# Senate Inquiry – Impact of the Decision by the South Australian Government to Forward-Sell the State's $2.8 Billion Timber Assets

SUBMISSION BY THE DISTRICT COUNCIL OF

GRANT

**Thursday 17 March 2011**

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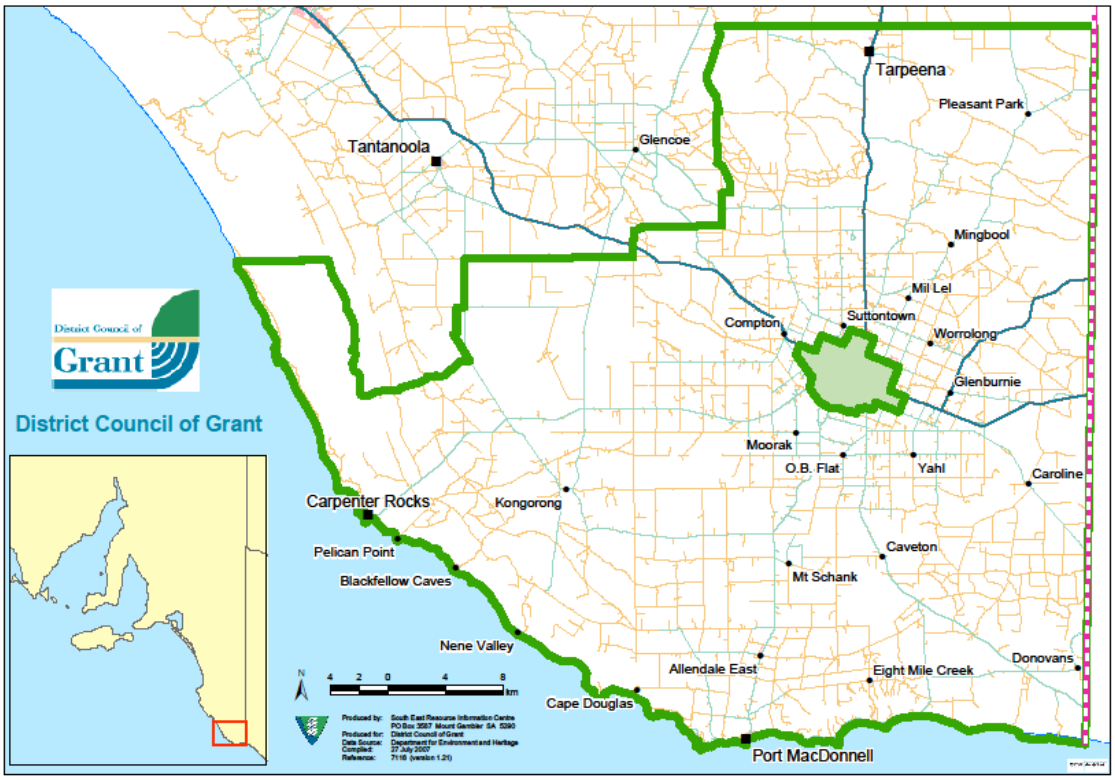
## INTRODUCTION

The District Council of Grant is the most southern Local Government area in South Australia. The Council is predominantly rural with a number of small townships serving a population of approximately 8,500 covering an area of 188,493 hectares. It is bounded to the south and west by the Southern Ocean, the Victorian Border to the east and the Wattle Range Council to the north. The Council encircles the local government area of the City of Mount Gambier. Dairying, beef and sheep production, wool, seed, and grain production and horticulture are the predominant agricultural activities. The Port MacDonnell fishing industry, in particular the rock lobster industry is a significant factor in the economy of the area, as is forestry production and the related industries of logging and milling.



The District Council of Grant recognises the significance of Forestry SA, its plantations and value adding of this resource to the South East's economy.

The importance of Forestry SA to the economy of this region is evidenced by the following:-

* Forestry SA owns over 135,000 hectares of land within excess of 87,000 hectares planted to Pinus Radiata (softwood). More than half of this estate is in the South East Region.

* 100% of the forest estate is plantation based. When added to privately owned softwood forests, the region harvests in excess of 2 million cubic metres of softwood log each year. (This is around 16% of Australia's total). Projections are that demand for Australian softwood sawn timber will rise by over 1 million cubic metres per year by 2018.

* More than 10,000 people are directly and indirectly employed in timber and wood processing activities, with some $2 billion of goods and services produced annually.

* Forest industries play an important role in the development of regional communities with some 28% of the South East's gross regional product coming from the forests and forest products industries.

It is also important to recognise that Forestry SA is a Government owned business corporation overseen by a Board which operates under a charter which requires the Board to take responsibility for: "Encouraging and facilitating regionally based economic activities based on forestry and other industries by protecting the long term viability of the Corporation and the Crown's financial interest in the Corporation for the benefit of the people and economy of the State".

Further, Forestry SA is responsible for the management of around 87,000 hectares of radiata pine plantation. In 2004, Forestry SA harvested 1.8million cubic metres of log from Forestry SA plantations, established a new Forestry SA Head Office in Mount Gambier in 2007 and was re-certified to AFS Standard 4708 in 2009. Forestry SA owns 51 percent of the area of softwood plantations within the Greater Green Triangle area of South Australia and Western Victoria, employs 217 (Full-time equivalent) and creates significant employment through timber mills, timber industry, log hauliers and retail. Forestry SA last year returned $43 million to the State Government.

In addition, it is pointed out that the Forestry Industry and associated industries employ 5,500 people directly and account for almost 50 percent of employment in the South East Region. The Forestry Industry also underpins many of the other key industries within the Region (transport, retail, education and community services).

## THE LIKELIHOOD OF REGIONAL JOB LOSSES

The District Council of Grant considers that a decision to forward sell the harvesting rights of up to 3 rotations of Forestry SA plantations will have a significant deleterious effect on employment directly and indirectly within the South East Region of South Australia. Indeed, a Community Impact Assessment undertaken by Dr Bob Smith has highlighted that up to 3,000 direct and indirect jobs associated with Forestry SA (FSA) jobs may be affected in the South East Region should the proposal for the sale of up to three (3) rotations proceed. A copy of the Community Impact Statement and Media Release issued by the three Mayors on Wednesday 9 March 2011;(Mayor District Council of Grant, Richard Sage, Mayor of City of Mount Gambier, Steve Perryman and Mayor of Wattle Range Council, Peter Gandolfi) is attached. (Appendix 1)

Key Findings of the Community Impact Statement include:

1. By 2027/28 the purchaser would have the option to sell 100% of logs outside the South East Region.

2. There is the potential by 2020/21 for around 40% of logs from Forestry SA's softwood estate to be exported reducing wood based manufacturing jobs in the South East area.

## THE FLOW-ON EFFECTS TO COMMUNITIES IN TIMBER-RELIANT REGIONS

There is no doubt that since the announcement of the proposed sale there has been a realised impact on Real Estate prices, industry expansion and employment generation.

"Sadly we are already beginning to see the highly negative impact the proposed sale is placing on our industry".

Further, it is considered that lack of confidence is causing contracts for building work to be postponed and other businesses are putting plans on hold to expand. Several of the local engineering companies have encouraged workers to take long service leave and paid annual leave to reduce their cash flow.

In addition, the number of Building Applications and the value of applications in the District Council of Grant are as follows:-

| **Financial Year** | **Number of Building Applications** | **Value of Development** |
|---|---|---|
| **2008/09** | 334 | 96,991,782 |
| **2009/10** | 345 | 199,194,336 |
| **2010/11*** | 184 | 12,856,573 |

* as at March 2011

Given the decrease in median house prices and decrease in property sales, it is also considered that this will also have a concomitant effect on Council rate income. Accordingly, the provision of Council services and facilities may well be affected due to a decrease in rate income.

Anecdotal evidence also indicates Transport companies are currently feeling the effect of the down turn since the announcement of the proposal, evidenced by the decrease in freight in and out of the region of finished product.

Engineering companies are already feeling the effect due to the uncertainty within the milling industry. Development expansion and maintenance programmes within this sector have either been cancelled or put on hold until the outcome is known, leading to a reduction in staff numbers and real jobs in the Region. The retail sector have indicated they are also feeling the effects of the uncertainty within the community through the reticence to expand or undertake capital works because of the possible forward sale proposal and the insecurity that pertains to this proposal.

Education in some areas is also starting to suffer with numbers of students in some schools reducing (Nangwarry, Tarpeena, Kalangadoo and Dartmoor). This is due to the reduction and uncertainty in the mills and people are leaving the area and looking for other jobs. (Kimberley Clark for example). The Tarpeena School is also under threat with pupil numbers in decline. They have also lost their football club, some of the shops have closed due to mill closures over the last couple of years and a down turn in the industry.

Health services are currently stretched to the limit in our regional hospital at Mount Gambier and mental health facilities are required. It is considered that the demand for more health services will only increase with the concerns of possible job losses.

## THE POTENTIAL FOR THE PRIVATE BUYER NOT TO CONSIDER LOCAL IMPACTS

Information obtained indicates that the purchaser of the Victorian Forest Assets has not considered local impacts. Indeed, it is understood that local mills in and around Mount Gambier have largely been unable to obtain log resource since this purchase occurred. It is suggested that information be obtained from mill owners and operators regarding the effect that similar purchases have had on their mill operations.

## THE POTENTIAL FOR REDUCED VALUE-ADDING LOCALLY AND INCREASED OFF-SHORING

It is considered that the response to this Term Of Reference is similar to the flow-on effects the communities in timber-reliant regions. To highlight the potential for reduced value adding locally and the concomitant affect on local industry, the findings of the economic impact of the timber industry in the Green Triangle Region undertaking in 2005 highlights this. Indeed, the report prepared for the Green Triangle Regional Plantation Committee Inc and Forestry SA by Econ Search Pty Ltd on June 30 2005, highlighted the Timber Industries (that is plantation forestry and timber processors) contribution to the Regional Economies of the South east of South Australia, South Western Victoria and the Green Triangle Regional Economy in 2003/04. The results of the impact analysis indicate inter alia the following:-

- The direct contribution to GRP generated by the wood and paper products sector in the Green Triangle region ( from output valued at $840 million) was around $401 million in 2003/04 (Table 2)

- Associated with this was GRP in the Forestry Sector of over $114 million (from output valued at $214 million).

- The flow-on GRP to other sectors in the Green Triangle region summed to almost $263 million.
- The flow-ons were greatest in the trade, transport, ownership of dwellings, business services, other manufacturing, utilities and finance sectors.

- Directly and indirectly, the timber industry (i.e forestry and processing) contributed over $778 million to GRP for the Green Triangle regional economy in 2003/04, approximately 16 per cent of the total.
- Direct employment generated by the wood and paper products sector in the Green Triangle region was around 3,400 and in the forestry sector approximately 830 in 2003/04

- Flow –on employment to other sectors in the region as a result of timber industry activity summed to almost 4,600 jobs.

- Directly and indirectly, the timber industry (i.e. forestry and processing) generated almost 8,800 jobs in the Green Triangle region in 2003/04, approximately 12 per cent of the total.

Indeed, the direct and indirect employment impacts of Forestry and Timber processing in the South East of South Australia for 2003/04 was 7,082 with flow-on impacts of 4,135, the multiplier effect for the total impact was 2.4 and flow on impacts multiplier was 1.4 (Refer Table 5.2). In addition, similar statistics are applicable to the Green Triangle region (Refer Table 5.10). A copy of the report is attached highlighting the importance of the timber industry to direct and indirect employment throughout the South East of South Australia and indeed the Green Triangle Region. (Appendix 2)

**ANY OTHER RELATED MATTERS**

Without Forestry SA It is considered that the South East Region would not have been as vibrant. The return to Government in 2009/10 from Forestry SA was $44.8 million. Forestry SA have encouraged development in saw milling and have expanded their estate over the last 130 years thus enhancing economic development and regional development in South Australia together with the western districts of Victoria

Forestry SA has three arms of their business profile; Economic, Environment and Social & Community. As part of its Charter, Social and Community achievements include the following:-

| **Recipient** | **Event /Cause** |
|---|---|
| AusTimber 2012 | Major sponsorship |
| ForestrySA Wood Sculpture Competition | Riddoch Art Gallery, 2012 |
| Timber Communities Australia | Corporate membership |
| The Future of Forestry and Forest Science Conference 2010 | Bronze sponsorship |
| City of Mount Gambier | Family Fun Day 2010 |
| Gottstein Trust | Patron |
| Stephanie Slotegraaf | Youth Parliament Program participant |
| Christmas Party for Special Children 2009 | Sponsorship for two South East children to attend event in Adelaide |
| Mount Gambier Breast Cancer Awareness Group | Sponsorship for 2009 fundraising luncheon |
| Mount Gambier Hoo Hoo Club 214 | 2009 Timber Industry Golf Day |
| Forestry SA Friends of the Forest | Forestry SA staff Relay for Life Team Mount Gambier 2010 |
| Friends of Native Wildlife SE | Donation to Mount Gambier-based community group |
| Give Me 5 for Kids campaign | Funds raised for children's hospital wards in the South |

Further, Forestry SA demonstrates its corporate responsibility through its Australian Forestry Standard (AFS) certification and commitment to a broad range of social obligations through the Community Forestry Program1. This program provides a range of (non-commercial) services to the community including protection and enhancement of biodiversity, cultural and heritage values, public access and recreation activities, and community engagement and participation.

## NATIVE FOREST MANAGEMENT

Forestry SA manages approximately 16,000 ha of Native Forest Reserves gazetted under the Forestry Act (1950) and a further 9,300 ha of other native vegetation areas, mostly embedded in the Forestry SA plantation estate. These are managed to maintain their conservation values.

Forestry SA is active in a number of biodiversity conservation initiatives both nationally and at a state level, including the "No species loss - natural conservation strategy for South Australia". Vegetation surveys conducted in 2009-10 in the Ranges, including the Northern Forests, have now identified 243 flora species with conservation ratings (an increase of approximately 15% over 2008-09), and 721 different flora species in total. This represents a significant increase in the number of known species present in Forestry SA native forest reserves. Also in 2009-10 a new mint Mentha atrolilacina (Honan Mint) was discovered and described: currently known to occur in Honans' Native Forest Reserve, in the South East of South Australia.

Forestry SA is committed to the provision of a range of high quality services to enhance visitor enjoyment and appreciation of South Australia's forests. Recreational use of forest reserves is managed to balance the wide range of public use with ongoing commercial forestry operations and conservation requirements. Forest Reserves play host to a wide range of recreation activities including walking, picnicking, camping, cycling, cave diving, horse riding and motor sport events.

## CULTURAL AND HERITAGE MANAGEMENT

In 2009-10 Forestry SA undertook several restoration activities. The Bundaleer Cottage, which provides a significant backdrop to the Biannual Bundaleer Forest weekend, has undergone further work, including the stabilisation of the stable. The Old Wirrabara Office and outbuildings have also seen upgrades, including the completion of the nursery walking trail.

## COMMUNITY ENGAGEMENT AND PARTICIPATION

In 2009-10, volunteers and community program participants contributed more than 35,000 hours of their time to improve the social values and environmental services of the State's forest reserves. This involved 44 different groups and equated to more than 18.6 full time equivalents.

