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Plantations, Jobs & Investment in Regional NSW

*A socio-economic analysis of
private forestry in the
Bombala region.*



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Executive summary

THIS STUDY PROVIDES a socio-economic analysis of the impact a single private forestry and processing company, Willmott Forests Limited, has on the Bombala region of south-eastern New South Wales.

Willmott Forests has been operating in the Bombala region of south-eastern New South Wales for over 20 years. In that time it has progressed from being a softwood plantation company into a fully integrated forestry business, responsible for plantation establishment, management and downstream timber processing.

The company manages some 18 000 hectares of plantation estate in the Bombala region, employs over 135 people from the Bombala region, and produces output of \$16 million per year from its sawmills.

Agriculture, forestry and fishing are the most significant source of employment in the Bombala region. Local employment depends heavily on these industries especially compared with state and south-east region averages.

However, in recent decades the Bombala region has experienced a decline in its population, with some industries scaling back their operations or even leaving the region. Declining commodity prices and the prolonged drought have contributed to a depression in agricultural activity. Farm incomes in the region have also fallen over the last decade despite signs of a more recent upturn. The average age of farmers in New South Wales is currently 58, with many in the Bombala region reaching retirement age, selling their properties and retiring outside of the region. As a result farm consolidation or conversion to alternative land uses such as forestry is on the increase. Net migration of the region's population has been strongest in the 10–19 age cohort, signalling young people seeking more opportunities elsewhere.

The local timber industry is an important contributor to the maintenance of medical, educational, retail services and other services within the region. However, some services in the Bombala LGA are not particularly resilient,

and are vulnerable to decline if regional employment levels are reduced further.

In contrast to the regional trend, Willmott Forests has continued to increase its employment and expenditure in the region as its operations have expanded. In fact, without Willmott Forests' presence there would have been further population decline, with more people leaving the region in search of employment, resulting in an adverse effect on the level of services provided within the region.

There is also currently an undersupply of long term accommodation available, particularly rental property, and housing shortages appear to be deterring some workers from taking up work and moving to Bombala.

Willmott Forests' activities generate significant economic benefits to the Bombala region. They include the following.

- Willmott Forests' Forestry Operations employs 35 people and contributed \$2.3 million to the community in 2003-04, as well as paying \$522 000 in state and local taxes. This is equivalent to \$14 914 per employee.
- In its timber Processing Operations, Willmott Forests provides employment for over 100 people – most of whom live in the Bombala LGA. The employment opportunities provided by Willmott Forests in the local region are significant particularly given its acquisition of the structural sawmill which was in receivership.
- The combined Forestry and Processing Operations injected a total of \$8 million to the Bombala regional economy in 2003-04 alone.
- The Company has planted most of New South Wales' new softwood plantations since 1999, most of which has been in the Bombala region.
- The Company's Processing Plants currently demand timber from Forests NSW. These licences avoid the need for Forests NSW to find other markets for its plantation harvests. Such alternative markets – more distant from Bombala – would potentially involve lower prices for products compared with that purchased by Willmott Forests.
- Willmott Forests adds to the training opportunities available to the Bombala region's youth through the vocational forestry industry course being offered at the year 11 and 12 levels.
- The Company offers a work experience program for Bombala High School students, and is facilitating the development of 'School based Industry links' to ensure it provides greater opportunities for those seeking employment within the industry.

- Willmott Forests is active in supporting local community initiatives through sponsorships, other funding support, and by providing a recognised bushfire brigade.

If Willmott Forests had not purchased the structural timber sawmill, 36 jobs would have been lost in the region. This size of job losses is similar to that experienced after the hardwood mill in Bombala closed which impacted heavily on the local economy.

Maintaining this flow of benefits is of critical importance to a region that has experienced population decline.

In terms of land production value, the agricultural sector in Bombala produced approximately \$138 of output per hectare compared with \$166 per hectare in estimated gross value of production by Willmott Forests' plantation business.

Further to this, forestry is more labour intensive than local agriculture, providing 2.5 jobs for every 1000 hectares of plantation relative to 1.8 jobs for every 1000 hectares of land supplied by the agricultural sector.

An upward shift in the scale of local softwood Processing Operations, combined with the expansion of plantation activity, supplying sawlogs and pulpwood would assist in creating a 'virtuous circle' of integrated forestry and forest product activity in the Bombala region. This 'virtuous circle' would be further enhanced by integrating pulpwood and residue processing which would result in a shift in costs, increasing profitability. Increased plantation size would play a part in such a shift.

Regional economies with a significant forestry and forest product base depend on sustainable wood flows to underpin investment decisions in mill upgrades and new mill establishment.

If regional wood security is not enhanced through net additional plantings, the region faces risks of foregone or postponed expansionary processing investment and jobs growth.

Expansion of private plantations of a further 13 000 plus hectares, as is planned by Willmott Forests, will be justifiable given the synergies they allow. Expansion of Processing Operations integrated with the use of pulp logs and mill residues to produce panel board products, would provide numerous opportunities.

Whilst there are no firm markets yet established in carbon credits in Australia, any policy change that saw ratification of the Kyoto Protocol or the introduction of a carbon tax and offsets regime in Australia would rapidly generate sequestration demands. Even moderate prices for carbon

credits would expand economic plantation areas beyond those planned by Willmott Forests.

1

Introduction

THE RELATIVE MERITS OF THE EXPANSION OF FORESTRY related economic activity in south-eastern Australia is a subject of active debate. Any environmental and other issues associated with the desirability of plantation timber activity in the region need to be seen in the context of the benefits that this activity is having on the regional economy and its population compared with alternatives. The Bombala region is in south-eastern New South Wales and the impact on it of a single private sector forestry and milling enterprise is the subject of this study.

Willmott Forests

Willmott Forests has been operating in the Bombala region of south eastern New South Wales since 1982. Over its 22 years in the region, Willmott Forests has moved from being a softwood (*Pinus radiata*) plantation company to a fully integrated forestry company. Activities undertaken by Willmott Forests span the full spectrum of forestry activities, encompassing everything from plantation establishment and management, to downstream wood processing at its recently acquired Bombala sawmills.

Willmott Forests was founded in 1979 and has been involved in forestry management since 1980. In December 2000, Willmott Forests listed on the Australian Stock Exchange, and in April 2004 had a market capitalisation of around \$131 million (Taylor Collison 2004).

During the 2002-03 financial year, Willmott Forests became a fully integrated forestry company through the acquisition of two local sawmills belonging to Austral Softwoods and Prime Pine. The diversification into downstream timber processing has improved the already positive outlook for Willmott Forests through the opening up of additional revenue streams. Previously, Willmott Forests' revenue had been reliant on tree growing and managed investment schemes (MIS) for small investors, professional investment products and wholesale funds for institutions and super-annuation investors. Willmott Forests anticipates that 40-50 per cent of future revenues will come from its timber processing activities (Hopkins 2003).

Today, Willmott Forests manages over 18 000 hectares of plantation estate in the Bombala region, employs over 135 people from the Bombala region, and produced output of almost \$15.9 million from its sawmills in 2003-04. Willmott Forests continually ranks as one of Australia's top performing companies in terms of environmental management, social engagement and corporate governance. This ranking is determined by Corporate Monitor, a reviewer of the non-financial activities of Australian companies and socially responsible investments.

This report

Over the last decade, the Bombala region has experienced a decline in population, with some industries leaving the region and some farm owners of a retirement age leaving the area. There has been some depression of agricultural activity given prolonged drought conditions and declining commodity prices, which have only recently corrected. During this time, Willmott Forests, the vertically integrated forestry enterprise and subject of this report, increased its employment and expenditure in the region as its business expanded. The analysis that follows indicates that without Willmott Forests' presence it is likely that there would have been further population decline, with more people leaving the region in search of employment opportunities. This would have had negative flow on effects for the level of services provided in the region.

Looking ahead, the presence and expansion of Willmott Forests' activities offer one of the main prospects for the 'timber economy' of the Bombala region to reach the critical size needed to take advantage of the economies of scale and synergies between different timber growing and processing activities.

Willmott Forests have commissioned the Centre for International Economics to undertake an assessment of the social and economic significance of its operations in the Bombala region of New South Wales.

