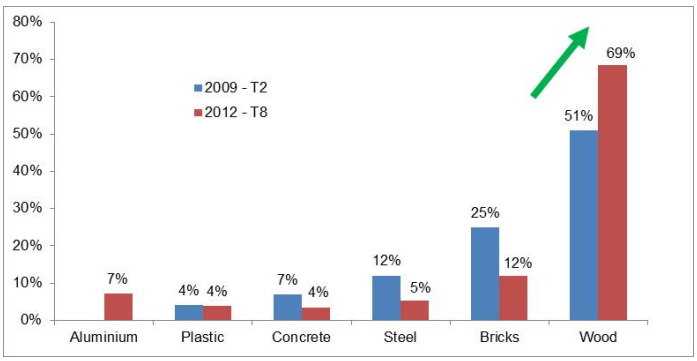


Figure 16 – Consumers' views of the Planet Ark TVC

	% Total Agree
Points made were believable	79%
Points made were relevant	57%
It told me something new about wood	57%
Wood became more appealing	54%
I enjoyed watching it a lot	41%

According to market research, 43% of consumers who reported seeing the TV advertising claimed they were more likely to use wood over other materials and 48% claimed the message that 'wood stores carbon for life' had a level of influence on their purchase behaviour towards timber[5].

This is an excellent result, given that the communication environment has been complicated by the public and political debate about veracity of climate change science and the merits of a carbon tax.

FWPA's vocation program (i.e. GrowingCareers) and school teacher education program (i.e. ForestLearning) both have the potential to have a positive impact on the industry's social licence.

At the Summit, industry participants strongly supported the continuation of the consumer promotion program. The participants also supported the ForestLearning program and the development of a business case for a new program to specifically address concerns about continued access to native forests for sustainable wood production.

The GrowingCareers program was not supported because of the current restructuring and the reduction in employment levels within the industry.

The ForestLearning program was launched in June 2011 with a new website (www.forestlearning.edu.au), which is being promoted directly to teaching associations and via the Primary Industries Education Foundation (PIEF). The website provides a convenient access point for pre-existing teaching resources for years 3 to 12 across a range of subjects.

Schoolchildren do not understand the forest industry and how it sustainably manages forests for timber production and other values. This is not significantly different to the levels of understanding of other primary industries. A recent PIEF review of responses in a study of about 900 Year 6 and 10 students and 53 teachers from about 70 schools nationwide made front page news in the metropolitan media with the findings that:

- 75% of students believe cotton was an animal product
- 27% of Year 6 students thought yoghurt was derived from plants
- more than 60% of students think most logs are harvested from native forests.

The native forest industry suffers intensive pressure from some sectors of the community to cease harvesting operations irrespective of its sustainability criteria.

Over the past 12 months, there has been an increase of activity by groups with a clear agenda to close down access to native forests. These groups have focused on the retail chains (e.g. Harvey Norman, Officeworks) and key overseas customers with the

[5] FWPA market research 2012

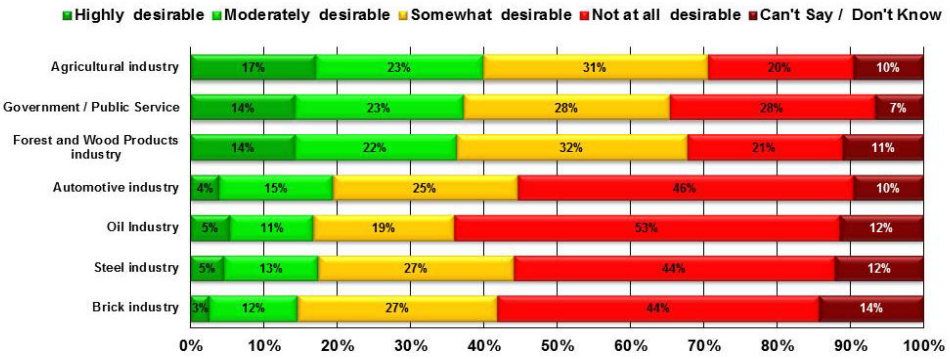
aim of undermining the commercial viability of the supply chain. To date, the campaigns have had variable impact but will no doubt continue to build over time.

An informal coalition of industry associations covering the full supply chain have attempted to counter this attack on native forest management. While there has been some positive press coverage, the coalition lacks resources to carry out a strategic program to support continued access to native forests.

3.2 Opportunity

FWPA's consumer tracking research shows that there is strong support for wood products, especially compared to alternative materials (e.g. steel, concrete, bricks). There is also evidence that the industry is a more desirable career option compared to some other sectors (see Figure 17).

Figure 17 – Perceptions of the desirability of employment in various sectors



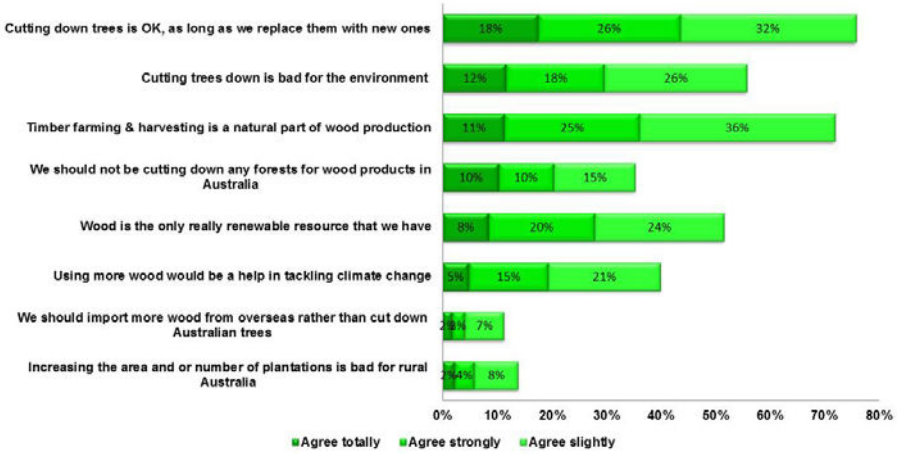
However, this support has not directly converted into improved social licence for forest management operations, plantation expansion or favourable government policy settings.

International experience shows that there can be a strong link between the environmental credentials of wood products and social licence. For example, in a growing number of jurisdictions, a 'Wood First' policy has been introduced to favour the use of wood products over more energy-intensive building materials such as concrete and steel.

Consumer attitudes to forest and wood products are nuanced and partially driven by a discomfort with timber harvesting operations (see Figure 18). For example, 56% of consumers think that cutting down trees is bad for the environment but 76% agree that cutting down trees is okay as long as we replace them with new ones.

This disjoint between wood and its origin is not unique to Australia. In Europe, the expression 'Slaughterhouse Paradox' has been used to describe consumers' unease with timber harvesting.

Figure 18 – Perceptions of forest management and sources of wood



While the industry appears to retain a broad base of support from the community, there is certainly room to improve the social licence for the industry, especially for the native forests sector.

The supply of logs from native forests remains an important source of wood for a wide range of products and key regions. In 2009/10, native forests accounted for approximately 25% of the total log supply. This would be a significantly higher proportion in regions such as north and south coasts of NSW, central highlands of Victoria and Tasmania.

Native forests are particularly important for the supply of sawn decorative timbers. The alternative domestic supply is hardwood plantations but there are significant doubts about the commercial viability or product suitability from the current plantations.

Any further reduction in access to native forests for wood production will increase the level of imports, especially for sawn decorative timbers and some paper grades, and reduced exports of woodchips.

3.3 Benefits to Whole Sector

Enhancing the social licence of the forest and wood products sector is a benefit to all players in the sector as it has a potential impact on market demand, staff morale, recruitment and operating costs.

This is certainly true of the proposed activities relating to consumer advertising activities, the Planet Ark alliance and education resources as they have the potential to create a positive impact with current and future consumers.

The proposed program to improve access to native forests is likely to be of direct benefit to those companies/agencies involved in native forest sector, at least in the short-term. However, the groups opposed to logging native forests are equally opposed to industrial plantations (and imports from some regions), so there is an argument that

the whole sector will benefit by supporting sustainable forest management regardless of the species or regeneration method.

Access to a sustainable supply of renewable resources is important for Australia's future fibre security and the promotion of the responsible use of natural resources should underpin the sector's communication activities.

It is proposed to allocate the investment benefits in the following way:

	Investment benefit allocation (%)						
Program	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper	Total
CURRENT FWPA PROGRAMS:							
Consumer advertising and Planet Ark alliance	20%	45%	3%	25%	7%	0%	100%
Primary and secondary education (ForestLearning)	50%	25%	3%	10%	12%	0%	100%
POTENTIAL PROGRAMS:							
Native forest access campaign	50%	30%	3%	0%	17%	0%	100%
Corporate overhead	40%	33%	3%	12%	12%	0%	100%

3.4 Proposed Programs and Benefits

3.4.1 Consumer marketing

The current generic industry promotion program consists of a two-pronged approach to promote wood to consumers *(why use wood?*) and to address the information needs of building specifiers (*how to use wood*).

In this business case, the consumer activity has been defined as 'Social Licence' while the specifier activity has been allocated to 'Growing the Market'.

The consumer program delivers information relating to the environmental credentials of forest products in terms of sustainable forest management principles and the properties and performance of forest products. This information also reinforces the relevance and social acceptance towards the use of sustainably sourced, renewable and recyclable building materials and thus adds to the industry's social licence.

Although branded separately, the consumer and specifier programs are mutually supportive – one cannot be successful without support from the other. For example, increasing consumer demand but not improving specifier knowledge on timber usage would lead to frustrated consumers; similarly, a knowledgeable building professional with no demand from consumers will see little change in consumption.

Within the five-year plan, it is proposed to continue the consumer program at the current level of approximately $2.5 million per year. This level of investment would provide ongoing funding for the Planet Ark alliance and allow national media exposure via TV advertising or other suitable media. It should be noted that Planet Ark is one of

the five top 'environment trust' marks in Australia, and this relationship provides greater cut-through and credibility than could be achieved on a standalone basis.

Key activities include:

- Expand the frequency and reach of the TV advertising that is co-branded with Planet Ark with a gradual evolution of the message
- Develop and distribute support materials to trade partners to promote the message throughout the supply chain
- Expand the support of events that can be used to promote the 'wood is good' message (e.g. National Carpenters Day, Sustainable House Day, home shows)
- Assist in developing consistent themes in communications from FWPA and industry campaigns.

Proposed investment: $2.5 million per year

3.4.2 ForestLearning

Over the past decade, there have been a number of state and national initiatives to provide resource materials for primary and secondary education.

Many of these initiatives were funded by state government forest and primary industry agencies and are now seriously under resourced, fragmented in their approach and lack a strong market-driven focus. They may also be out-of-date with the introduction of the national curriculum.

The ForestLearning program is a national program and is intended to provide a convenient online repository of teaching resources that directly align to the national curriculum. The website is up and running and receives about 3,000 visits per month.

The specific activities under this program would include:

- progressive upgrading of teaching resources to align with the national curricula across a range subject areas and age groups
- promoting the availability of the resources to teachers
- undertaking a limited 'teach the teacher' program to create champions
- developing a program of school visits by industry supporters.

Proposed investment: $300,000 per year

3.4.3 Access to native forests

A structured, national program to maintain access to native forests must be built on a platform of cogent social, economic and moral arguments that are relevant to a largely urban population.

The proposed investment is insufficient to support mass media advertising, so a targeted program aimed at opinion leaders would be undertaken. The program would also need to directly respond to misleading claims by environmental NGOs opposed to native forest management.

The specific activities under this program would include:

- market research into issues related to management of native forests
- developing social, economic and moral arguments related to native forest management
- communicating with key opinion leaders and journalists
- developing website and marketing collateral
- targeted advertising.

Proposed investment: $1.0 million per year

3.5 Levies Required

Based on the benefit allocation methodology discussed previously, the funding requirements of the proposed social licence program are shown in Figure 19 and include the estimated proportion of matchable payments from the Commonwealth Government.

Figure 19 – Investment requirement by levy category

					Investment benefit allocation ($'000)						
Program	Total Investment ('000)	Proportion matchable ('000)	Available Gov't funding ('000)	Industry contribution ('000)	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper	Total
CURRENT FWPA PROGRAMS:											
Consumer advertising and Planet Ark alliance	$2,500	0%	$0	$2,500	$500	$1,125	$75	$625	$175	$0	$2,500
Primary and secondary education (ForestLearning)	$300	100%	$150	$150	$75	$38	$5	$15	$18	$0	$150
POTENTIAL PROGRAMS:											
Native forest access campaign	$1,000	0%	$0	$1,000	$500	$300	$30	$0	$170	$0	$1,000
Corporate overhead	$380	4%	$15	$365	$146	$122	$11	$43	$44	$0	$365
TOTAL	**$4,180**		**$165**	**$4,015**	**$1,221**	**$1,584**	**$120**	**$683**	**$407**	**$0**	**$4,015**

Utilising the average volumes over the five-year period, the levies required from industry to fund the program are shown in Figure 20.

Figure 20 – Investment requirement by levy category

	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper
Allocation of investment benefits	40%	33%	3%	12%	12%	0%
Investment required ('000)	**$1,221**	**$1,584**	**$120**	**$683**	**$407**	**$0**
5-year average annual vol ('000m3)	23,376	10,744	1,720	1,458	10,913	0
Required levy rates per m3	**$0.052**	**$0.147**	**$0.070**	**$0.468**	**$0.037**	**$0.000**

3.6 Return on Investment

Maintaining and/or enhancing the social licence of a business and an industry is increasingly becoming a cost of doing business.

If an industry's legitimacy is undermined to a large extent, its legality will also come under question. If this claim seems dramatic, remember that it is only 43 years since the Commonwealth Government outlawed whaling in Australia.

In terms of financial benefits, a maintenance or improvement of social licence has the potential to reduce operating costs, increase market access (i.e. volume or value) and improve the recruitment of new talent to the sector.

The financial implications of growing the market are shown as a sensitivity analysis in Figure 27. Even relatively minor increases will provide a payback on the proposed investment. This could be achieved through increased consumer demand or favourable policy settings like a 'Wood First' building procurement policy.

3.7 The Do Nothing Option

Social licence for the forest industries, especially related to native forests and plantation expansion, is complex and is highly influenced by the past 30 years of campaign activity by green NGOs and subsequent responses by industry and/or governments.

It appears that the green NGOs work in a coordinated manner across groups and regions. As a consequence, they have successfully orchestrated a rolling agenda that intentionally or unintentionally undermines the legitimacy of industrial forest management in Australia. For the most part, the industry's response has been reactive and uncoordinated.