It is contended that Community Forest Program, Nature Forest management, Community Use of Forests Reserves, Cultural and Heritage Management and Community Engagement and Participation has been undertaken well by Forestry SA for

the benefit of the Community. It is considered unlikely that these programs would continue under the proposal for the forward sale.

## ENVIRONMENTAL ACHIEVEMENTS

In relation to environmental achievements by Forestry SA under its Charter, the following is highlighted. A program is maintained by Forestry SA to ensure that its forest management practices are continually improved and to maintain a high standard of environmental and social performance.

The forest research program aims to improve wood growth and characteristics, lower costs and better manage risk particularly with respect to environmental outcomes. The program also seeks to support industry activities. A range of internal and joint trials and activities are jointly funded by Forestry SA and Community Service Obligation (CSO) funds provided by the South Australian Government.
Research highlights in 2009-10 included:

- Forestry SA was the lead agency in the establishment of the Australian Forest Industry Herbicide Research Consortium. This research cooperative is designed to maintain and increase the productive capacity of the Australian Forest Industry by ensuring the continued availability of effective, environmentally and socially acceptable chemical control options for weeds, pests and diseases. This is achieved by coordinating the forestry specific pesticide research effort, developing and promoting industry best practice and providing considered scientific advice to the public, regulators, legislators and industry. The cooperative is made up of 17 public and private plantation growers representing all states and territories of the commonwealth, five chemical manufacturers, peak industry bodies and independent researchers. The cooperative is funded by a combination of industry contributions and matching funding from the Forest and Wood Products Australia. Forestry SA is the South Australian industry representative on the managing steering committee of the cooperative and has been appointed the research provider for trials established in the Green Triangle region.

Annual forest health surveys have been conducted using a refined version of the Digital Aerial Sketchmapping software developed by Forestry SA. This software is now being trialled in Australia and in New Zealand.

Forestry SA is involved, together with the National Sirex Coordination Committee (NSCC) and Charles Sturt University, in a national project “Protecting Australia’s pine plantations from climate change and exotic pests”. This project is investigating the distribution of Ips in different bioclimatic regions and the Ips /Sirex interaction. This work is funded by the NSCC and an Australian Research Council grant. Once again, it is unlikely that these programs will continue and be funded under a forward sale proposal.

## PLANTATION MANAGEMENT AND FIRE PREVENTION

Other programs undertaken by Forestry SA under its Charter are Plantation Management and Fire Prevention. The following is provided in evidence of the success of these programs.

The control of noxious weeds continues to be a focus across plantation and native forests. A number of strategies are utilised to maximise this effort including the use of biological controls, selective herbicides and manual techniques combined with a monitoring program to assist in focusing future work.
Many processes related to operations have been streamlined with the use of an "Operations Plan" workflow system. This assists in ensuring that all aspects of the Australian Forestry Standard (AFS) are incorporated and actioned accordingly. This includes the identification of indigenous, heritage and biological values, allowing appropriate buffering or setbacks to be established. The plans also ensure that communication is maintained both internally and externally with stakeholders.

Commitments made in the spring of 2009 resulted in a significant increase in the areas of prescribed burning of native forest. Forestry SA continued to operate the Green Triangle fire tower network. The towers were utilised on days of Forest Fire Danger Index (FFDI) 12 and above, a total for the 2009-10 season of 97 days, including one period from late December to early February of 41 consecutive days.

Extensive fire prevention measures including firebreak and roadside slashing to reduce fuel loadings in all Regions, and the continued development and maintenance of strategic fuel management zones throughout the Green Triangle plantations and protection zones around townships contributed to community fire protection.

Automatic despatch of first attack suppression forces ensures a minimum of two Forestry SA fire appliances on scene within 15 minutes on days of FFDI 35+ in central forest areas in the Green Triangle region and a similar approach in the Mount Lofty Ranges ensures rapid response to any reported incident.

Forestry SA on-gound fire crews continue to meet the international standard for fire fitness as used by other land management agencies throughout Australia, and are trained to CFS Bushfire Fire Fighting Level 1 and Suppress Wildfire standard as minimum requirements. The crews also complete on an annual basis Forestry SA Plantation Fire Fighting training.

Forestry SA is a leader at all levels of the rural wildfire community with representation on relevant committees at local, State and National levels. Forestry SA also works closely with Volunteer Fire Services in South Australia and Victoria, the Forest Owners Conference and the Bureau of Meteorology to ensure that all aspects of fire prevention, fire management and fire recovery are addressed. Forestry SA contributes to incident management at the highest levels within the CFS and considers significant improvements in fire prevention outcomes will be achieved through increased and effective interaction with the community, with other forest growers and through cooperative efforts with other fire, forest and land management agencies.

Appendix 1

# COMMUNITY IMPACT STATEMENT

# INTO THE FORWARD SALE OF

# FORESTRY SA PLANTATIONS

# MARCH 2011

# Appendix 1

## CONTENTS

# Appendix 1

## FORESTRY SOUTH AUSTRALIA SOFTWOOD ESTATE

## POTENTIALLY AN ADVERSE OUTCOME FOR THE SOUTH EAST COMMUNITY

### 1. THE PROPOSAL

The South Australian Government, (Treasurer's Statement of 19th December 2008) as a component of Strategy for reducing the State's debt, announced their intention to forward sell "up to" three rotations of wood products harvested from the softwood plantations managed by Forestry South Australia (FSA).

### 2. STRUCTURE OF "SALE"

To date the Government has not communicated a preferred structure or business model for sale of FSA's softwood estate. The S.A. Government appears to be examining a number of options.

Within this context one option being examined by the Government is the sale of current FSA's wood flows from one, two or three rotations – period not determined – to a private organisation (third party). At a minimum the private organisation would be responsible for marketing and sale (revenue) of wood produced by FSA's softwood estate over the sale period (FSA currently manage plantations over a 35 year rotation). The on-going role of FSA has not been specified. However, the former Treasurer Kevin Foley in an interview with ABC Radio South East dated 12 November 2010 clearly indicated that Forestry SA will continue its role as Manager of the plantations.

The buyer of wood flows from FSA's softwood estate, for up to three rotations, would be assigned responsibility for managing the obligations specified in current wood supply contracts between FSA and their customers, and subsequent right to enter into future sale arrangement as non-contracted wood becomes available from the Estate.

### 3. FOCUS OF REPORT

As part of developing knowledge to inform the South East community and facilitate the shaping and productive participation in Regional Impact Statement processes – theoretically a key input into Government's decision making processes regarding the forward sale of plantation rotations – this Report focuses on articulating the challenges and risks associated with an unconstrained sale of wood flows including management of current FSA's softwood estate.

### 4. FSA's CONTRIBUTION TO GREEN TRIANGLE

#### 4.1 The Resource

FSA is the trading name for the South Australian Forestry Corporation established on 1st January 2000 under the South Australian Forestry Corporation Act.

The Charter of the South Australian Forestry Corporation requires FSA amongst other requirements, to "contribute to the growth of an internationally competitive forestry industry *within*

*South Australia"* and "encourage and facilitate *regionally based* economic activity based on forestry and other industries".

FSA's current core responsibility is the commercial management of 84,000 hectares of plantation resources developed over the last 130 years from an initial planting of around 250 hectares in 1879. The resources are located primarily in the Green Triangle (70,000 hectares) with majority of estate located in South East region of South Australia (69,000 hectares), and small holdings in Victoria. FSA's other plantation resources (approximately 14,000 hectares) are located in Mt Lofty and Mid North Regions of SA.

FSA also has charter to provide community support and recreation facilities within their forest estate and manages approximately 25,000 ha of native forests for conservation.

The focus of this Report is on the potential challenges and impacts to the South East region associated with the forward sale of FSA's wood flows from softwood plantations in the Green Triangle.

FSA's resources in the Green Triangle represent approximately 7% of Australia's softwood resources and approximately 65% of softwood plantations in Green Triangle. The remaining 45% of softwood plantation resources in Green Triangle (SA and Victoria) are owned and managed by private sector organisations.

FSA's softwood plantations supply a wide range of forest products to a variety of processing plants including sawmills, engineered wood products, preservation, pulp and paper, waste industries and potentially energy facilities. The diversity of industries supports the commercial utilisation of the different grades of logs produced by softwood plantations, an essential component of the economic performance of FSA and to regional prosperity.

The "current ownership framework and operating model (for FSA is) a catalyst for stability within the industry" (Chairman's Report, FSA Annual Report, 2009/10).

In addition the Green Triangle also has approximately 45,000 hectares of hardwood plantations established primarily by MIS companies over the last decade. The hardwood plantation estate is currently focused on supplying export woodchip markets.

## 4.2 Timber Industry Contribution

**Regional Level:**
Forestry and timber processing is not only a significant contributor to the economic well being of the South East Region.

At a sector level forestry and associated timber industry (softwood and hardwood) in the broader Mt Gambier region (consisting of the areas of City of Mount Gambier, Wattle Range Council and the District Council of Grant) of is estimated to directly contribute between 18-20% of gross regional product (estimated at $2.8B for 2009/10) and directly supports around 3,600 jobs (10-12%) in a region with approximately 33,000 jobs. (Population of South East region is approximately 77,000 people.) Forestry and forest industries paid incomes to workers and owners of around $240m in 2009/10, representing approximately 18% of income paid in South East region.

At an activity level it is estimated that forestry (the establishment and growing of trees) supports approximately 600 jobs and processing of wood by twenty one facilities adding approximately another 3,000 jobs. Given that the majority of processing of wood is associated with softwood –

currently the market focus of limited harvesting of hardwood plantations is for export woodchip – the majority of wood product processing employment is associated with resources supplied from softwood plantations.

In addition to these direct impacts (for jobs, income and gross regional product) there are flow-on impacts driven by purchase of goods and services from local industries and commercial providers to support timber industry activities in South East region. These activities support another 3,500 jobs generating approximately 20% of total employment in the South East region, 2009/10.

### 4.3 FSA's Contribution

FSA, as the sustainable and reliable supplier to industry of around 65% of softwood logs in Green Triangle, is a major contributor to regional prosperity. As estimated in Table 1 the activities of FSA directly support around 2,150 jobs with majority (83%) in the processing sector. When the flow-on job impacts are included, FSA's activities support around 3,090 jobs in the South East region. FSA is a pillar for stability in the South East region.

**Table 1. Estimated jobs contribution from FSA's activities in the South East region (2010)**

| Indicator | Jobs |
|---|---|
| **Direct Effects:** | |
| - Forestry and logging | 350 |
| - Processing (Wood and Paper) | 1,750 |
| Sub-Total | 2,100 |
| **Flow-on Effects *** | 990 |
| **TOTAL Industry Employment** | **3,090** |

* Includes industrial effects (Type I multipliers). Does not include consumption induced effects (Type II multipliers).

## 5. RELATED ISSUES

In considering potential socio-economic impacts of an unrestricted sale of FSA's forest estate it is also important to recognise parallel, but interrelated, issues (threats) impacting on the immediate and longer term viability of jobs supported by the growing and processing of softwood plantations in broader Mt Gambier area.

Core issues which are impacting on the value of FSA's estate, somewhat independent of the ownership of softwood plantations in Green Triangle, include:

1) **Continuing leadership by SA Government to increase returns to South Australia facilitate investment in long-rotation softwood rotations**

Currently the SA Government receives dividends and taxation payments from the assets managed by FSA. For 2009/2010 approximately $44m was paid by FSA in dividends and taxes. The community is strongly of the view that the combination of strong revenue streams from FSA to SA Government and commitment to regional processing and jobs provides strong support for continuation of current ownership arrangements for FSA.

# Appendix 1

A significant threat to maintaining jobs in the softwood industry across Australia is the low rate of re-establishment and expansion of softwood plantations. The private sector does not have a positive record of re-establishing and/or expanding long-rotation softwood plantations. Over the last decade the areas of softwood plantation in Australia has stagnated at around 1 million hectares. The SA Government has recognised this risk and has facilitated FSA, in addition to re-establishing around 1,900 hectares of harvested areas, planting an additional 700 hectares per annum to create additional resources.

It is only by increasing softwood resources available for processing that investment and jobs will be maintained in a price competitive and trade exposed industry such as wood processing.

## 2) Adaptation to changing forestry landscape

The South East area community acknowledges that changes are occurring in the forest landscape and processing industries in the Green Triangle. These changes are driven by:

- **Water regulation.** Analyses by forest industries indicate that the processes for water management detailed in the Natural Resources (Commercial Forests) Amendment Bill 2010 will significantly impede the re-establishment of commercial forests through expansion in the South East Region. This outcome could negatively impact on the competitiveness and scale of softwood plantations in the South East Region reducing the competitiveness of growers and processors and subsequently jobs.
- **International Benchmarking**. Over the last decade there has been a shift to international ownership of forests and processing facilities in the broader Mt Gambier area. This 'internationalisation' of ownership is placing increased competitive pressures on the potential use of forest resources and commitments to regional processing. The significance of softwood processing facilities in the South East is evidenced from the fact that for every job in forestry an additional two jobs are currently in processing. The current ownership arrangements of FSA allow the Government to influence regional processing outcomes and jobs.
- **Carbon Offsets.** Australia's policy and program responses in moving to a lower carbon emissions economy are evolving. Likewise the role and value the carbon assets embedded in FSA's plantations will play in Australia's carbon management structure is evolving. An indication of the potential worth of carbon assets in FSA's plantation estate – under current ownership framework a permanent forest estate making it attractive to investors – is evidenced by the NZ Ministry of Agriculture and Forestry recently issuing, since early 2009, the 10 millionth forestry carbon unit (at estimated average price of A $12 per forestry unit) associated with participation in NZ Emissions Trading Scheme.
- **Implementation of broader land-use options** by new owners of failed MIS companies. The new owners are forecasting that significant areas (around 30%) of land currently in hardwood plantations will be transferred to different land uses including agriculture. Within this context there is the opportunity to increase the land allocated to pine plantations.

How these issues and opportunities are addressed will have a significant impact on the contribution of plantation forests to regional prosperity.

## 6. POTENTIAL ADVERSE OUTCOME

At this time an assessment of the challenges and risks associated with the Government's proposal to forward sell wood flows from up to three rotations of FSA's plantation estate can only be indicative. The conditions and obligations associated with the potential forward sale on both the

buyer and FSA, a major determinant of the potential impacts in the Region, have not to date been articulated by Government.

For the purpose of providing information to facilitate constructive dialogue by the community with the Government outlined below is an indicative analysis of potential impacts on the South East area community which could arise if the divestment model implemented by SA Government does not contain binding requirement for "encouraging and facilitating regional based economic activities based on forestry and other industries". Currently FSA's business model and operations support these regional outcomes.

In debating the potential socio-economic impacts of potential sale of wood flows from FSA's softwood estate it is useful and relevant to estimate the potential impacts to South East area community of the sale option providing the purchaser with unconstrained freedom to market and grow wood to the purchasing organisation's best advantage, subject to operating consistent with government laws and regulations and meeting the requirements of wood supply contracts previously entered into by FSA and assigned to purchaser.

### 6.1 Benchmark changes

The core risks generated by "unconstrained" selling FSA's softwood estate, compared to current ownership framework and operating practices, can be summarised as:

1. **Reduced opportunities for regional processing**
   Currently FSA, consistent with their Charter, implements positive actions to "encourage and facilitate regionally based economic activity based on forestry and other industries".

