4. FOREST INDUSTRIES

4.1 NATIVE WOOD BASED INDUSTRIES

The consultative mechanisms provided by the RFA process, including the social assessment process, enabled local communities and stakeholders to identify issues that need to be addressed to promote the timber industry and regional development. Through a range of mechanisms including the RFA, the Commonwealth and Victorian governments are addressing key issues raised by stakeholders, including:

- resource certainty;
- value-adding, product development and potential marketing opportunities; and
- public log pricing and allocation policies.

In light of the long term nature and capital intensity of most forestry investments, increased certainty of resource availability is necessary to promote a more efficient and internationally competitive forest based industry. In this respect, the West Victoria RFA will be part of the framework that permits the forest industries to be internationally competitive and delivers desired environmental outcomes. This framework and its potential effects are discussed below.

The Commonwealth and Victorian governments have also introduced initiatives addressing the issues of product and market development and pricing and allocation policies. While these initiatives are not directly related to the RFA, they are described below to provide the context for the forest industry policy.

Resource Certainty

One of the objectives of Regional Forest Agreements is to provide greater certainty for forest based industries, including access to timber resources. Past land use planning decisions by the Victorian government, including decisions based on the recommendations of the former Land Conservation Council, have influenced current resource availability in the region. Updated resource information and the establishment of the draft CAR reserve system outlined in Chapter 3 are likely to influence potential timber resource availability.

In conjunction with existing conservation reserves, additional areas identified in the draft CAR reserve system are designed to maintain species and genetic diversity through the protection of a proportion of all Ecological Vegetation Classes (EVCs) across all public land tenures. Specific conservation measures for known rare or threatened species, such as the Powerful Owl, Red-tailed Black Cockatoo and Spot-tailed quoll are also included.

As part of providing timber resource certainty for the industry, preliminary timber resource analyses have been undertaken by the Department of Natural Resources and Environment (NRE) for the Midlands, Portland and Horsham Forest Management Areas (FMAs), and is still under development for the Otways FMA, in the West Victoria RFA region. These analyses utilise updated data from a range of sources to prepare a new estimate of timber resource availability (TRA) and to assess the implications of establishing the draft CAR reserve system.

Sustainable yield, as defined in Victorian legislation, will be determined when the next formal review is undertaken by NRE using fully spatially based modelling in the Integrated Forest Planning System (IFPS) and incorporating Statewide Forest Resource Inventory (SFRI) data, an agreed CAR reserve system, other outcomes established in the West Victoria RFA and detailed input from regional staff and stakeholders.

Certainty about resource availability is a major issue for the timber industry and enables investment decisions to be made with confidence. A statewide sawlog licensing system based on 15 year tradeable licences was introduced in 1987. Licences were introduced to guarantee long-term access to sawlog resources, promote investment and facilitate the transition to sustainable supply levels. A direct benefit of such a system has been the increased level of confidence within the Victorian sawmilling industry, which has seen a significant increase in the level of investment in value-adding operations, including the West Victoria RFA region.

On completion of a West Victoria RFA, the Commonwealth will remove export controls on unprocessed native hardwood sourced from the region. The lifting of these export controls, together with the maintenance of a long term licensing system, will increase certainty of access to hardwood resources and promote an investment climate conducive to the development of internationally competitive forest based industries. The present flexibility with respect to the trading of sawlog volumes between licensees also allows processors to respond to market conditions and maximise opportunities.

The issue of certainty of access to public hardwood resources is equally applicable to pulpwood (or residual log) processors.

Investment in the Timber Industry

As with other sawmilling operations in the State, some companies in the West Victoria RFA region have made significant investments in upgrading mills over the past decade, resulting in increased production of higher value products. Value-adding initiatives facilitated by long term resource agreements have increased the production of kiln dried timber and the recovery of sawn timber from lower grade logs. The changes have required:

- substantial capital investment in value-adding facilities;
- development of a larger and more skilled workforce;
- development of new markets in Victoria, interstate and overseas; and
- development of new products.

In 1997-98, there was an estimated capital investment of $1.4 million in mills sourcing sawlogs from the West Victoria RFA region. This investment was undertaken by 12 sawmills which are producing seasoned sawn timber. The broad types of sawmills that exist today and are expected to exist in the future are set out in Table 4.1. In 1997-98, 18 of the 21 mills sourcing sawlogs from the West Victoria RFA region had an annual log input of less than 20,000 m^3, with 14 of these mills having a log input of less than 6,000 m^3. The remaining three mills had an annual log throughput in excess of 20,000 m^3 but none exceeded 50,000m^3.

Table 4.1 Broad classification of sawn timber producers

Annual log input	Processing facilities	Principal products produced
Up to 6,000 m^3	Conventional sawmill	Green structural timber (F8)
6,000 – 20,000 m^3	Conventional sawmill Drying kilns & planer	Seasoned structural timber (F17) Some green structural (F8)
20,000 – 50,000 m^3	Bandsawmill Drying kilns & moulders Laminating & finger jointing equipment	Maximum recovery of appearance grades. Seasoned structural (F17) No unseasoned timber
Over 50,000 m^3	Bandsawmill Drying kilns & moulders Laminating, finger jointing & other re-processing facilities.	Appearance grade products. Capacity to supply export markets with joinery/furniture components.

Further development in value-adding, marketing and product development

The Victorian and Commonwealth governments are jointly committed to ensuring that hardwood resources sourced from the West Victoria RFA region are utilised to their maximum potential, recognising the economic and social benefits flowing from competitive value-added based industries.

An assessment of the further growth potential of the forest industries, drawing hardwood resources from the West Victoria RFA region, identified a number of potential investment and employment opportunities. Development opportunities for the hardwood sawmilling industry in the West Victoria RFA region will be substantially determined by the final level of sawlog availability. Specific development options that could be considered by the sawn timber industry sourcing hardwood sawlogs and residual logs from the West Victoria RFA region include:

- increasing the proportion of sawn timber that is kiln dried. Most producers processing logs from the West Victoria RFA region have the capacity to increase the proportion of their production that is kiln dried and re–processed;
- increased processing of residual logs through investment in plants specifically designed to process logs that are smaller and more defective than sawlogs;
- developing networks between timber processors to facilitate investment in the specialised equipment needed to produce highly processed wood products;
- strengthening links with the furniture industry; and
- continuing to identify and expand markets where the properties of the particular West timbers (durability, appearance, strength and hardness) provide a competitive advantage.