The report is structured as follows. The socio-economic profile of the Bombala region is established in chapter 2. Aspects considered include population growth, education and skill levels, industry profile, employment and unemployment, and income. The socio-economic profile will enable context to be given to the contribution of Willmott Forests to the region. In chapter 3 the socio-economic contribution of Willmott Forests to the Bombala region is evaluated. In chapter 4 we consider the likely future contribution of Willmott Forests' activities on the economic and social profile of the Bombala region.

2

Socio-economic profile of Bombala

THE BOMBALA LOCAL GOVERNMENT AREA (LGA) had a resident population of 2468 at the 2001 census. This was a decline of 17 per cent from 3000 in the 1991 census (ABS 2003a). Bombala's population decline is in sharp contrast to the increase in New South Wales' population by 10 per cent over the same period. The Bombala LGA includes the townships of Bombala and Delegate and communities of Bibbenluke, Ando, Cathcart, Craigie, Mila and Corrowong.

Willmott Forests operates in an area which has experienced demographic decline

Factors influencing the decline in the local population have been the exit of the hardwood industry, difficulties experienced by the farming sector, and many farmers of a retirement age selling their land and moving from the Bombala shire to coastal areas. The closure of wool businesses and hardwood industry has led to the relocation of workers and their families to larger population centres such as Canberra and Bega in search of work (Southern Area Health Service (SAHS) 2002). It has been estimated that 40 jobs were lost in the regional area solely due to the departure of the hardwood industry. The movement of whole families would have converted these job loss figures into more significant population loss. At the same time there is anecdotal evidence of an ageing farming population undergoing some retirement and movement to coastal locations. The population decline has also had consequences for the level and range of local services provided, which will be discussed later.

It is into this region of downward population dynamic that Willmott Forests has injected investment in softwood plantation and processing. The decline has occurred despite the presence of Willmott Forests. However, it is likely that a greater decline would have taken place had Willmott Forests not established a presence in the region. And creation of regional employment opportunities by Willmott Forests have also occurred in the

last few years through the further expansion of its plantation business and acquisitions of downstream processing facilities that may not yet be captured by available data (see chapter 3).

Finding

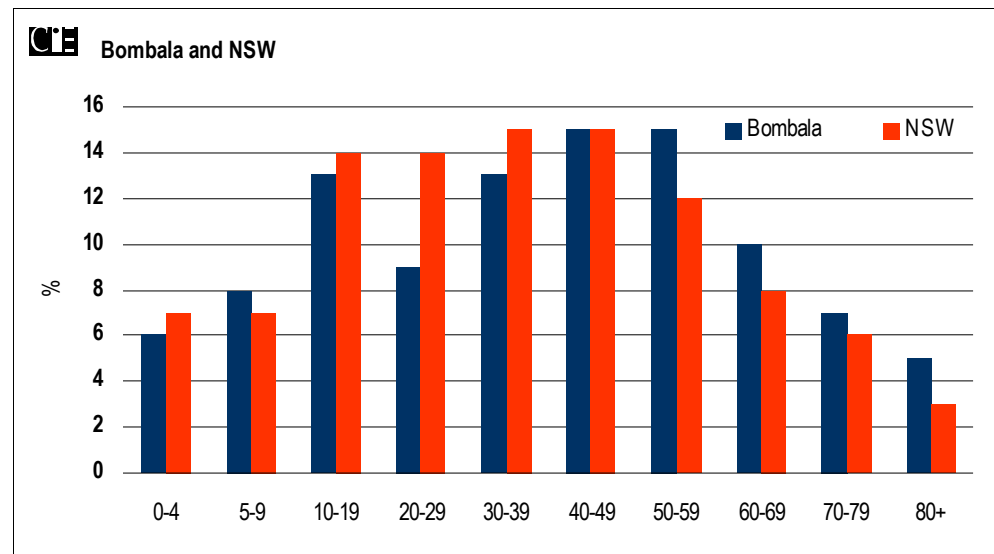
Bombala's population has continued to decline. The departure of the hardwood and the scaling back of other industries has had a significant impact on Bombala's population. Without Willmott Forests' contribution to the local economy, the population downturn may have accelerated.

Population is concentrated in working aged groups

The demographic profile of Bombala LGA demonstrated in chart 2.1 indicates that the population is concentrated in the 40-49 and 50-59 working age cohorts. The Bombala LGA age structure shows clear differences from the state as a whole. The proportions of Bombala LGA's population in the 10-19 and particularly the post-teenage age groups of 20-29 are lower than that of New South Wales. This can often be the result of outward migration, with young people looking for opportunities in other larger towns and cities (see later discussion).

The Bombala LGA also has a greater proportion of its population aged over 50 in comparison with New South Wales.

2.1 Age distribution — Bombala and New South Wales 2001



Data sources: ABS (2003a) and ABS (2002b).

A picture of what age groups are migrating can be obtained by examining changes to the Bombala LGA's age profile. The 1996 age profile is depicted in table 2.2. Changes to a particular age cohort over the five years to the next census count will be reflected by natural ageing and births in the 0–4 cohort, deaths, and net migration into and out of the region. Natural ageing implies that at the next census count, persons counted in the 0–4 cohort in 1996 will be recorded in the 5–9 cohort in 2001 and so on for other age groups. By deducting five years from each 2001 cohort and lining this up with the corresponding 1996 cohort, the effect of natural ageing can be netted out. This then provides a picture of net migration, which is illustrated in table 2.2.

2.2 Net migration by age group

Age cohort	1996	Adjusted ^a	Change in	Change in
	population	2001	population	population
	Number	Number	Number	Percentage
0-4	209	187	-22	-11%
5-9	201	319	118	59%
10-19	417	219	-198	-47%
20-29	301	316	15	5%
30-39	449	380	-69	-15%
40-49	442	363	-79	-18%
50-59	348	239	-109	-31%
60-69	253	181	-72	-28%

^a See text for discussion.

Sources: CIE estimates; ABS (2003a).

Data on recorded deaths at the LGA level were not available, so the estimates of net migration could overstate actual migration levels by the number of deaths in each age cohort. Net migration appears to be strongest in the 10–19 age group, which could reflect young people leaving the area in search for more education and work opportunities. There also appears to have been an outward migration of those aged 50–59. This could be influenced by the trend towards farmers retiring and moving to coastal areas. The number of those retiring and leaving the Bombala LGA may be greater than the number of retirees moving into the region. Or the census data from 2001 may not account for a perhaps more recent trend noted by some local service providers of people retiring into the Bombala LGA, having benefited financially from increases in property values in Sydney and coastal areas.

A review of the Bombala LGA's socio-economic trends by the South East Area NSW Consultative Committee (SEACC) found net migration of those in the post teenage groups between 1997 and 1991.

The danger for Bombala is that a rapidly falling number of young workers will lead to future skill shortages and a lack of labour force flexibility. This would compromise the Shire's ability to respond adequately in times of increasing economic and social change. (SEACC 2001, p. 3)

However, there may have been some halt to the outflow of those aged between 20 and 29, with a 5 per cent positive change in that age group between 1996 and 2001.

In brief, table 2.2 shows several important intercensal movements which have implications for the socio-economic coherence of the region. They are:

- significant outward migration of the 10–19 youth aged group;
- some departure of those in the working aged groups of 30–39 and 40–49; and
- sizeable outward migration of the retirement aged population.

Finding

The local population is concentrated in the 40-49 and 50-59 working age groups. Net migration of the Bombala LGA's population has been strongest in the 10-19 signalling young people seeking more opportunities elsewhere.

Limited local higher education and training opportunities

A greater proportion of the population in New South Wales have some form of tertiary education relative to that of the Bombala LGA (table 2.3). There are limited tertiary educational opportunities available in the region. Those that wish to enrol in most TAFE courses are required to travel to larger towns such as Cooma. The percentage of the population in this local government area with qualifications at the advanced diploma, diploma or certificate level is 20 per cent compared with 23 per cent for the rest of the state.