   The "unconstrained" sale of FSA's softwood estate would allow the purchaser of assets to sell uncontracted wood to *their best advantage* – for example into log export markets – without being constrained by regional development outcomes.

2. **Changed role for FSA**
   First, under the current ownership and operating framework FSA, in addition to fulfilling commercial and sustainable regional development requirements, also is responsible for resourcing regional forest protection programs (eg fire and forest health), environmental sustainability (eg conservation of 25,000 ha of native forest) and community, recreational and sponsorship activities. With an unconstrained sale of FSA's softwood estate, the direct resourcing of these non-commercial activities, estimated to currently cost approximately $6.5m/yr, would have to be resourced from other sources.

   Second, the management role of FSA from that of owner-forest manager-wood supplier would change to that of potentially providing contracted services to the new purchaser. It would be expected that purchaser would not consider FSA to be a monopoly supplier of management services and would enter into any contracts with FSA based on "value" assessments. The likely outcome is that FSA would be a smaller and organisationally different.

### 6.2. Potential indicative impacts

On the basis that Government will successfully implement effective policies to manage the on-going threats and capture the opportunities for softwood forestry and regional processing detailed above an indication of the likely risks to economic activity and regional jobs associated with an unconstrained sale of FSA softwood estate can be estimated.

**For processing jobs**

An outcome probable with an unconstrained sale of FSA softwood assets is that as wood becomes uncontracted to regional processors the purchaser of FSA's softwood estate may find that their commercial interests are better served by exporting logs to non-regional markets thus reducing opportunities for regional processing and jobs.

As illustrated in Figure 1, the purchaser by 2011/12 would have the ability to re-direct sales of around 15% of estimated log availability from FSA's softwood estate (that is 85% of estimated log availability of 1.1 m cubic metres/yr is still contracted) to other markets potentially outside the South East region. By 2020/21 the purchaser would have the option to sell 40% of logs available (that is 60% of wood available would be under contract) outside the South East region. By 2027/28 the purchaser would have option to sell 100% of logs outside the South East Region.

While it is unlikely that the purchaser of FSA's softwood estate by a third party would lead to the cessation of all processing of logs in the broader Mt Gambier area, it is likely that the purchaser would "hedge their bets" by selling a proportion of logs into non-Green Triangle markets. One scenario is that the purchaser could segregate logs, with lower quality logs being retained for regional processing and higher graded logs sold on export markets. Export markets for higher quality logs, primarily driven by China, are currently very attractive to sellers with available logs.

Under this scenario if contracts are not renewed there is the potential by 2020/21 for around 40% of logs from FSA's softwood estate to be exported reducing wood based manufacturing jobs in South East area.

The sequence of impacts on jobs is difficult to estimate as the uncertainties generated by implementation of such a strategy by purchaser of estate and flow-on negative outcomes – for example, investment in more productive processing plant, "bank" financial support to regional industries, requirements for additional volumes to retain competitiveness, and regional house prices and saleability, and loss of services – will commence well before 2020/21. Further there is the loss of community confidence the proposed sale is generating in the region. The region is already reeling from the recent Kimberly-Clark Australia job shedding announcement.

For illustrative purposes it is estimated that with other issues remaining neutral, a 40% reduction in logs available for local processing would reduce by 2020/21 direct log processing employment (in sawmills and other wood engineering plants) by around 920 jobs (from 2011 levels) increasing to 1,350 jobs when flow-on impacts to employment in South East region are included.

In considering the impacts associated with this scenario it is also important to note that withdrawal of resources does not have linear impact on jobs. Wood processing industries require threshold levels (volumes) of wood input, that is a tipping point, to be financially viable. It is probable that the implementation of such a marketing scenario will not only reduce the number of processing industries but also change and rationalise the mixture of small and medium size processing facilities.

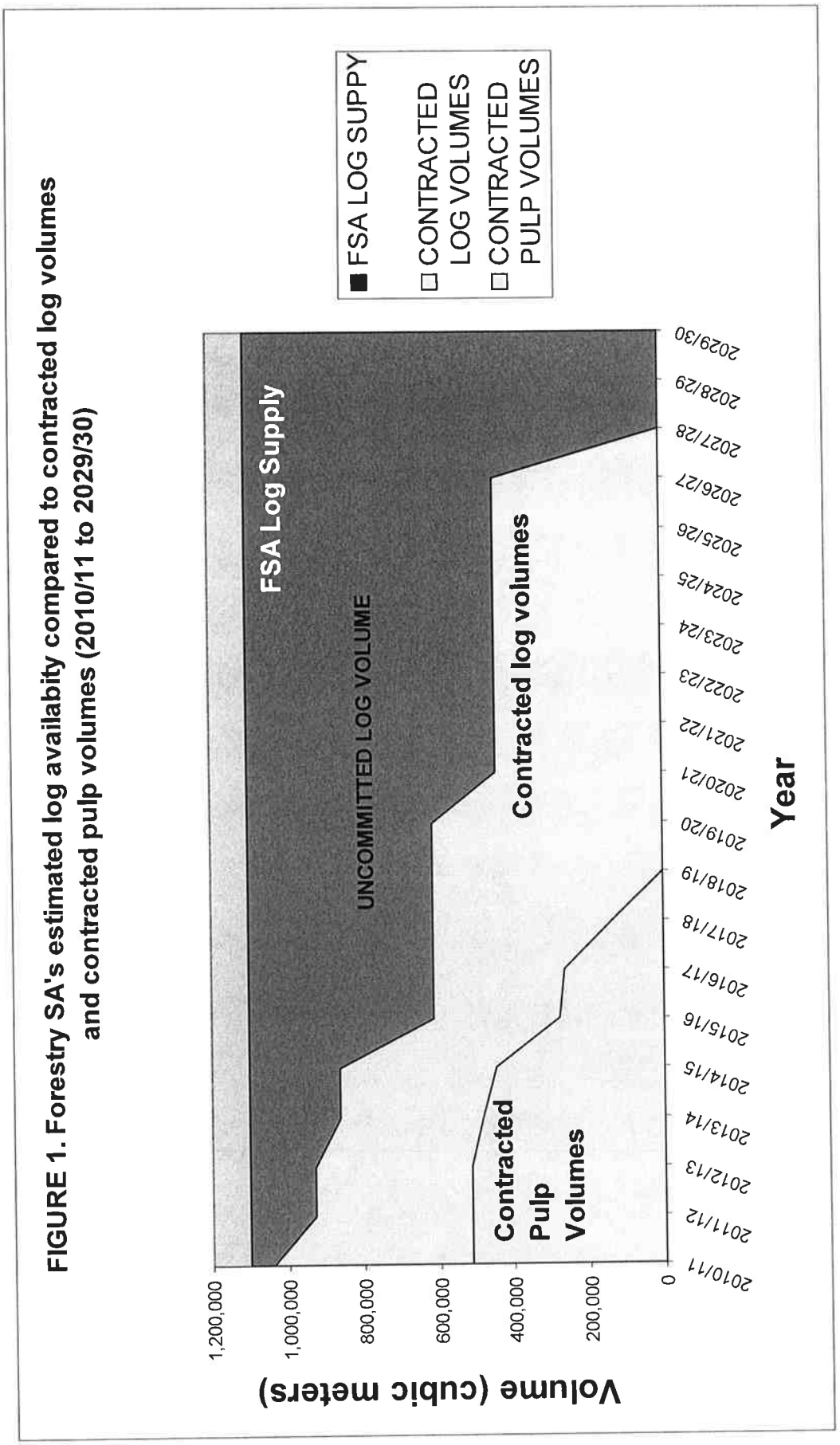
**Role of FSA**

As indicated previously an unconstrained sale of FSA's softwood estate could lead to current role of FSA as an owner-manager-marketing and sales organisation being redundant.

FSA currently employs approximately 190 persons with an estimated 8 persons (full time equivalent) providing non-core commercial services, associated with environmental management, recreation infrastructure, social and community engagement, industry development and research.

# Appendix 1

**FIGURE 1. Forestry SA's estimated log availability compared to contracted log volumes and contracted pulp volumes (2010/11 to 2029/30)**



# Appendix 1

The level of resources retained within FSA following any divestment by SA Government of FSA's softwood estate is dependent on consideration of the most effective and efficient structures to provide an on-going level for these non-core commercial services.

The future employment of current FSA personnel directly working on core commercial activities, and hence aggregate employment levels, will be dependent on the needs of the third party purchasing the sales rights to FSA's softwood estate.

## 7. SUMMARY

While it is difficult, without knowledge of the preferred sales structure for FSA's softwood estate, to be definitive on the potential socio-economic impacts, it is highly likely that an unconstrained sale of FSA's softwood estate will reduce job opportunities in the South East region in the wood processing sector. (Employment in harvesting and haulage is expected to remain the same as forests will still be harvested.) This impact will be generated by the ability of purchaser to sell uncontracted logs currently sold to regional processors, to non-South East area markets. In addition there will be negative flow-on impacts for community confidence and regional industry development.

The proposed sale of FSA's softwood estate, up to three rotations, and combined with the recent Kimberly-Clark Australia's job shedding announcement and uncertainties associated with continued operation of pulp mill, is already reducing community confidence.

In addition the unconstrained sale of FSA's softwood estate could render the current role and resourcing of FSA redundant leading to lessening of ability of the community to facilitate regional development jobs dependent on regional processing.

In considering the impacts of selling FSA's softwood estate it is important to address, in a comprehensive and integrated manner, parallel issues which will in the short and medium term (next two years) impact on the role and value of FSA's softwood estate. These issues include water regulation, opportunities for expansion of softwood resources, carbon assets, and impediments to international competitiveness of forestry and wood processing on the South East region.

It is the view of the authors that the SA Government should invest in expanding the forestry estate. As this submission makes clear, the South East is heavily reliant on the forestry industry and many livelihoods depend on it. It is our belief that if the sale was to proceed it would have an adverse effect on the South East economically and socially.

# Appendix 3

# Economic Impact of the Timber Industry in the Green Triangle Region, 2003/04

A report prepared for

Green Triangle Regional Plantation Committee Inc.
and
Forestry SA

Prepared by

EconSearch Pty Ltd

30 June 2005

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# Appendix 3

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## List of Tables



## List of Figures

## Document History and Status

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## Abbreviations

| | |
|---|---|
| ABARE | Australian Bureau of Agricultural and Resource Economics |
| ABS | Australian Bureau of Statistics |
| GTR | Green Triangle Region |
| GTRPC | Green Triangle Regional Plantation Committee Inc. |
| GRP | Gross Regional Product |
| GSP | Gross State Product |
| LGA | Local Government Area |
| PIRSA | Primary Industries and Resources South Australia |
| SE SA | South East South Australia |
| SW Vic | South West Victoria |
| SD | Statistical Division |
| SLA | Statistical Local Area |

## Acknowledgements

The assistance and feedback provided by John Kellas (Green Triangle Regional Plantation Committee Inc.) and Leith Davis (Forestry SA) is gratefully acknowledged. The analysis would not have been possible without the input provided by participants in the timber industry survey.

# Executive Summary

The broad objective of this study was to provide indicators of the timber industry's (i.e. plantation forestry and timber processing) contribution to the regional economies of South East South Australia (SE SA) and South West Victoria (SW Vic) and, collectively, for the Green Triangle regional economy in 2003/04.

The work was commissioned by John Kellas, Executive Officer, Green Triangle Regional Plantation Committee Inc. (GTRPC) and was jointly funded by Forestry SA. The survey work, data collection, modelling and report production were undertaken by Matthew Ferris and Julian Morison (EconSearch Pty Ltd).

The approach to the analysis was similar to that adopted by EconSearch in the preparation of the previous reports for the SE SA regional economy (EconSearch 1998 and 2001), it involved:

- the collection of primary industries data for the region for 2003/04, including a survey of plantation forestry and timber processing firms;
- a brief regional profile and the preparation (SW Vic) and update to 2003/04 (SE SA) of input-output models for the analysis; and
- estimation of the economic impact of forestry, timber processing, agriculture and the processing of agricultural products in the Green Triangle region.

**Survey of plantation forestry and timber processing firms**

The survey of plantation forestry and timber processing firms commenced in early February 2005, based on the GTRPC contact database. Detailed follow-up was undertaken by telephone, fax and e-mail during February and March 2005. The distribution of questionnaires and subsequent follow-up was undertaken by EconSearch.

At least 95 per cent of the forest plantation in the Green Triangle region by area and over 90 per cent of the timber processing activity by value was accounted for by the 16 completed, relevant responses to the survey. Those firms that did not respond were thought to be minor operators relative to the total size of the industry.

**Regional profile and model preparation**

An input-output table for the SE SA region for 2002/03 has been recently prepared by EconSearch (2005). This model required a number of adjustments in order to update it to 2003/04. The input-output table for the SW Vic region was constructed using the RAS method supplemented by data gathered from a variety of other sources. These sources included the Australian Bureau of Statistics, Australian Taxation Office, Department of Employment and Workplace Relations and information collected from the timber industry survey.

Some of the key measures of economic activity in the SE SA, SW Vic and Green Triangle regions in 2003/04 are provided in Table 1.

Table 1 Key measures of economic activity in the SE SA, SW Vic and Green Triangle regions, 2003/04

| | South East SA | | South West Victoria | | Green Triangle |
|---|---|---|---|---|---|
| | | Share of SA | | Share of Vic | |
| Gross Regional Product ($b) | 2.49 | 4.6% | 2.42 | 1.2% | 4.90 |
| Employment (no. of jobs) | 34,130 | 4.8% | 38,643 | 1.6% | 72,773 |
| Population (30 June 2004) | 63,040 | 4.1% | 88,422 | 1.8% | 151,462 |

Note: Totals may contain rounding.

Source: EconSearch analysis

**Results of the impact analysis**

Based on data gathered from the timber industry survey (including the regional value of production in the plantation forestry and wood and paper processing industries), the objective of the analysis was to estimate the flow-on (or indirect) effects generated by that production. Estimates of the (direct and indirect) economic impact of the forestry and timber processing industries in the SE SA, SW Vic and Green Triangle regional economies in 2003/04 are provided below in terms of contribution to GRP and employment.

It is important to note that the estimates of economic impact for the Green Triangle region are not a simple aggregation of the estimates for the component regions of SE SA and SW Vic. The broader Green Triangle regional economy is less reliant on imported goods and services than either SE SA or SW Vic because of the trade that occurs between these regions. Reduced expenditure on imported goods and services results in more local economic activity.

- The direct contribution to GRP generated by the wood and paper products sector in the Green Triangle region (from output valued at $840 million) was around $401 million in 2003/04 (Table 2).
- Associated with this was GRP in the forestry sector of over $114 million (from output valued at $214 million).
- The flow-on GRP to other sectors in the Green Triangle region summed to almost $263 million.
- The flow-ons were greatest in the trade, transport, ownership of dwellings, business services, other manufacturing, utilities and finance sectors.
- Directly and indirectly, the timber industry (i.e. forestry and processing) contributed over $778 million to GRP for the Green Triangle regional economy in 2003/04, approximately 16 per cent of the total.
- Direct employment generated by the wood and paper products sector in the Green Triangle region was around 3,400 and in the forestry sector approximately 830 in 2003/04.
- Flow-on employment to other sectors in the region as a result of timber industry activity summed to almost 4,600 jobs.