As well as major capital investment in equipment, industry is also establishing more effective marketing networks and opportunities for product development. There are significant opportunities for those companies that have been developing co-operative networks to target major national and export markets such as Japan.

One such initiative is the Australwood Export Network, which allows participating companies to trade individually, but also as a collective force. The network offers

combined research, promotion, quality assurance and marketing activities. A major focus of the Australwood Export Network is the Japanese market, following an initial study jointly funded by industry and the Commonwealth AusIndustry program. The Commonwealth assisted the industry in establishing the Network, and provided initial support for technology transfer in hardwood sawmilling and kiln drying.

The work of the timber industry in developing new markets for value-added products complements the Victorian Timber Promotion Council's development of a detailed quality assurance program for hardwood sawn timber to ensure consistency in the supply of products targeted to customer requirements.

In order to promote further manufacturing opportunities, the Furniture Industry Association of Australia is developing a national export program and strategy for timber and furniture producers and exporters to promote Australian furnishings to the Japanese market. These timber promotion and quality assurance programs are funded by industry with Commonwealth assistance requirements (DPIE 1996). In 1994 less than 5 per cent of Australian furniture was exported. This increased by 10 cent over the next two years with Victorian manufacturers contributing significantly to this outcome (Cock 1997).

The Victorian government will develop a Forests and Forests Products Industry Plan to further encourage a sustainable timber industry, create employment and promote value-adding. It will be developed and implemented in partnership with industry, industry unions and local governments.

Opportunities for the Victorian sawmilling industry given the climate of certainty provided by completed RFAs across the State have been reviewed by FORTECH (1999). Value-adding in the sawmilling sector offers the greatest scope as market opportunities are available both domestically and internationally. The most promising product outlets are in flooring, external appearance products and furniture. The potential industry development opportunities in Victoria with high priority for assistance are listed in Table 4.2.

Development opportunities for the hardwood sawmilling industry in the West Victoria RFA region will be determined in part by the level of sawlog availability as well as a range of other factors such as location of the resource and of processing facilities, consequent transport costs, and competition by pine for traditional markets. Decisions on industry expansion and investment will be made by private investors and companies in light of normal commercial considerations rather than being prescribed in the RFA.

Table 4.2: Potential industry development opportunities in Victoria

Opportunity	Benefits
Further development of natural feature grade products	Potential markets may be very large if industry builds on initial success and extend to a wider range of species.
Increased production of flooring	Potential markets may also be large particularly where advantages of strength and durability are linked with natural feature grades.
Increased drying of Ash species	Increased employment and income.
Increased drying of mixed species timbers, particularly in East Gippsland.	Increased employment and income.

Re-manufacturing to produce appearance products	Import replacement and move to higher value end uses and higher utilisation of logs.
Preservative and other treatments	Import replacement and move to higher value end uses.
Hardwood furniture manufacturing	Significant export potential particularly for natural feature grade furniture grade timbers. Increase in skilled jobs.
Increased sawing of lower grade logs	Increased employment and income and greater utilisation of logs.
Mechanical harvesting	Lower delivered log costs, lower environmental impact.

Pricing and allocation policies

NRE has a major influence on the efficiency and competitiveness of downstream processing industries and private growers through the pricing and allocation of the logs it supplies. In recent years, NRE has responded to changing community expectations and policies towards the management of commercial aspects of public forests and is adopting more market oriented pricing methods. This includes greater flexibility in the sale of short term parcels of timber, and ongoing review of log royalties in light of market conditions. As noted in the Statewide ESFM report (VicRFASC 1997), the ongoing reform of NRE accounting systems to promote greater transparency between commercial and non-commercial forest production activities is acknowledged as a positive step towards increasing the efficiency of public wood supply activities.

A key feature of the existing log allocation is the classification of logs into four sawlog grades or into residual logs, according to their quality. At present, residual logs are largely used as fibre input for the production of pulp and paper products. The log grading system is designed to encourage value-adding and to maximise the economic and social benefits from the utilisation of the timber resource. For example, in the West Victoria RFA region around 20,000m^3 of better quality sawlogs below D grade are also converted into sawn timber products such as pallets and fencing material.

Further improvements in the grading of logs below D grade sawlog may facilitate additional value-adding activities, such as composite products made from small dimension timbers.

As part of the Competition Principles Agreement, Victoria reviewed legislation and policies relevant to the allocation and pricing of hardwood logs from State forest in 1999. The Victorian Government is committed to an independent review of royalties and charges relating to timber harvesting, taking into account reports conducted in accordance with National Competition Policy and other government policies.

Potential Forest Industry Opportunities

Timber industry development opportunities in the West Victoria RFA region were examined as part of the economic assessment for the West Victoria Comprehensive Regional Assessment (CRA). This section outlines the main findings of that assessment, taking into account forest product markets and the availability and quality of hardwood resources.

Sawmilling

Many sawmillers drawing hardwood resources from the region intend to further increase the degree of value-adding within the industry over the next few years. In particular, sawmillers intend to increase the production of higher value products such as dried and appearance grade products (VicRFASC 1999).

During the sawmill survey conducted by ABARE in 1998, sawmillers were asked for details of their proposed investment plans in terms of new milling equipment, total mill capacity and new timber drying facilities over the next ten years. Such investment plans will result in not only an increase in log capacity able to be handled by mills, but also an increase in timber recovery rates and an increase in the proportion of timber able to be processed beyond the green sawntimber stage. Responses from the sawmill survey regarding anticipated production shares in 2007-08 against production shares in 1997-98 are summarised in Table 4.3.