The proposed activities and expenditure are quite modest, especially in comparison to the significantly larger budgets of the green NGOs. However, they are intended to create building blocks that can be used by other FWPA programs or by companies and associations.

Without a levy-funded program to support the provision of a national TV consumer campaign or leverage the partnership with Planet Ark, the supply and support of forest and wood focused teaching resources or an industry-based promotion campaign to continued access to native forests, the likely outcome will be a further erosion of the broader industry's social licence to operate.

Over time, reduced social licence is likely to increase the sector's operating costs, reduce market acceptance of the sector's products and reduce its ability to recruit talented new employees.

3.8 Measures of Success

The key measures of the success of this program will be community understanding and acceptance of industrial forestry as measured by opinion surveys. Other performance measures will include:

- number of website visitors and participants in events
- use of resource materials by teachers
- understanding of the sector and key messages by educators and students
- engagement with the program by industry and associations

3.9 Industry Priority

Attendees at the 2012 FWPA summit assessed the consumer promotion program and Planet Ark alliance as a very high priority. However, education resources and native forest access programs were ranked as lower order priorities to be funded should resources become available.

The attendees however recognised and supported the concept that collaborative industry investments into programs that add strength to the industry's social licence are high priority.

3.10 Proposed implementation process

If this program is endorsed by levy payers, then the consumer program and Forest Learning program would continue immediately from the commencement of the new funding period. Design and final implementation of the Native Forest Access campaign would take an estimated 18 months of industry consultation and input before it would be formally launched to the market place.

4 Growing the Market

4.1 Current Situation

In most markets, wood products compete against a wide range of man-made materials that are typically more uniform and predictable (e.g. steel, concrete). The diversity of wood products in terms of species, properties and applications, and its natural variability, creates both opportunities and challenges.

Wood is highly regarded by consumers with nearly 90% claiming to 'love' or 'like' the 'look and feel of wood'. Wood is also seen as more 'environmentally friendly' than alternative materials by 69% of consumers, 65% of structural engineers and 87% of architects.

This level of goodwill toward the material does not automatically translate into increase sales volumes or improved social licence for the industry because:

- consumers are rarely presented with a simple side-by-side comparison of materials for a given application
- in many applications, the material choice is traditional and not subject to a conscious purchase decision
- the purchase decision between materials is highly complex, involving a wide range of extenuating factors and influencers (e.g. building specifiers)
- some consumers are uncomfortable with the fact that wood is sourced from forests (and/or trees) and are influenced by those who campaign against specific wood sources or forest management practices (e.g. old growth, rainforest, clear cutting)

FWPRDC historically invested in R&D and extension of R&D findings into the building construction sector with the aim of creating knowledge to be used for innovation and to address the information needs of builders and building specifiers. This investment has been continued by FWPA over the past four years.

Key research and extension activities have included:

- completing the Australian timber products life cycle inventory database
- comparative analysis of a range of investment and public funding policy mechanisms designed to support the expansion of the Australian plantation estate
- producing and distributing the Australian Forest and Wood Products Statistics Report and Timber Market Survey
- assessing the Australian market for a range of innovative timber products used in international residential construction systems

- developing a post tensioned LVL beam and timber wall panel system as a substitute for steel and concrete products used for commercial construction.

Since 2002, some $21 million has been invested in market access research and extension. An independent assessment concluded that this investment has generated around $68 million in value to the industry, a benefit-cost ratio of more than 3:1.[6]

After a review of the inaugural consumer advertising program, in 2010, FWPA expanded its promotion program through development of a new initiative under the brand WoodSolutions™. This is a comprehensive program aimed at a wide range of building specifiers (e.g. architects, engineers, building designers, building surveyors, quantity surveyors) with four key pillars:

- Education
- Information
- Inspiration
- Communication

Activities under this program have included education support for key professional associations, building alliances, international keynote speakers, conferences, an authoritative website, timber tutorials and technical design guides. A number of measures indicate that the WoodSolutions program is well received by building specifiers and is addressing a number of information gaps (see Figure 21).

Figure 21 – Measures of success for WoodSolutions

Measure	Results
Number of daily visits to the website	1,400
Number of registered users to the website	4,5900
Percentage of seminar participants who claimed using more wood in their future products	80%
Percentage of seminar participants who wanted to receive up-to-date and relevant information on designing with wood	94%

Following an extensive process of consultation, FWPA took on the role of standards and building codes coordination in late 2009. This program aims to increase the use of wood-based products through the efficient and effective development and/or maintenance of key standards, codes and handbooks that underpin the manufacture and use of timber and wood products (except forest management standards).

Standards and codes are important to market access. The industry currently has approximately 150 timber and wood product standards and is exposed to nearly 80 building standards which influence the use of timber and wood products. In addition,

[6] URS Forestry – Benefit-cost analysis of selected projects within the FWPA R&D Program (2012)

there are many building regulations that reference standards that affect the use of timber and wood products.

FWPA's program is designed to improve the efficiency of the industry's approach to material standards, while ensuring that wood products are not adversely affected by changes in a range of building development standards (e.g. wind loads, bushfire).

It is difficult to develop a clear and unambiguous linkage between improved market conditions and FWPA's R&D investments, standards coordination, consumer advertising and WoodSolutions activities. However, economic analyses, market research and anecdotal evidence suggest that the programs are making a difference.

Currently, there is relatively poor information on the market share of wood-based products compared to alternative materials in the built environment. As part of its statistics investment plan, FWPA is developing a mechanism to estimate market shares in the traditional single-family dwelling market. Surveys for other market segments will be developed over time (see section 5). These surveys will help provide clearer measures of success for future FWPA programs.

4.2 Opportunity

There is a real opportunity to grow the market for wood-based construction systems in both traditional and non-traditional markets within Australia.

Most wood in the Australian marketplace is used in building construction, in either structural or decorative applications. Structural timber and engineered wood are the principal products, representing approximately 80% of current consumption, and this is mostly used in new and renovated detached dwellings.

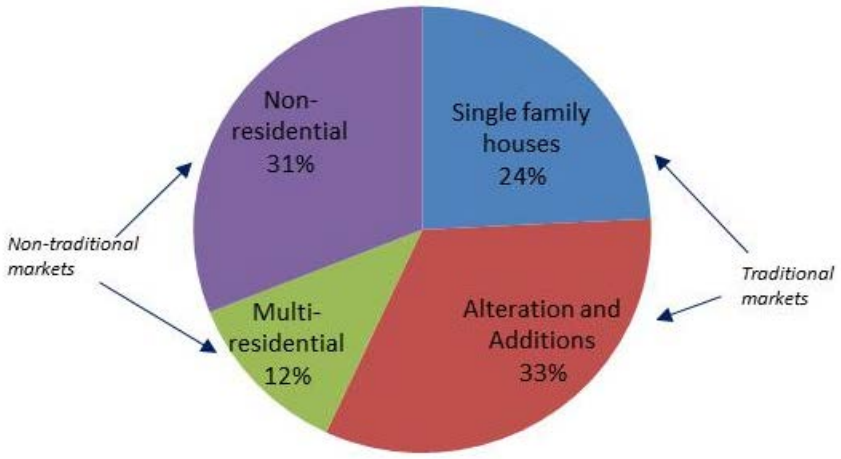
In contrast, structural timber and wood products currently have a limited market share in multi-residential dwellings, and almost zero share in non-residential buildings. Recent developments such as Lend Lease's new cross-laminated timber (CLT) building in Melbourne suggest that timber-based construction systems have the potential to gain market acceptance.

Decorative timber products are found in all building markets. Their use is dependent on fashion and market competition from alternative products.

Timber and wood products are also found in many other markets such as outdoor and agricultural applications and infrastructure, as well as packaging and pallets. These markets are more fragmented, regional and offer less potential for growth.

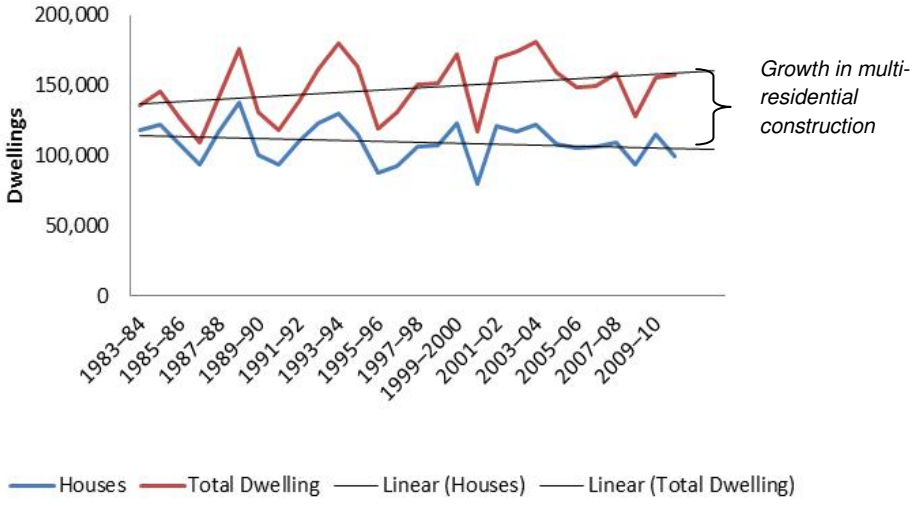
The key market segments can be divided into traditional and non-traditional markets with non-traditional markets estimated to be approximately 43% of the entire construction market[7] (see Figure 22).

Figure 22 – Estimated building construction markets by value (2010/2011)



Over the past three decades there has been a decline in new single family dwellings and an increase in the number of multi-residential building commencements (see Figure 23).

Figure 23: Residential dwelling commencements[8]



[7] The value of the residential alteration and additions market is hard to quantify as most work undertaken does not require building approval or is less than $10,000 in value. A BIS Shrapnel report in 2006 estimated $24.6 billion of work was undertaken. In the corresponding period Australian Bureau of Statistics (ABS) placed the value of this market at $5.6 billion. For the purposes of this analysis, the official statistics are adjusted by a factor of five.

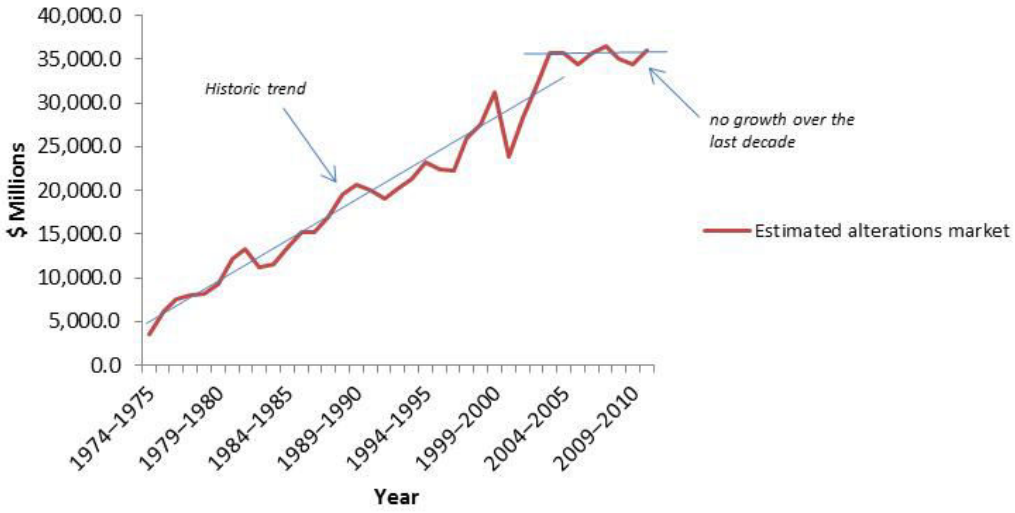
[8] Australian Bureau of Statistics data

It is widely recognised that wood's share of the single dwelling market has substantially declined over time. For example, the raised timber floor has been largely replaced by concrete slabs and timber weatherboard cladding has been replaced by brick or other materials. The quantity of wood used in house construction is estimated at 0.06 m^3 per m^2 compared with 0.29 m^3 per m^2 in 1945 – a decline of nearly 80%[9].

The alterations and additions market is another traditional market for wood products. As discussed in Footnote 7, this market has been estimated using the methodology of BIS Shrapnel, which measures it as approximately 30% larger than the new housing starts market. However, this market has remained flat for nearly a decade (see Figure 24).

The market value of multi-residential grew tremendously in the early 2000s but has levelled off in recent years, in line with single family housing. By far the largest increase in the past decade has been in the value of non-residential construction, although some of this may be a one-off due to the infrastructure requirements of the mining sector and the Commonwealth Government's Building Education Revolution stimulus in 2008 (see Figure 25).

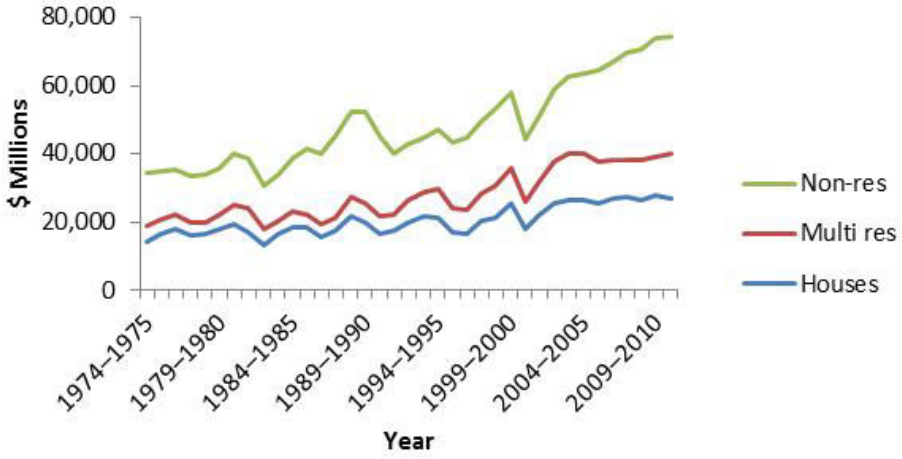
Figure 24: Estimated alterations and additions market value[10]



[9] FWPA, Dynamics of carbon stocks in timber in Australian Residential Housing, 2009

[10] Australian Bureau of Statistics data

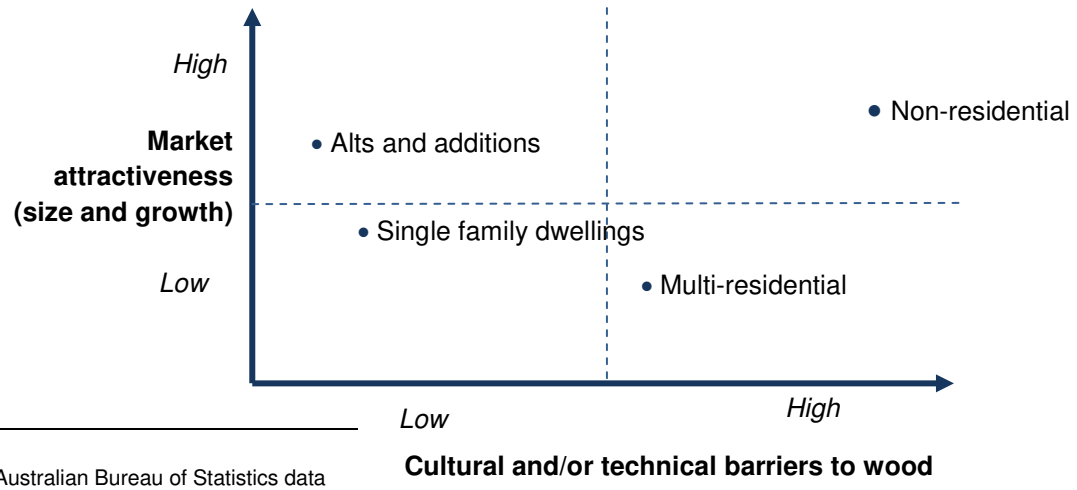
Figure 25 – non-residential and residential market value[11]



In broad terms, wood products have a relatively minor share in the multi-residential and non-residential construction. Wood products are mostly used as formwork and scaffolding, as well as internal fit-outs, joinery and cabinetry. Recent innovations in engineered products such as post-tensioned laminated veneer lumber and CLT have expanded the potential for timber as a structural material in non-traditional markets. It is anticipated that increased use of wood-based structural materials will also increase the use of wood for non-structural purposes (e.g. curtain walls).