- Directly and indirectly, the timber industry (i.e. forestry and processing) generated almost 8,800 jobs in the Green Triangle region in 2003/04, approximately 12 per cent of the total.

Table 2 The economic impact of the timber industry in SE SA, SW Vic and the Green Triangle region, 2003/04

| | Contribution to GRP ($m) [a] | | | Employment (no. jobs) [b] | | |
|---|---|---|---|---|---|---|
| | SE SA [c] | SW Vic | Green Triangle | SE SA [c] | SW Vic | Green Triangle |
| Direct | | | | | | |
| Forestry | 98 | 16 | 114 | 614 | 215 | 829 |
| Wood and Paper | 368 | 32 | 401 | 3,052 | 297 | 3,354 |
| Indirect (flow-on) | 197 | 49 | 263 | 3,416 | 882 | 4,582 |
| **Total timber industry** | **664** | **97** | **778** | **7,082** | **1,394** | **8,765** |
| Regional total | 2,488 | 2,416 | 4,905 | 34,130 | 38,643 | 72,773 |
| **Proportion of region** | **27%** | **4%** | **16%** | **21%** | **4%** | **12%** |

Note: Totals may contain rounding.

[a] GRP impacts are a measure of contribution to gross regional product. Estimates are in 2003/04 dollars.

[b] Employment impacts are a measured in terms of the number of full-time and part-time jobs.

[c] The relative contribution of the timber industry in SE SA would appear to have declined over time (30 per cent of GRP in 1995/96 and 28 per cent in 1998/99; 26 per cent of employment in 1995/96 and 24 per cent in 1998/99). This could be as a result growth in other sectors of the regional economy (e.g. tourism and the ownership of dwellings), although the possibility that indirect impacts were overestimated for the years 1995/96 and 1998/99 also needs to be taken into account.

Source: EconSearch analysis

To put these estimates into perspective, primary industries[1] in the Green Triangle region were estimated to have directly and indirectly contributed approximately 54 per cent of GRP (61 per cent in SE SA and 44 per cent in SW Vic) and 53 per cent of regional employment (59 per cent in SE SA and 46 per cent in SW Vic) in 2003/04.

[1] Primary industries have been defined to include agriculture, viticulture, horticulture, food products processing, wineries, plantation forestry and wood and paper products processing. The definition excludes mining and energy, fishing and aquaculture and any processing of these products that might take place in the regions.

# Appendix 3

# 1. Introduction

## 1.1 Background

The broad objective of this study was to provide indicators of the timber industry's (i.e. plantation forestry and timber processing) contribution to the regional economies of South East South Australia and South West of Victoria and, collectively, for the Green Triangle regional economy in 2003/04. Specifically, the task involved the preparation of the following tables.

- The direct and indirect impact of forestry and timber processing in terms of contribution to gross regional product[2].
- The direct and indirect impact of forestry and timber processing in terms of employment.
- The direct and indirect impact of primary industries[3] in terms of value of output, contribution to gross regional product, employment and household income.

In addition, time series estimates of the timber industry's contribution to the regional economy of South East South Australia (SE SA) have been prepared for the years 1995/96 and 1998/99, based on previous work undertaken by EconSearch (1998 and 2001).

The work was commissioned by John Kellas, Executive Officer, Green Triangle Regional Plantation Committee Inc. (GTRPC) and was jointly funded by Forestry SA. The survey work, data collection, modelling and report production were undertaken by Matthew Ferris and Julian Morison (EconSearch Pty Ltd).

## 1.2 Approach to the Analysis

The approach to the analysis was similar to that adopted by EconSearch in the preparation of the previous reports for the SE SA regional economy (EconSearch 1998 and 2001). There were three steps involved in undertaking the project:

1. the collection of primary industries data for the region for 2003/04, including a survey of plantation forestry and timber processing firms;
2. a brief regional profile and the preparation (SW Vic) and update to 2003/04 (SE SA) of input-output models for the analysis; and
3. estimation of the economic impact of forestry, timber processing, agriculture and the processing of agricultural products in the Green Triangle region.

An outline of the indicators of economic impact used in the analysis is provided in Section 2 of the report. The three primary steps to the analysis are outlined in more detail in Sections 3 to 5, respectively.

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2 The terminology 'contribution to gross regional product' and 'value added' can be used interchangeably. 'Value added' was used in previous reports (EconSearch 1998 and 2001).

3 Primary industries have been defined to include agriculture, viticulture, horticulture, food products processing, wineries, plantation forestry and wood and paper products processing. The definition excludes mining and energy, fishing and aquaculture and any processing of these products that might take place in the regions.

## 2. Measures of Economic Impact

The focus of this report is a statement of regional economic impact (i.e. so many jobs, so much income, etc.) arising from timber industry and other primary industry activity. The results of the analysis do not indicate whether the costs to the regions of this activity outweigh the benefits. An assessment of this nature would require a comprehensive cost-benefit analysis.

Estimates of economic impact or economic contribution are presented in terms of the following indicators[4]:

- output;
- contribution to gross regional product;
- employment; and
- household income.

**(Value of) Output** is a measure of the gross revenue of goods and services produced by commercial organisations (e.g. farm-gate value of production) and gross expenditure by government agencies. Total output needs to be used with care as it includes elements of double counting (e.g. the value of timber mill output includes the plantation-gate value of saw logs). For this reason, only direct output impacts are reported.

**Contribution to gross regional product** (GRP) is a measure of the net contribution of an activity to the regional economy. Contribution to gross regional product is measured as value of output less the cost of goods and services (including imports) used in producing the output. In other words, it can be measured as household income plus other value added (gross operating surplus and all taxes, less subsidies). It represents payments to the primary inputs of production (labour, capital and land). Using contribution to GRP as a measure of economic impact avoids the problem of double counting that may arise from using value of output for this purpose.

**Employment** is a measure of the number of working proprietors, managers, directors and other employees, in terms of the number of full-time and part-time jobs.

**Household income** is a component of GRP and is a measure of the wages and salaries and other payments to labour including overtime payments and income tax, but excluding payroll tax.

Estimates of economic impact are presented in terms of

- direct impacts;
- flow-on (or indirect) impacts; and
- total impacts.

**Direct impacts** are the initial round of output, employment and household income generated by an economic activity, in this case plantation forestry and wood and paper processing.

[4] See Appendix 2 for a more detailed glossary of input-output terminology.

**Flow-on (or indirect) impacts** are the sum of production-induced effects and consumption-induced effects. Production-induced effects are additional output, employment and household income resulting from re-spending by firms (e.g. forestry contractors) that receive payments from the sale of goods and services to firms undertaking, for example, plantation forestry activities. Consumption-induced effects are additional output, employment and household income resulting from re-spending by households that receive income from employment in direct and indirect activities.

**Total impacts** are the sum of direct and flow-on impacts.

# 3. Data Collection

There were two key data collection tasks undertaken for this project; the first a survey of timber industry firms in the region and the second, the compilation of information on agricultural, viticultural and horticultural value of output and employment (on-farm and processing) in the region. These tasks are described in more detail below.

## 3.1 Timber Industry Survey for the Green Triangle Region

An outline of the timber industry survey conducted for this project is provided below. Details are provided of the nature of the information sought, the firms and organisations contacted, survey response rate and the processing of completed questionnaires.

***Questionnaire***

To enable the estimation of the impact of the timber industry in the Green Triangle region, a questionnaire was prepared for completion by plantation forestry and timber processing firms and other organisations that undertake related activity in the region.

The questions were designed to elicit:

- the nature of the firm's timber industry activity;
- the firm's employment levels and total wages and salaries;
- estimates of employment and the nature of goods and services provided by contractors to the firm;
- the magnitude of other costs incurred by the firm in the course of conducting timber industry operations; and
- a breakdown of timber industry related earnings and market share by broad category.

Respondents were asked to indicate in which region their timber industry operations occur (i.e. SE SA or SW Vic) and to apportion, where possible, employment, costs and revenue between these regions. The questionnaire is reproduced in Appendix 1.

A covering letter for the questionnaire was prepared on GTRPC letterhead to encourage individual organisations to participate in the survey. It outlined the background and objectives of the study, explained why the survey was required and indicated that all survey data would be treated in confidence. A copy of the covering letter is also reproduced in Appendix 1.

***Firms who received the questionnaire***

The contact list of timber industry firms and organisations for inclusion in the survey (39 in total) was compiled in consultation with John Kellas (GTRPC) and was based on the GTRPC contact database.

The covering letter and questionnaire were sent by post in early February 2005. Detailed follow-up was undertaken by telephone, fax and e-mail during February and March 2005. The distribution of questionnaires and subsequent follow-up was undertaken by EconSearch.

***Responses***

A summary of the nature and extent of the responses to the timber industry survey in the Green Triangle region is provided in Table 3.1. While the 'response rate' appears to be low it is important to note that at least 95 per cent of the forest plantation in the Green Triangle region by area and over 90 per cent of the timber processing activity by value was accounted for by the 16 completed, relevant responses. That is, those firms that did not respond were thought to be minor operators relative to the total size of the industry.

Table 3.1 Green Triangle timber industry survey respondents

| | |
|---|---|
| Total number of firms to which questionnaires were sent | 39 |
| Number of firms with no reported timber industry activity in the region | 2 |
| Number of firms found to be timber industry service providers only | 2 |
| Net total of firms from whom data were sought | 35 |
| Non-respondents | |
| cited confidentiality restrictions | 2 |
| incorrect contact details [a] | 8 |
| no response despite follow up | 9 |
| Total non-respondents | 19 |
| Number of completed, relevant responses | 16 |

[a] Incorrect postal address and/or phone number.

***Processing and safeguarding of completed questionnaires***

Upon receipt of completed questionnaires, the responses were scrutinised for comprehensiveness and internal consistency with follow-up phone calls undertaken to seek further information or clarify inconsistencies, where necessary.

The data were recorded electronically and the completed questionnaires have been destroyed. The name/company of the survey respondent was separated from the statistical return and stored in a separate location to enhance the security of the data storage arrangements.

## 3.2 Primary Industries Data

An important step in the analysis was the collection and collation of value of output, contribution to GRP and employment estimates for forestry, timber processing, agriculture and the processing of agricultural products in the region. These data were necessary:

- in order to quantify the contribution of the timber industry to regional economic activity, relative to the contribution of agriculture and agricultural processing; and
- to validate the information collected from the timber industry survey.

For the purpose of this analysis, and to maintain consistency with previous studies (EconSearch 1998 and 2001), primary industries have been defined to include agriculture, viticulture, horticulture, food products processing, wineries, plantation forestry and wood and paper products processing. The definition excludes mining and energy, fishing and aquaculture and any processing of these products that might take place in the regions.

The relevant data have been drawn from a number of sources, including:

- Australian Bureau of Statistics (ABS) *AgStats 2001* (census) and subsequent surveys;
- Australian Bureau of Agricultural and Resource Economics (ABARE);
- Forestry SA;
- Primary Industries and Resources South Australia (PIRSA) *Regional Scorecards;* and
- Lloyd (2004) *Limestone Coast Plantation Timber 2005 and Beyond.*

The data collection process involved sourcing relevant publications, electronic data and 'special requests' from the above organisations. Broader, region-wide data required for the preparation and update of the regional input-output models was collected at the same time.

# 4. Regional Profile and Model Preparation

## 4.1 Regional Profile

The Green Triangle region, as defined for the purpose of this study, is the same as that used in Lloyd (2004), as illustrated in Figure 4.1.

The SE SA sub-region is comprised of the District Councils of Robe, Tatiara, Grant, Lacepede, Wattle Range, Naracoorte-Lucindale and the City of Mount Gambier. The boundaries of the region correspond to the South East Statistical Division (SD) as defined by the ABS. This means that published production and financial data does, for the most part, correspond to such boundaries. Some of the key measures of economic activity in the SE SA region in 2003/04 were as follows[5]:

- Gross Regional Product (GRP) was estimated to be $2.49 billion (4.6 per cent of South Australian Gross State Product[6]);
- total employment was estimated to be 34,130 jobs (4.8 per cent of the South Australian state total[7]); and
- the total resident population at 30 June 2004 was estimated to be 63,040 persons (4.1 per cent of the South Australian state total[8]).

The SW Vic sub-region is comprised of the Local Government Areas (LGAs) of West Wimmera, Southern Grampians, Glenelg, Moyne and the City of Warrnambool. This region does not correspond with an ABS Statistical Division and the published production and financial data has been compiled by sourcing information on a Statistical Local Area (SLA) basis[9]. Some of the key measures of economic activity in the SW Vic region in 2003/04 were as follows[10]:

- GRP was estimated to be $2.42 billion (1.2 per cent of Victorian Gross State Product[11]);
- total employment was estimated to be 38,643 jobs (1.6 per cent of the Victorian state total[12]); and
- the total resident population at 30 June 2004 was estimated to be 88,422 persons (1.8 per cent of the Victorian state total[13]).

---

5 Regional estimates for 2002/03 were derived from EconSearch (2005) and updated to 2003/04, as outlined in Section 4.2.

6 Estimated to be $53.897 billion in 2003/04 (ABS 2005a).

7 Estimated to be 710,000 jobs in 2003/04 (DEWR 2005).

8 Estimated to be 1,534,250 persons at 30 June 2004 (ABS 2005b).

9 The SW Vic region is comprised of the SLAs of West Wimmera, Southern Grampians – Hamilton, Southern Grampians – Wannon, Southern Grampians – Balance, Glenelg – Heywood, Glenelg – North, Glenelg – Portland, Moyne – North-East, Moyne –- North-West, Moyne – South and Warrnambool (C).

10 Regional estimates were derived from the input-output table constructed specifically for this project, as outlined in Section 4.2.