2.3 Comparison of qualification levels^a 2001

<i>Type of qualification</i>	<i>NSW</i>	<i>Bombala</i>
	%	%
Postgraduate Degree, Graduate Diploma or Graduate Certificate	3	1
Bachelor Degree	10	5
Advanced Diploma, Diploma or Certificate	23	20
Not stated/applicable	64	74

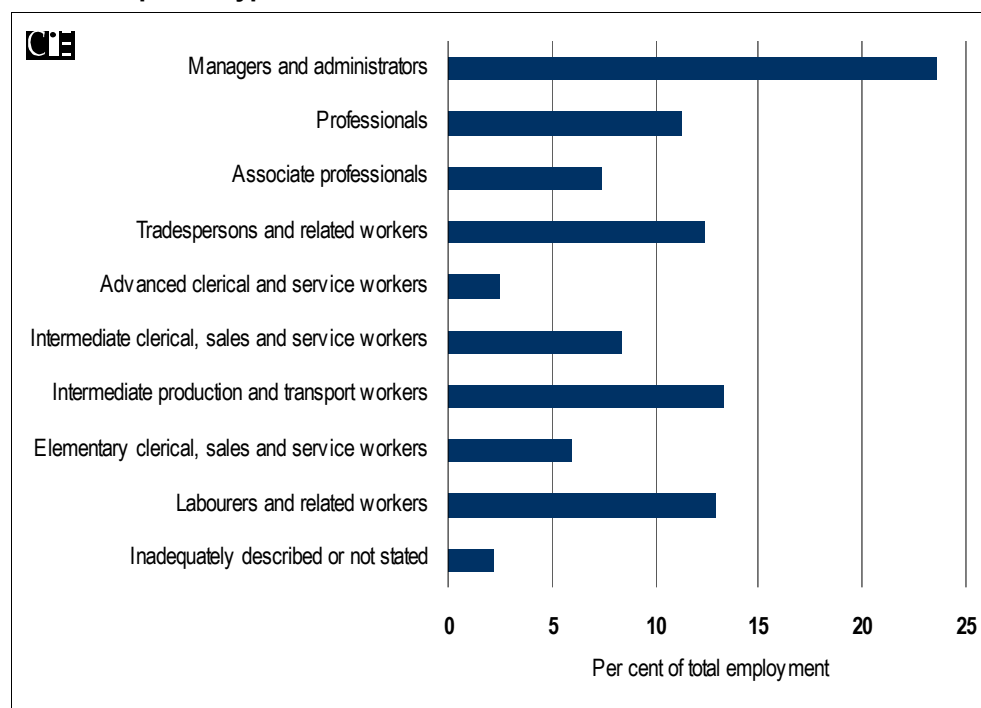
^a For the population aged 15 years and over.

Sources: ABS various.

Bombala's regional workforce has a variety of skills as depicted in chart 2.4. Approximately 24 per cent of the workforce is employed in a managerial or administrative position. Other significant occupation types in the Bombala region are tradespersons, labourers, production and transport workers and professionals. These types of skills are well suited to the agricultural and forestry businesses, which underpin the local economy.

However, the above statistics do not reflect whether there is a sufficient supply of workers with various skills to meet the region's demand. Both the local high school and some employers have found that there is an inadequate supply of skilled people in the local area. Some local businesses have experienced prolonged difficulties in obtaining local skilled employees and local people to hire for apprenticeships. Bombala High School is focusing on increasing the amount of vocational training offered to students. One example of this is the vocational forestry industry course being offered at the year 11 and 12 levels.

2.4 Occupation type in Bombala LGA 2001

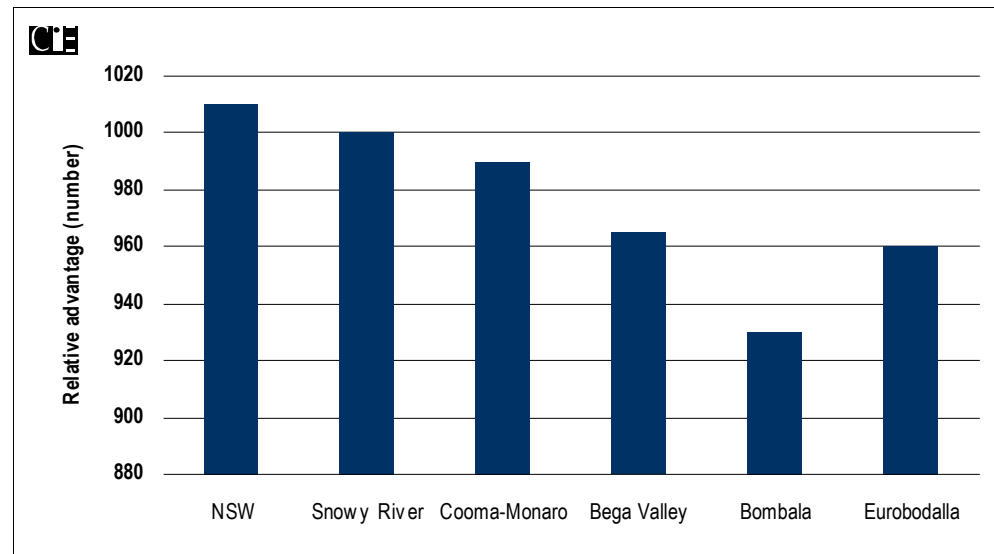


Data source: ABS (2003a).

The ABS socio-economic index of relative education and occupation advantage provides a useful indicator by which to assess how well the Bombala LGA's population fares compared with other nearby regions and the state average. Chart 2.5 shows that Bombala LGA's population is disadvantaged when comparing the education and occupation index to

that of its regional neighbours and the state. The Bombala LGA's score of 930 is low when compared with 1010 for the state of New South Wales. The lower score indicates that the proportion of people employed in a skilled occupation and the proportion of people with a higher qualification in the local area is lower than those areas that receive a higher index score.

2.5 Index of education and occupation by LGA 2001



Source: SAHS (2002).