Market development activities can be undertaken by individual companies, specific sectors (e.g. hardwood, softwood, imports) or on a pre-competitive basis. Each market segment has its own unique drivers, although the markets with higher cultural and/or technical barriers are more suited to pre-competitive market development (see Figure 26). There is currently little specific activity within the timber industry to capture these market opportunities.

Figure 26 – Categorisation of major construction markets



[11] Australian Bureau of Statistics data

4.3 Benefits to Whole Sector

The purpose of generic market development (i.e. not company specific) is to improve the profitability of an industry sector by facilitating innovation and improving access to information in a pre-competitive manner, which can hopefully lead to:

- increasing the market volume at the expense of substitutes
- increasing the perceived product value
- reducing the transaction costs (i.e. marketing and sales expenses)

Generic market development is a collaborative activity, but it should not be mistaken for illegal activities such as price fixing or other collusive activity that is specifically prohibited by Commonwealth or state legislation.

Generic market development is more likely to be successful in markets where there is a lack of product differentiation, low corporate concentration, clearly defined substitutes and high information costs.

Before FWPA was formed, there were sporadic generic promotion activities carried out by the timber and wood products industry on a state, product category or sector basis[12]. Notable examples include Australian Hardwood Network, EcoSelect and the BluePine Framing campaigns.

In general, these programs were funded by voluntary contributions (mostly from processors) and so were subject to changing market conditions and/or corporate priorities. Due to funding constraints, the programs were usually limited in scope and duration, which meant they could not achieve the desired market impact. This further weakened industry support for generic market development.

The narrow scope of the previous programs made it difficult to obtain full commitment by the merchants and resellers, who often had competing product ranges or customers. Inadequate funding and support by resellers significantly reduced the ability to reach the target audience. Budgets were insufficient for extended mass media advertising, and processors generally lacked the staff for a direct end-user support program.

Due to its unique funding from growers, processors and importers, FWPA has an automatic focus on the whole sector. Its pre-competitive position also gives it credibility to invest in R&D and extension around market access and to build alliances with a wide range of bodies such as Planet Ark, professional associations and Standards Australia.

The benefits from growing the market can be significant based on a simple sensitivity analysis of the drivers of market value (see Figure 27). Small changes in market prices can result in large economic returns as there may be no additional costs. However,

[12] The notable exceptions were the Timber Market Development Council and NAFI's consumer program, which were both initiated in the 1990s.

these gains may only be temporary due to strong internal industry competition between differing timber products and between domestic and import suppliers.

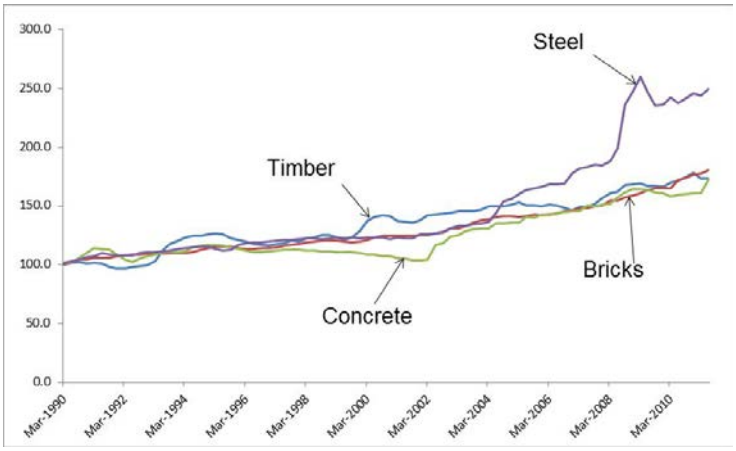
Figure 27 – Sensitivity analysis of drivers in market value

				Annual economic impact of price increases with constant volumes ($ mil)			Annual economic impact of volume increases at constant prices ($ mil)(a)		
	Volume - 2008/9 ('000 m3)	Value - 2008/09 ($ mil)	Average price ($/m3)	0.5%	1.5%	2.5%	5%	15%	25%
Domestic suppliers									
Total sawmilling	4,730	4,263	901	21.3	63.9	106.6	32.0	95.9	159.9
Total veneer and plywood	235	477	2,025	2.4	7.2	11.9	3.6	10.7	17.9
Total reconstituted wood product	1,543	1,085	703	5.4	16.3	27.1	8.1	24.4	40.7
Australian manufacturers	**6,508**	**5,825**	**895**	**29.1**	**87.4**	**145.6**	**43.7**	**131.1**	**218.4**
Importers									
Total sawn imports	628	405	644	2.0	6.1	10.1	3.0	9.1	15.2
Total wood-based panels	412	271	659	1.4	4.1	6.8	2.0	6.1	10.2
Importers	**1,040**	**676**	**650**	**3.4**	**10.1**	**16.9**	**5.1**	**15.2**	**25.3**
Total Market	**7,548**	**6,501**	**861**	**32.5**	**97.5**	**162.5**	**48.8**	**146.3**	**243.8**

(a) Assume constant EBIT/Sales of 15%
Based on ABARES (2008-09) data

The challenges in capturing market share from competitor materials should not be under-estimated. Historically, the building sector is conservative and unwilling to change from well-proven practices, which tends to reduce the cross-elasticity of demand between substitute products. For example, an increase in price relativity of steel compared to other building materials over the last decade has not had an apparent impact on market shares (see Figure 28).

Figure 28 –Relativity based on ABS price indices



Source: ABS Producer Price Indexes (6427.0)

Despite these difficulties, generic market development is widely accepted as an important tool in growing the market especially in sectors where there are a large number of players and low barriers to entry.

The proposed market development activities are focused on the domestic market. The benefits of these investments will be shared by processors and importers, and by forest

growers, especially as many log sale contracts are tied to market price movements and/or have a take-or-pay requirement. There are no expected benefits for exporters.

The benefit allocation is estimated to be the following:

	Investment benefit allocation (%)						
Program	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper	Total
CURRENT FWPA PROGRAMS:							
Market Access and Development R&D	10%	45%	15%	30%	0%	0%	100%
Standards and building codes coordination	10%	55%	10%	25%	0%	0%	100%
Building specifer marketing strategy	20%	45%	10%	25%	0%	0%	100%
SUBTOTAL							
POTENTIAL PROGRAMS:							
Built environment tech support	20%	45%	10%	25%	0%	0%	100%
SUBTOTAL							
Corporate governance	15%	48%	11%	26%	0%	0%	100%

4.4 Proposed Programs and Benefits

Other than market access R&D investments, most of FWPA's market development activities are still very much in the formative stages. For example, the WoodSolutions have been in the market for less than 18 months.

The proposed five-year plan of activity is focused on consolidating and leveraging the platforms that have been developed. In addition, it is proposed to establish a field force to improve face-to-face extension of R&D findings and promote the benefits of wood on a building-by-building basis in major capital cities.

4.4.1 Market access R&D

With the completion of three R&D investment plans covering sustainable buildings, commercial and non-commercial construction markets, there is now a clear focus for market access R&D. These plans identify the key impediments to the use of wood and the knowledge that must be generated to help address these impediments:

- marketing plan for specification of wood products by building specifiers.
- R&D investment plan for residential construction
- R&D investment plan for increased use of timber and wood construction systems in multi-residential and commercial buildings
- R&D investment plan for wood products in sustainable buildings.

Key activities include:

- quantifying the environmental credentials of wood products for application within the emerging environmental ranking schemes in the built environment
- analysing and reporting housing market needs and expectations for timber building materials in terms of performance and alignment to emerging

construction practices and regulations and development of new knowledge where appropriate
- identifying and analysing product opportunities for timber materials within multi-residential and non-residential construction sectors and development of new knowledge where appropriate.

Proposed investment: $2 million per year

4.4.2 Building specifier marketing

WoodSolutions to date has focused on establishing a credible platform for delivering information to building specifiers. Activities have included an authoritative website and knowledge database, a national seminar program, technical design guides, alliances with key professional associations and strong branding. Future activities are aimed at building off the existing strong base with a focus on TAFE and university education, continuous professional development, design and costing tools, and building stronger linkages to international innovations.

New activities include:

- expanding alliances to other professional associations (e.g. developers)
- developing timber engineering and costing tools to address current market gaps for multi-residential and non-residential construction
- developing and distributing education resources for university and TAFE students
- developing accredited continuous professional development programs (CPD) for building professionals.

Proposed investment: $1.2 million per year

4.4.3 Standards and building codes coordination

Key additional activities include:

- developing a mechanism to control linkage between standards to ensure changes flow in a planned manner
- reducing the number of relevant Australian standards to a sustainable number of approximately 30 to 40
- migrating non-key standards to other formats such as industry handbooks or guides
- developing a training program to increase adoption of key standards

- providing training opportunities for early career technical people
- reducing regulatory barriers for timber and wood products.

Proposed investment: $0.5 million per year

4.4.4 Built environment technical support

The proposal is to develop a support team of 8-10 technical people who are experienced building design and building professionals (e.g. structural engineers, architects, building designers, project managers). This team would be extended across key markets and urban centres in Australia to provide generic support under the WoodSolutions™ brand. It would be responsible to FWPA.

The team's activity would disseminate timber and wood product knowledge, as well as assist in inspiring design and construction of timber projects and provide technical advice to all design professionals.

The support team would also be a resource for the other FWPA programs and initiatives. For example it can:

- provide representation on building standards and regulatory committees (note: not timber standards as this is a direct industry responsibility)
- liaise with key building professional associations
- be the industry's 'eyes and ears' on developing issues or opportunities
- provide the speakers for the WoodSolutions onsite tutorial and industry-organised seminars and workshops
- develop or review publication and guides
- populate the WoodSolutions website
- provide educational links and lectures.

Proposed investment: $2 million per year

4.5 Levies Required

Based on the benefit allocation methodology discussed previously, the funding requirements of the proposed market development program are shown in Figure 23. It includes the estimated proportion of matchable payments from the Commonwealth Government.

Figure 23 – Investment requirement by levy category

					Investment benefit allocation ($'000)						
Program	Total investment ('000)	Proportion matchable ('000)	Available Gov't funding ('000)	Industry contribution ('000)	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper	Total
CURRENT FWPA PROGRAMS:											
Market Access and Development R&D	$2,000	100%	$1,000	$1,000	$100	$450	$150	$300	$0	$0	$1,000
Standards and building codes coordination	$500	0%	$0	$500	$50	$275	$50	$125	$0	$0	$500
Building specifer marketing strategy	$1,200	30%	$180	$1,020	$204	$459	$102	$255	$0	$0	$1,020
SUBTOTAL	**$3,700**		**$1,180**	**$2,520**	**$354**	**$1,184**	**$302**	**$680**	**$0**	**$0**	**$2,520**
POTENTIAL PROGRAMS:											
Built environment tech support	$2,000	30%	$300	$1,700	$340	$765	$170	$425	$0	$0	$1,700
SUBTOTAL	**$2,000**		**$300**	**$1,700**	**$340**	**$765**	**$170**	**$425**	**$0**	**$0**	**$1,700**
Corporate overhead	$570	26%	$148	$422	$63	$200	$47	$111	$0	$0	$422
TOTAL	**$6,270**		**$1,628**	**$4,642**	**$757**	**$2,149**	**$519**	**$1,216**	**$0**	**$0**	**$4,642**

Utilising the average volumes over the five-year period, the levies required from industry to fund the program are shown in Figure 24.

Figure 24 – Investment requirement by levy category

	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper
Allocation of investment benefits	15%	48%	11%	26%	0%	0%
Investment required ('000)	**$757**	**$2,149**	**$519**	**$1,216**	**$0**	**$0**
5-year average annual vol ('000m3)	23,376	10,744	1,720	1,458	10,913	0
Required levy rates per m3	**$0.032**	**$0.200**	**$0.302**	**$0.834**	**$0.000**	**$0.000**

4.6 Return on Investment

Predicting the benefits from market development investments is problematic because of the large number of uncontrolled variables, such as response from competitors and macro-economic conditions.

An *ex post* investment of FWPA's investments in market development R&D has been undertaken by URS Forestry and it shows the estimated benefit-cost ratio is over 3:1 (see Figure 25).[13]

[13] This review was undertaken in accordance with the benefit-cost analysis methodology that has been adopted by the Council of Rural Research and Development Corporations.

Figure 25 – Ex post benefit-cost analysis of FWPA market development R&D investments

	No of Projects	Total Value Invested ($' 000)	Value of Sample projects ($' 000)	Sample projects as % of total investment	Weighted Average BCR	Estimated benefits from total investment ($' 000)
Markets	49	21,188	2,857	13	3.2	68,144

Source: URS Forestry – Benefit-cost analysis of selected projects within the FWPA R&D Program (2012)

The URS methodology has not yet been applied to current investments in generic marketing and standards development.

The proposed market development activities are focused on increasing innovation and improving access to information, which have been identified as barriers to increased use of wood products. In a competitive market, increased demand will be transacted through increased market share and/or market price. One approach is to review a range of scenarios such as the following:

- 0.5% increase in market price achieved in full by Year 5
- 5% volume increase achieved in full by Year 5
- 1.5% increase in market price achieved in full by Year 10
- 15% volume increase achieved in full by Year 10.