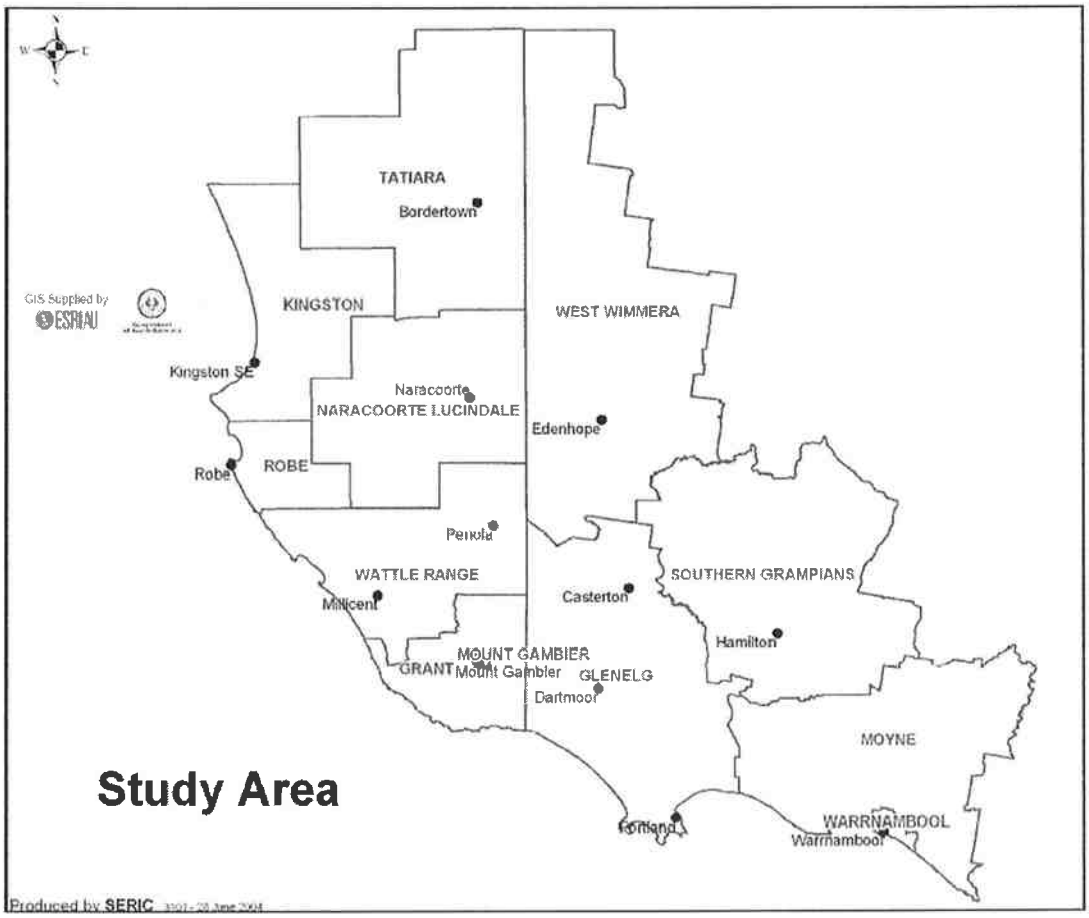
11 Estimated to be $206.733 billion in 2003/04 (ABS 2005a).

12 Estimated to be 2,401,300 jobs in 2003/04 (DEWR 2005).

13 Estimated to be 4,972,779 persons at 30 June 2004 (ABS 2005b).

In aggregate, GRP in the Green Triangle region in 2003/04 was estimated to be $4.91 billion, total employment was estimated to be 72,773 jobs and total resident population was estimated to be 151,462 persons.

Figure 4.1 The Green Triangle region




Source: Lloyd (2004).

The regional softwood plantation resource (166,000 ha in 2003/04) is concentrated in the LGAs of Wattle Range, Grant and Glenelg (approximately 89 per cent of the total). The hardwood plantation resource (113,000 ha in 2003/04) is somewhat more widely distributed, with the LGAs of Naracoorte-Lucindale, Wattle Range, Grant, Glenelg, West Wimmera and Southern Grampians accounting for approximately 99 per cent of total plantings (Lloyd 2004). Regional timber processing activity is concentrated in the LGAs of Wattle Range, Grant, Mount Gambier and Glenelg.

The plantation resource as a proportion of total land area in the SE SA, SW Vic and Green Triangle regions is outlined in Table 4.1.

Table 4.1 Total plantation area and land area, Green Triangle region, 2003/04

| Region | Plantation Area (ha) [a] | Total Land Area (ha) [b] | Plantation Area as a Proportion of Total |
|---|---|---|---|
| SE SA | 133,506 | 1,771,939 | 7.5% |
| SW Vic | 145,925 | 2,775,570 | 5.3% |
| Green Triangle | 279,431 | 4,547,509 | 6.1% |

[a] Derived from Lloyd (2004). Estimates include 2003 plantings.

[b] ABS Regional Profiles (www.ausstats.abs.gov.au).

## 4.2 Model Preparation and Update

The regional input-output table for the SE SA region for 2003/04 was based on a model for the same region for 2002/03 that was recently prepared by EconSearch as part of a project for the Regional Communities Consultative Council, Local Government Association of SA and Regional Development SA (EconSearch 2005).

This model required a number of adjustments for the purpose of this study, specifically, an update from 2002/03 to 2003/04 of the value of output estimates in agricultural and agricultural processing sectors[14] and some of other key indicators of regional economic activity[15]. It was assumed that the basic structure of the economy did not change significantly between 2002/03 and 2003/04.

The input-output table for the SW Vic region was constructed using the RAS method[16] supplemented by data gathered from a variety of other sources. These sources included:

- Australian Bureau of Statistics ('Journey to Work Employment Data' from the *2001 Census* (by special request), *1998/99 Household Expenditure Survey,* ABS (2005a and 2005b), *1998/99 National Input-Output Table,* etc.*)*
- Australian Taxation Office;
- Department of Employment and Workplace Relations (DEWR 2005);
- Information collected from the timber industry survey; and
- A range of other sources as outlined in Section 3.2.

The preliminary input-output table for the SW Vic region for 2003/04 was developed by applying the RAS method to the SE SA regional table for 2002/03 and subsequently

[14] From the PIRSA *Regional Scorecard* for the Limestone Coast Regional Development Board region (Jack Langberg, PIRSA, pers. comm.).

[15] These indicators included price changes in other sectors of the regional economy (updated using Consumer Price Index for Adelaide from ABS, National Information Referral Service), changes in employment (updated using DEWR (2005)) and changes in GRP (updated using ABS (2005a)).

[16] RAS is a bi-proportional iterative adjustment procedure designed to modify a base matrix to fit new row and column totals. The row and column totals are adjusted proportionally to the new row and column totals, in turn, and the cycle repeated until the actual row and column totals converge to the specified values. This procedure allows estimation of intermediate inputs (transactions) in the input-output table for which alternative estimates are not available. The Australian Bureau of Statistics uses this method in updating the national input-output table. The method is illustrated in Appendix A of ABS Cat. No. 5209, *Australian National Accounts, Input-Output Tables, 1996/97* (ABS 2001).

refined by applying various adjustment procedures. The computer program to make these adjustments was IOW, developed by West (2005). This software was also used to calculate industry multipliers and to estimate the impacts of the various primary industries at the regional level[17].

The input-output models provide a consistent base to present the plethora of economic data available for analysis of regional economies and allow the economic contribution of forestry, timber processing, agriculture and the processing of agricultural products to be estimated relative to other sectors in the regional economy.

[17] See Appendix 3 for an outline of input-output methodology.

# 5. The Economic Impact of Forestry, Agriculture and Associated Processing in the Green Triangle Region

## 5.1 Introduction

The main objective of this study was to measure the economic impact in the SE SA, SW Vic and Green Triangle regional economies in 2003/04 of forestry, timber processing, agriculture and the processing of agricultural products.

In order to meet this objective, it was necessary to obtain estimates of the regional value of production (output) of these industries, through published sources and a timber industry survey, and estimate the flow-on effects generated by that production. The flow-on effects are those impacts generated by the purchase of materials, services, labour and capital by forestry and agricultural producers and by the processing, marketing and handling of forestry and agricultural products.

The flow-on effects have been estimated using the input-output models outlined in Section 4.2. The standard approach for the estimation of the regional economic impact of a particular activity, such as the timber industry, is to employ input-output analysis. See Appendix 2 for a glossary of input-output terminology and Appendix 3 for an outline of input-output methodology.

Estimates of the economic impact of forestry, timber processing, agriculture and the processing of agricultural products in SE SA are provided in Section 5.2 of the report. Similar estimates for SW Vic and the Green Triangle region are provided in Sections 5.3 and 5.4, respectively.

## 5.2 Economic Impacts in South East South Australia

### 5.2.1 Economic impact of the timber industry in SE SA, 2003/04

Estimates of the economic impact of the forestry and timber processing industries in the SE SA regional economy are provided below in terms of contribution to GRP (Table 5.1) and employment (Table 5.2).

- The direct contribution to GRP generated by the wood and paper products sector (from output valued at $748 million) was around $368 million in 2003/04 (Table 5.1).
- Associated with this was GRP in the forestry sector of over $98 million (from output valued at $160 million).
- The flow-on GRP to other sectors in the SE SA region summed to over $197 million.
- The flow-ons were greatest in the trade ($39 million), transport ($32 million), ownership of dwellings ($31 million), business services ($18 million), utilities ($12 million) and finance ($10 million) sectors.
- Directly and indirectly, the timber industry (i.e. forestry and processing) contributed over $664 million to GRP for the SE SA regional economy in 2003/04, approximately 27 per cent of the total.

Table 5.1 The direct and indirect GRP impacts of forestry and timber processing, SE SA, 2003/04 ($'000) [a]

| Sector | Final demand | Industrial support | Consumption induced | Total Impact | Proportion of total | Flow-on impacts | Proportion of flow-ons |
|---|---|---|---|---|---|---|---|
| Sheep | 0 | 675 | 525 | 1,199 | 0.2% | 1,199 | 0.4% |
| Grains | 0 | 20 | 136 | 156 | 0.0% | 156 | 0.1% |
| Beef | 0 | 86 | 1,112 | 1,198 | 0.2% | 1,198 | 0.4% |
| Dairy | 0 | 47 | 610 | 657 | 0.1% | 657 | 0.2% |
| OthLS | 0 | 6 | 77 | 83 | 0.0% | 83 | 0.0% |
| OthAg | 0 | 279 | 1,312 | 1,591 | 0.2% | 1,591 | 0.5% |
| ServAg | 0 | 398 | 145 | 543 | 0.1% | 543 | 0.2% |
| Forestry | 39,599 | 58,292 | 587 | 98,478 | 14.8% | 58,879 | 19.7% |
| Fishing | 0 | 64 | 455 | 520 | 0.1% | 520 | 0.2% |
| Mining | 0 | 1,003 | 252 | 1,255 | 0.2% | 1,255 | 0.4% |
| FoodPrd | 0 | 207 | 2,695 | 2,902 | 0.4% | 2,902 | 1.0% |
| Wine | 0 | 59 | 324 | 383 | 0.1% | 383 | 0.1% |
| WdPaper | 325,817 | 39,007 | 3,497 | 368,322 | 55.4% | 42,504 | 14.2% |
| OthMan | 0 | 7,820 | 1,606 | 9,426 | 1.4% | 9,426 | 3.2% |
| Utilities | 0 | 9,730 | 2,176 | 11,906 | 1.8% | 11,906 | 4.0% |
| BldgCon | 0 | 5,130 | 1,802 | 6,931 | 1.0% | 6,931 | 2.3% |
| Trade | 0 | 20,973 | 18,011 | 38,984 | 5.9% | 38,984 | 13.0% |
| AccmRest | 0 | 1,206 | 3,501 | 4,707 | 0.7% | 4,707 | 1.6% |
| Tport | 0 | 30,170 | 2,218 | 32,388 | 4.9% | 32,388 | 10.8% |
| Comm | 0 | 1,680 | 1,799 | 3,479 | 0.5% | 3,479 | 1.2% |
| Finance | 0 | 3,285 | 6,793 | 10,078 | 1.5% | 10,078 | 3.4% |
| ODwell | 0 | 0 | 31,205 | 31,205 | 4.7% | 31,205 | 10.4% |
| BusServ | 0 | 14,487 | 3,560 | 18,047 | 2.7% | 18,047 | 6.0% |
| PAdmin | 0 | 1,824 | 570 | 2,394 | 0.4% | 2,394 | 0.8% |
| Educn | 0 | 963 | 3,397 | 4,361 | 0.7% | 4,361 | 1.5% |
| Health | 0 | 353 | 5,207 | 5,560 | 0.8% | 5,560 | 1.9% |
| RecServ | 0 | 494 | 2,143 | 2,637 | 0.4% | 2,637 | 0.9% |
| PersServ | 0 | 656 | 4,226 | 4,882 | 0.7% | 4,882 | 1.6% |
| TOTAL | 365,417 | 198,913 | 99,943 | 664,272 | 100.0% | 298,856 | 100.0% |
| MULTIPLIER | 1.0 | 0.5 | 0.3 | 1.8 | - | 0.8 | - |

[a] GRP impacts are a measure of contribution to gross regional product. Estimates are in 2003/04 dollars.

Source: EconSearch analysis.

Table 5.2 The direct and indirect employment impacts of forestry and timber processing, SE SA, 2003/04 (no. of jobs) [a]

| Sector | Final demand | Industrial support | Consumption induced | Total Impact | Proportion of total | Flow-on impacts | Proportion of flow-ons |
|---|---|---|---|---|---|---|---|
| Sheep | 0 | 16 | 12 | 29 | 0.4% | 29 | 0.7% |
| Grains | 0 | 0 | 1 | 1 | 0.0% | 1 | 0.0% |
| Beef | 0 | 2 | 20 | 22 | 0.3% | 22 | 0.5% |
| Dairy | 0 | 1 | 13 | 14 | 0.2% | 14 | 0.3% |
| OthLS | 0 | 0 | 2 | 2 | 0.0% | 2 | 0.1% |
| OthAg | 0 | 3 | 13 | 16 | 0.2% | 16 | 0.4% |
| ServAg | 0 | 10 | 4 | 13 | 0.2% | 13 | 0.3% |
| Forestry | 247 | 363 | 4 | 614 | 8.7% | 367 | 8.9% |
| Fishing | 0 | 2 | 11 | 12 | 0.2% | 12 | 0.3% |
| Mining | 0 | 4 | 1 | 5 | 0.1% | 5 | 0.1% |
| FoodPrd | 0 | 4 | 47 | 51 | 0.7% | 51 | 1.2% |
| Wine | 0 | 0 | 3 | 3 | 0.0% | 3 | 0.1% |
| WdPaper | 2,700 | 323 | 29 | 3,052 | 43.1% | 352 | 8.5% |
| OthMan | 0 | 192 | 39 | 232 | 3.3% | 232 | 5.6% |
| Utilities | 0 | 55 | 12 | 68 | 1.0% | 68 | 1.6% |
| BldgCon | 0 | 56 | 20 | 75 | 1.1% | 75 | 1.8% |
| Trade | 0 | 659 | 566 | 1,225 | 17.3% | 1,225 | 29.6% |
| AccmRest | 0 | 43 | 125 | 168 | 2.4% | 168 | 4.1% |
| Tport | 0 | 521 | 38 | 559 | 7.9% | 559 | 13.5% |
| Comm | 0 | 20 | 21 | 41 | 0.6% | 41 | 1.0% |
| Finance | 0 | 30 | 61 | 91 | 1.3% | 91 | 2.2% |
| ODwell | 0 | 0 | 0 | 0 | 0.0% | 0 | 0.0% |
| BusServ | 0 | 259 | 64 | 322 | 4.5% | 322 | 7.8% |
| PAdmin | 0 | 32 | 10 | 42 | 0.6% | 42 | 1.0% |
| Educn | 0 | 24 | 85 | 109 | 1.5% | 109 | 2.6% |
| Health | 0 | 9 | 137 | 147 | 2.1% | 147 | 3.5% |
| RecServ | 0 | 9 | 39 | 48 | 0.7% | 48 | 1.2% |
| PersServ | 0 | 17 | 108 | 124 | 1.8% | 124 | 3.0% |
| TOTAL | 2,947 | 2,651 | 1,484 | 7,082 | 100.0% | 4,135 | 100.0% |
| MULTIPLIER | 1.0 | 0.9 | 0.5 | 2.4 | - | 1.4 | - |

[a] Employment impacts are a measured in terms of the number of full-time and part-time jobs.

Source: EconSearch analysis.