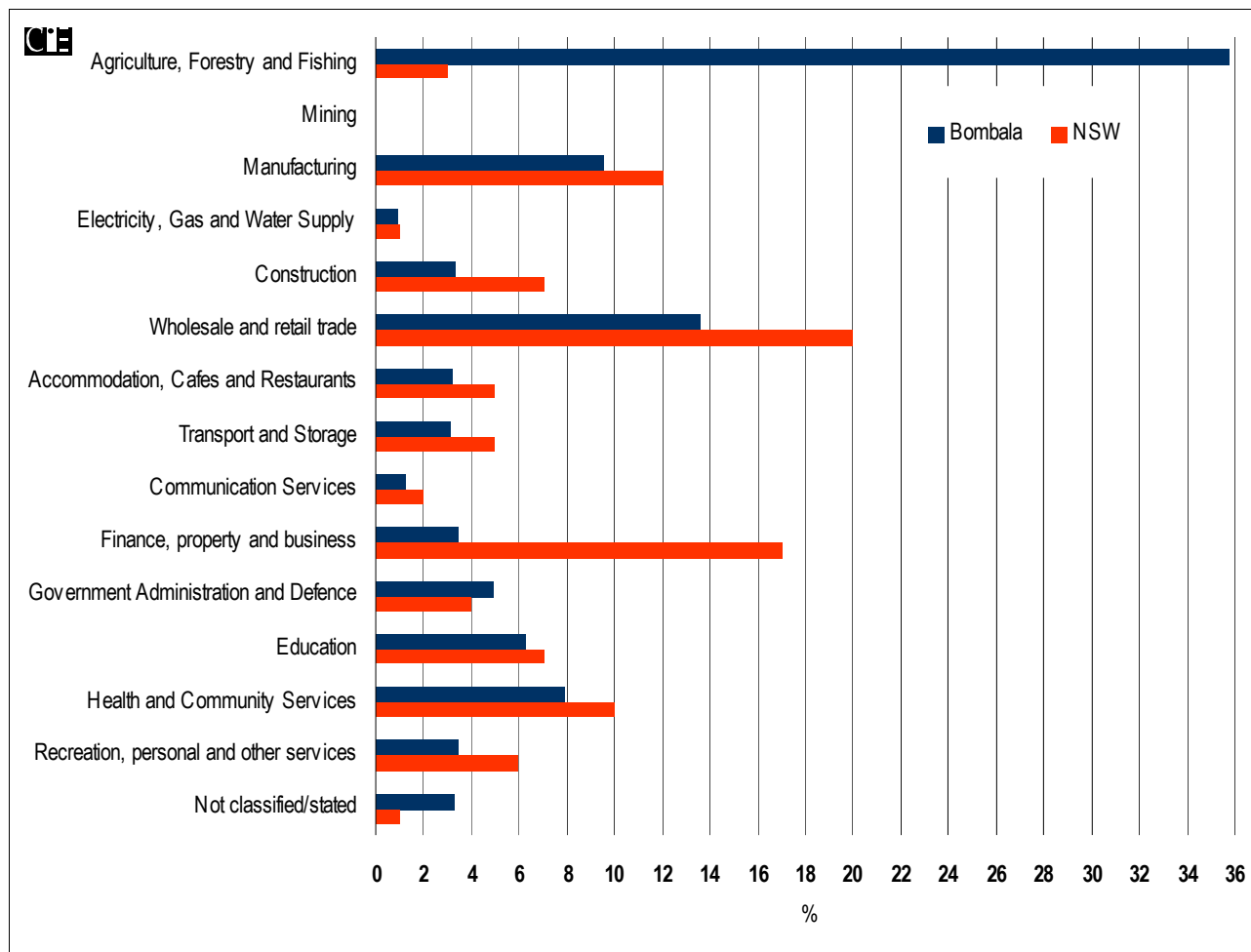
Finding

The local labour force has a variety of skills that are well suited to the agricultural and forestry businesses which underpin the local economy. However, several businesses cannot obtain enough suitably qualified staff to meet their needs.

Agriculture, forestry and fishing – dominates employment in Bombala

The agriculture, forestry and fishing industries provide by far the most significant source of employment in Bombala LGA (chart 2.6). This sector is much more dominant in the Bombala LGA compared with New South Wales as a whole providing 36 per cent of employment relative to 3 per cent for the state. The next largest employing industry sectors in the Bombala LGA are wholesale and retail trade, manufacturing (which includes wood products), health and community services, and education.

2.6 Employment by industry 2001



Data sources: ABS (2003a) and ABS (2003b).

At a south east regional level, agriculture, forestry and fishing is also a relatively dominant source of employment in Bombala at 37 percent of total employment compared with 13 per cent for Bega Valley, 10 per cent for Cooma Monaro and 6 per cent for Eurobodalla (SEACC 2001).

Following the trends of wider Australia, the industry profile of the Bombala LGA has changed over the last decade with some move towards service oriented business. Reflecting this move, there has been an increase in employment in wholesale and retail trade, recreation, personal and other services, and health and community services. Chart 2.7 shows employment in various industry sectors of Bombala LGA in 1991, 1996 and 2001. There have also been increases in the proportion of jobs sourced from the manufacturing and construction sectors.

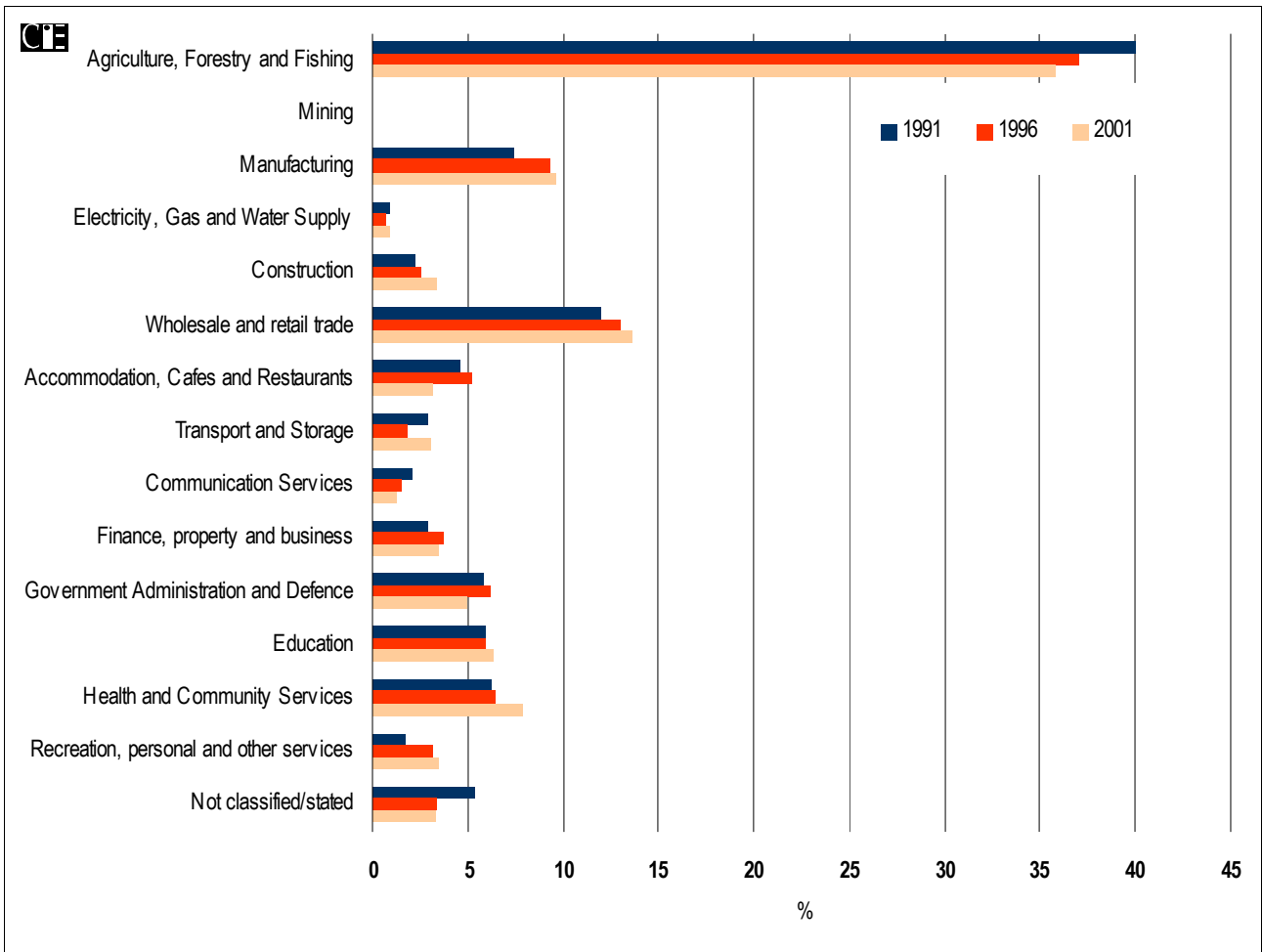
Despite still providing the greatest single source of employment, the proportion and number of jobs in the agriculture, forestry and fishing industries has fallen over time. These industries provided 513 jobs in 1991

which accounted for 40 per cent of total employment. In 2001, there were 384 jobs accounting for 36 per cent of employment. The closure of local hardwood businesses is considered to have led to considerable job losses.

Finding

Agriculture, forestry and fishing are the most significant source of employment in the Bombala region. Local employment depends heavily on these industries especially compared with state and south-east region averages.

2.7 Employment of the Bombala workforce by industry over time 1991-2001



Data source: ABS (2003a).