It has been assumed that the economic benefits of a volume increase are achieved with an earnings before interest, tax, depreciation and amortisation (EBITDA) ratio of 15% to sales and that a market price increase incurs no additional costs. While market price and volume increases may achieve the same return, a market share increase should be preferable due to the 'stickiness' of building practices.

The net benefits of the above four scenarios are shown in Figures 26 and 27.

Figure 26 – Estimated net benefit over time for market development investments

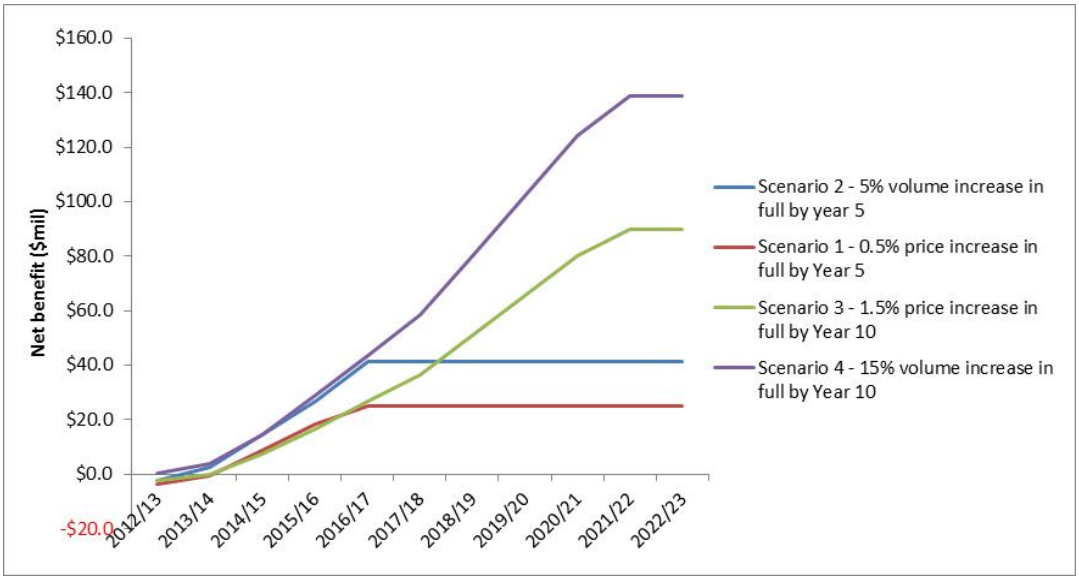


Figure 27 – Benefit-cost ratios and net present values

	Benefit-cost ratio after 5-years	Benefit-cost ratio after 10-years	NPV after 5-years @ 8% discount rate ($ mil)	NPV after 10-years @ 8% discount rate ($ mil)
Scenario 1 - 0.5% price increase in full by Year 5	4.20	5.44	$44.3	$131.7
Scenario 2 - 5% volume increase in full by Year 5	6.04	8.02	$70.1	$208.7
Scenario 3 - 1.5% price increase in full by Year 10	4.64	10.58	$45.1	$262.5
Scenario 4 - 15% volume increase in full by Year 10	6.96	15.87	$76.9	$410.4

It is difficult to apportion the estimate benefits to various players within the supply chain but it would be realistic to assume that a rising market (i.e. volume or price) should benefit all players to some extent.

The above analysis has not included any savings from reduced expenditure on individual corporate market development or promotional activities.It is expected that this expenditure would continue and would leverage off FWPA investments.

4.7 The Do Nothing Option

The implications of cancelling the market development program or significantly curtailing its funding are:

- reduced capacity to build strategic partnerships with building professional associations

- reduced technical representation to building professionals
- reduced tertiary education resources
- reduced investment in R&D to support market development
- inability to train and development new timber technical experts
- reduced capacity to grow the market share of wood versus other materials.

Like previous market development programs, there is a danger that underfunded programs will become narrow in scope and duration. This reduces the ability to achieve the program objectives, which, in turn, further erodes stakeholder support.

With the immense variety of building products available in the market place, and the short time available to designers, if the solution is not immediately at hand, they will soon substitute with what *is* at hand.

Conventional solutions are perceived to be less risk and work for all involved. Many potentially iconic timber projects have been lost to other materials due to inertia from design and general lack of existing experience. Large projects often need support along the design and building chain, ensuring the original concept is maintained to the actual build.

One alternative is that individual companies (or sectors) respond to the market need and provide a commercial solution. However, it is rare that one company can provide all timber products and the necessary expertise for all applications in a given project. For example, a manufacturer of specific engineered wood products is interested in the structural products, but the house building designer has questions on the use of flooring, veneer panel, cladding and various outdoor applications.

Market research on the attitudes of design professionals and consumers also indicates that they are frustrated with hunting for relevant and good information on the use of timber and wood products. A common request is for a central contact point with the timber industry that either provides or points out where critical and specific information can be found.

4.8 Measures of Success

The measures of success for the market development program will be measured in a number of ways, these include:

Adoption

- take up of research findings by industry and governments
- adoption of key standards
- reduction of overall number of standards requiring industry maintenance
- positive change in building regulations.

Analysis

- conducting benefit-cost analysis on programs and projects
- researching perception of consumers and building professionals.

Participation

- awareness and accessing of R&D findings
- attendance at outreach events: seminars, conferences, workshops, courses
- website visits or participation levels in campaign activities
- use of resources.

Liaison

- continuing engagement with building professionals associations.

Ultimately, the greatest measure of success will be increased consumption of timber and wood products and/or increased margins within all sectors.

4.9 Industry Priority

In addition to support for the continuation of the current WoodSolutions and codes and standards programs, attendees at the 2012 FWPA summit endorsed the proposed built environment technical support program as a Priority 1 (supported by all working groups) initiative.

4.10 Proposed Implementation Process

Once endorsed by FWPA levy payers and members, many of the planned activities would continue essentially unchanged from existing FWPA programs except for already scheduled program review and renewal processes. The market access R&D program would continue, as guided by existing R&D investment plans. The development and launch of the proposed built environment technical support program could take up to 12 months to become fully operational as the program structure and reporting metrics are developed.

A number of alliances with key building sector bodies would need to be created and formalised. In some instances, activities under this program would replace existing helpline and consumer and trade support programs, while for other areas a new set of program specifications and reporting structures would need to be developed. As per existing FWPA programs, clear success measures are set in place to ensure that the return on industry investments are monitored and communicated effectively to levy payers.

5 Improving Statistics and Economic Analysis

5.1 Current Situation

FWPA and its predecessor have provided funding to gather key industry statistics such as the Forest and Wood Products Statistics (FWPS), produced by ABARES, and the Timber Market Survey, produced by URS Forestry.

Industry also directly funds the Australian Pine Log Index, the softwood manufacturing volumes, and the collection and analysis of import and export statistics.

FWPA constantly seeks to improve the statistical information about the industry, including, but not limited to, that data which it funds, either in part or completely. In 2010, FWPA commissioned an R&D investment plan following consultation with industry stakeholders.[14] This plan led to a new three-year contract with ABARES and the development of new statistical series related to timber market shares and socio-economics.

A subsequent review was undertaken to determine how to improve the timeliness, accuracy and relevance of the statistics collected.[15] This review was based on an initial issues paper and a facilitated workshop held in October 2011.

This is not new: the Australian forest industry has long been keen to improve the statistical information it receives, with a previous review of the current and future requirements of the FWPS undertaken in 2004.[16]

The current and proposed Australian industry statistics and their relevant funding sources are shown in Figure 28.

[14] Fifth Estate – Investment plan for industry statistics (April 2010)

[15] Fitzpatrick Woods Consulting – Statistical Information and Data Collection: Improvement Opportunities

[16] Pöyry & ABARE – Review of the Australian Forest and Wood Products Statistics

Figure 28 – Current and proposed industry statistics

Title and Description	Funding Source	Cost to Industry
Forest & Wood Products Statistics (FWPS) ~ the core statistical data and information collection, covering resources, extractions, production and trade.	FWPA (66%) ABARES (34%)	$280,000 pa, approx.
Timber Market Survey (TMS) ~ primarily pricing indexes for sawn softwood and hardwood	FWPA (50%) Industry (50%)	$200,000 pa, approx.
Australian Pine Log Price Index (APLPI) ~ provides average resource price by grade from major resource managers	Industry	$20,000 pa, approx.
Plantation Softwood Sales Volume Statistics (PSSVS) ~ sales volumes collected across a range of approximately 45 pine products with data provided by businesses constituting 75%+ of total volume	AFPA (100%)	$5,000 pa, approx.
NEW – Regional Socio-economic Profiling	FWPA (100%)	Inc. in ABARES contract
NEW – Product Market Shares	FWPA (100%)	Inc. in ABARES contract
NEW – Private Native Forest Extractions	FWPA (100%)	Inc. in ABARES contract

Source: Woods, 2011 from FWPA documents and IndustryEdge research

It is also suggested that forest industry statistics have a broader use than the industry itself. Governments; policy analysts; social, community, labour and environmental groups; and other interested parties all access data at different times. As a consequence, there is a large public good element to industry statistics and basic analyses.

It has been observed that data relating to native forest sales volume, particularly from private native forests, appears to be incomplete and that, in many cases, the users of data need to consult more than one data report and/or provider for their purposes. Some of these report data differently, have different timelines and levels of detail, and, in some cases, are limited in their distribution. As a result, correlating industry statistics over time by product or region is a complex task.

For example, while the FWPS provides annual and quarterly volumes and revenues (including by state and for destination countries) and a price index for pulpwood exports (logs and woodchips), much of this data is generally provided long after trades occurred, possibly up to 10 months later. This slow delivery does not assist timely commercial industry decision making.

Another dilemma outlined by recent reviews was that the provision of data is voluntary and this means incomplete or even inaccurate data sets, resulting in low statistical validity of the reports.

National statistics within the ABS are bound by international arrangements which define major product category descriptions through a process known as harmonisation codes. While uniformity is important, it creates some inflexibility.

For example, while some indicative consumption data can be compiled across the different reports, apparent consumption (Production + Imports – Exports) is difficult to ascertain, even at the broadest levels reported by the ABS, let alone at the detailed levels required for genuine business comprehension and planning. For these purposes, issues of market size and changing market dynamics are important.

There is a strong reliance on housing and construction data to inform industry of apparent consumption, due to the proportion of solid wood that ends up in new dwellings and alterations and additions. It is reported by the Housing Industry Association and others such as the National Australia Bank that there is a housing deficit in Australia of some 200,000-250,000 new dwellings. However, industry is increasingly concerned about this claim as the method of calculation of this figure remains unclear and it does not necessarily transfer into new product demand.

There is sufficient data, such as that from the Plantation Softwood Sales Volume Statistics (PSSVS), to demonstrate that more than 25% of domestically sawn softwood is going to purposes other than construction. However, there is little capacity to measure the net trade in these products.

In terms of industry contribution to the national and regional economies, socioeconomic data was also identified as being critically important but this is not currently collected on any systematic basis.

The various sectors have individual statistical needs. According to Fifth Estate these include:

Growers

- statistics are essential
- most would prefer additional differentiation in current information
- most saw gaps in data availability and provided recommendations (anonymously) of what additional data would be useful
- the information important to growers ranged widely across the respondents.

Processors

- processors are mainly interested in statistics which indicate demand, production and trade
- most are interested in statistics on timber product usage trends
- forecasts are used via consultancy reports.

Distributors and importers

- companies surveyed use market statistics in a limited way

- figures are deemed to lack sufficient detail and frequency to be used as a base for business decisions
- they look for data of interest, such as consumer confidence and housing starts
- import data is used to a limited extent
- one respondent said that they can be interesting to 'get a feel' for what was happening in the market, however, even if they were more detailed and accurate, they still wouldn't be the basis for business decisions because of limited relevance
- decisions in this part of the industry are made in a much shorter time frame; statistics that report, for example, trade six months after it has occurred are of limited value.

Consultants and associations

- most found statistics in general to be essential
- all respondents provided information on additional statistics they require, which focused on additional detail (including state breakdowns and species) and higher accuracy
- given that other industry participants rely on consultants and associations to deal with issues that they are unable to address directly or as individual companies, their feedback is important.

Other items on the 'wish list'

- hardwood log price index
- general industry statistics, particularly socio-economic
- production by state
- imports by port by source
- benchmarking data on safety, costs and prices
- more frequent forest updates.

Industry statistics and economics are eligible for Commonwealth matching payments, so the cost to industry could be reduced by establishing a centralised statistics and economics service.

5.2 Opportunity

There is an opportunity to provide the forest and wood products industry with accurate, timely and relevant industry statistics and economic forecasts.

The provision and analysis of key forest industry statistics is undertaken by a range of organisations, both public and private, with no central coordination or repository of information. As a consequence, there are ongoing concerns about the accuracy and timeliness of statistics. There is also cost duplication. Individual companies are often

using third party statistical services to fill gaps, which add to the overall cost to the industry.

There is a need for the cost-effective collation of appropriately detailed data from a range of sources that is timely, transparent and statistically reliable (or, at least, the derivation of data needs to be well understood by industry users).

The standardisation of the data collection technologies and methods could lead to improved accuracy and timeliness of responses by industry, and of reports by data collection agencies.

Transparency of the specific data and reports that different users are able to access allows everyone to accept its accuracy. This, in turn, encourages the use of and reliance on the statistical data.

However, there are limits to transparency:

- retaining confidentiality of commercial information necessarily limits access to individual business data
- pricing data must be carefully managed to avoid actual or perceived anti-competitive behaviour
- domestic confidence in data reliability aside, it is unwise for an industry to expose all its data and information to anyone and everyone that may seek it, for whatever purpose.

These are necessary filters on reporting of and access to specific data.

5.3 Benefits to the Whole Sector

A dedicated FWPA statistics and economics service could coordinate the national collection and analysis of key economic statistics and provide a secure and assured interface between government collection agencies such as ABS and ABARES and industry-owned data.

Industry statistics are used to inform a wide range of company and government decisions such as capital investments and policy initiatives. If statistics were more timely and accurate, they could also help inform market pricing, stock management and labour force decisions.

It is important that everyone in industry has confidence that the statistical data is reliable so that trend data can be produced and robustly modelled by methods such as regression analysis.

FWPA also has the ability to secure industry support and expert knowledge (possibly via an Advisory Group) to assist in the data collection, standardisation and analysis process.