- The direct employment generated by the wood and paper products sector was over 3,000 in 2003/04. Direct employment in the forestry sector was around 600 (Table 5.2)
- Flow-on employment to other sectors in the region as a result of timber industry activity summed to over 3,400 jobs.

- The flow-ons were greatest in the trade (1,220), transport (560), business services (320), other manufacturing (230) and accommodation, cafes and restaurants (170) sectors.
- Directly and indirectly, the timber industry (i.e. forestry and processing) generated almost 7,100 jobs in the SE SA region in 2003/04, almost 21 per cent of the total.

### 5.2.2 Total economic impact of primary industries, SE SA, 2003/04

Estimates of the direct and indirect impact of forestry, timber processing, agriculture and the processing of agricultural products in the SE SA region are provided in Table 5.3.

In aggregate, it is clear how significant these primary industries are to the economy of SE SA. In terms of contribution to GRP, forestry, timber processing, agriculture and the processing of agricultural products directly contributed 44 per cent of regional economic activity in 2003/04. This activity generated a further 17 per cent of GRP in flow-on effects, in total generating approximately 61 per cent of GRP. Total employment impacts were slightly less at 59 per cent of the regional total and the household income generated directly and indirectly by these primary industries comprised around 56 per cent of the regional total[18].

[18] Total household income in SE SA in 2003/04 was estimated to be $1.1 billion.

Table 5.3 The direct and indirect impact of primary industries, SE SA, 2003/04 [a]

| | Gross Value of Output [b] | Contribution to GRP | Employment | Household Income |
|---|---|---|---|---|
| | $m | $m | No. of jobs | $m |
| **Direct Impact of Primary Industries** | | | | |
| Sheep | 185.1 | 105.0 | 2,497 | 36.2 |
| Grains | 128.9 | 68.4 | 332 | 5.4 |
| Beef | 153.5 | 88.8 | 1,603 | 24.1 |
| Dairy | 62.1 | 26.3 | 578 | 13.1 |
| Other Livestock | 9.2 | 2.1 | 62 | 1.3 |
| Other Agriculture [c] | 266.0 | 154.5 | 1,513 | 39.4 |
| Forestry | 159.7 | 98.5 | 614 | 29.1 |
| Food Products | 199.0 | 51.2 | 895 | 33.4 |
| Wine | 499.1 | 127.1 | 1,042 | 31.0 |
| Wood and Paper Products | 747.5 | 368.3 | 3,052 | 145.5 |
| **Total Direct Impact** | | **1,090.3** | **12,189** | **358.2** |
| Proportion of regional total | | 43.8% | 35.7% | 32.4% |
| **Indirect Impact of Primary Industries** | | | | |
| Trade | | 96.8 | 3,043 | 76.0 |
| Transport | | 51.3 | 885 | 39.4 |
| Business Services | | 42.4 | 758 | 31.3 |
| Finance | | 27.9 | 251 | 9.9 |
| Other Manufacturing | | 17.3 | 425 | 13.1 |
| Utilities | | 17.6 | 100 | 6.8 |
| Accommodation, Restaurants and Cafes | | 16.4 | 586 | 10.7 |
| Communications | | 10.2 | 122 | 5.6 |
| Ownership of Dwellings | | 66.3 | - | - |
| Other sectors | | 80.7 | 1,729 | 64.3 |
| **Total Indirect Impact** | | **426.9** | **7,898** | **257.0** |
| Proportion of regional total | | 17.2% | 23.1% | 23.3% |
| **Total Direct plus Indirect Impact of Primary Industries** | | **1,517.2** | **20,087** | **615.3** |
| Proportion of regional total | | 61.0% | 58.9% | 55.7% |

[a] Primary industries include, for the purpose of this analysis, forestry, timber processing, agriculture and the processing of agricultural products.

[b] Flow-on (indirect) and total output impacts are not reported as there are problems with double counting which can give a misleading impression of the significance of individual industries. For example, the value of saw logs processed locally is included in both the wood and paper products and forestry sectors. If the two values were added together the plantation-gate value of saw logs would be included twice.

[c] Includes viticulture, horticulture and other agriculture.

Source: EconSearch analysis.

### 5.2.3 Economic impact of primary industries in SE SA, time-series

Based on this analysis and previous work undertaken by EconSearch (1998 and 2001) it was possible to compile time-series estimates of the contribution of forestry, timber processing, agriculture and the processing of agricultural products to the regional economy of SE SA for the years 1995/96, 1998/99 and 2003/04.

The direct and indirect impact of the timber industry on regional economic activity over the nine year period is summarised in Table 5.4 and the contribution of forestry, timber processing, agriculture and the processing of agricultural products over the same time period are provided in Table 5.5.

Table 5.4 The direct and indirect GRP and employment impacts of forestry and timber processing, SE SA, 1995/96, 1998/99 and 2003/04 [a]

| | Contribution to GRP ($m) | | | Employment (no. jobs) | | |
|---|---|---|---|---|---|---|
| | 1995/96 [b] | 1998/99 [c] | 2003/04 [d] | 1995/96 [b] | 1998/99 [c] | 2003/04 [d] |
| Direct | | | | | | |
| Forestry | 53.2 | 68.5 | 98.5 | 480 | 696 | 614 |
| Wood and Paper | 210.6 | 220.3 | 368.3 | 2,954 | 2,662 | 3,052 |
| Indirect (flow-on) | 182.3 | 194.3 | 197.5 | 3,430 | 3,422 | 3,416 |
| **Total timber industry** | **446.1** | **483.1** | **664.3** | **6,864** | **6,780** | **7,082** |
| Regional total | 1,470.1 | 1,727.7 | 2,488.2 | 26,790 | 27,770 | 34,130 |
| **Proportion of region** | **30%** | **28%** | **27%** | **26%** | **24%** | **21%** |

[a] GRP impacts are a measure of contribution to gross regional product, in nominal dollars. Employment impacts are a measured in terms of the number of full-time and part-time jobs.

[b] From output valued at $90m in the forestry sector and $539m in the wood and paper products sector.

[c] From output valued at $133m in the forestry sector and $570m in the wood and paper products sector.

[d] From output valued at $160m in the forestry sector and $748m in the wood and paper products sector.

Source: EconSearch analysis.

Caution needs to be exercised when interpreting these estimates. There are a number of important points that need to be taken into account.

- Estimates of the direct impacts of forestry and timber processing on the regional economy of SE SA for the years 1995/96, 1998/99 and 2003/04 were imputed on the basis of three, distinct surveys. Although the major operators in the industry have responded to each survey, there still exists the possibility of sample bias in the survey results.

Table 5.5 The direct and indirect impact of primary industries, SE SA, 1995/96, 1998/99 and 2003/04 [a]

| | Contribution to GRP ($m) | | | Employment (no. jobs) | | |
|---|---|---|---|---|---|---|
| | 1995/96 [b] | 1998/99 [c] | 2003/04 [d] | 1995/96 [b] | 1998/99 [c] | 2003/04 [d] |
| Direct | 628.7 | 723.5 | 1,090.3 | 9,416 | 9,702 | 12,189 |
| Indirect (flow-on) | 408.7 | 400.7 | 426.9 | 7,662 | 7,133 | 7,898 |
| **Total primary industries** | **1,037.4** | **1,124.3** | **1,517.2** | **17,078** | **16,835** | **20,087** |
| Regional total | 1,470.1 | 1,727.7 | 2,488.2 | 26,790 | 27,770 | 34,130 |
| **Proportion of region** | **71%** | **65%** | **61%** | **64%** | **61%** | **59%** |

[a] Primary industries include, for the purpose of this analysis, forestry, timber processing, agriculture and the processing of agricultural products.

[b] From output valued at $1.46 billion.

[c] From output valued at $1.62 billion.

[d] From output valued at $2.41 billion.

Source: EconSearch analysis.

- Estimates of the indirect (flow-on) impacts of forestry, timber processing, agriculture and the processing of agricultural products on the regional economy of SE SA for the years 1995/96, 1998/99 and 2003/04 were generated using different input-output models. In turn, these models were constructed using different data sources and methods.
- The input-output model for 2003/04 was based on a suite of integrated regional models and a state input-output model prepared by EconSearch (2005), in collaboration with the Centre of Policy Studies at Monash University. The latest model for the SE SA regional economy is, therefore, considered to provide a more accurate representation of the structure of the linkages in the regional economy than those used to prepare impact estimates for 1995/96 and 1998/99. Thus, it is possible that the indirect impacts of the timber industry in SE SA were overestimated for the years 1995/96 and 1998/99.

It is apparent, however, that:

- The total GRP impact of the timber industry and all primary industries increased in absolute terms over the period 1995/96 to 2003/04.
- The total employment impact of the timber industry and all primary industries increased in absolute terms over the period 1995/96 to 2003/04. The less than proportional increase in employment impacts probably reflects economy-wide labour productivity improvements.
- The declining relative contribution of the timber industry and all primary industries could be as a result growth in other sectors of the regional economy (e.g. the wine sector, tourism and other service industries).

## 5.3 Economic Impacts in South West Victoria

### 5.3.1 Economic impact of the timber industry in SW Vic, 2003/04

Estimates of the economic impact of the forestry and timber processing industries in the SW Vic regional economy are provided below in terms of contribution to GRP (Table 5.6) and employment (Table 5.7).

- The direct contribution to GRP generated by the wood and paper products sector (from output valued at $92 million) was around $32 million in 2003/04 (Table 5.6).
- Associated with this was GRP in the forestry sector of approximately $16 million (from output valued at $54 million).
- The flow-on GRP to other sectors in the SW Vic region summed to over $49 million.
- The flow-ons were greatest in the trade ($11 million), transport ($11 million), business services ($6 million), ownership of dwellings ($6 million), finance ($3 million) and other manufacturing ($2 million) sectors.
- Directly and indirectly, the timber industry (i.e. forestry and processing) contributed over $97 million to GRP for the SW Vic regional economy in 2003/04, approximately 4 per cent of the total.
- Direct employment generated by the wood and paper products sector was around 300 and in the forestry sector around 220 in 2003/04 (Table 5.7).
- Flow-on employment to other sectors in the region as a result of timber industry activity summed to almost 900 jobs.
- The flow-ons were greatest in the trade (340), transport (180), business services (90), accommodation, cafes and restaurants (50) and health (40) sectors.
- Directly and indirectly, the timber industry (i.e. forestry and processing) generated almost 1,400 jobs in the SW Vic region in 2003/04, almost 4 per cent of the total.
- The higher GRP and employment multipliers associated with the forestry and timber processing industries in SW Vic (Tables 5.6 and 5.7) relative to SE SA (Tables 5.1 and 5.2) reflect the fact that much of the potential income from existing plantations in SW Vic is yet to be realised, thus expenditure on local goods and services comprise a higher proportion of current output (sales).

Table 5.6 The direct and indirect GRP impacts of forestry and timber processing, SW Vic, 2003/04 ($'000) [a]

| Sector | Final demand | Industrial support | Consumption induced | Total Impact | Proportion of total | Flow-on impacts | Proportion of flow-ons |
|---|---|---|---|---|---|---|---|
| Sheep | 0 | 23 | 76 | 99 | 0.1% | 99 | 0.2% |
| Grains | 0 | 1 | 8 | 9 | 0.0% | 9 | 0.0% |
| Beef | 0 | 7 | 70 | 77 | 0.1% | 77 | 0.1% |
| Dairy | 0 | 5 | 52 | 57 | 0.1% | 57 | 0.1% |
| OthLS | 0 | 0 | 0 | 0 | 0.0% | 0 | 0.0% |
| OthAg | 0 | 109 | 55 | 164 | 0.2% | 164 | 0.3% |
| ServAg | 0 | 255 | 14 | 268 | 0.3% | 268 | 0.5% |
| Forestry | 8,298 | 7,645 | 2 | 15,944 | 16.4% | 7,647 | 13.5% |
| Fishing | 0 | 2 | 57 | 60 | 0.1% | 60 | 0.1% |
| Mining | 0 | 130 | 13 | 143 | 0.1% | 143 | 0.3% |
| FoodPrd | 0 | 37 | 395 | 433 | 0.4% | 433 | 0.8% |
| Wine | 0 | 39 | 49 | 88 | 0.1% | 88 | 0.2% |
| WdPaper | 32,255 | 141 | 6 | 32,402 | 33.3% | 146 | 0.3% |
| OthMan | 0 | 1,724 | 369 | 2,093 | 2.1% | 2,093 | 3.7% |
| Utilities | 0 | 582 | 560 | 1,142 | 1.2% | 1,142 | 2.0% |
| BldgCon | 0 | 539 | 138 | 677 | 0.7% | 677 | 1.2% |
| Trade | 0 | 6,764 | 4,279 | 11,043 | 11.3% | 11,043 | 19.4% |
| AccmRest | 0 | 361 | 1,125 | 1,486 | 1.5% | 1,486 | 2.6% |
| Tport | 0 | 10,363 | 509 | 10,872 | 11.2% | 10,872 | 19.1% |
| Comm | 0 | 540 | 478 | 1,018 | 1.0% | 1,018 | 1.8% |
| Finance | 0 | 1,247 | 1,286 | 2,533 | 2.6% | 2,533 | 4.5% |
| ODwell | 0 | 0 | 5,949 | 5,949 | 6.1% | 5,949 | 10.5% |
| BusServ | 0 | 4,795 | 1,036 | 5,831 | 6.0% | 5,831 | 10.3% |
| PAdmin | 0 | 441 | 140 | 580 | 0.6% | 580 | 1.0% |
| Educn | 0 | 276 | 959 | 1,235 | 1.3% | 1,235 | 2.2% |
| Health | 0 | 120 | 1,382 | 1,502 | 1.5% | 1,502 | 2.6% |
| RecServ | 0 | 108 | 564 | 672 | 0.7% | 672 | 1.2% |
| PersServ | 0 | 127 | 866 | 993 | 1.0% | 993 | 1.7% |
| TOTAL | 40,553 | 36,379 | 20,438 | 97,370 | 100.0% | 56,817 | 100.0% |
| MULTIPLIER | 1.0 | 0.9 | 0.5 | 2.4 | - | 1.4 | - |

[a] GRP impacts are a measure of contribution to gross regional product. Estimates are in 2003/04 dollars.

Source: EconSearch analysis.