Table 4.3:Current and anticipated sawntimber production in the West Victoria RFA region and major markets, 1997-98 and 2007-08 [a]

Product	% Share of Production		Major markets in 1997-98 [b]
	1997-98	2007-08	
Seasoned sawntimber	**21.7**	**31.4**	
Appearance grade – select	5.4	5.5	Melbourne
Appearance grade – standard	3.8	5.1	Melbourne
Dried structural grade	11.1	16.2	Melbourne, regional Victoria, interstate
Further processed	1.3	4.5	Melbourne, regional Victoria
Green sawn timber sold for further processing	**1.2**	**1.0**	Melbourne, regional Victoria
Unseasoned sawntimber	**77.2**	**61.7**	
Structural	0.03	0.03	Melbourne, regional Victoria, interstate
Scantling	47.0	38.5	Melbourne, regional Victoria, interstate
Palings and pallets	26.4	25.9	Melbourne, regional Victoria
Other sawntimber	3.8	3.1	Melbourne, regional Victoria
Total	**100**	**100**	

a Preliminary estimates for industry based on sawmill survey. These estimates exclude specialist recovery mills. **b** Markets recorded in order of importance. (This table varies from the CRA due to an extra mill inadvertently included).

Sawmillers utilising sawlogs from the West Victoria RFA region anticipate that the proportion of output sold as seasoned timber will increase from 22 per cent sold in 1997-98 to around 31 per cent of total output by 2007-08. The increase is based largely on sawmillers expecting to further process more of the unseasoned sawn timber (mainly scantling) they currently produce. This would significantly increase the gross value of production associated with the timber industry in the West. In 1997-98 seasoned sawntimber was 22 per cent of total sawntimber production, and accounted for almost 40 per cent of the gross value of sawntimber sales. Sawmillers indicated that if there were sufficient high quality sawlogs available in the future, they would undertake additional investment to increase their production of (high value) appearance grade products rather than unseasoned sawntimber production.

Timber resource availability

Sustainable yield rates for the four FMAs in West Victoria were last reviewed in 1996. Since then new data have become available relating to the area of productive forest. For the purposes of evaluating the changes resulting from the proposals outlined in this paper, preliminary timber resource analyses have been undertaken. These results are indicative only and a full review of the sustainable yield rate will be undertaken following completion of the West Victoria RFA. The review will utilise final SFRI data where available, and incorporate more detail than has been used in this process.

The timber resource analyses involved developing new area statements for each FMA. Existing growth and yield information was used for the Midlands and Otway FMAs. Historical growth data were used in the analysis for Portland FMA and recent inventory provided additional information for the Horsham FMA analysis.

To determine the impact of the proposals outlined in this paper, new estimates of the timber resource were developed for all FMAs incorporating mandatory Code of Forest Practices for Timber Production (Revision # 2) exclusions. These models assume that available and productive forest stands can be harvested.

A 10 per cent contingency was applied to all models to take account of differences between actual and modelled buffers and to allow for those factors which influence availability but which are not readily incorporated into the existing models.

In each case the analyses below are of a preliminary nature and are presented to facilitate community discussion prior to completion of the RFA. Further development of the estimates of timber resource availability will be ongoing and involve consultation with stakeholders.

Portland FMA

In the Portland FMA current licence commitments are 13,950 m^3 of D grade and better sawlogs. The information presented is based on interim SFRI data and general estimates of growth for this mixed species forest type. SFRI assessments and modelling are not complete for this area.

Using the newly available data and the assumptions outlined above, the timber resource availability is approximately 12,000 m^3/year of D grade and better sawlogs. Preliminary analysis indicates that if the draft CAR reserve system were to be established, D^+ sawlog availability could be reduced by a further 2,000 m^3/year to 10,000 m^3 of D grade and better sawlogs per year.

Horsham FMA

In the Horsham FMA, the current licence commitment for Red Gum is 880 m^3 of sawlogs per year. The extent of productive forest available for sawlog production was determined from an inventory conducted in 1998, and field surveys undertaken in December 1999. Estimates of growth were obtained from inventory plots located within the FMA.

Preliminary analysis indicates that, based on available data and modelled assumptions, current licence commitments can continue to be met if the draft CAR reserve system was established.

Midlands FMA

In the Midlands FMA, current licence commitments are 58,600 m^3/year of D grade and better sawlogs. The information presented below is based on existing information updated with interim SFRI data where available. Growth rates for the mixed species forests across the Midlands FMA are based on existing information. SFRI assessments and modelling are not complete for this area.

A new baseline model was prepared incorporating existing spatial data, the forest management zones as published in the 1996 Forest Management Plan and Code of Forest Practices for Timber Production (Revision # 2, 1996) exclusions. Interim SFRI data were used to update productive forest area information where spatial data was not available. Small isolated areas of productive forest were excluded from the analysis given that these stands are unlikely to be economic to harvest. The availability of forest severely burnt in the 1983 Trentham fire was also reviewed.

This analysis provided the baseline for assessing the impacts of the draft CAR reserve design on timber resource availability (see Table 4.4). The new timber resource availability baseline is estimated to be approximately 45,000 m^3 D grade and better sawlogs per year.

Factors that have contributed to the new timber resource availability figure are:

- improved definition of productive forest based on species and stand height for areas such as Enfield, Ross Creek and Pyrenees State Forests;
- a new and more comprehensive model to estimate the Code of Forest Practices for Timber Production (Revision # 2) exclusions;
- improved modelling of the Midlands FMP catchment prescriptions relating to the scheduling of timber harvesting, and Powerful Owl Special Management Zone constraints;
- review of forests burnt in the 1983 Trentham fire on the basis of operational experience. This area is now considered uneconomic to harvest due to the low sawlog quality of surviving trees;
- incorporation of the forest management zones identified in the forest management plan published in 1996;
- the exclusion of small isolated areas of productive forest; and
- adoption of a 10 per cent contingency to allow for differences between modelled and actual available areas.

Preliminary modelling to assess the impact of the draft CAR reserve system indicates that, if the draft CAR reserve system were to be established, timber resource availability is likely to be about 40,000m^3 of D grade and better sawlogs per year.

Otway FMA

In the Otway FMA current licence commitments are 41,154 m^3 of D grade and better sawlogs per year. The current sustainable yield is 44,000 m^3 per year of D grade and better sawlogs. SFRI has been used to define the area of productive forest. To ensure a consistent basis for comparison, a new baseline model is in preparation and will incorporate SRFI forest types and ages, forest management zones as published in the 1992 Forest Management Plan, Code of Forest Practices for Timber Production (Revision # 2) exclusions including rainforest, steep slopes and stream buffers, and the exclusion of small isolated areas of productive forest. Existing growth and yield information, modified to match the SFRI forest types, will be used for the analyses.