FWPA is the most likely body to engender confidence from the industry and, as a result, ensure high participation rates. This would be particularly important if an online data collection portal is developed. FWPA is in a position to monitor accuracy and use of data, and modify collection and analysis to ensure timeliness (e.g. monthly, quarterly, annual reporting) and relevance is maintained. A controlled continuous improvement process can be managed with continued industry feedback to improve the value of statistical and economic data.

The proposed investment benefit allocation is as follows:

	Investment benefit allocation (%)						
Program	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper	Total
Industry statistics and economics	40%	40%	3%	10%	7%	0%	100%
Corporate overhead	40%	40%	3%	10%	7%	0%	100%

5.4 Proposed Programs and Benefits

Under this program, it is proposed that FWPA take a much more active role in the collection and analysis of statistics for the sector. FWPA's strong connections across industry sectors, linkage to government and its pre-competitive position puts it in an ideal position to help forge a new approach to statistics and economics.

A key platform is to establish an online statistics hub where data can be centrally entered, accessed and analysed. This model already exists for two key data sets, so it is a matter of implementing the appropriate systems that can provide confidence to maintain commercially sensitive data.

Equally important is to rebuild the skills to critically analyse the data and make meaningful projections into the future.

Specific activities under this program would include:

- developing a national statistics portal for entry and analysis of statistics
- developing regular economic forecasts of the sector's key metrics
- recruiting a national statistics economic manager
- establishing an industry advisory group
- holding regular workshops and/or master classes on forest and wood sector economics.

Proposed investment: $800,000 per year

5.5 Levies Required

The proposed program is eligible for 100% matched funding from the Commonwealth Government. Using the benefit allocation above, the cost to industry is shown in Figure 29 with flow-on to levies in Figure 30.

Figure 29 – Proposed investment by sector

					Investment benefit allocation ($'000)						
Program	Total investment ('000)	Proportion matchable ('000)	Available Gov't funding ('000)	Industry contribution ('000)	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper	Total
Industry statistics and economics	$800	100%	$400	$400	$160	$160	$12	$40	$28	$0	$400
Corporate overhead	$80	100%	$40	$40	$16	$16	$1	$4	$3	$0	$40
TOTAL	**$880**		**$440**	**$440**	**$176**	**$176**	**$13**	**$44**	**$31**	**$0**	**$440**

Figure 30 – Proposed levies by sector

	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper
Allocation of investment benefits	40%	40%	3%	10%	7%	0%
Investment required ('000)	**$176**	**$176**	**$13**	**$44**	**$31**	**$0**
5-year average annual vol ('000m3)	23,376	10,744	1,720	1,458	10,913	0
Required levy rates per m3	**$0.008**	**$0.016**	**$0.008**	**$0.030**	**$0.003**	**$0.000**

5.6 Return on Investment

It is estimated that the industry is spending $600,000 to $800,000 per year (excluding internal staff costs) on statistics collection and analysis. By centralising this activity, the sector should be able re-direct internal staff costs to more value-adding activities that directly affect the sector's productivity and profitability.

If the capital expenditure in the sector is assumed to $200 million per year, then the potential returns from improved decision making can be estimated (see Figure 31). This excludes the benefits that may derive from improved pricing and/or inventory decisions.

Figure 31 – Returns from improved Capex decisions

	Benefit-cost ratio after 5-years	Benefit-cost ratio after 10-years	NPV after 5-years @ 8% discount rate ($ mil)	NPV after 10-years @ 8% discount rate ($ mil)
Scenario 1 - 0.5% saving in Capex after 5-years	1.36	1.82	$0.52	$2.04
Scenario 2 - 1.0% saving in Capex after 5-years	2.73	3.64	$2.79	$7.03
Scenario 3 - 1.5% saving in Capex after 5-years	4.09	5.45	$5.06	$12.02

5.7 The Do Nothing Option

In the absence of a dedicated service, the status quo would apply, with a range of disjointed statistics and economics activities undertaken across the sector. The likely outcome would be a further loss of confidence in the value of the statistics and a dis-investment by industry and government over time.

The lack of accurate, timely and relevant data could also increase the uncertainty for key decision makers such as governments and potential investors.

5.8 Measures of Success

Information is a key factor in a commercially competitive world. FWPA can bring efficiencies and confidence in the collation of a range of statistics and economic data desired by industry, including:

- improved relevance, timeliness and accuracy of statistics
- lower overall cost to industry
- a higher level of industry engagement via entry and access to statistics
- increased confidence in statistics and economic forecasts.

5.9 Industry Priority

Attendees at the 2012 FWPA summit endorsed the proposed program as a Priority 1 initiative, which was supported by all working groups.

5.10 Proposed Implementation Process

If endorsed by FWPA members, the contracted project elements of the program would continue as per current arrangements. An industry steering committee would be recruited to ensure that access to industry generated statistics is made readily available by individual companies to reflect the program endorsements made by senior management. The recruitment and contracting of a national industry economist, and design and delivery of the industry statistics and economics workshops/master classes could be completed within 12 months of program launch.

6 Integrating Forest Research and Extension

6.1 Current Situation

FWPA runs a broad R&D investment program aimed to improve industry's understanding of, and ability to manage, its forest resources in a productive and sustainable manner. There are five areas of priority in forest research: genetics, climate change, water, biosecurity and forest management tools. Each priority is informed by an investment plan.

Over the past 12 months, FWPA has put a focus on improving the uptake and understanding of existing R&D findings (i.e. extension activities) through electronic newsletters, regional seminars and other communication opportunities.

The changing structure of the Australian forest and wood products sector requires a new approach to the funding of R&D and encouraging the uptake of R&D findings.

Historically, the majority of Australia's productive forest estate (i.e. native forests and plantations) was owned and managed by state government entities that were capable of supporting substantial in-house research, extension and development capacity with respect to most forest research disciplines. In addition, there was significant capacity within CSIRO, universities, government agencies and, more recently, the cooperative research centres (CRCs).

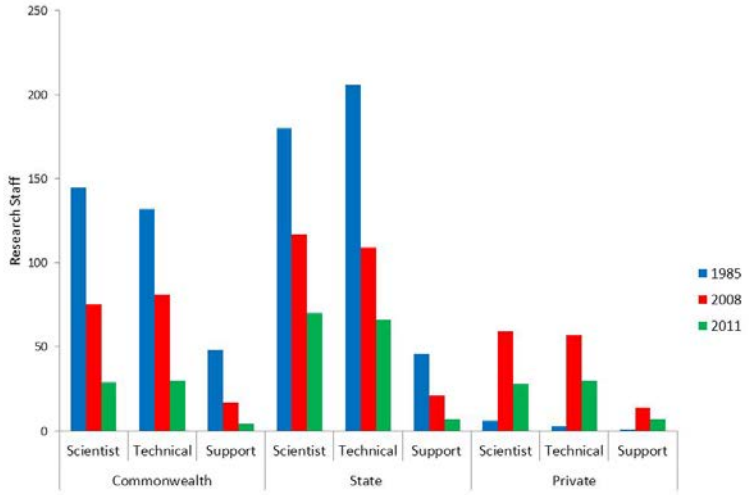
Since the late 1990s, a rapid expansion of the plantation estate under managed investment schemes (MIS) brought with it some additional in-house expertise, particularly for larger firms.

However, in recent years this technical capacity has substantially diminished through a combination of:

- ongoing budgetary pressure for state-owned forest managers
- collapse of most of the large MIS companies
- a shift to institutional ownership of much of the plantation estate

The decline in research capacity is shown in Figure 32. It is estimated that from 2008 to 2011, the number of research scientists in the sector has declined from around 250 to about 132 (excluding universities).

Figure 32 – Research capacity by personnel numbers



The imminent closure of the CRC for Forestry and further agency restructuring will continue to erode capacity over the next 12-18 months.

Under the national research, development and extension (RD&E) strategy, a national forum has been established to identify the key priorities, foster mechanisms for improved coordination, and recommend new institutional arrangements for RD&E within the sector.

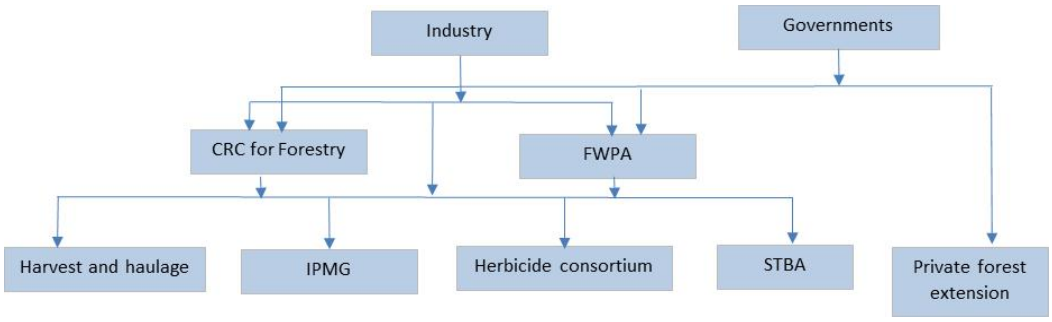
FWPA is an active participant in the national RD&E process and is hopeful that an overarching solution can be developed for the sector. However, in the interim, there is a need for ongoing investment in the current five priority R&D areas as well as five additional priorities identified at the Summit:

1. Genetics deployment.
2. Forest health surveillance.
3. Pesticide trialling.
4. Forest harvest and haulage research.
5. Private forest extension.

These priorities are not new. Each is either being undertaken currently or was previously undertaken by another body within the sector and funded by a range of mechanisms (see Figure 33).

The CRC for Forestry has played a key role in funding research related to harvest and haulage, genetics and forest health, but a lesser role in herbicide development. Neither the CRC nor FWPA has previously had a significant role in private forest extension, as this has been directly funded by the Commonwealth or state agencies.

Figure 33 – Current structures and funding mechanisms



The rationale for these activities to be undertaken by FWPA is that they are truly a public good, eligible for matching payments from the Commonwealth Government and provide value to the whole sector.

Over the past 30 years, the development and deployment of improved genetics for plantation forestry has been undertaken primarily through subscription-driven programs overseen by the Southern Tree Breeding Association (STBA). STBA has been principally focused on *Pinus radiata* and *Eucalyptus globulus*.

Some companies and government agencies have not been a part of STBA and have invested instead in the Radiata Pine Breeding Company (RPBC), a New Zealand-based consortium that has a focus on radiata pine. FWPA has funded several research projects and consultation processes that aim to improve collaboration between STBA and RPBC.

Additionally, individual companies have developed propriety genetic programs, specifically for *E. nitens*, subtropical *Eucalyptus* and *Corymbia* hybrids and southern pines (generally *P. carribaea* and *P. hondurensis* and hybrids). Enterprise-driven breeding and deployment has gradually wound down over the past 10 years. There is now limited capacity among individual companies (or government agencies) for this type of applied research.

There have been significant achievements to date in the field of genetics:

- developing economic weighting values for commercially significant measures of wood quality including productivity, stiffness, form, volume of juvenile wood and resistance to identified pathogens
- optimising breeding programs to minimise in-breeding depression of commercially significant traits
- developing a user-friendly database structure to store detailed provenance, growth and quality performance data from commercial plantations for use in pooled data analysis to identify elite germplasm

- identifying genetic molecular markers linked to commercially valuable wood quality measures.

The CRC for Forestry has hosted the Integrated Pest Management Group (IPMG), a WA-based network of plantation forest managers sharing joint access to a specialist forest entomologist employed through Murdoch University and hosted by one of the member companies. The entomologist provides a diagnostics and response advice service to several smaller plantation companies. Samples and photographs of suspected outbreaks are provided to the scientist for diagnosis and development of appropriate response strategies, if warranted, as well as communication of alert messages to other companies in the region.

With the closure of the CRC for Forestry, there is the potential to expand the IPMG model nationally, bringing a number of advantages, including:

- better coordination of identification and response to forest health issues
- expansion of focus beyond insect pests to other forest health issues
- more-efficient allocation of funding and less scope for inefficiency and duplication.

At present, members of Research Working Group 7 represent the majority of technical expertise in Australian forest health. This group provides a highly qualified group of professionals to draw on for implementation of a national program.

The Forest Industry Herbicide Research Consortium was established in 2009 to build on an industry initiative that has been in operation since the late 1990s to coordinate the trialling of herbicides and secure labelling approval from the Australian Pesticide and Veterinary Medicines Authority (APVMA).

This is important because the international herbicide companies see little value in pursuing federal approval through the APVMA to gain access to a relatively small Australian plantation sector.

The consortium conducts and coordinates forestry-specific pesticide research with chemical manufacturers, from initial field trials to full label registration. It also provides advice and representation to the APVMA and state regulators.

One of the key initiatives of the CRC for Forestry was to re-establish a program for systematic research into forest harvesting and research – an area of RD&E that had previously been significantly under-resourced. These activities represent up to half the delivered cost of the wood harvested from Australian forests. Nationally, more than $1 billion is spent annually on the harvest and haul of 25 million m^3 of wood with a net stumpage value of another $1 billion. These costs are incurred over a relatively short time and critical decisions about the equipment, timing, product mix and overall organisation of harvest and haulage operations are some of the major variables influencing the costs and value achieved.

The CRC for Forestry's documented achievements to date include:

- reduced harvest costs by 5% to 25% by making better-informed decisions on what harvest system to use in a given operating condition
- decreased harvest operations costs by 5-15% through the use of onboard computer tracking and management systems to improve harvest system balance, increase machine efficiency and improve product throughput
- reduced haulage costs by 5% to 20% through the use of optimised transportation planning, which allows the operation to more effectively meet delivery demands, with fewer vehicles at a lower unit cost
- increased value attained by up to 2% and reduced cost of harvesting by up to 7% through the effective implementation of in-field optimisation on multifunction harvester heads
- effectively doubling the pulp wood yield of a plantation through an integrated residue stem wood recovery harvest method that only increased overall costs by 3% when implemented effectively.

There is growing evidence that it is not commercially viable to expand Australia's industrial plantation estate, due to high land costs, especially for longer rotation crops, and some plantations will be converted back to agriculture over the next decade.

Over the past 20-30 years, there have been a number of national and state government programs to encourage commercial tree farming with small to medium-sized private land owners. Unlike some other international regions (e.g. eastern and southern USA, Scandinavia, Germany), Australia's small to medium-scale private forestry sector in both plantations and native forests remains relatively undeveloped and is highly regionally focused.

Some forest and wood products sector companies have developed their own privately owned forest resources, but the development of private forest resources with third party land owners has only had limited success. Nevertheless, small to-medium scale, privately developed forest resources have the potential to be a major source of fibre in the future.