Unemployment has improved but this may reflect net migration

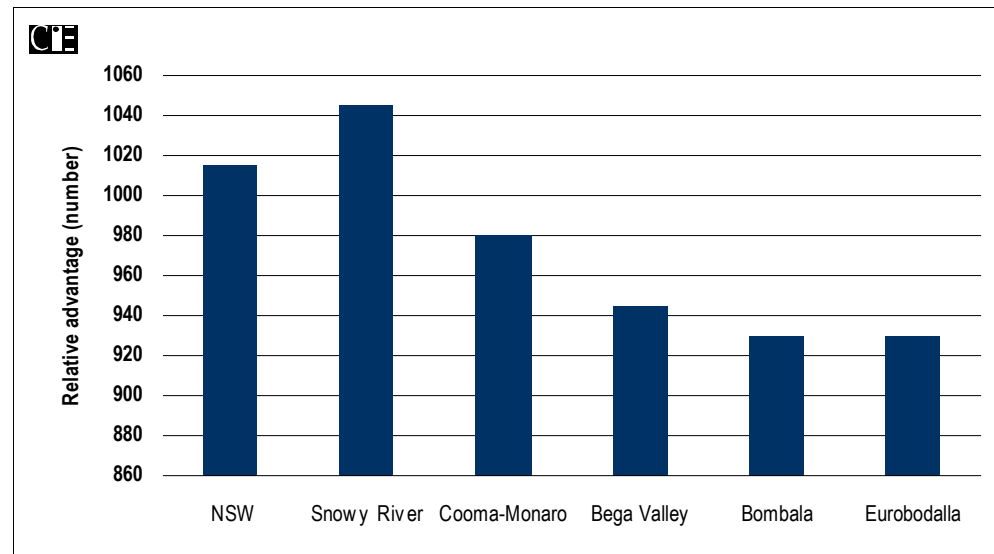
Measured unemployment in the Bombala LGA is lower than that of New South Wales. In 2001, unemployment in the Bombala LGA was 5.0 per cent and 7.2 per cent in New South Wales (ABS 2002a and ABS 2002b). According to the measured number, unemployment in Bombala improved, falling from 7.8 per cent in 1996 to 5.0 per cent in 2001 (ABS 2002a). This measured rate may understate actual unemployment in the region with out-migration of younger people influencing a reduction in the rate of unemployment (see earlier discussion).

Household income and economic well being lower than state averages

According to the 2001 census, the median weekly household income in Bombala LGA was lower than in New South Wales, at \$600-\$699 compared with \$800-\$999 (ABS 2003a and ABS 2003b).

The lower level of household income in the region is reflected in a broad indicator of well being, the ABS' socio-economic index of relative advantage. This index offers a high level barometer of the welfare of a location's population based on factors such as high income, tertiary education, home ownership and skilled occupations. According to this index for 2001, The Bombala LGA is one of the least advantaged areas compared with the state average and in the region.

2.8 Index of socio-economic advantage by LGA 2001



Data source: SAHS (2002).

Housing stocks appear to be limited

According to the ABS 2001 census data there were 1336 dwellings in the Bombala LGA, with 76 per cent of those occupied and 24 per cent unoccupied. Discussions with a local real estate agent and a range of businesses indicate that there is an undersupply of long term accommodation available, particularly rental property.

Housing purchase prices have also risen sharply over the last year. On average, house prices have increased by 20–40 per cent from the beginning to the end of 2003 (*Bombala Times*, 1 October 2003). A significant proportion of demand for residential properties in the Bombala LGA is coming from outside the local area including investors and people moving from larger cities seeking retirement in Bombala. This movement is a partial counter to the outward migration of Bombala LGA retirees to the coast and other areas. According to one local real estate agent:

...there were not enough good, well presented homes in Bombala and more potential rental tenants than rental homes. (*Bombala Times*, 1 October 2003)

The inadequate supply of housing appears to be having a negative impact on businesses ability to attract new workers, which has been experienced by local forestry and health services providers. One real estate agent commented that... 'When the next mill is built I don't know where the people will live' (*Bombala Times*, 1 October 2003).

This raises significant issues for the local planning authorities faced with decisions over the release and servicing of parcels of urban land. There is a need to balance the risks associated with premature development and related carrying costs with the deterrent effect that housing shortages can have on worker inflow in response to emerging job opportunities.

Finding

There is an undersupply of long term accommodation available, particularly rental property. Housing shortages appear to be deterring some workers from taking up work and moving to Bombala.

Changes in agriculture

Agriculture production makes up a significant proportion of the Bombala LGA's economic base. The value of agricultural commodities produced in the local government area was estimated to be \$22.4 million at the 2001

census (see later chapter for further discussion). The main agricultural activity in Bombala and the Monaro region is grazing, followed by cropping.

Farm incomes in the Monaro region have generally fallen over the past decade following a declining terms of trade. Some farmers have experienced declining pasture productivity influenced by low incomes and investment, weed infestation and continuing drought conditions (Watson and Hall 2001). Most farmers in the Bombala LGA have and require off-farm income to supplement their farm income.

The average age of farmers has been increasing over time, and in New South Wales the average farmer is estimated to be 58 years old. There has been a trend towards many farmers retiring and leaving their land for coastal areas. In many cases, land is not being passed from these farmers to the next generation to carry on the farming business. Farm consolidation or conversion to alternative uses such as forestry are a result of this. Difficulties in obtaining a sustainable livelihood given past falls in commodity prices and prolonged drought conditions are some of the reasons discouraging the younger generation from pursuing farming.

However, some of the local farming community commented that commodity prices have taken a recent upturn, associated in part with drought and sector declines in Australia wide livestock numbers.

Changes in agricultural activity in the region will have implications for issues of land availability for various uses in the area. This issue will be taken up later in the report.

Finding

Farm incomes in the region have fallen over the last decade although there are signs of a more recent upturn. The average age of farmers is 58, with many selling their land and retiring outside of the Bombala region. Farm consolidation or conversion to alternative uses such as forestry are occurring.

Service providers

The limited range and scale of services reflects the small population, its age and relative remoteness of the region. A number of these services are highly sensitive to relatively small movements in population numbers and age profiles. School staffing and health facilities are examples.

Retail activity

There are a variety of retail businesses in the Bombala LGA, including small supermarkets, cafes, stock and station agents, car dealerships, petrol stations, a shoe shop and hotels. Several retail premises that appeared to have been vacant for a considerable amount of time indicate the occurrence of a contraction in retail activity in terms of the number of operating businesses.

Those wishing to access other retail outlets including shopping centres and large supermarkets usually travel to bigger towns such as Cooma.

Medical services

The Bombala LGA is currently part of the Southern Area Health Service following the amalgamation of former Monaro, South Coast and Southern Tablelands health districts in 1996. Further amalgamation of area health services are imminent.

There is one hospital in Bombala and another in Delegate. The Bombala Hospital provides a range of facilities including 24 hour emergency service, 24 hours radiography, 10 aged care beds and 8 acute care beds. A Community Health Service is provided in the grounds of the hospital. There is significant pressure on aged care facilities, with demand exceeding current supply. This trend is likely to continue with an increasing proportion of the population falling into the over 70 age category.

Forty staff are employed in the hospital, attending an average of 18 patients per day. The Bombala Hospital has difficulty in attracting and retaining qualified staff in this relatively remote area. This problem is exacerbated by the perceived lack of housing available in the local area.

The Bombala Hospital is going to be significantly upgraded with construction on a new multipurpose facility likely to commence next year. Approval has also been received from the state government for a heli-pad. Support for these new facilities has partly been driven by a perceived recent increase in the local population stemming from retirees moving to Bombala and an inflow of young families working in the local forestry and milling industries. This is one example of how relatively small fluctuations in the local population can impact on the level of services provided.

The hospital in Delegate is a multipurpose facility and provides eight acute care places. It has an average daily occupancy of 90-95 per cent.

There are two General Practitioners (GP) working in Bombala township and one in Delegate with a dentist that visiting the region once a week. Medical services at the GP level are stretched with considerable waiting lists currently being experienced.

Some specialists provide a visiting service to these towns such as cardiology and paediatrics. Those living in the Bombala LGA generally have to visit larger centres such as Cooma for many other specialist health services.

Education

The Bombala LGA offers education at the pre-school, primary and secondary levels, with some limited tertiary courses available through a local TAFE learning centre. There are two primary schools (one public and one private) and a high school in the Bombala township. These schools provide education not only for students in the local town, but also for those from neighbouring communities such as Bendoc and Tubbut.

In recent times, both of the public schools have faced the challenge of maintaining certain critical levels of students to retain staffing and funding levels. Over the past 10 years, enrolments at the high school have fallen from 250 to 200. The critical threshold needed for the school to remain viable is 150. However, even though the school is currently above that level, for every two enrolments below the current level, one member of teaching staff is lost to the school. The decline in enrolled students and staffing numbers has a detrimental impact on the curriculum that can be offered. However, in keeping with a state-wide trend, there has been some increase in enrolments at the local private school.