Preliminary estimates indicate that the timber resource availability for the Otway FMA will be lower than the current licence commitment. Further analyses in conjunction with consultation processes are required in order to quantify the reduction in the level of timber resource availability.

The key factors that will influence the analysis are:

- the need to incorporate measures to ensure balanced wood flows from different forest types;
- the new SFRI-based definition of productive forest;
- application of modelled slope, stream and rainforest exclusions required by the revised Code of Forest Practices for Timber Production (Revision # 2);
- the exclusion of small isolated areas of productive forest; and
- adoption of a 10 per cent contingency to allow for differences between modelled and actual available areas.

Table 4.4: Estimated sawlog availability under the baseline model and the draft CAR reserve system under a West Victoria RFA (m^3D grade and better sawlog)

	Midlands	Otway[1]	Portland	Horsham[2]
Licence Commitments	58,600	41,154	13,950	880
New Estimate	45,000	Currently under development	12,000	na
Draft CAR reserve	40,000	Currently under development	10,000	880

[1] Further analyses in conjunction with consultation processes are required in order to quantify the reduction in the level of timber resource availability.
[2] Separate sawlog grading criteria apply to Red Gum sawlogs harvested in the Horsham FMA.

Under the new estimate of TRA for the Midlands FMA, resource availability could be reduced by approximately 23 per cent against the current commitments with a further 9 per cent reduction if the draft CAR reserve system were to be established.

Under the new estimate of TRA for the Portland FMA, resource availability could be reduced by approximately 14 per cent against the current commitments with a further 14 per cent reduction if the draft CAR reserve system were to be established. Within the Horsham FMA current commitments could continue to be supplied under the new estimate of TRA and if the draft CAR reserve system were to be established.

SOCIAL AND ECONOMIC ANALYSIS

In order to examine potential changes in sawntimber production, improvements in timber recovery rates and changes in total log resources over the life of the RFA, industry development scenarios were examined using individual spreadsheet analyses for the Midlands, Portland and Horsham FMAs. A spreadsheet approach was used as the resource information available was more suited to this approach.

The economic and social analyses are reported for the Midlands FMA. The Portland and Horsham FMAs are reported together as disagregation would breach confidentiality provisions of the data used.

Initially a new estimate of TRA was developed using updated information described above (Scenario 1). Scenario 2 models the industry if the draft CAR reserve system were to be established and using the new estimate of TRA. The impacts of increased value-adding that industry indicated it was intending to undertake were then modelled over Scenarios 1 and 2. Firstly, Scenario 3 examined increased value-adding as identified in the mill survey building on the new estimate of TRA. Secondly, Scenario 4 examined the effect of establishing the draft CAR reserve system and increasing value-adding.

Scenarios 1 and 2 reflect the industry structure as at 1997-98. The value-adding component of Scenarios 3 and 4 use the data supplied by the sawmills in the 1998 sawmill survey on expected changes in operating costs, mill capacity, employment and the level of investment. These data are used to estimate changes in recovery rates, planned or expected changes to the timber product mix and changes to the level of timber production. The model assumes that investment in new mill capacity, changed technology and drying facilities occurs in the first year of the RFA, whereas in fact the investment may take place over a number of years. It should also be noted that the value-adding intentions of sawmills could be significantly affected by changes in resource availability and the results discussed below should be examined in this light. Given the potential of resource implications to influence value-adding plans the value-adding scenarios were developed on the assumption of establishing a single value-adding facility in each FMA rather than increased or new capacity at individual existing facilities.

As some mills currently process residual logs for sawn timber, account is also taken of residual log availabilities. It is assumed that mills that process residual logs will continue to process this grade of log (after available sawlogs have been processed) up to the limit of mill capacity (subject to supply constraints) and that it remains profitable for a mill to continue to process residual logs. It is assumed that if a sawmill currently does not process residual logs it will not do so over the life of the RFA.

The figures reported are for sawmill employment only and it should be noted that harvesting and haulage employment would also change under each scenario.

Results of the economic analysis

The estimated output and employment of the sawmill industry for each scenario are reported for the Midlands FMA and the Portland and Horsham FMAs in Tables 4.5 and 4.6.

Table 4.5: Industry scenarios for Midlands FMA

		1998/99 Current Commitments	1. New Estimate of TRA	2. Draft CAR reserve	3. New Estimate of TRA and Value-Adding	4. Draft CAR reserve and Value-Adding
Mill Production	**Units**					
Seasoned Timber	m^3/yr	5709	4,355	3,870	6,728	5,980
Green Timber	m^3/yr	28,865	23,747	21,915	21,373	19,804
Residues	m^3/yr	43,232	35,824	33,172	35,824	33,172
Gross Value of Production [a]						
Seasoned Timber	$M/yr	3.43	2.63	2.34	4.22	3.76
Green Timber	$M/yr	9.04	7.43	6.86	6.64	6.15
Residues	$M/yr	1.09	0.89	0.82	0.89	0.82
Total	$M/yr	13.56	10.96	10.02	11.75	10.73
Employment [b]	Persons	136	116	108	120	112

a In 1997-98 dollars. **b** Full time equivalent.

Where mills receive sawlogs from both the Midlands and Otways FMAs, the information in Table 4.5 refers to the production and employment due to or derived from the resources sourced from the Midlands FMA. It is recognised that a significant reduction in resource availability from both FMAs could compound the affect on those mills that draw resource from both FMAs.

Table 4.6: Industry scenarios for Horsham and Portland FMAs

		1998/99 Current Commitments	1. New Estimate of TRA	2. Draft CAR reserve	3. New Estimate of TRA and Value-Adding	4. Draft CAR reserve and Value-Adding
Mill Production	**Units**					
Seasoned Timber	m^3/yr	97	94	92	600	518
Green Timber	m^3/yr	6,602	5,869	5,078	5,363	4,648
Residues	m^3/yr	11,003	9,781	8,463	9,780	8,457
Gross Value of Production [a]						
Seasoned Timber	$m/yr	0.06	0.06	0.06	0.49	0.42
Green Timber	$m/yr	2.22	1.97	1.71	1.78	1.54
Residues	$m/yr	0.29	0.26	0.22	0.26	0.22
Total	$m/yr	2.57	2.29	1.99	2.52	2.18
Employment [b]	Persons	30	28	25	28	25

a In 1997-98 dollars. **b** Full time equivalent.