There are key regions in Australia where small to medium-scale private forestry has developed and contributes to the overall regional supply picture in important ways. These include:

- south-west Western Australia (primarily hardwood pulpwood plantations, and some softwood plantations)
- Green Triangle (both hardwood pulpwood and softwood plantations)
- north-east Victoria/southern NSW (primarily softwood plantations)
- Tasmania (primarily private native forest)
- north-east NSW and south-east Queensland (private native forest).

These regions are generally characterised by either (or both) a relatively strong, mature market with demonstrated long-term demand for log products or a recent history of substantial expansion of the plantation estate.

Constraints to the recent development of private forest resources have included:

- scepticism among small and medium-scale private land owners about the commercial viability of tree farming as part of their land use mix
- uncertainty about the role of forest management certification in the management and marketing of private timber resources
- unfavourable regulatory environment (specifically for private native forestry) and an expectation that regulations will get more difficult over time (leading to lack of investment in stand improvement)
- competition from alternative land uses.

6.2 Opportunity

The current arrangements for R&D investments in forest resources and uptake of R&D findings are under considerable stress due to the imminent closure of the CRC for Forestry and de-investment by companies and government agencies.

The sector is confronting a large number of challenges related to its ongoing viability such as policy initiatives (e.g. climate change, water), changing environmental conditions and low (or stagnant) productivity growth. The situation is further complicated by a high degree of regionalism (e.g. species, environments, markets) that require the development of local solutions.

The opportunity is to develop a nationally coordinated program of R&D investments and regional extension activities that have strong industry 'ownership' and engagement across several key disciplines. If established, this would be an important step in building a new approach to forest research and extension in Australia.

There is a growing acceptance that the institutional arrangements for RD&E for commercial forestry may have worked well in the past but cannot be sustained in the future due to organisational changes and reduced availability of funds.

It is not suggested that FWPA simply be the vehicle for funding the status quo. Instead, this is an opportunity to redesign the system to ensure that there is a strong partnership between R&D providers and industry that delivers clear outcomes.

The five initiatives supported at the Summit can be described as mostly applied research, development or extension. The industry is clearly seeking short-term solutions to current problems, which is a direct reflection of the structural and profitability issues facing the sector.

As shown in Figures 34 and 35, there has been a long-term trend towards dis-investment in basic research.

Figure 34 – Categorisation of research expenditure in 1985

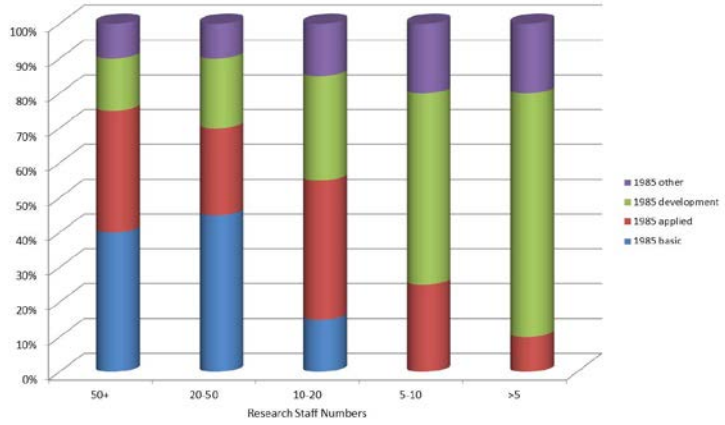
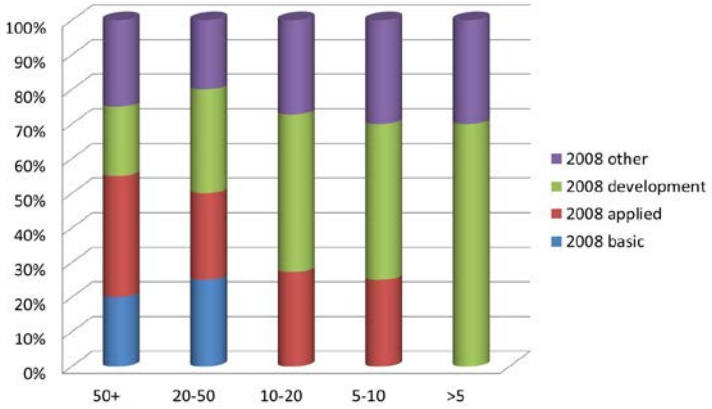


Figure 35 – Categorisation of research expenditure in 2008



In most cases, basic research cannot solve today's problems – however, it is critical to solving the problems of the future. There is a danger that the sector is living off past investments and, at some point, there will be a tipping point where this knowledge reservoir is exhausted. Given the age profile of researchers, the loss of key research field trials, and organisational changes, this tipping point may be imminent, if not already reached.

The decline in basic research is not addressed by this business case. This is a bigger issue that requires a commitment of funds in the order of $20 to $30 million per year based on previous expenditure reports from CSIRO and State Agencies – an investment that will only be achieved if the sector increases its profitability and/or has substantial government support.

FWPA's investment in integrated forest research and improved extension has the opportunity to:

- create a truly national program that eliminates 'free riders'
- improve linkages between single discipline programs (e.g. genetics, herbicides, forest health)
- reduce administration and corporate governance costs
- improve forest productivity through increased knowledge adoption
- increase the plantation estate by the farm sector.

6.3 Benefits to Whole Sector

The Australian forest and wood products supply is typified by a lack of vertical integration, with specialist growers, manufacturers and distributers.

However, this structure belies the high degree of reliance, especially when it comes to decisions that underpin the physical attributes of the resource. For example, decisions around genetics and silviculture can have a large impact on the design of a future manufacturing facility or the efficiency of an existing mill.

The future resource availability is also of critical importance to all players within a region. If manufacturing economies of scale continue to rise, some regions may have insufficient wood to support a re-investment in local processing. Under this scenario, existing growers would benefit from an expansion by other growers, even if this results in increased competition.

The proposed activities related to forest research and extension are designed to address existing market failures and thus provide a benefit to the whole sector and the Australian community.

The proposed investment benefit allocation is as follows:

	Investment benefit allocation (%)						
	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper	Total
CURRENT FWPA PROGRAMS:							
Forest resources R&D program	75%	13%	2%	0%	10%	0%	100%
POTENTIAL PROGRAMS:							
Herbicide consortium	100%	0%	0%	0%	0%	0%	100%
Genetics deployment	75%	13%	2%	0%	10%	0%	100%
Forest health surveillance	75%	13%	2%	0%	10%	0%	100%
Forest harvest and haulage	75%	13%	2%	0%	10%	0%	100%
Private forest grower extension	75%	13%	2%	0%	10%	0%	100%
SUBTOTAL							
Corporate overhead	79%	11%	2%	0%	8%	0%	100%

6.4 Proposed Programs and Benefits

6.4.1 Sustainable resources R&D investments

As stated previously, FWPA has completed and published five investment plans to inform its future investment portfolio:

- Genetic improvement and delivery for increased wood yield and quality and for managing risks
- Mitigation of and adaption to climate change and the management of the carbon cycle in plantations and native forests
- Water use efficiency, access to resources and balanced policy outcomes
- Improved wood quality and yield and tools for forest management
- Forest biosecurity and preparedness.

Each investment plan has been developed following extensive consultation, analysis of the current situation and desired outcomes from the investments, and, in some plans, a recommended resource allocation.

This strategic approach is to take a 'helicopter' view of the sector to identify the key issues/challenges affecting it and possible solutions that will provide the broadest benefits. Critically, the plans seek to solve a known or predicted problem and are industry-driven rather than simply a pursuit of knowledge. They also provide a mechanism to measure performance over time.

Over the five-year period, it is anticipated that these plans would be substantially completed, with a range of findings ready for uptake by industry and governments in an operational or policy environment.

A strategic investment approach is not static; the plans will be reviewed and updated within the five-year period to ensure that they remain relevant.

Proposed investment: $2.0 million per year

6.4.2 Genetics deployment

It is proposed that tree breeding be undertaken on a national basis to improve cost efficiency and deliver more genetic gain per unit time with lower overheads. This approach is recommended because breeding programs are largely precompetitive in nature and require secure and predictable funding over a long period of time.

As stated previously, the current arrangements are fragmented across two breeding cooperatives (i.e. STBA and RPBC) and several companies/agencies have their own programs.

A review of the potential models for the establishment of a levy-funded, industry led national tree breeding and improvement program was undertaken by Zed and Kile (2011)[17]. This review identified four distinct approaches:

- retaining the status quo
- facilitating a consolidation of STBA and RPBC resources
- expanding Australian investment in tree breeding through STBA
- creating a new Australian levy-funded entity.

The challenge is to develop a model that is responsive to industry needs and inclusive of regional needs and minor species. In addition, a key challenge will be to develop a model that deals with commercial implications of historic work and intellectual property rights.

The choice of the most appropriate organisation structure for to support a collaborative industry based program for tree improvement will require consultation with stakeholders and will not be addressed in this business case. Critically, the organisation structure must be consistent with FWPA's corporate governance and accountabilities to the Commonwealth Government.

However, as stated previously, FWPA is committed to continuous improvement and will not be a simple funding vehicle for maintaining the status quo.

There are four key elements identified in relation to genetics deployment:

- *tree breeding* – the physical exercise of developing new germplasm
- *tools and strategies* – collecting and analysing data, determining breeding traits, identifying the mechanisms for setting commercial breeding priorities and deploying new germplasm
- *knowledge creation* – development of new technologies
- *production* – production and sale of seed and treestocks from improved germplasm.

The proposed genetics deployment program is focused on breeding and tools and strategies, while knowledge creation is captured within the R&D investment program. Production activities relate to commercial application and have been excluded from the current consideration.

Specific activities under the genetics deployment program would include:

- a comprehensive review of all historic genetics research across species and regions to determine its suitability for incorporation into a national program
- transfer of all existing trials and data into a common database for evaluation and information conservation

[17] Future Australian Tree Breeding Investment – A paper for FWPA on the potential options for addressing future tree breeding investment in Australia.

- development and adoption of common information and analysis tools
- establishment of agreed breeding strategies for key species and regions
- liaison with international tree breeding programs to leverage collective knowledge.

Proposed investment: $1.0 million per year

6.4.3 Forest health surveillance

Managing forest health in response to a wide range of pests is critical to the productivity and, in some instances, the viability of commercial forestry. Given the mobility of pests, there are strong arguments for collaboration within regions and between regions.

Forest health surveillance supports the current R&D investment plan for biosecurity. It should be noted that biosecurity, by definition, is focused on exotic pests that are currently not established in Australia and not endemic species[18].

It is proposed to build on the WA-based model of the IPMG. The CRC for Forestry funding of the IPMG will cease on 30 June 2012 and the IPMG, as it currently stands, will need to find alternative funding mechanisms if it is to continue. A number of other regionally focused groups exist, including the Green Triangle Regional Plantation Committee, which has a forest health subcommittee, and a subtropical forest health alliance in northern NSW and Queensland.

A national approach to forest health surveillance must focus on building systems and tools that can be applied at a regional level.

For example, the IPMG has been developing a software tool that can be used on a range of portable devices to record pest and disease outbreaks. The data is recorded in a standard format to allow further analysis. The tool's purpose is to collate outbreak information across the plantation estate (regardless of ownership) to identify possible trends and provide the basis for a coordinated response.

A key challenge is to develop a model that can practically meld operational and expert resources through effective communication and stakeholder engagement to ensure that the proposed program objectives can be met with quality outcomes.

[18] The term 'endemic' is used to describe indigenous pests and those non-indigenous pests that have become established in Australia. 'Exotic' has been used to describe those pests that are present outside Australia but have not become established here.

Specific activities under this program would include:

- establishing a network of forest health specialists to provide remote diagnostics and extension support for plant pest and disease outbreaks for plantation managers.
- field sampling, reporting activities and response activities provided and resourced by a program of forest health experts and field foresters
- providing susceptibility assessments of commercial plantations and native forests to emerging pathogens
- developing appropriate response strategies in the event of detected outbreaks.

Proposed investment: $0.6 million per year

6.4.4 Pesticide trialling

A key focus to maintain and improve the productive capacity of the Australian forestry plantation industry is the capacity of growers to minimise the impacts of weed competition and insect attack.

The most economical way to achieve this goal is through the use of pesticides, specifically herbicides and insecticides. However, there is an underlying community concern about the use of pesticides that requires communication with local communities as well as addressing regulatory and compliance requirements.

Since 2009, the herbicide consortium has operated under a 50:50 funding arrangement with industry and FWPA. While the consortium members benefit through access to new (or ongoing) active herbicides, these benefits are also available to contributors and non-contributors alike. As the activities of the group can be correctly defined as RD&E activities, they would eligible for matching Commonwealth funding if supported 100% via an FWPA levy.

The program's aim is to extend coverage of the current consortium to include insecticides, fungicides and other chemistry responses and the development of appropriate tools to aid adoption of the findings from the trials.

Specific activities would include:

- continuing the current herbicide testing program with provisions for expansion into new tree species and site conditions
- expanding into evaluation and licensing of insecticides and fungicides to control common plantation threats
- liaising with chemical producers to set priorities for research to meet industry needs

- developing and promulgating best practice guides for chemical use to enhance efficiency and social acceptability.

Proposed investment: $0.6 million per year

6.4.5 Forest harvest and haulage

The supply chain linking forest owners, logging and haulage contractors and processors is critical to the success of the domestic industry. Optimising this supply chain has historically been difficult due to competing interests, poor communication and differing technical skills.

Research that covers the entire supply chain must provide clarity about how the various stakeholders benefit. The ability to demonstrate how and to whom research benefits are distributed can address barriers to the acceptance of research proposals and investment in implementation of the results.

The current forest operations research activity was established and built up through the CRC for Forestry. This program resulted in the development of a number of planning and optimisation tools and solutions that have the potential to offer substantial cost savings (more than 10%) to the industry.

The proposed program will cover the timber supply chain from pre-harvest planning and preparation through to delivery and pre-processing of timber products. Specific activities would include:

- further developing existing tools and research outputs to facilitate practical application by Australian timber supply chain participants
- developing new practical, integrated tools to optimise the efficiency and value across the supply chain in accordance with international best practice
- benchmarking supply chain costs between regions and international jurisdictions
- encouraging the adoption of R&D findings and tools across the supply chain.

Proposed investment: $1.2 million per year

6.4.6 Private forest grower extension

One of the best opportunities to expand the forest estate in key ‘wood basket’ regions is to stimulate the small to medium farm sector. Over the past 30 years, there have been a number of regional, state and national programs to encourage the farm sector to view tree cropping as a part of a mixed farm enterprise.

Some of these activities have been research focused (e.g. Joint Venture Agroforestry Program) and the recently disbanded Private Forestry Development Committees oversaw the development of significant resources in the form of research, marketing assistance and the publication of extension material, which is still relevant.