Table 5.7 The direct and indirect employment impacts of forestry and timber processing, SW Vic, 2003/04 (no. of jobs) [a]

| Sector | Final demand | Industrial support | Consumption induced | Total Impact | Proportion of total | Flow-on impacts | Proportion of flow-ons |
|---|---|---|---|---|---|---|---|
| Sheep | 0 | 0 | 2 | 2 | 0.1% | 2 | 0.2% |
| Grains | 0 | 0 | 0 | 0 | 0.0% | 0 | 0.0% |
| Beef | 0 | 0 | 1 | 1 | 0.1% | 1 | 0.1% |
| Dairy | 0 | 0 | 1 | 1 | 0.1% | 1 | 0.1% |
| OthLS | 0 | 0 | 0 | 0 | 0.0% | 0 | 0.0% |
| OthAg | 0 | 5 | 2 | 7 | 0.5% | 7 | 0.7% |
| ServAg | 0 | 6 | 0 | 6 | 0.4% | 6 | 0.6% |
| Forestry | 112 | 103 | 0 | 215 | 15.4% | 103 | 10.5% |
| Fishing | 0 | 0 | 1 | 1 | 0.1% | 1 | 0.1% |
| Mining | 0 | 1 | 0 | 1 | 0.1% | 1 | 0.1% |
| FoodPrd | 0 | 0 | 4 | 4 | 0.3% | 4 | 0.4% |
| Wine | 0 | 0 | 0 | 1 | 0.0% | 1 | 0.1% |
| WdPaper | 295 | 1 | 0 | 297 | 21.3% | 1 | 0.1% |
| OthMan | 0 | 21 | 4 | 25 | 1.8% | 25 | 2.6% |
| Utilities | 0 | 3 | 3 | 6 | 0.4% | 6 | 0.6% |
| BldgCon | 0 | 9 | 2 | 12 | 0.8% | 12 | 1.2% |
| Trade | 0 | 211 | 133 | 344 | 24.6% | 344 | 34.8% |
| AccmRest | 0 | 12 | 37 | 49 | 3.5% | 49 | 4.9% |
| Tport | 0 | 170 | 8 | 178 | 12.8% | 178 | 18.1% |
| Comm | 0 | 5 | 5 | 10 | 0.7% | 10 | 1.0% |
| Finance | 0 | 11 | 11 | 23 | 1.6% | 23 | 2.3% |
| ODwell | 0 | 0 | 0 | 0 | 0.0% | 0 | 0.0% |
| BusServ | 0 | 73 | 16 | 88 | 6.3% | 88 | 9.0% |
| PAdmin | 0 | 9 | 3 | 12 | 0.8% | 12 | 1.2% |
| Educn | 0 | 6 | 23 | 29 | 2.1% | 29 | 2.9% |
| Health | 0 | 3 | 36 | 39 | 2.8% | 39 | 4.0% |
| RecServ | 0 | 2 | 11 | 13 | 1.0% | 13 | 1.4% |
| PersServ | 0 | 4 | 26 | 30 | 2.2% | 30 | 3.0% |
| TOTAL | 407 | 656 | 331 | 1,394 | 100.0% | 987 | 100.0% |
| MULTIPLIER | 1.0 | 1.6 | 0.8 | 3.4 | - | 2.4 | - |

[a] Employment impacts are a measured in terms of the number of full-time and part-time jobs.

Source: EconSearch analysis.

### 5.3.2 Total economic impact of primary industries, SW Vic, 2003/04

Estimates of the direct and indirect impact of forestry, timber processing, agriculture and the processing of agricultural products in the SW Vic region are provided in Table 5.8.

In aggregate, it is clear how important these primary industries are to the economy of SW Vic. In terms of contribution to GRP, forestry, timber processing, agriculture and the processing of agricultural products directly contributed 24 per cent of regional economic activity in 2003/04. This activity generated a further 20 per cent of GRP in flow-on effects, in total generating approximately 44 per cent of GRP. Total employment impacts were slightly more at 46 per cent of the regional total and the household income generated directly and indirectly by these primary industries comprised around 45 per cent of the regional total[19].

[19] Total household income in SW Vic in 2003/04 was estimated to be $1.3 billion.

Table 5.8 The direct and indirect impact of primary industries, SW Vic, 2003/04 [a]

| | Gross Value of Output [b] | Contribution to GRP | Employment | Household Income |
|---|---|---|---|---|
| | $m | $m | No. of jobs | $m |
| **Direct Impact of Primary Industries** | | | | |
| Sheep | 322.0 | 163.0 | 3,308.0 | 68.0 |
| Grains | 27.0 | 14.0 | 234.0 | 5.0 |
| Beef | 174.0 | 89.0 | 1,492.0 | 30.0 |
| Dairy | 229.0 | 91.0 | 1,795.0 | 65.0 |
| Other Livestock | 2.0 | 0.0 | 24.0 | 0.0 |
| Other Agriculture [c] | 8.0 | 6.3 | 281.0 | 6.3 |
| Forestry | 54.2 | 15.9 | 215 | 11.5 |
| Food Products | 773.0 | 155.0 | 1,496.0 | 81.0 |
| Wine | 20.0 | 7.0 | 50.0 | 2.0 |
| Wood and Paper Products | 92.3 | 32.4 | 297 | 15.3 |
| **Total Direct Impact** | | **573.7** | **9,192** | **284.2** |
| Proportion of regional total | | 23.7% | 23.8% | 22.0% |
| **Indirect Impact of Primary Industries** | | | | |
| Trade | | 102.1 | 3,178 | 82.9 |
| Transport | | 50.7 | 832 | 33.1 |
| Business Services | | 62.1 | 942 | 46.8 |
| Finance | | 31.9 | 285 | 16.6 |
| Other Manufacturing | | 14.5 | 176 | 7.2 |
| Utilities | | 23.9 | 117 | 5.6 |
| Accommodation, Restaurants and Cafes | | 15.7 | 513 | 10.3 |
| Communications | | 15.7 | 153 | 7.2 |
| Ownership of Dwellings | | 60.5 | - | - |
| Other sectors | | 102.3 | 2,362 | 82.7 |
| **Total Indirect Impact** | | **479.5** | **8,558** | **292.3** |
| Proportion of regional total | | 19.8% | 22.1% | 22.6% |
| **Total Direct plus Indirect Impact of Primary Industries** | | **1,053.2** | **17,750** | **576.5** |
| Proportion of regional total | | 43.6% | 45.9% | 44.6% |

[a] Primary industries include, for the purpose of this analysis, forestry, timber processing, agriculture and the processing of agricultural products.

[b] Flow-on (indirect) and total output impacts are not reported as there are problems with double counting which can give a misleading impression of the significance of individual industries. For example, the value of saw logs processed locally is included in both the wood and paper products and forestry sectors. If the two values were added together the plantation-gate value of saw logs would be included twice.

[c] Includes viticulture, horticulture and other agriculture.

Source: EconSearch analysis.

## 5.4 Economic Impacts in the Green Triangle Region

### 5.4.1 Economic impact of the timber industry in the Green Triangle region, 2003/04

Estimates of the economic impact of the forestry and timber processing industries in the Green Triangle regional economy are provided below in terms of contribution to GRP (Table 5.9) and employment (Table 5.10).

It is important to note that these estimates of economic impact are not a simple aggregation of the estimates for the component regions of SE SA and SW Vic. The broader Green Triangle regional economy is less reliant on imported goods and services than either SE SA or SW Vic because of the trade that occurs between these regions. Reduced expenditure on imported goods and services results in more local economic activity.

Estimates of the economic impact of the forestry and timber processing industries in the Green Triangle regional economy are provided below in terms of contribution to GRP (Table 5.9) and employment (Table 5.10).

- The direct contribution to GRP generated by the wood and paper products sector (from output valued at $840 million) was around $401 million in 2003/04 (Table 5.9).
- Associated with this was GRP in the forestry sector of over $114 million (from output valued at $214 million).
- The flow-on GRP to other sectors in the Green Triangle region summed to almost $263 million.
- The flow-ons were greatest in the trade ($53 million), transport ($44 million), ownership of dwellings ($40 million), business services ($25 million), other manufacturing ($14 million), utilities ($13 million) and finance ($13 million) sectors.
- Directly and indirectly, the timber industry (i.e. forestry and processing) contributed over $778 million to GRP for the Green Triangle regional economy in 2003/04, approximately 16 per cent of the total.
- Direct employment generated by the wood and paper products sector was around 3,400 and in the forestry sector approximately 830 in 2003/04 (Table 5.10).
- Flow-on employment to other sectors in the region as a result of timber industry activity summed to almost 4,600 jobs.
- The flow-ons were greatest in the trade (1,660), transport (750), business services (430), other manufacturing (290) and accommodation, cafes and restaurants (240) sectors.
- Directly and indirectly, the timber industry (i.e. forestry and processing) generated almost 8,800 jobs in the Green Triangle region in 2003/04, approximately 12 per cent of the total.

Table 5.9 The direct and indirect GRP impacts of forestry and timber processing, Green Triangle region, 2003/04 ($'000) [a]

| Sector | Final demand | Industrial support | Consumption induced | Total Impact | Proportion of total | Flow-on impacts | Proportion of flow-ons |
|---|---|---|---|---|---|---|---|
| Sheep | 0 | 848 | 740 | 1,588 | 0.2% | 1,588 | 0.4% |
| Grains | 0 | 26 | 175 | 202 | 0.0% | 202 | 0.1% |
| Beef | 0 | 111 | 1,308 | 1,419 | 0.2% | 1,419 | 0.4% |
| Dairy | 0 | 63 | 747 | 810 | 0.1% | 810 | 0.2% |
| OthLS | 0 | 6 | 78 | 85 | 0.0% | 85 | 0.0% |
| OthAg | 0 | 404 | 1,414 | 1,818 | 0.2% | 1,818 | 0.5% |
| ServAg | 0 | 661 | 175 | 836 | 0.1% | 836 | 0.2% |
| Forestry | 41,543 | 72,192 | 677 | 114,412 | 14.7% | 72,869 | 19.3% |
| Fishing | 0 | 91 | 596 | 686 | 0.1% | 686 | 0.2% |
| Mining | 0 | 1,251 | 297 | 1,547 | 0.2% | 1,547 | 0.4% |
| FoodPrd | 0 | 294 | 3,346 | 3,640 | 0.5% | 3,640 | 1.0% |
| Wine | 0 | 147 | 406 | 552 | 0.1% | 552 | 0.1% |
| WdPaper | 358,249 | 39,432 | 3,660 | 401,342 | 51.6% | 43,093 | 11.4% |
| OthMan | 0 | 11,082 | 2,419 | 13,501 | 1.7% | 13,501 | 3.6% |
| Utilities | 0 | 10,431 | 2,975 | 13,405 | 1.7% | 13,405 | 3.5% |
| BldgCon | 0 | 6,650 | 2,356 | 9,006 | 1.2% | 9,006 | 2.4% |
| Trade | 0 | 28,713 | 24,065 | 52,778 | 6.8% | 52,778 | 13.9% |
| AccmRest | 0 | 1,692 | 5,072 | 6,764 | 0.9% | 6,764 | 1.8% |
| Tport | 0 | 40,919 | 3,003 | 43,921 | 5.6% | 43,921 | 11.6% |
| Comm | 0 | 2,293 | 2,484 | 4,777 | 0.6% | 4,777 | 1.3% |
| Finance | 0 | 4,671 | 8,644 | 13,315 | 1.7% | 13,315 | 3.5% |
| ODwell | 0 | 0 | 39,228 | 39,228 | 5.0% | 39,228 | 10.4% |
| BusServ | 0 | 19,784 | 5,146 | 24,930 | 3.2% | 24,930 | 6.6% |
| PAdmin | 0 | 2,489 | 857 | 3,345 | 0.4% | 3,345 | 0.9% |
| Educn | 0 | 1,569 | 4,940 | 6,509 | 0.8% | 6,509 | 1.7% |
| Health | 0 | 672 | 7,325 | 7,997 | 1.0% | 7,997 | 2.1% |
| RecServ | 0 | 649 | 2,943 | 3,592 | 0.5% | 3,592 | 0.9% |
| PersServ | 0 | 862 | 5,460 | 6,322 | 0.8% | 6,322 | 1.7% |
| TOTAL | 399,792 | 248,000 | 130,536 | 778,328 | 100.0% | 378,536 | 100.0% |
| MULTIPLIER | 1.0 | 0.6 | 0.3 | 1.9 | - | 0.9 | - |

[a] GRP impacts are a measure of contribution to gross regional product. Estimates are in 2003/04 dollars.

Source: EconSearch analysis.

Table 5.10 The direct and indirect employment impacts of forestry and timber processing, Green Triangle region, 2003/04 (no. of jobs) [a]

| Sector | Final demand | Industrial support | Consumption induced | Total Impact | Proportion of total | Flow-on impacts | Proportion of flow-ons |
|---|---|---|---|---|---|---|---|
| Sheep | 0 | 20 | 17 | 37 | 0.4% | 37 | 0.7% |
| Grains | 0 | 0 | 1 | 1 | 0.0% | 1 | 0.0% |
| Beef | 0 | 2 | 23 | 25 | 0.3% | 25 | 0.5% |
| Dairy | 0 | 1 | 16 | 17 | 0.2% | 17 | 0.3% |
| OthLS | 0 | 0 | 2 | 3 | 0.0% | 3 | 0.0% |
| OthAg | 0 | 8 | 16 | 25 | 0.3% | 25 | 0.4% |
| ServAg | 0 | 16 | 4 | 20 | 0.2% | 20 | 0.4% |
| Forestry | 274 | 550 | 5 | 829 | 9.5% | 555 | 10.1% |
| Fishing | 0 | 2 | 13 | 16 | 0.2% | 16 | 0.3% |
| Mining | 0 | 5 | 1 | 6 | 0.1% | 6 | 0.1% |
| FoodPrd | 0 | 5 | 54 | 58 | 0.7% | 58 | 1.1% |
| Wine | 0 | 1 | 3 | 4 | 0.0% | 4 | 0.1% |
| WdPaper | 2,997 | 327 | 30 | 3,354 | 38.3% | 357 | 6.5% |
| OthMan | 0 | 235 | 50 | 285 | 3.3% | 285 | 5.2% |
| Utilities | 0 | 59 | 16 | 75 | 0.9% | 75 | 1.4% |
| BldgCon | 0 | 78 | 29 | 106 | 1.2% | 106 | 1.9% |
| Trade | 0 | 900 | 755 | 1,655 | 18.9% | 1,655 | 30.1% |
| AccmRest | 0 | 59 | 176 | 235 | 2.7% | 235 | 4.3% |
| Tport | 0 | 697 | 51 | 748 | 8.5% | 748 | 13.6% |
| Comm | 0 | 26 | 28 | 54 | 0.6% | 54 | 1.0% |
| Finance | 0 | 42 | 78 | 120 | 1.4% | 120 | 2.2% |
| ODwell | 0 | 0 | 0 | 0 | 0.0% | 0 | 0.0% |
| BusServ | 0 | 340 | 88 | 427 | 4.9% | 427 | 7.8% |
| PAdmin | 0 | 45 | 16 | 61 | 0.7% | 61 | 1.1% |
| Educn | 0 | 38 | 121 | 159 | 1.8% | 159 | 2.9% |
| Health | 0 | 18 | 192 | 210 | 2.4% | 210 | 3.8% |
| RecServ | 0 | 12 | 55 | 67 | 0.8% | 67 | 1.2% |
| PersServ | 0 | 23 | 144 | 167 | 1.9% | 167 | 3.0% |
| TOTAL | 3,271 | 3,508 | 1,986 | 8,765 | 100.0% | 5,495 | 100.0% |
| MULTIPLIER | 1.0 | 1.1 | 0.6 | 2.7 | - | 1.7 | - |

[a] Employment impacts are a measured in terms of the number of full-time and part-time jobs.

Source: EconSearch analysis.

### 5.4.2 Total economic impact of primary industries, Green Triangle region, 2003/04

Estimates of the direct and indirect impact of forestry, timber processing, agriculture and the processing of agricultural products in the Green Triangle region are provided in Table 5.11. As above, note that these estimates of economic impact are not a simple aggregation of the estimates for the component regions of SE SA and SW Vic.