A significant reduction in resource availability in the Midlands, Otways and Portland FMAs would have consequent reductions in mill production, gross value of production and employment. However, it must be emphasised that any actual changes would be determined by individual enterprise decisions and other economic factors affecting individual mills over time. Industry development changes could involve altered supply arrangements (for example existing green sawn timber mills supplying green material to a central located seasoned sawn timber processing plant) to rationalisation of mills to a smaller number of processors.

Any changes to the direct employment and value of production, could have further economic and social flow-ons, such as for harvesting and haulage contractors mentioned previously.

Social Impact Assessment

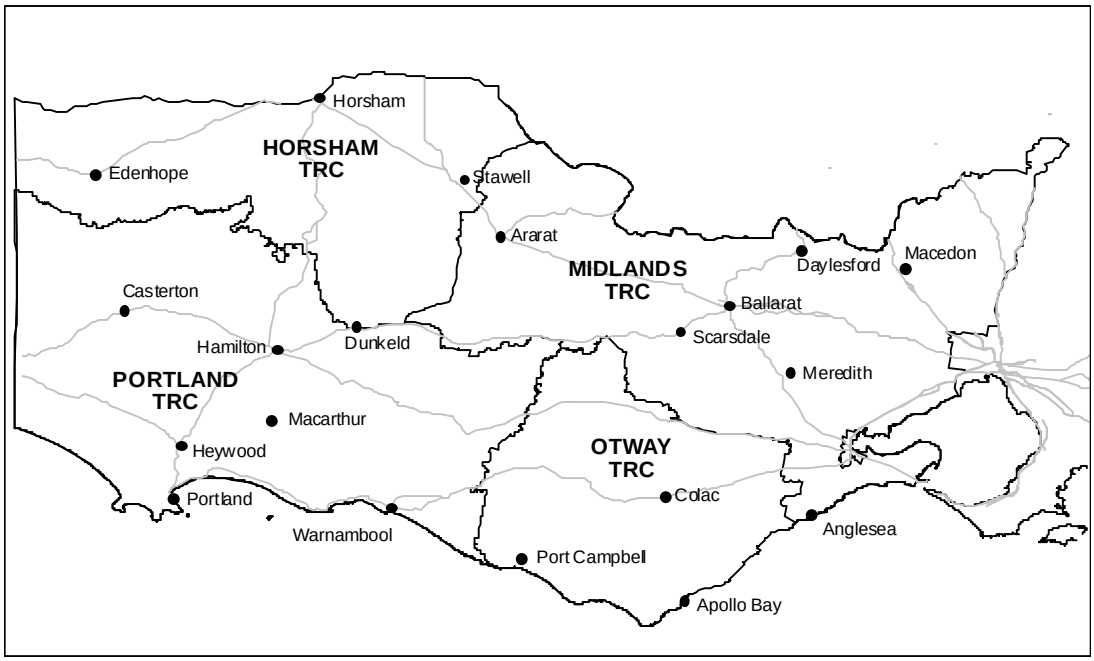
The new estimates of TRA and the draft CAR reserve design will have social implications for the communities in the region. As part of the social assessment for the CRA, information was collected on forest based industries to indicate the range of positive and negative effects that may be associated with changes in forest policies with in the West Victoria RFA region. Businesses, with licences to utilise public native forests, and their employees, were surveyed to gather information such as length of time in the industry, use of public and private forests, and expenditure patterns. Through these surveys, and other material, profiles were developed which could be used in the assessment different resource scenarios or options.

The information gained from the various study methods showed that the West Victoria RFA region can be divided into distinct regional groups or town resource clusters. Town Resource Clusters (TRCs) are used to identify significant relationships between specific areas of forest resources (usually from Forest Management Areas) and the communities that are dependent upon that resource.

While the economic analyses provide information on production, value and employment under different scenarios, the social assessment information can be used to show the likely implications for industry and communities, and the flow-on effects to service towns.

Within the West Victoria RFA region four TRCs were identified the Horsham, Portland, Midlands and Otways TRCs. These TRCs are primarily linked to the corresponding FMAs of Horsham, Portland, Midlands and Otway (Figure 4.1). The match of TRCs and FMAs reflects the size and nature of the West Victoria RFA region and FMAs, as discussed earlier, in contrast to other regions where TRCs were related to but not identical to FMAs. As such, Tables 4.5 and 4.6 provide the employment implications of each scenario on both an FMA and TRC basis.

Figure 4.1 Town Resource Clusters



Changes in Mill Employment

In the Midlands TRC a reduction in employment of 20 is estimated to result from reducing sawlog allocations from the level of current commitments to the new estimate of timber resource in the Midlands FMA. If the draft CAR reserve system were to be established, a reduction of a further 8 jobs is estimated. While the models for the two value-adding scenarios show a lower impact on employment, this will depend on the way in which any value-adding occurs under different resource availability.

Any reductions in resource availability in the Otway FMA could also have implications for the Midlands TRC, given that a small number of mills draw part of their supply from the Otways FMA.

Mills within the Horsham TRC draw their resource primarily from the Horsham FMA and, as resource availability is estimated to remain at the level of current commitments and the number of mill employees in the FMA is small, no changes in employment are predicted under the scenarios examined.

In the Portland TRC a reduction in employment of 2 is estimated to result from reducing sawlog allocations from the level of current commitments to the new estimated TRA in the Portland FMA. If the draft CAR reserve system were to be established, a reduction of a further 3 jobs is estimated.

The loss of between two and five mill employees is likely to be distributed across the three mills located within the Portland FMA which are located within the towns of Hamilton, Heywood and Portland. The predicted loss of employment is unlikely to

result in any significant regional social impacts or financial impacts on towns and communities within the Portland TRC.

However, in examining the results of the analyses, it needs to be recognised that the results are strongly influenced by the assumptions made in modelling the potential resource changes, which reflect only one of the possible ways of implementing a resource reduction under the new estimated TRA and if the Draft CAR reserve system were to be adopted.

It has been assumed that any change in resource availability will be evenly distributed across all mills receiving wood from each FMA. However, actual changes would be determined by individual enterprise decisions and other economic factors affecting individual mills over time. For example it is also possible that a reduction in supply could be accommodated by rationalisation of mills, which could then result in different impacts across TRCs than a pro-rata reduction for each.