Some states continue to actively support private forestry through specific agency functions. Specifically, Tasmania (Private Forests Tasmania, Forest Practices Board), New South Wales (Department of Innovation and Investment and Office of Environment and Heritage) and Victoria (Department of Primary Industries) have active programs that are engaged in supporting and regulating private forestry. Western Australia is in the process of winding back its commitments to private forest expansion in the agricultural landscape.

It can be argued that historic, government-based support for private forestry has fallen short as a consequence of conflicting objectives between the main players. Added to that, the withdrawal of funding for tree farming support in the past few years has resulted in the loss of some considerable technical expertise that, with agreement on appropriate objectives, could have continued to facilitate maintenance or even expansion of the private forest resource base in key wood baskets.

Notwithstanding past difficulties, the encouragement of a vibrant small to medium-scale privately owned forest resource base can help overcome a number of economic and social constraints on future wood supply in key regions.

Proposed activities would include:

- developing a program of technology transfer and extension to capitalise on the significant historic research and technical investment associated with private forestry extension in key wood baskets
- developing field extension services in the major commercial forestry regions in coordination with the local industry
- coordinating with key state agencies, where present
- tasking extension officers to actively driving opportunities to expand the private tree farm estate in those key regions
- facilitating development or maintenance of cooperative structures to improve the efficiency of the model
- providing independent technical and commercial advice
- developing a program for collection and analysis of private forestry statistics, including sales data.

Proposed investment: $2.0 million per year

6.5 Levies Required

The proposed forest research and extension program is eligible for 100% matched funding from the Commonwealth Government. Using the benefit allocation in Section 5.3, the cost to industry is shown in Figure 36 and flow-on to levies in Figure 37.

Figure 36 – Proposed investment by sector

					Investment benefit allocation ($'000)						
	Budget ('000)	Proportion matchable ('000)	Available Gov't funding ('000)	Industry contribution ('000)	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper	Total
CURRENT FWPA PROGRAMS:											
Forest resources R&D program	$2,000	100%	$1,000	$1,000	$750	$130	$20	$0	$100	$0	$1,000
POTENTIAL PROGRAMS:											
Herbicide consortium	$600	100%	$300	$300	$300	$0	$0	$0	$0	$0	$300
Genetics deployment	$1,000	100%	$500	$500	$375	$65	$10	$0	$50	$0	$500
Forest health surveillance	$600	100%	$300	$300	$225	$39	$6	$0	$30	$0	$300
Forest harvest and haulage	$1,200	100%	$600	$600	$450	$78	$12	$0	$60	$0	$600
Private forest grower extension	$2,000	100%	$1,000	$1,000	$750	$130	$20	$0	$100	$0	$1,000
SUBTOTAL	**$5,400**		**$2,700**	**$2,700**	**$2,100**	**$312**	**$48**	**$0**	**$240**	**$0**	**$2,700**
Corporate overhead	**$740**	100%	$370	$370	$293	$40	$6	$0	$31	$0	$370
TOTAL	**$8,140**		**$4,070**	**$4,070**	**$3,143**	**$482**	**$74**	**$0**	**$371**	**$0**	**$4,070**

Figure 37 – Proposed levies by sector

	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper
Allocation of investment benefits	79%	11%	2%	0%	8%	0%
Investment required ('000)	**$3,143**	**$482**	**$74**	**$0**	**$371**	**$0**
5-year average annual vol ('000m3)	23,376	10,744	1,720	1,458	10,913	0
Required levy rates per m3	**$0.134**	**$0.045**	**$0.043**	**$0.000**	**$0.034**	**$0.000**

6.6 Return on Investment

An *ex post* investment of FWPA's prior investments in forest R&D by URS Forestry shows the estimated benefit-cost ratio is over 13:1 (see Figure 38).

It is anticipated that the proposed program would generate benefits of the same order of magnitude of previous investments.

Figure 38 – Ex post benefit-cost analysis of FWPA forest growing R&D investments

	No of Projects	Total Value Invested ($' 000)	Value of Sample projects ($' 000)	Sample projects as % of total investment	Weighted Average BCR	Estimated benefits from total investment ($' 000)
Growing	35	17,596	3,394	19	13.4	235,339

Source: URS Forestry – Benefit-cost analysis of selected projects within the FWPA R&D Program (2012)

6.7 The Do Nothing Option

A decision to not fund an integrated forest research and extension program via FWPA would likely lead to a reduction (or stagnation) of productivity in forest growing and reduced confidence in the commercial viability of forest growing.

It is likely that companies/agencies would continue to invest in some forest research and extension on an individual and/or collaborative basis, especially in some key regions.

The reduced funds for RD&E would lead to further erosion in capacity across a number of key disciplines such as genetics, pest control and forest operations. In the absence of local research capacity, the increased use of international expertise (if accessible) would probably result in higher costs.

6.8 Measures of Success

Given the wide breadth of the proposed programs related to integrated forest research and extension, the measures of success will need to be tailored to each activity. However, measures that would apply across the whole program would include:

- developing and publishing best practice guidelines to facilitate adoption of research findings by industry
- expanding extension activities (e.g. field days) and demonstrable increase in participation
- increasing awareness of RD&E findings as measured via report downloads and attendance at seminars and field days
- greater collaboration across the sector
- timeliness and effectiveness of responses to reported outbreaks
- industry acceptance and use of existing and enhanced supply chain tools for which significant investment has already been made
- benefit-cost analyses that demonstrate positive impact of research output that has been implemented operationally
- measurable increase in commercial forest investments in target regions.

6.9 Industry Priority

Attendees at the 2012 FWPA summit endorsed the proposed programs Priority 1 (supported by all working groups) initiatives with the exception of the Forest Harvest and Haulage and Private Forest Grower Extension programs which were rated as Priority 2 (supported by the majority of the working groups).

6.10 Proposed Implementation Process

If endorsed by members, the implementation of this program would occur according to a number of parallel timetables involving a range of stakeholders. Management and reporting frameworks for the new initiatives would require detailed development and it is possible that a single management structure could be developed to cover all the proposed new programs.

Sustainable Resources R&D Investments: This program would continue as per the current FWPA program guided by Board endorsed R&D investment plans.

Genetics Deployment: The details of this program would need to be developed in conjunction with current industry cooperatives. Once confirmation of industry support for the program had been confirmed in late 2012, broader consultation and priority/goal setting could be undertaken via FWPA Advisory Groups and the existing tree improvement cooperatives with a view to commencing the new program in mid-2013.

Forest Health Surveillance: Once industry endorsement had been obtained for this program, it is likely that a national program could be developed and contracted in a relatively brief period of time based upon current and previous industry structures including the Integrated Pest Management Group, Research Working Group 7 and the Subtropical Forest Health Alliance.

Pesticide Trialling: Implementation of this program would be undertaken via an expansion of the existing Australian Plantation Forest Industry Herbicide Research Consortium to include trialling and labelling of appropriate pesticides based upon the guidance of the Forest Health Surveillance Network.

Forest Harvest and Haulage: Upon completion of the current CRC Forestry Forest Operations Research program in June 2012 a new research node is being established at the University of the Sunshine Coast. This research group, comprising former CRC Forestry researchers are coordinating the development of an industry funded research program resourced via yearly industry subscriptions to take effect from 1 July 2012. If the proposed FWPA program is endorsed by industry then the existing USC program would be incorporated into this program from 1 July 2013 with additional industry input and consultation undertaken in the first six months of 2013.

Private Forest Grower Extension: Implementation of this program, if endorsed, could take up to two years to become fully operational. Alliances would need to be formed with existing forest development bodies including plantation development committees, universities and government departments to form a national program. The necessary personnel would need to be recruited and contracted for each region of operations and a detailed review of available literature and knowledge assembled in partnership with alliance partners.

7 Boosting Manufacturing Productivity

7.1 Current Situation

Forest and Wood Products Australia (FWPA) and its predecessor have invested in research in wood processing for solid wood products and engineered wood products.

Funding of pre-competitive research in wood processing has historically been undertaken by CSIRO and various state agencies, but this has now mostly ceased. Research capacity for wood processing, properties and performance is extremely limited with much of the expertise now limited to one facility[19].

Given the scale of the Australian wood processing industry compared to other forest-growing regions, it is unrealistic to expect that Australia will be a leader in basic wood processing research or in the development of new processing technology. In fact, most wood processing technology for solid wood or engineered products is developed by private companies for an international market, delivered and installed on a 'turn-key' basis. There is an opportunity for the industry to develop better international linkages with equipment manufacturers and research providers to access both basic and applied research.

However, Australian plantation species and native forests have some unique properties that will require optimisation of processing technology for local conditions. This has previously been achieved through investments in projects measuring the effects of thinning, pruning and/or nutrient addition to plantation species to improve productivity and product yields. Projects aimed at reducing mill production costs have covered areas such as log and board segregation systems for batch drying and processing, robotic timber handling systems, improvements to kiln drying and steaming schedules, and accelerated testing of new wood preservatives.

The main activities within the current program are based on:

- improving understanding of the effects of softwood log quality on product properties and yield through the Wood Quality Initiative/Solid Wood Initiative
- characterising log properties and product yield and performance from plantation hardwoods
- durability of wood products across a range of climate zones and product uses via the timber service life design guide
- online detection of internal check in ash eucalypts
- assessing new adhesive systems for the manufacture of engineered wood products.

[19] Salisbury research centre, Queensland Department of Agriculture, Fisheries and Forestry

7.2 Opportunity

Despite the reduction in wood processing research capacity and facilitation, there remain numerous challenges for Australian wood processors to competitively process Australian forest resources. For example, the profitability of plantations is driven by growth rate and log prices, so reducing the time it takes to grow log products, particularly saw logs has a significant benefit for growers. However, younger wood, particularly young hardwood, presents challenges for processors that need to be understood before profitable processing will become the norm.

It should be kept in mind that it took at least two or more decades over the late 1950s to late 1970s to successfully process radiata pine efficiently for structural grade timber and it could take the same time to understand how to optimise processing of young eucalypt hardwood, whether from plantations or regrowth.

Successful processing of young eucalypt has been achieved overseas but this is a combination of genetic improvement, processing research, specialist equipment and market development. It represents an opportunity for FWPA to gain from international research through collaboration.

The high Australian dollar is making imports more competitive than they have been since the float of the dollar in the early 1980s. As a result, any improvements in processing efficiency will be critically important for Australian wood processors.

FWPA's investment in the Solid Wood Innovations research consortia shows that incremental cost savings are achievable without capital expenditure, such as optimised kiln schedules and reduced steaming times, which could reduce costs by $\$2.60/m^3$ and $\$2.30/m^3$ respectively. If applied across the total solid wood processing sector, this could represent $20-$30 million per year in savings.

7.3 Benefits to Whole Sector

As discussed previously, there are concerns about the ongoing viability of domestic manufacturing in the face of high foreign exchange rates and low demand in North America and Europe. Governments are unlikely to reintroduce tariffs or other trade barriers to assist manufacturing, so the onus will be on industry to adjust to the new trading conditions.

A decline in domestic manufacturing will affect forest growers, especially those in regions without ready access to export ports or other alternative markets.

Exporters and importers are less likely to gain from increased innovation in the manufacturing sector, although it could be argued that Australia would be poorer without a competitive manufacturing sector.

The proposed allocation of investment benefits is:

	Investment benefit allocation (%)						
	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper	Total
Wood processing R&D	20%	70%	10%	0%	0%	0%	100%
Corporate overheads	20%	70%	10%	0%	0%	0%	100%

7.4 Proposed Programs and Benefits

A future program of activity has been identified in two R&D investment plans. Key activities include:

- optimising production grading systems, translating log quality measures into improved product value and volume recovery
- improving product durability through wood modification and preservative treatment
- improving mill productivity through reduction in process energy and water consumption
- improving in-mill processing logistics and material handling systems.

Proposed investment: $2.2 million per year (including overheads)

7.5 Levies Required

This program would be eligible for 100% matching payments from the Commonwealth Government. Based on the benefit allocation methodology discussed previously and the average volumes over the five-year period, the levies required to fund the program are shown in Figures 32 and 33.

Figure 32 – Investment requirement by levy category

					Investment benefit allocation ($'000)						
	Budget ('000)	Proportion matchable ('000)	Available Gov't funding ('000)	Industry contribution ('000)	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper	Total
Wood processing R&D	$2,000	100%	$1,000	$1,000	$200	$700	$100	$0	$0	$0	$1,000
Corporate overheads	$200		$100	$100	$20	$70	$10	$0	$0	$0	$100
TOTAL	**$2,200**		**$1,100**	**$1,100**	**$220**	**$770**	**$110**	**$0**	**$0**	**$0**	**$1,100**

Figure 33 – Proposed levies by sector

	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper
Allocation of investment benefits	20%	70%	10%	0%	0%	0%
Investment required ('000)	**$220**	**$770**	**$110**	**$0**	**$0**	**$0**
5-year average annual vol ('000m3)	23,376	10,744	1,720	1,458	10,913	0
Required levy rates per m3	**$0.009**	**$0.072**	**$0.064**	**$0.000**	**$0.000**	**$0.000**

7.6 Return on Investment

Previous analysis of FWPA's investment in manufacturing productivity, using the combined RDC methodology for benefit-cost analysis, has shown that the weighted average return is 5.0 over a 20–year period as shown in Figure 34. It is anticipated that similar returns could be achieved for future investments.

Figure 34 – Ex post benefit-cost analysis of FWPA processing projects

	No of Projects	Total Value Invested ($' 000)	Value of Sample projects ($' 000)	Sample projects as % of total investment	Weighted Average BCR	Estimated benefits from total investment ($' 000)
Processing	60	35,636	3,490	10	5.0	177,428

Source: URS Forestry – Benefit-cost analysis of selected projects within the FWPA R&D Program (2012)

7.7 The Do Nothing Option

In the absence of an FWPA levy-funded R&D program aimed at manufacturing productivity, the most likely consequence is a further loss of R&D capacity and an increase in industry costs due to a reliance on overseas technical expertise.

It could be expected that some companies, either individually or in collaboration, would continue to invest in company-specific research.

The absence of pre-competitive research could reduce the competitiveness of smaller operators and could act as a barrier for entry of new players into the industry.

7.8 Measures of Success

Performance will be monitored and measured by:

- adoption of research findings by industry that leads to increased productivity and/or profitability
- *ex ante* and *ex post* benefit-cost analyses
- maintained or increased competitiveness compared to imports or international benchmarks
- awareness of R&D findings as measured by report downloads and attendance at seminars.

7.9 Industry Priority

Attendees at the 2012 FWPA summit endorsed the continuation of this program at its current level of expenditure.