The public primary school currently has 160 children enrolled. Due to enrolments currently being below the threshold level of 170 children, the principal of the school is required to take on the role of teaching in addition to existing responsibilities.

Local government services

The Bombala Council provides a range of services including road maintenance and water and wastewater service provision. Total expenditure in 2001 was \$5.5 million compared with \$5.8 million in revenue (ABS 2002c).

Banking postal and other services

There are two bank branches and a post office located in the town of Bombala. Solicitor services are not available locally and there is one accountant in the area.

Local tradespeople are in short supply, for example there is only one plumber available and tradespeople visit once per month. Coastal areas and Canberra offer larger markets for this expertise compared with the Bombala area, which has difficulty attracting tradespeople.

Some services remain at a knife edge level

From the above, it is clear that further job loss of a magnitude that accompanied the closure of the shire's hardwood mills would threaten some basic services. A loss of 40 jobs would be likely to produce a population decline that would threaten the viability of the high school, for instance, in the medium term.

Finding

Some services in the Bombala LGA are not particularly resilient, and are vulnerable to decline if regional employment levels are reduced. The local timber industry is an important contributor to the maintenance of medical, educational, retail services and other services within the region.

3

Socio-economic contribution of Willmott Forests

WILLMOTT FORESTS' FORESTRY AND PROCESSING activities generate significant economic benefits to the Bombala region. These benefits are of critical importance to a region that has experienced population decline. This decline has been influenced by the scaling back of other industries such as the hardwood timber and wool shearing industries. Changes in the local agricultural industry have also had consequences on the level and range of local services available. Willmott Forests' contribution to the region is outlined below.

Quantifying Willmott Forests' contribution

Because of 'upstream' and 'downstream' influences of the forestry-timber processing value adding chain, Willmott Forests' business generates two types of economic benefits to the Bombala supply zone. The first are direct benefits, which encompass direct expenditure in the regional economy and employment by Willmott Forests. The second are indirect or flow on benefits which measure the expenditure, production and employment induced by the initial expenditures by Willmott Forests and its employees.

Willmott Forests has two main sides to its overall business, Forestry and Processing. The two businesses are at separate stages of producing output, with the forestry business in an 'investment phase' that is not yet harvesting, and the processing business, which is producing output ready for sale. As a result, two different approaches will be taken to quantify each business' direct contribution before aggregating them to arrive at Willmott Forests' total contribution to the Bombala region.

Furthermore, a later chapter examines the implications for the region when Willmott Forests' Forestry Operations have matured to a 'steady state' of harvesting and replanting phase.

Contribution of plantation operations

In 2002–03, there were approximately 42 000 hectares of *softwood* plantations in the Bombala region, which is almost 16 per cent of total New South Wales softwood plantations (Department of Agriculture, Fisheries and Forestry 2003 and Cameron 2004). At that time, Forests NSW managed the bulk of plantations in the Bombala region at around 31 000 hectares compared with 11 000 hectares managed by Willmott Forests (Cameron 2004). In 2003–04 Willmott Forests managed around 13 865 hectares of plantation.

Willmott Forests has planted most of New South Wales' new softwood plantation since 1999. It is understood that Forests NSW is not currently planning to undertake any new plantings which may have implications for future wood security in the region.

Willmott Forests' Forestry Operations have expanded over the last two decades and with this so has its contribution to the local region. In the 1980s, Willmott Forests planted an average of 100 hectares of softwood per annum and employed 1 person from the local region. During the 1990s, Willmott Forests planted an average of 500 hectares per annum, providing between 2–4 positions filled by people from the local region. Towards the end of 2004, Willmott Forests manages around 18 000 hectares and employs 35 people in its Forestry Operations alone.

In undertaking its forestry business, Willmott Forests' direct contribution to the Bombala region can be characterised through its gross value of production or output. As the plantation business is still largely in an investment phase and not producing significant output, its gross value of production in Bombala can be estimated through its expenditure on employing staff, purchasing inputs to production, and state and local taxes and revenue.

Employment

Willmott Forests Forestry and Processing Operations provide direct employment for over 135 employees. Excluding the head office function in Melbourne, Willmott Forests Forestry Operations employ 35 people on both a full-time and part-time basis. All of the full-time, and 82 per cent of the part-time, positions are filled by local employees and workers. Willmott Forests' expenditure on wages, salaries and other entitlements for its forestry staff was \$864 000 in 2003–04.

Due to the expansion of Willmott Forests' Forestry Operations it is currently undertaking an aggressive recruitment campaign where four new full time positions have been advertised in regional papers across Australia.

Expenditure

Willmott Forests' Forestry Operations spends a significant amount each year in the local region on purchasing inputs to production. In 2003-04, Willmott Forests spent almost \$1.1 million on goods and services purchased in the Bombala region. However, not all of this expenditure will remain in the local region. In relation to the purchase of *goods*, local suppliers will have incurred costs in acquiring those goods or on inputs into those goods from other locations. One way to estimate the likely amount of Willmott Forests' expenditure on local *goods* that would remain in the region is to apply an average wholesale¹ margin paid by the forestry industry from national accounts data to Willmott Forests' total spend on local *goods*.

According to the ABS' most recent national accounts data, the average wholesale margin paid by the forestry and logging industry in purchasing their inputs to production is 10 per cent of their expenditure on intermediate goods (ABS 2004). The last national accounts figures released by the ABS included a higher wholesale margin paid by the forestry and logging industry of 15 per cent. The 15 per cent margin will be used in this exercise rather than the 10 per cent figure because the latter figure is a national average that tends to reflect more competitive conditions of larger centres of activity where margins are generally tighter. It is likely that margins in the Bombala region would be larger due to its relatively remote and isolated location resulting in less intense competition than in larger centres of activity.

Willmott Forests' injection into the Bombala region in terms of its expenditure on local *goods* is estimated by taking the margin of 15 per cent as a proportion of their total expenditure on local *goods*. The margin is not applied to Willmott Forests' purchases of *services*, which accounts for the vast majority of its total expenditure on inputs in the local area. The purchase of *goods* and *services* as inputs for Willmott Forests' Forestry Operations alone in 2003-04 injected approximately \$910 000 into the Bombala region.

¹ The retail margin paid by the Australian forestry and logging industry is zero because according to the ABS most businesses do not purchase their inputs at the retail level. Hence, only an estimate of the wholesale margin will be used.

The plantation activities undertaken by Willmott Forests added to state and local taxes and revenue in the order of \$522 000 in 2003-04. This is equivalent to \$14 914 per employee (including 35 full time and part time workers).

Table 3.1 outlines each of the components that make up Willmott Forests Forestry Operations' gross value of production which is used as a measure of its economic contribution to the Bombala region. Total expenditure locally retained includes the sum of purchases of local goods retained locally, services and freight. In 2003-04, the Forestry Operations' gross value of production (including total expenditure on creditors not only margins) was \$2.4 million and its total direct economic contribution to the Bombala region (using the margin only) in terms of gross value of production was \$2.3 million. This contribution is projected to grow in the future as Willmott Forests continues to expand its plantations and begins harvesting its trees.

3.1 Willmott Forests forestry's direct contribution to the Bombala region

<i>Type of expenditure</i>	<i>2003-04</i>
	\$
Gross payroll	864 000
Creditor	
Total purchase of local goods	218 378.79
Purchase of local goods retained locally ^a	32 757 ^a
Services	821 520
Freight	55 100
Total expenditure	1 039 899
Total expenditure locally retained	909 377
State and local taxes	522 000
Gross value of production	2 425 899
Gross value of production Bombala	2 295 377

^a Expenditure on local goods retained in the region is equal to the average wholesale margin of 15 per cent as a proportion of total expenditure on local goods of approximately \$218 379.

Sources: Data from Willmott Forests and CIE estimates.

Finding

Willmott Forests forestry business employs 35 people and spent \$864 000 on wages and salaries in 2003-04. An additional \$910 000 was injected into the local economy in purchases of goods and services as inputs to its forestry business in that year alone. Willmott Forestry Operation's direct contribution to the local Bombala economy was \$2.3 million in 2003-04. Willmott Forests also added \$522 000 to state and local taxes and revenue during this period. This is equivalent to \$14 914 per employee.