Under the analyses the most significant employment loss across the four TRCs could be expected to occur within the Midlands TRC. The following analysis is based on a review of timber industry employment and population characteristics for the Midland TRC.

MIDLANDS TRC

Mills located within the Midlands TRC draw the majority of their resource from the Midlands FMA. Changes in resource availability from this FMA will affect mill employment within the Midlands TRC.

There are 11 mills within this TRC that may be impacted by changes in resource from the Midlands FMA. They include four mills at Daylesford, two mills at Beaufort and mills at Trentham, Woodend, Ballarat, Bacchus Marsh and Moolap.

Table 4.7 shows the towns of residence for mill employees within the Midlands TRC. Although Daylesford, Woodend and Colac (in the Otway TRC) are the most common residential locations of mill employees within this TRC. What is also apparent from Table 4.7 is that many mill employees also live in smaller towns located throughout the TRC. While changes in mill employment within this TRC are likely to impact on the towns of Daylesford, Woodend and Colac there is also the potential for several smaller towns within the TRC to be impacted by changes in mill employment.

Table 4.7: Mill Employees Place of Residence: Midlands TRC

Town	Percent
Daylesford	29.9
Woodend	10.8
Colac	10.3
Ballarat	9.3
Beaufort	8.3
Kyneton	8.3
Moolap	5.9
Hepburn	3.9
Trentham	2.5

Bacchus Marsh	1.5
Diggers Rest	1.5
Gisborne	1.5
Taradale	1.5
Avoca	1.0
Cororooke	1.0
Creswick	1.0
Yendon	1.0
Dereel	0.5
Porcupine Ridge	0.5
Total	100.0

Table 4.8 shows the town locations from which mill employees within the Midlands TRC purchase household goods and services. The towns of Daylesford, Woodend and Beaufort are primary locations from which goods and services are sourced within this TRC, suggesting that changes in mill employment and incomes within this TRC may have indirect impacts on these three towns.

Table 4.8: Mill Employees Source of Household Expenditure: Midlands TRC

Town	Percent
Daylesford	35.8
Woodend	25.0
Beaufort	21.6
Ballarat	9.3
Moolap	5.9
Bacchus Marsh	1.5
Trentham	1.0
Total	100.0

In addition to this effect of changes to mill employment, there may also be further implications from changes to business expenditure by mills on goods and services. The town locations from which mills within the Midlands TRC source goods and services are shown in Table 4.9. The towns of Ballarat and Beaufort are the primary locations from which mills within this TRC source goods and services. Any change to expenditure by mills within this TRC is likely to have indirect impacts on other businesses and industries within these towns.

Table 4.9: Location of Timber Processing Industry Expenditure: Midlands TRC

	Catchments		
Goods and services	**Primary**	**Secondary**	**Tertiary**
Frequent business expenses A	Ballarat	Beaufort	Daylesford
Other business expenses B	Ballarat	Beaufort	Melbourne
Repairs and maintenance	Beaufort	Ballarat	Ballan
Major equipment purchases	Ballarat	Melbourne	
Building or land purchases/extensions	Beaufort	Ballarat	
Log costs (royalties and levies)	Beaufort	Daylesford	Ballan

Note: Frequent business expenses A includes frequent business expenses such as power, fuel, freight, banking and office supplies. Other business expenses B includes less frequent expenses such as accounting, legal expenses, insurance, advertising and printing.

UNEMPLOYMENT RATES WITHIN THE MIDLANDS TRC

Table 4.10 shows the unemployment rate for the general population and the unemployment rate for males 15-64 years of age for specific towns located within the Midlands TRC. The unemployment rate is one indicator of how sensitive communities are to employment changes in the timber industry.

All towns within the Midlands TRC in which mill employees are resident or from which household and industry goods and services are sourced, show unemployment rates for the population and for males 15-64 years to be above the unemployment rates found in the West RFA and rural Victoria. This suggests these towns may be sensitive to significant direct changes in timber industry employment.

Table 4.10 Unemployment Rates for Towns within Midlands TRCs

	Unemployment Rate	Unemployment Rate (Males 15-64 years)
Midlands TRC		
Beaufort	*14.32*	*16.38*
Daylesford	*13.56*	*16.45*
Ballarat	*12.73*	*14.12*
Woodend	10.70	10.40
West RFA	**9.20**	**9.60**
Rural Victoria	**10.20**	**10.80**

Note: All unemployment values based on ABS urban centres.

MILL EMPLOYEE CHARACTERISTICS

Table 4.11 shows the employee profile for timber industry employees within the West RFA region. This profile shows the mean age of employees to be 40 years, with employees having lived in their town of residence for an average of 24 years, and having worked in the timber industry for an average of 12 years with an average of 8 years working for their current employer.

Ninety-five percent of employees surveyed indicated they were in full time employment, with 52% of employees having partners in either full-time or part-time employment.

Forty-seven percent of employees had an educational level of year 10 or less, with approximately equal proportions currently renting, owning or having a mortgage on their home.

These indicators suggest that employees have strong attachments to community, town and their work environments and that it is likely that many employees if they were to lose their current employment, would seek further employment in the region. The relatively low educational levels, long term employment in the timber industry and that many employees have only worked in this industry sector, may also reflect limited capacity to manage and adjust to significant changes in employment.