7.10 Proposed Implementation Process

The activities within the program would continue essentially unchanged from the current FWPA wood products R&D program. R&D priorities and project investments would continue to be informed and guided by the existing R&D investment plans which would be subject to scheduled review and renewal via stakeholder consultation.

8 Addressing Skills Shortages

8.1 Current Situation

Over the past decade, there has been a range of investigations and initiatives to help address the workforce skills needed for the sector.

Forestworks is the industry service company with primary responsibility for skills in the sector. It is the Commonwealth Government's endorsed Industry Skills Council and is the main channel between industry, government and the Australian Vocational Education and Training (VET) system. Each year, Forestworks reviews the issues facing the sector and the impact on the skills and training needs.[20]

FWPA commissioned a review of the gaps and needs in the education and training for the Australian forest and wood products industry.[21] In response to this review, FWPA developed an education investment plan to address some of the identified gaps, which included the development of the ForestLearning and GrowingCareers programs.

In addition, FWPA and FWPRDC have been investors in postgraduate scholarships for candidates undertaking research topics related to forest growing, processing and market access. To date, 39 postgraduates have been funded.

The Cooperative Research Centres (CRC) have been the main vehicles for training new researchers for the sector. The CRC for Forestry is the last active CRC in the sector and is scheduled to close in June 2012.

The number of postgraduate students and the type of topics required by the sector is unknown; however, it is an area that will be investigated by the new National Research, Development and Extension (RD&E) Forum.

One of the specific skills shortages identified by Forestworks and the FWPA review relates to tertiary-trained professional foresters. Research suggests that the average annual number of forestry graduates has been in a steady decline since the early 1980s and that current graduates are only fulfilling about half the demand.[22] With reduced availability of local graduates, some employers have taken to recruiting internationally.

Under the education investment plan, FWPA has undertaken some limited activity to help promote professional forestry as a career opportunity to 18-35 year olds. This has included profiles on the GrowingCareers website, e-newsletters, limited on-campus

[20] Forestworks – 'Industry Skills Scan: A research summary of the forest and timber products industry developments and directions impacting on skills, training and workforce demands 2012'
[21] Rob de Fegely – 'Review of Australian Forestry and Wood Products Education and Training Needs'
[22] Searle & Bryant (2009) – Why students choose to study for a forestry degree and implications for the forestry profession, Australian Forestry 2009 Vol 72 No 2 pp71-79.

activity and a summer work program. In addition, the Institute of Foresters of Australia and the Gottstein Trust offer scholarships as an incentive to study forestry.

8.2 Opportunity

Training professional foresters and future researchers within Australia will ensure that their skills are closely aligned to the needs of the sector.

The sector has a proud tradition of professional education with the 100th anniversary for Australian forestry education celebrated in 2010. Over that time, locally trained professional foresters and researchers have created a strong cohort, focused on solving local problems and expanding the forest sector.

This is not to diminish the significant role that internationally trained foresters and researchers have made to the sector. Immigrants have made an enormous contribution to the forest sector at all levels, including forest management and research.

However, locally based education has the ability to forge strong interpersonal relationships and to inoculate key knowledge that may be specific to the Australian political and physical environment.

8.3 Benefits to Whole Sector

The role and influence of professional foresters and researchers is not just restricted to the 'bush' and the 'lab'.

Historically, foresters have utilised their management training to move into a wide range of roles within the sector, including operations, manufacturing, distribution, policy and politics. Similarly, postgraduate researchers have moved into a wide range of fields beyond their PhD topic.

Collectively, the breadth of forestry training and the focused discipline of postgraduates have helped reinforce the strong scientific credentials that underpin the sector.

The proposed allocation of the investment benefits is:

	Investment benefit allocation (%)						
Program	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper	Total
CURRENT FWPA PROGRAMS:							
Postgraduate scholarships	40%	40%	5%	10%	5%	0%	100%
POTENTIAL PROGRAMS:							
Professional forestry education	60%	20%	5%	5%	10%	0%	100%
Corporate overheads	50%	30%	5%	8%	8%	0%	100%

8.4 Proposed Programs and Benefits

8.4.1 Postgraduate scholarships

Postgraduate scholarships are awarded to individuals, but are managed as a partnership and/or contract with the academic institution. Each year, FWPA promotes the availability of its scholarships directly to relevant universities and through other communication channels to potential candidates.

Historically, the candidates were chosen based on the perceived relevance of their research thesis to the forest and wood products sector.

Following the completion of the national research, development and extension (RD&E) strategy for the sector, which includes an assessment of research capacity, the focus is now on selecting candidates who are planning to undertake research in disciplines where capacity is low or in significant decline.

The proposed investment is sufficient to award approximately three or four new postgraduate scholarships per year, which means that we would be providing ongoing funding for 10 to 12 scholarships every year.

Proposed investment: $300,000 per year

8.4.2 Professional forestry education

Over the past 20 years, there has been reduced undergraduate enrolment in professional forestry courses in Australia and some other international jurisdictions. A similar trend has been experienced in agriculture and other rural related professions.

There have been several studies into why people chose to study forestry. Unfortunately, there is little knowledge about why people chose *not* to study forestry and therefore we have do not know how to provide incentives for students to enrol in forestry.

For example, the undergraduate scholarships are awarded to students currently studying forestry and it could be argued that these scholarships are not increasing the number of potential graduates.

Funding of university places is driven by student numbers. Without an increase in enrolments, the current undergraduate and Masters program for professional forestry may not be sustainable.

Activities under this program will include the following:

- promoting professional forestry as a career to potential or existing university students

- expanding the number and value of scholarships to study forestry
- promoting scholarships to school leavers, careers advisers and the general public via a range of advertising media
- supporting the teaching of forest industry-specific courses such as wood products, forest operations and silviculture.

Proposed investment: $800,000 per year

8.5 Levies Required

The proposed activities are eligible for 100% matching by the Commonwealth Government.

Based on the benefit allocation methodology discussed previously, the funding requirements of the proposed market development program are shown in Figure 41.

Figure 41 – Investment requirement by levy category

					Investment benefit allocation ($'000)						
Program	Budget ('000)	Proportion matchable ('000)	Available Gov't funding ('000)	Industry contribution ('000)	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper	Total
CURRENT FWPA PROGRAMS:											
Postgraduate scholarships	$300	100%	$150	$150	$60	$60	$8	$15	$8	$0	$150
POTENTIAL PROGRAMS:											
Professional forestry education	$800	100%	$400	$400	$240	$80	$20	$20	$40	$0	$400
Corporate overheads	$110	100%	$55	$55	$28	$17	$3	$4	$4	$0	$55
TOTAL	**$1,210**		**$605**	**$605**	**$328**	**$157**	**$30**	**$39**	**$52**	**$0**	**$605**

Utilising the average volumes over the five-year period, the levies required from industry to fund the program are shown in Figure 42.

Figure 42 – Investment requirement by levy category

	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and paper
Allocation of investment benefits	50%	30%	5%	8%	8%	0%
Investment required ('000)	**$328**	**$157**	**$30**	**$39**	**$52**	**$0**
5-year average annual vol ('000m3)	23,376	10,744	1,720	1,458	10,913	0
Required levy rates per m3	**$0.014**	**$0.015**	**$0.018**	**$0.027**	**$0.005**	**$0.000**

8.6 Return on Investment

Continuing to educate and train professional foresters and researchers in Australia is necessary because there are features of the Australian forest and wood products sector that are unique.

For example, management of native eucalypt forests requires specific local knowledge in relation to fire management, silviculture and biodiversity conservation. Similarly, the

silviculture of exotic plantations has developed over time to respond to endemic pests, low moisture and poor soil nutrition.

The return on investment in local training is achieved by avoiding the need to 'localise' overseas-trained professionals or researchers. It is estimated that the cost of localising would be in the order of 6-12 months at full salary costs (say, $75,000-$100,000 per year per person). If the sector requires 10-15 new recruits per year, then the proposed program would be cost neutral.

8.7 The Do Nothing Option

In the absence of a levy-funded program to support the training of future researchers and professional foresters, there will be a continued erosion of local skills and the potential closure of some, or all, of the tertiary forestry education programs.

Under this scenario, the sector will need to recruit researchers and professionals from overseas or other disciplines and 'localise' via in-house training programs.

Over time, there is the potential that some local knowledge will be lost as the balance shifts away from mostly locally trained staff due to natural attrition and retirement.

On the positive side, the new recruits may bring skills and experiences that add to the expertise of the sector.

Another pay-off from local training is the development of interpersonal relations within the sector. Historically, there has been a high degree of collaboration in the sector as many senior executives share common educational experiences.

The absence of a strong cohort is likely to lead to reduced collaboration and an increase of 'silos' within and between companies and sectors.

8.8 Measures of Success

The success of this skills program will be measured by:

- number and quality of postgraduates who remain in the sector
- number and quality of candidates who choose to study forestry
- retention of local knowledge and expertise
- maintenance of dedicated university courses for the sector.

8.9 Industry Priority

Attendees at the 2012 FWPA summit acknowledged the importance of skills development but gave it a Priority 3 due to more short-term pressing issues.

8.10 Proposed Implementation Process

If funded, the current activities postgraduate support program would continue essentially unchanged from the current FWPA education investment plan. The development of a professional forestry program would take 12-18 months to ramp up.

9 Funding Implications

Based on the previous sections, the total funding required for this business case from industry and the Commonwealth Government is shown in Figure 43.

Figure 43 – Investment requirement by Government and industry

	Total Investment ($'000)	Total Gov't matching funds ($'000)	Industry funds required ($'000)	Proposed funding by levy category ($'000)					
				Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and Paper
Enhancing social licence	$4,180	$165	$4,015	$1,221	$1,584	$120	$683	$407	$0
Growing the market	$6,270	$1,628	$4,642	$757	$2,149	$519	$1,216	$0	$0
Improving statistics and economics	$880	$440	$440	$176	$176	$13	$44	$31	$0
Integrating forest research and extension	$8,140	$4,070	$4,070	$3,143	$482	$74	$0	$371	$0
Boosting manufacturing productivity	$2,200	$1,100	$1,100	$220	$770	$110	$0	$0	$0
Addressing skills shortages	$1,210	$605	$605	$328	$157	$30	$39	$52	$0
TOTAL	**$22,880**	**$8,008**	**$14,872**	**$5,845**	**$5,318**	**$868**	**$1,981**	**$860**	**$0**
Required levy per m3				$0.25	$0.50	$0.50	$1.36	$0.08	$0.00

Under the current regulations, the Commonwealth Government will provide matching funds up to 0.5% of the Gross Value of Production (GVP) of the forest growing sector.

The GVP is calculated at the equivalent of the 'farm gate' and was determined to be $1.74 billion in the 2010/11 financial year. Therefore, the current maximum amount of Government funding would be $8.7 million per year. This business case estimates that the matching funds required from the Government would be just over $8 million per year.

On this basis, approximately $700,000 per year in Commonwealth matching payments would remain, if industry wanted to invest in appropriate eligible activities.

The total amount funds and levies required from each sector in the industry is shown in Figure 44.

Figure 44 – Funds and levies required from each sector

	Forest growers	Solid wood processors	Engineered wood processors	Importers	Exporters	Pulp and Paper	TOTAL
Estimated levies - 2011/12 ('000)	$1,037	$2,723	$191	$985	$297	$0	$5,234
% of total levy income	20%	52%	4%	19%	6%	0%	100%
Funds required for business case ('000)	**$5,845**	**$5,318**	**$868**	**$1,981**	**$860**	**$0**	**$14,872**
% of total funds required	39%	36%	6%	13%	6%	0%	100%
Percentage increase from current levies	563%	195%	454%	201%	289%	0%	284%
Required levy per m3	**$0.25**	**$0.50**	**$0.50**	**$1.36**	**$0.08**	**$0.00**	

The current and proposed levies are a relatively small proportion of the estimated selling price of the wholesale price that the industry receives for its products. In fact, the proposed levies are significantly lower than the levies collected only for R&D investment purposes by other rural research and development corporations (see Figure 45).

Figure 45 – Comparison of levies by organisation and commodity

Organisation	Commodity type	Current Levy rate ($)	Estimated commodity price ($)	Current levy as a proportion of selling price	Current levy as a proportion of selling price
Forest and Wood Products Aust	Round log	0.050	55	0.09%	0.45%
	Softwood sawn timber (a)	0.290	400	0.18%	0.31%
	Imported softwood timber	0.715	400	0.18%	0.34%
	Engineered wood product	0.150	800	0.02%	0.07%
Cotton RDC (b)	Cotton	2.250	425	0.53%	
Australian Egg Corporation Ltd	Chick x 2d old	0.460	4.5	10.22%	
Dairy Australia	Milk	0.004	0.396	0.89%	
Australian Pork Ltd.	Pig	2.525	200	1.26%	
Grapes and Wine RDC (b)	Grapes	2.000	400	0.50%	
	Wine	4.980	1010	0.49%	
Rural Industries RDC (b)	Honey	0.023	3	0.77%	
	Bees	0.100	20	0.50%	
	Rice	3.000	275	1.09%	

(a) assumes 40% recovery
(b) R&D expenditure only

10 Implementation

If the industry wishes to support this business case, a formal poll of levy payers would be needed, leading to a simple majority of support for the change(s). The process for changing levies is laid out in DAFF's document, *Levy Principles and Guidelines*. Ultimately, the change would require a change of Commonwealth regulations and is thus subject to the political process.

There are currently 12 levy classes, which have been consolidated in this business case into six categories. The current levy classes create an additional burden on administration and compliance costs associated with levy collection. There is also the potential for leakage of levies due to misclassification.

In allocating the investment benefits, the resultant levy for the solid wood processor and engineered wood processing categories were both approximately $0.50 per cubic metre. Therefore, there may be an opportunity to consolidate these two categories.

The future programs identified at the Summit, and further developed within the business case, will require a significant investment by industry that will be reflected in increased levies. The Board recognises that the current economic climate for the industry is extremely tough and the proposed levy increases may need to be phased in.

There a range of ways that the increase in levies could be implemented such as the following:

1. Immediate implementation as of 1 July 2013
2. Staged implementation over a number of years (say, three years)
3. Implementation in response to an independent market trigger such as national housing starts.

A possible staged implementation could take the following form:

Source of funds ('000)	2011/12 (f'cast)	2012/13 (budget)	Year 1	Year 2	Year 3
Industry levies	$5,234	$5,371	$8,000	$11,000	$14,872
Gov't matching funds	$4,773	$3,079	$6,000	$7,000	$8,008
Total	$10,007	$8,450	$14,000	$18,000	$22,880
Cash reserves	$3,373				
Total investment	$13,380	$8,450	$14,000	$18,000	$22,880

The FWPA Board is confident that the company has the governance and business systems in place to deliver the projected benefits in accordance to any implementation pathway chosen by industry.