Contribution of milling operations

Output

Willmott Forests contributes to the local economy through its recently acquired processing facilities. In 2002, Willmott Forests, acquired a structural sawmill in Bombala, formerly Austral Softwoods Bombala Pty Ltd, known as Bright Street, which had been in receivership. Since that time, Willmott Forests has upgraded the facility, reopening it for trading in July 2003. The structural sawmill produces several types of softwood timber products including structural and visual grade timber, dressed boards, lining boards, decking, sleepers and palings. These products are sold to the wholesale market and to Willmott Forests' other processing facility, known as Sandy Lane for further value adding. The Bright Street facility produced \$1.6 million of output in 2003-04.

By their nature, Forestry Operations (planting, thinning, harvesting and haulage) tend to be land and capital intensive. In nature, wood processing is also capital intensive but typically involves a higher labour to capital ratio than 'upstream' operations.

Commencement of harvesting of Willmott Forests' trees from its plantation operations will provide increased throughput for Bright Street. It may also offer new product opportunities, such as woodchips which could be exported.

Willmott Forests also purchased a landscape products plant at Sandy Lane, formerly known as Prime Pine in July 2003. The Sandy Lane facility provides three main areas of milling operations, processing, refinement and treatment. The acquisition of this additional facility means that Willmott Forests now has a more diverse range of products which it can sell to meet the needs of local and external markets. Willmott Forests' local treatment facility enables them to add value to locally harvested softwood, which is currently sourced from Forests NSW but will be supplemented by supplies from their own plantation business. Willmott Timbers produced \$14.3 million of output in 2003-04.

These acquisitions have transformed Willmott Forests' from a plantation manager into a vertically integrated company producing high value end products.

Willmott Forests' Processing Operations produced almost \$16 million of output in 2003-04. Willmott Forests' processing output is predicted to

increase above this figure following the completion of current mill upgrading to \$21-22 million in the next few years.

Employment and taxes

Willmott Forests' Processing Operations currently provide employment for over 100 people with a large proportion of these positions filled by people from the Bombala LGA. Expenditure on wages and salaries was considerable close to \$3.9 million in 2003-04. The employment opportunities provided by Willmott Forests in the local region are even more significant given its acquisition of the Bright Street mill which was in receivership. If Willmott Forests had not acquired this facility the existing jobs might have been lost (see later discussion). Not only have these positions been re-instated, but additional jobs have also been created by Willmott Forests' Processing Operations. The earlier discussion on the socio-economic profile of the Bombala region mentioned that providers of health services had observed a recent increase in activity in forestry and some other industries leading to an inflow of workers with young families, which is having positive benefits for these and other local services.

There will also be flow on benefits to the local region from Willmott Forests' employment of workers in their Processing Operations, as employees spend a significant proportion of the \$3.9 million in wages and salaries in undertaking their own purchasing of goods and services in the Bombala LGA.

Willmott Forests' Processing Operation has also added to state and local taxes and revenue in the order of \$218 000 in 2003-04 (see table 3.2). Total

3.2 Processing operations' expenditure on production inputs 2003-04

<i>Type of expenditure</i>	<i>Sandy Lane</i>	<i>Bright Street</i>	<i>Total</i>
	<i>Landscape Timbers</i>	<i>Structural Timbers</i>	
	\$/yr	\$/yr	\$/yr
Creditors			
Purchase of services	2 785 919	596 599	3 382 518
Total purchase of goods	716 671	92 833	809 504
Purchase of goods locally retained ^a	107 501	13 925	121 426
Freight	514 239	18 244	532 483
Logs and sawn timber ^b	4 451 550	1 187 926	5 639 476
Total expenditure on goods and services	8 468 379	1 895 602	10 363 981
Total expenditure locally retained	7 859 208	1 816 693	9 675 902
State and local taxes	157 000	61 000	218 000

^a Applying average wholesale margin of 15 per cent to total purchase of local goods.

^b Excludes intra company transfer of purchased logs and sawn timber from Willmott Forests.

Sources: Willmott Forests data and CIE estimates.

payments in local property rates by Willmott Forests' Forestry and Processing Operations combined was \$94 000. This is equivalent to a contribution of approximately 5 per cent of Bombala LGA council's total revenue from rates and charges, which was \$1 930 000 in 2003 (Bombala Council 2003).

Expenditure

In order to produce its output, Willmott Forests' processing facilities also contribute to the region through its purchasing of production inputs from local supplying firms. In 2003-04, Willmott Forests spent \$10.4 million in total on goods and services including freight and transport from the Bombala supply zone. Using the average wholesale margin on purchase of *goods* to estimate the total amount of Willmott Forests' expenditure on *goods* retained by the local region, plus the purchase of services, freight and logs and sawn timber, gives a figure of \$9.7 million injected into the Bombala region economy (see table 3.2).

Value added

The contribution of Willmott Forests' Processing Operations to the Bombala region's economy can be characterised in terms of value added. Value added refers to the value adding done by a particular firm in its transformation of inputs to produce a good or service, which may then be ready for further transformation by another firm in the production chain, or for final consumption by the consumer. Value added is a measure of a firm or industry's contribution to aggregate gross product. Value added is calculated by taking a firm's gross value of production minus its purchase of intermediate inputs.

Willmott Forests' Processing Operations contributed \$5.7 million in value adding to the Bombala regional economy in 2003-04.

Combining the Forestry Operations' gross value of production in Bombala (\$2.3 million) and the Processing Operation's value added (\$5.7 million) gives a total injection of \$8 million to the Bombala regional economy in 2003-04 alone.

Finding

Willmott Forests' Processing Operations provide employment for over 100 people and spent close to \$3.9 million on wages and salaries in 2003–04 alone. The Processing Operations purchased \$9.7 million of goods and services from local suppliers in that year. Willmott Forests' Processing Operations contributed \$5.7 million in value adding to the Bombala regional economy in 2003-04.

Impact of avoided closure of the structural sawmill

To underscore the significance of Willmott Forests' contribution to the Bombala region it is illustrative to consider the impact that the reopening of the Bright Street facility had on local employment levels. To illustrate these effects, employment multipliers will be used which capture the flow on benefits or stimulus to employment in other industries in the region from linkages between Willmott Forests' Processing Operations and those other industries.

Margules Groome Poyry et al. (1995) provides the most recently available multipliers on the New South Wales timber industry at the regional level. Although somewhat dated, they are likely to offer a more accurate reflection of the structure of local timber industries and their economic importance in terms of flow on effects to particular regions compared with national multipliers.

Caution needs to be exercised when interpreting results using multipliers. Multipliers have been derived from Input-Output tables compiled by Margules Groome Poyry et al. (1995). Input-Output multipliers are a summary measure for estimating the total economy-wide impact of changes in the value of output of any one sector or industry. Multipliers describe *average* effects of changes in the value of output and are based on a number of assumptions which do not cater for factors such as economies of scale or technological change (ABS 1990).

Employment multipliers for softwood and hardwood milling combined in the south-east region are reported in table 3.3. Multiplier effects can be allocated between 'direct' and 'flow-on' effects. Direct effects capture those impacting on Willmott Forests' Processing Operations, and flow-on effects arise from Willmott Forests' upstream (production) and downstream (consumption) linkages with other industries.

The employment multipliers represent the proportional change in employment following a change in the value of output. For example, using multipliers in table 3.3, if the value of Willmott Forests' milling production increased by \$1 000 000 we would expect 8 additional permanent jobs to be created in the south east region.

3.3 South east region multipliers for the milling industry

	<i>Direct</i>	<i>Flow-on effects</i>	<i>Total</i>
	no.	no.	no.
For a \$1000 change in value of Willmott Forests processing output			
▪ Employment	0.0047	0.0030	0.0078

Source: Margules Groome Poyry et al. (1995).