Table 4.11: Timber Industry Employee Profile

Profile	Value
Mean age of employee (years)	39.8
Per cent males	92.9
Per cent females	7.1
Employment	
Per cent full-time employment	94.5
Per cent part-time employment	5.5
Average number of hours worked per week	21.2
Mean number of years working for current business	8.0
Mean number of years working in current industry sector	11.9
Per cent who have only worked in current industry sector	51.7
Per cent who have moved town to retain employment in industry	10.2
Median number of town moves to retain employment in industry	2.0
Home ownership characteristics	
Mean number of years resident in current town	23.7
Home ownership (per cent)	
Rent home	31.7
Have a mortgage	32.3
Own the home	33.8
Highest level of education (per cent)	
Primary school	2.3
Year 7	3.9
Year 8	6.3
Year 9	15.6
Year 10	18.8
Year 11	12.5
Year 12	14.8
A trade or TAFE certificate	19.5
Degree or diploma	6.3
Marital status (per cent)	
Married or defacto	63.8
Widowed	2.4
Single	27.6
Separated or divorced	6.3
Partners employment characteristics (per cent)	
Full-time	20.9
Part-time	31.4
Not employed	47.7
Per cent with partner employed in same industry as employee	19.7
Family characteristics	
Mean family size	3.0
Family lifecycle age profiles (per cent)	
0–4 years (pre-school)	6.0
5–12 years (primary school)	12.3
13–17 years (high school)	11.4
18–24 years (young singles/couples)	12.0
25–39 years (young/middle families)	20.2
40–49 years (mature families)	20.2
50–64 years (pre-retirement)	16.3
65+ years (elderly)	1.5

Note: Sample based on survey responses from 130 employees of timber processing industries

Social impact assessment summary

This analysis and discussion provides an indicative assessment of the potential sub-regional (TRC) employment impacts of implementing an evenly distributed reduction in resource availability across all mills sourcing wood from the FMAs, as well as implementing value-adding proposals by industry. The significance of potential employment changes under the scenarios is examined using community profiles of the TRCs developed through the Social Assessment component of the CRA process. Further analysis for the Otways TRC will be undertaken in conjunction with the detailed timber resource analyses currently under development.

4.2 Other Industry Issues

Pulpwood processing

Development options for processing residual logs are minimal. While the resource is relatively large it is widely dispersed to develop competitive new industries manufacturing either panelboards or pulp and paper. Generally, the availability of plantation resources with more uniform log mixes generally disadvantages the use of native hardwood logs for these end uses. The residual log resource may contribute to the development of new manufacturing industries if it is used in conjunction with resources from adjacent regions or supplemented from private hardwood resources.

Other uses for residual logs include generation of energy and export woodchips. To date pilot plants for the use of residual wood such as sawmill residues for the generation of energy have been established, but the profitability of large scale ventures particularly using residual logs has not been established. Any increase in export of woodchips would be market dependant.

Facilitating investment and best-use of timber resources

As well as increasing investment certainty, governments are also committed to facilitating the best use of timber resources and to ameliorating any negative economic and social impacts of land-use proposals. The requirements to achieve these objectives will vary from region to region, depending on the level of opportunities or impacts.

The Forest Industry Structural Adjustment Package (FISAP) was developed during the negotiation of Interim (or Deferred) Forest Agreements which provided interim protection for areas which may be needed to form a CAR reserve system within a region. As such, it was initially designed to assist workers and businesses in the native forest industry which are directly affected by the outcomes of the Interim Forest Agreements (IFAs) and/or Regional Forest Agreements (RFAs). The program is designed to ameliorate any immediate adjustment impacts on workers and business in the native forest industry, and to facilitate investment in the production of value-added wood products through restructuring assistance.

As part of the Central Highlands RFA negotiations the Commonwealth and Victorian governments agreed that the FISAP program would contribute $27.6 million, of which $18.8 million would be directly available for industry development and restructuring of the Victorian hardwood sawmilling industry. A joint Commonwealth and Victoria

Memorandum of Understanding (MOU) establishes the respective roles and responsibilities of the two governments in funding and administering the program.

Mining

There are 51 historic goldfields in the West Victoria RFA region which have produced in excess of 550 tonnes of gold. The Stawell gold mine is the largest gold producer in Victoria. Three of the other 83 gold tenements in the region produced more than one kilogram of gold in 1997-98. An open-pit gold mining operation is proposed at Big Hill, near Stawell, and the most significant gold resources, as recorded in 1996, are about 35 tonnes of gold at Stawell, 31 tonnes at Ballarat East Project, and 22 tonnes at Ballarat East Gold Mine.

About half of the $294 million worth of production of construction materials in Victoria in 1997-98, was produced in the West Victoria RFA region. Brown coal is mined for power generation from the Anglesea coalfield near Geelong at a rate of just over 1 million tonnes per year.

Strandline type heavy mineral sand deposits have been recently discovered in the northwest of the region and their economic significance is currently under investigation. There are large sub-economic mineral sands deposits (fine-grained WIM150 type) in the north-west of the region, which may be come significant in the future with technological advances.

Exploration expenditure on Exploration and Mining Licences in 1997-98 totalled $7.7 million and other expenditure on Mining Licences totalled $26.8 million in 1997-98 (1997-98 dollars).

The mineral resource assessment identified potential for 9 types of mineral deposits and 5 types of industrial mineral and construction materials and for coal. The assessment indicates:

- high potential for slate-belt gold (15.1 per cent of the region), strandline heavy mineral sands, volcanic associated base metals, volcanic associated gold, alluvial gold, construction materials, dimension stone, kaolin, silica sand, limestone; and
- moderate to high potential for alluvial gold, flat-lying heavy mineral sands, slate-belt gold, silica sand, disseminated gold, porphyry copper-gold, volcanic associated base metals, volcanic associated gold.

Some of the above mentioned mineral potential tracts overlap.

Recent successes in exploration results for strandline type heavy mineral sands in the north-west of the region (is this within the West Victoria RFA region or further north and advances in the geological knowledge of the region is enhancing the understanding of the mineral potential of the region. Mineral exploration is likely to remain active as results of ongoing geological and geophysical studies in the region become available.

The principal issue for mineral exploration and mining is long-term access to land because of the long-term continual nature of exploration activities. This occurs because of the development of new exploration techniques and changes to the economic viability of exploration and development of particular minerals.

In making decisions on the tenure of the CAR Reserve system, consideration will be given to the impact on land access for exploration and mining activities. Mineral

exploration and mining will be permitted in certain parts of the reserve system (depending on underlying tenure) but only where the identified conservation values are not incompatible with exploration and mining. Consistent with the North East Victoria RFA, mineral exploration and mining in the reserve system will be subject to the normal Victorian legislative controls. Mine rehabilitation will also be subject to Victorian legislation and will aim to achieve world best practice.

Another important issue is the need for management and environmental impact assessment regimes that allow mineral exploration and mining industries to remain internationally competitive while at the same time delivering desired environmental outcomes. State government requirements for taking this into account are outlined in chapter 10 of the West Victoria CRA (VicRFASC 1999).