In aggregate, it is clear how significant these primary industries are to the economy of the Green Triangle region. In terms contribution to GRP, forestry, timber processing, agriculture and the processing of agricultural products directly contributed 34 per cent of regional economic activity in 2003/04. This activity generated a further 20 per cent of GRP in flow-on effects, in total generating approximately 54 per cent of GRP. Total employment impacts were slightly less at 53 per cent of the regional total and the household income generated directly and indirectly by these primary industries comprised around 51 per cent of the regional total[20].

[20] Total household income in the Green Triangle region in 2003/04 was estimated to be $2.4 billion.

Table 5.11 The direct and indirect impact of primary industries, Green Triangle region, 2003/04 [a]

| | Gross Value of Output [b] | Contribution to GRP | Employment | Household Income |
|---|---|---|---|---|
| | $m | $m | No. of jobs | $m |
| **Direct Impact of Primary Industries** | | | | |
| Sheep | 507.1 | 268.0 | 5,805.5 | 104.2 |
| Grains | 155.9 | 82.4 | 566.4 | 10.4 |
| Beef | 327.5 | 177.8 | 3,095.5 | 54.1 |
| Dairy | 291.1 | 117.3 | 2,373.0 | 78.1 |
| Other Livestock | 11.2 | 2.1 | 86.0 | 1.3 |
| Other Agriculture [c] | 274.0 | 160.9 | 1,793.5 | 45.7 |
| Forestry | 213.8 | 114.4 | 828.8 | 40.6 |
| Food Products | 972.0 | 206.2 | 2,391.5 | 114.4 |
| Wine | 519.1 | 134.1 | 1,092.1 | 33.0 |
| Wood and Paper Products | 839.9 | 400.7 | 3,348.7 | 160.8 |
| **Total Direct Impact** | | **1,664.0** | **21,381** | **642.4** |
| Proportion of regional total | | 33.9% | 29.4% | 26.8% |
| **Indirect Impact of Primary Industries** | | | | |
| Trade | | 208.1 | 6,508 | 166.2 |
| Transport | | 103.5 | 1,743 | 73.6 |
| Business Services | | 107.9 | 1,754 | 80.6 |
| Finance | | 62.3 | 559 | 27.6 |
| Other Manufacturing | | 36.8 | 670 | 23.0 |
| Utilities | | 42.5 | 222 | 12.6 |
| Accommodation, Restaurants and Cafes | | 34.1 | 1,167 | 22.3 |
| Communications | | 26.9 | 285 | 13.3 |
| Ownership of Dwellings | | 132.6 | - | - |
| Other sectors | | 206.9 | 4,591 | 163.9 |
| **Total Indirect Impact** | | **961.7** | **17,497** | **583.2** |
| Proportion of regional total | | 19.6% | 24.0% | 24.3% |
| **Total Direct plus Indirect Impact of Primary Industries** | | **2,625.7** | **38,878** | **1,225.6** |
| Proportion of regional total | | 53.5% | 53.4% | 51.1% |

[a] Primary industries include, for the purpose of this analysis, forestry, timber processing, agriculture and the processing of agricultural products.

[b] Flow-on (indirect) and total output impacts are not reported as there are problems with double counting which can give a misleading impression of the significance of individual industries. For example, the value of saw logs processed locally is included in both the wood and paper products and forestry sectors. If the two values were added together the plantation-gate value of saw logs would be included twice.

Source: EconSearch analysis.

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## Appendix 1 Survey Covering Letter and Questionnaire

3 February 2005

«Title» «FirstName» «Surname»
«Company»
«Address1»
«Town» «Postcode»

Dear «Title» «Surname»

**The Economic Impact of the Timber Industry in the Green Triangle Region**

The Green Triangle Regional Plantations Committee has commissioned EconSearch Pty Ltd to undertake a study to assess the economic impact of the forest plantation and wood processing industries in South East South Australia and South West Victoria (i.e. the Green Triangle Region).

EconSearch undertook a similar study for the South East South Australia region in 2001 and the information has been a valuable tool for promoting the significance of the timber industry in the regional economy. In response to the development of substantial Blue Gum plantations in both South East South Australia and South West Victoria in recent years, the analysis is being updated and the scope widened to estimate the economic impact of the timber industry in the broader Green Triangle Region.

As part of the study, EconSearch is conducting a survey of firms involved in the forest plantation and wood processing industries in the Green Triangle Region. A short questionnaire is attached. The survey will provide information that is not available from published sources. It will enable EconSearch to estimate the regional impacts of the timber industry, both direct and flow-on effects, in terms of a range of indicators (e.g. employment, contribution to regional income, etc.).

In order to maintain the confidentiality of data from individual organisations, the final report will present results in aggregated forms only. All completed questionnaires will be held by EconSearch, treated in confidence and subsequently destroyed. The Green Triangle Regional Plantations Committee will not have access to, nor will they seek to obtain access to, the completed questionnaires.

A representative from EconSearch (Matthew Ferris) will contact you by phone shortly to ensure that you have received the questionnaire and to see if you require any assistance in interpreting it. In the meantime, if you have any queries with regard to the project or the questionnaire, please contact me on (08) 8273 1050 or Matthew Ferris at EconSearch on (08) 8357 9560.

I would be grateful if you would support this study by completing the attached questionnaire and returning it to EconSearch in the reply paid envelope by **14 February 2005.** The questionnaire can be provided in electronic form (via email), if preferred.

Yours sincerely,

John D. Kellas
Executive Officer

**EconSearch Pty Ltd**
PO Box 746
Unley Business Centre SA 5061
Tel: 08 8357 9560
Fax: 08 8357 2299
Email:
matferris@econsearch.com.au
Contact: Matthew Ferris or Julian Morison

**CONFIDENTIAL**

## GREEN TRIANGLE TIMBER INDUSTRY ECONOMIC IMPACT STUDY

**Please read this first:**

- If exact figures are not available, please provide careful estimates.
- Please report all monetary values in ***thousands of dollars*** ($'000).

### 1. Company Information

Company Name:_____

Timber industry activities (*e.g. plantation forestry and/or timber processing*):

_____

Contact Name:_____

### 2. Employment

a) Please indicate the number of employees and associated costs incurred in plantation forestry and/or timber processing activities by region: (*average for financial year 2003/04, including working proprietors, managers, directors*):

| Employment | Region | |
|---|---|---|
| | South East South Australia | South West Victoria |
| Full time (no. jobs) | | |
| Part time (no. full time equivalent jobs) | | |
| Total wages and salaries ($'000) (*including super, etc.*) | | |

b) Please indicate the proportion of employment in:

a. plantation forestry and related activities (%)_____

_____

b. timber processing and related activities (%)_____

_____

c) If your firm out-sources or contracts significant services that are integral to your day-to-day operations, could you please provide estimates of **employment** (in 2003/04) in those firms and the **nature of the goods and/or services provided** by those firms.

_____

_____

## 3. Other Costs

a) Please indicate the magnitude of other costs incurred in the course of conducting your timber industry operations in 2003/04 (e.g. fuel, R&M, transport, contracted services) by region:

| **Expenditure ($'000)** | South East South Australia | South West Victoria |
|---|---|---|
| Saw logs | | |
| Harvesting | | |
| Fuel | | |
| Repairs and maintenance | | |
| Contracted services | | |
| Transport | | |
| Insurance | | |
| Other | | |
| | | |

b) Please indicate the proportion of these costs incurred in:

a. plantation forestry and related activities (%)_____

_____

b. timber processing and related activities (%)_____

_____

## 4. Earnings

Please break down your timber industry related earnings by region and by broad category and estimate market share for each.

| | South East South Australia | | South West Victoria | |
|---|---|---|---|---|
| | Revenue, 2003/04 ($'000) | Market share (%) | Revenue, 2003/04 ($'000) | Market share (%) |
| Saw logs | | | | |
| Woodchips | | | | |
| Boards (MDF, LVL, etc) | | | | |
| Paper, paper products, etc | | | | |
| Other (please specify) | | | | |
| | | | | |
| | | | | |
| TOTAL | | | | |

Thank you for your time and cooperation. Please return the questionnaire by **14 February 2005** in the reply paid envelope **OR** Fax: (08) 8357 2299.

If you have any queries don't hesitate to contact Matthew Ferris or Julian Morison on (08) 8357 9560 or matferris@econsearch.com.au.

## Appendix 2 Glossary of Input-Output Terminology

***Consumption-induced effects*** are additional output, employment and income resulting from re-spending by households that receive income from employment in direct and indirect activities. Consumption-induced effects are sometimes referred to as "induced effects".

***Contribution to gross state/regional product*** is calculated as the value of output less the cost of goods and services (including imports) used in producing the output. It represents payments to the primary inputs of production (labour, capital and land). Contribution to GSP/GRP is consistent with standard measures of economic activity, such as gross domestic, State or regional product and it provides an assessment of the net contribution to regional economic growth of a particular enterprise or activity.

***Direct effects*** are the initial round of output, employment and income generated by an economic activity.

***Employment*** is the number of working proprietors, managers, directors and other employees, in terms of the number of full-time equivalent jobs.

***Flow-on effects*** are the sum of the production-induced effects and the consumption-induced effects.

***Household income*** is wages and salaries and other payments to labour including overtime payments and income tax, but excluding payroll tax.

***Input-output analysis*** is an accounting system of inter-industry transactions based on the notion that no industry exists in isolation.

***Input-output table*** is a transactions table that illustrates and quantifies the purchases and sales of goods and services taking place in an economy at a given point in time. It provides a numerical picture of the size and shape of the economy and its essential features. Each item is shown as a purchase by one sector and a sale by another, thus constructing two sides of a double accounting schedule.

***Multiplier*** is an index (ratio) indicating the overall change in the level of activity that results from an initial change in economic activity. They are an indication of the strength of the linkages between a particular sector and the rest of the regional economy. They can be used to estimate the impact of a change in that particular sector on the rest of the economy.

***Other Final Demand*** includes government expenditure, private and public sector investment (gross fixed capital formation) and change in stocks (inventories).

***Other Value Added*** includes gross operating surplus and all taxes, less subsidies.

***Output*** is gross revenue of goods and services produced by commercial organisations plus gross expenditure by government agencies.

***Production-induced effects*** are additional output, employment and income resulting from re-spending by firms that receive income from the sale of goods and services to firms undertaking, for example, agricultural activities. Production-induced effects are sometimes referred to as "indirect effects".

***Total impact*** is the sum of the direct effects and the flow-on effects.

***Type I multiplier*** is calculated as (direct effects + production-induced effects)/direct effects.

***Type II multiplier*** is calculated as (direct effects + production-induced effects + consumption-induced effects)/direct effects.

# Appendix 3 Input-Output Methodology

### Overview of Input-Output Analysis

Input-output analysis provides a comprehensive economic framework that is extremely useful in the resource planning process. Broadly, there are two ways in which the input-output method can be used.

First, the input-output table provides a numerical picture of the size and shape of the economy and its essential features. The input-output transactions table can be used to describe some of the important features of an economy, the interrelationships between sectors, and the relative importance of the individual sectors.

Second, input-output analysis provides a standard approach for the estimation of the economic impact of a particular activity. The input-output model is used to calculate industry multipliers that can then be applied to various development scenarios.

### Linkages between sectors

The standard approach for the estimation of the regional economic impact of a particular activity, such as timber production, is to employ *input-output analysis.* The input-output model conceives the economy of the region as being divided up into a number of sectors, and this allows the analyst to trace expenditure flows.

To illustrate this, consider the example of a timber mill that, in the course of its operation, purchases goods and services from other sectors. These goods and services would include saw logs, machinery repairs and maintenance services and, of course, labour. The direct employment created is regarded in the model as an expenditure flow into the household sector, which is one of several non-industrial sectors recognised in the input-output model.

Upon receiving expenditure by the timber mill, the other sectors in the state economy engage in their own expenditures. For example, as a consequence of winning a contract for work with a timber mill, a machinery maintenance firm buys materials from its suppliers and labour from its own employees. Suppliers and employees in turn engage in further expenditure, and so on. These *indirect effects*, as they are called, are part of the impact of the timber mill on the regional or state economy. They must be added to the *direct effects* (which are expenditures made in immediate support of the timber mill itself) in order to arrive at a measure of the total impact of the timber mill.

It may be thought that these indirect effects go on indefinitely, and that their amount adds up without limit, the presence of *leakages*, however, prevents this from occurring. In the context of the impact on a *regional or state* economy, an important leakage is expenditure on imports, that is, products or services that originate from *outside the region, state or country* (e.g. milling machinery).

Thus some of the expenditure for imports to the region is lost to the local economy. Consequently, the indirect effects get smaller and smaller in successive expenditure rounds, due to this and other leakages. Hence the total expenditure created in the local economy is limited in amount, and so (in principle) it can be measured.

The performance of the input-output analysis calculations require a great deal of information. The analyst needs to know the magnitude of various expenditures and where they occur. Also needed is information on how the sectors that receiving this expenditure share *their* expenditures among the various sectors from whom they buy, and so on for the further expenditure rounds.

In applying the input-output model, the standard procedure is to determine the direct or first-round expenditures only. No attempt is made to pursue such inquiries on expenditure in subsequent rounds, not even (for example) to trace the effects in the local economy on household expenditures by timber mill employees on food, clothing, entertainment, and so on, as it is impracticable to measure these effects for an individual case, here the timber mill.

The input-output model is instead based on a set of assumptions about constant and uniform proportions of expenditure. If households in general in the local economy spend (say) 13.3 per cent of their income on food and non-alcoholic beverages, it is assumed that those working in timber mills do likewise. Indeed, the effects of all expenditure rounds after the first are calculated by using such standard proportions (*multiplier* calculations).

**Multipliers**

Multipliers are an indication of the strength of the linkages between a particular sector and the rest of the regional economy. As well, they can be used to estimate the impact of a change in that particular sector on the rest of the economy. As noted above, detailed explanations on calculating input-output multipliers (and the underlying assumptions) are provided in any regional economics or input-output analysis textbook (see for example Jensen and West (1986)). Suffice to note that they are calculated through a routine set of mathematical operations based on coefficients derived from the input-output transactions table.

**Input-output transactions table**

The structure and linkages of a local economy can be described with the aid of input-output analysis. Input-output analysis, as an accounting system of inter-industry transactions, is based on the notion that no industry exists in isolation.

This assumes, within any economy, each firm depends on the existence of other firms to purchase inputs from, or sell products to, for further processing. The firms also depend on final consumers of the product and labour inputs to production. An input-output transactions table is a convenient way to illustrate the purchases and sales of goods and services taking place in an economy at a given time.

Input-output tables provide a numerical picture of the size and shape of the economy and its essential features. Products produced in the economy are aggregated into a number of groups of industries and the transactions between them recorded in the transactions table. The rows and columns of the input-output table can be interpreted in the following way:

- The rows of the input-output table illustrate sales for intermediate usage (to other firms) and for final demand (consumers, exports, capital formation).

- The columns show the origin of the inputs and hence the purchases made at that time (labour, capital and intermediate inputs).

- Each item is shown as a purchase by one sector and a sale by another, thus constructing two sides of a double accounting schedule.

In summary, the input-output transactions table can be used to describe some of the important features of a regional economy, the interrelationships between sectors, and the relative importance of the individual sectors. The table is also used for the calculation of sector multipliers and the estimation of economic impacts arising from some change in the local economy.