Tourism recreation and outdoor education

The forests of West Victoria contribute significantly to the region's attractiveness as a tourism and recreation destination, providing a wide range of tourism and recreational opportunities. The natural attractions and the range of activities available in the region are a major tourism and recreation asset and provide one of the identified strengths with respect to future tourism development potential. The West received over 3.5 million visitors in 1995 most of whom were from within the State. The majority of these, 2.42 million visitors, visited attractions along the Great Ocean Road. Driving to sightsee is the most popular activity. Attractions on public land include:

- the Grampians National Park for camping and bush-walking;
- Mt Arapiles for rock climbing and abseiling;
- the Twelve Apostles and other attractions in the Port Campbell National Park;
- the Glenelg, Wimmera and Wannon Rivers, and many other rivers and streams, which are popular for fishing, canoeing and rafting;
- Lake Elizabeth, Triplet Falls and Sabine Falls in the Otway State forest;
- Rocklands Reservoir, Lake Fyans and Lake Merrimu for boating and water-skiing;
- mountain biking, and two-wheel and four-wheel driving opportunities on roads and tracks throughout the region;
- a variety of forested landscapes used for camping, horse-riding, bush-walking and nature observation; and
- relics of aboriginal heritage, mining, grazing and timber production across the region;
- the mineral springs near Daylesford.

The social assessment process and other information provided by stakeholders identified a range of community and stakeholder issues related to development opportunities for tourism in the region including:

- further tourism development focussing on the key features of the area;
- maintenance of environmental and aesthetic values; and
- compatible development of the tourism and timber industries.

The RFA is intended to provide certainty about the future use of forests in the region for the next twenty years and will provide the context for future planning of tourism and recreation opportunities in the West.

The Victorian Regional Travel and Tourism Survey (Tourism Victoria 1996) found that the West received approximately 3.5 million visitors who stayed overnight in

1995, with an additional 4.52 million day trippers spending a total of around $576 million.

As outlined in the CRA report, in 1994-95 there were an estimated 723,000 visitors to State forests and 3,675,700 visitors to National Parks in the West generating a total net economic value for tourism and recreation of between $4.3 million and $13.0 million in State forests in the West Victoria RFA region, and $66.2 million from parks. Using a 1995 study which suggests that a range of between $20 and $50 per visitor day can be used as a guide to calculate the stimulus to the regional economy of tourism and recreation in State forests, it is estimated that State forests contribute between $14.5 million and $36.2 million per year to the regional economy in the West. Using an estimate of $131 per visitor day as a guide to calculate the stimulus of tourism and recreation to the regional economy derived from the 1994 Grampians study, parks in the West could generate up to $481.5 million, though caution is required in these figures as they are extrapolations from other studies. Based on these aggregated figures, tourism and recreation based on public land in the West is estimated to contribute between $496.0 million and $517.7 million per year to the regional economy making tourism and recreation important parts of the economic values derived from forests.

The Grampians National Park provides a significant input into Victoria's economy creating more than 1,270 jobs in 1991. Visitors to the Grampians contribute around $174 million to the local economy and a further $220 million to the State's economy, including around $100 million added by interstate and overseas visitors (Read Sturgess and Associates 1994).

Fossicking and prospecting are also popular activities in the West Victoria RFA region, in areas with prospective mineralisation. Similarly, bush walking, deer hunting, horse riding, trail-bike and mountain-bike riding, four-wheel and pleasure driving, camping, fishing, hunting, rafting, canoeing and a range of other activities are popular activities on public land in the region.

Tourism is one of Australia's fastest growing industries. The growth in visits to Victorian State forests has been estimated to remain at least in the order of 3 to 5 per cent per annum until the end of the decade. Applying these growth rates to the 1995 visitation levels in the West, between 744,700 and 759,200 visits are expected in the region's State forests by 2000. Visits to National Parks in Victoria averaged around 5 per cent per annum in the eight years to 1996-97 and this growth is expected to continue.

Outdoor Education

Outdoor education is an important forest-based activity undertaken by a number of commercial operators, school groups and clubs in the region. Activities include bush walking, kayaking, mountain bike riding, wildlife observation, historic site interpretation and camping. There is an increasing focus on the environment in outdoor education, with these activities used as a link to environment awareness. Currently, 47 commercial operators conduct educational and training tours in the forests of the West Victoria RFA region with the Grampians National Park being one of the most popular sites for outdoor education in Victoria.

Establishment of a CAR reserve system may have some implications for the availability of forest areas currently used for recreation access. However, based on

currently available information, the draft CAR reserve system is unlikely to have adverse implications for tourism, recreation and outdoor education.

Apiculture

Apiarists use forests of the West Victoria RFA region for honey production. Eucalypt forests including species such as Yellow Box (*E. melliodora*), Yellow Gum (*E. leucoxylon*), River Red Gum, Messmate, Brown Stringybark, Manna Gum, Red Box (*E. polyanthemos*) and Red Stringybark (*E. macrorhyncha*) are particularly valuable. Other shrub and understorey species including tea tree, banksia and heath vegetation also provide useful nectar sources. In addition, conditions found in warm coastal areas in the West Victoria RFA region make them suitable localities for over-wintering hives (LCC 1972).

Apiculture on public land is controlled through the issue of annual licences for annual sites and temporary permits (three and six months) for temporary bee sites. Licences and permits allow access to a site for locating hives and use of forest nectar and pollen resources within a radius of 1.6 km or 0.8 km for annual and temporary sites respectively. Currently, there are 108 annual bee sites and 434 temporary bee sites licensed in the West Victoria RFA region. There are numerous other temporary sites in the region, which are not currently licensed. It is expected that current level of demand for access to public land will remain similar in the future. Within the West Victoria RFA region, apiaries are excluded from areas proclaimed under the *Reference Areas Act 1978*.

The draft CAR reserve system has been developed taking into consideration the needs of apiarists. Beekeeping is permitted in State forest except where it conflicts with specific uses or management aims, and remains a generally permitted use of State forest Special Protection Zones. The management of apiculture on State forests is documented in the Otway and Midlands Forest Management Plans. Beekeeping will be considered further, as future Forest Management Plans are prepared by the Department of Natural Resources and Environment. The plans will be developed in consultation with the apiary industry.

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