As discussed above the value of output produced in 2003–04 by the Bright Street Processing facility was \$1.6 million. There are currently 31 people employed directly in the Bright Street facility therefore, if this mill had not been acquired by Willmott Forests and \$1.6 million in output was not produced, approximately 36 jobs would be lost in total in the region. Out of these 36 jobs, the multipliers indicate that 5 would be positions lost in regional upstream and downstream industries linked to Willmott Forests. In a relatively small rural area particularly with a history of population decline influenced to some extent by the departure of timber based industries, job losses of this order would have had a significant impact. This reduction in employment is similar to the estimated 40 jobs lost when the hardwood mill in Bombala closed.

Without Willmott Forests, there may also be consequences for the price of wood received by Forests NSW. Multipliers do not take account of changes in prices when there is a 'shock' to the (regional) economy account. The departure of Willmott Forests' demand for wood from Forests NSW could put pressure on it to find other markets for its wood supply, where it could potentially receive a lower price for its sales compared with that from Willmott Forests' purchasing. This could in turn have other negative flow on effects such as requiring some change to their management regime. Where Forests NSW is required to haul its wood to areas outside the region, the increased cartage costs (where it incurs them) could lower their profitability and the state government's return from forestry activities.

Finding

If Willmott Forests had not purchased the structural sawmill 36 jobs would have been lost in the region. This size of job losses is similar to that experienced after the hardwood mill in Bombala closed which impacted heavily on the local economy.

Other socio-economic benefits to the region

Willmott Forests' operations provide additional socio-economic benefits that were not captured in the discussion of quantitative effects above. Further to the economic contribution of \$8 million to the Bombala regional economy, Willmott Forests makes a range of other positive contributions to the community.

Training of workforce and community

Willmott Forests is providing important employment opportunities particularly for younger groups of the population – the average age of Willmott Forests' employees is 34 years. Employment opportunities in the local region are needed given the past trend of outward migration of the Bombala LGA's youth (see chapter 2). Willmott Forests' contribution to employment has been outlined above. In addition to employment, Willmott Forests also provides people with training and new skills.

Willmott Forests initiated the establishment of a Forest Cadet Program, which receives federal funding under the Eden Regional Adjustment Package. Under this program, local school leavers are offered full time employment whilst they undertake accredited forestry training.

It also offers its employees the opportunity to undertake diploma and certificate level training in forestry growing and management at TAFE. The skills gained through training offered at Willmott Forests enables staff to have a broader range of career opportunities within various areas of Willmott Forests' operations, and has already led to the career progression of a number of its employees. Skills and training gained from Willmott Forests may also be transferable to other forestry businesses.

As mentioned in chapter 2, Willmott Forests adds to the training opportunities available to the Bombala LGA's youth through its input into the vocational forestry industry course being offered at the year 11 and 12 levels. It also offers a work experience program for Bombala High School students. Willmott Forests is working with local schools to assist them in making additions to the curriculum so that it provides more practical work ready skills training.

Community participation

In addition to the skills development provided by Willmott Forests, it has also been active in the local community.

Some of the community activities which Willmott Forests has been involved in are:

- the Bombala Cup;
- the Cabanandra Camp Draft;
- the Delegate Golf Club Competition;
- sporting club sponsorship;
- significant financial contribution to local clubs, associations and events since 1996 of approximately \$52 000; and
- providing a recognised CFA accredited fire brigade, which was commended by local community and state agencies in Victoria and New South Wales for its assistance during the 2002-03 fire season.

Comparison of agriculture and forestry

The agriculture, forestry and fishing industries together are the largest source of employment in the Bombala region as discussed in chapter 2. Given some local perceptions about the scarcity of land suitable for either activity, there has been some debate about whether agriculture or forestry provides the greater economic contribution or source of employment. This is taken up in further detail in the following chapter where issues relating to the critical size of regional 'timber economies' are taken up. The following discussion offers a form of comparison between the two in terms of employment and value of production for illustrative purposes.

According to the most recently available ABS statistics, the entire agricultural sector in the Bombala LGA covering 162 000 hectares of land produced \$22.5 million of gross value product in 2001. This dollar value is the total value of sales of commodities produced and does not net out the costs of inputs to the business. The agricultural sector in the Bombala region produced approximately \$138 of output per hectare on this basis.

For reasons discussed above, plantations in this 'investment' phase cannot be evaluated in terms of current sales. But, on calculated projections, Willmott Forests' plantation business' gross value of production in the Bombala region has been estimated to be \$2.3 million in 2003-04 covering approximately 13 865 hectares. This is equivalent to a gross value of production per hectare of \$166.

Based on ABS census data, the agricultural sector provided 298 jobs for people living in the Bombala LGA or 1.8 jobs for every 1000 hectares of land (based on total land under agricultural production of 162 000).

Seventy five positions, excluding Willmott Forests employees exist in the Bombala region in the forestry and logging sectors, with around 45 000 hectares of *total* plantations (including hardwood, mixed species and softwood) in the region (ABS 2003c, Cameron 2004 and Henshall 2004). This is equal to 1.6 jobs for every 1000 hectares of plantations.

3.4 Comparison of agriculture and forestry production and employment Bombala

<i>Economic contribution by type</i>	<i>Unit</i>	<i>Agriculture</i>	<i>Willmott Forests forestry business</i>	<i>Forestry and logging</i>
<i>Agricultural production</i>				
Total value of agriculture	\$	22 400 000	2 300 000	n/a
Hectares of land	Hectares	162 000	13 865	n/a
Gross value of production per hectare	\$	138	166	n/a
<i>Employment</i>				
Total jobs	Number	298	35	75
Hectares of land	Hectares	162 000	13 865	44 969
Jobs per 1000 hectares	Number	1.8	2.5	1.6

Sources: ABS data; Cameron (2004); Henshall (2004).

However, Willmott Forests' plantation business provided 35 positions (including part time jobs) over a plantation area of approximately 13 865 (by the end of 2003-04), equal to 2.5 jobs for every 1000 hectares of plantation. On this basis Willmott Forests' forestry business in its current phase can be said to be somewhat more labour intensive than local agriculture.

In any event, both of these industries provide important employment and economic opportunities to a relatively remote and isolated area. As discussed above Willmott Forests' Forestry Operations has provided employment opportunities in the region which may assist in stemming or slowing the rate of population decline.

Finding

The agricultural sector in Bombala produced approximately \$138 of output per hectare compared with \$166 per hectare in estimated gross value of production by Willmott Forests' plantation business. Willmott Forests' forestry business is more labour intensive than local agriculture, providing 2.5 jobs for every 1000 hectares of plantation relative to 1.8 jobs for every 1000 hectares of land supplied by the agricultural sector.

4

Willmott Forests future regional economic contribution

EXPANSION PLANS FOR WILLMOTT FORESTS' OPERATIONS, at both the plantation level and the processing stage have important implications for the future of the regional economy.

A further (13 769) hectares of softwood plantings are anticipated by Willmott Forests between 2005 and 2012 giving rise to a 'steady state' forestry cycle of harvesting and replanting that will, with supplies from existing Willmott Forests' plantings yield an estimated 208 900 thousand tonnes of saw logs and tonnes of thinnings on a five year average basis by 2019 onwards. Meanwhile, the existing two processing mills can be expanded from a current intake of approximately 150 000 tonnes to 300 000, and possibly 400 000 provided markets and processing costs justify this. A third softwood green mill, with an announced capacity of 400 000 tonnes is planned by another private enterprise group – Timberman's – which is understood to have secured a 20 year contract for wood supply with Forests NSW. That contract is however, only sufficient to run the mill at 300 000 tonne annual input. With sufficient expansion of plantation activity and both mill residue and pulpwood availability a fibre board plant may become a viable investment for the supply zone. The possibility of establishing a veneer plant has also been explored.

Plantation expansion impacts and resource reallocation

When previously cleared agricultural land is taken up to establish plantations there is an opportunity cost of the plantations. It consists of the alternative returns that could be had from other uses of the agricultural land in other activities.

Conversely, when agricultural land is retained in its current use this retention has an opportunity cost in terms of the foregone value of the land in its next best use. If returns to alternative uses such as forestry are

sufficiently high the opportunity cost of retaining land under grazing, for instance, will exceed the returns from grazing.

The Australian Bureau of Agricultural and Resource Economics and the Bureau of Rural Sciences have conducted a joint state-wide assessment of the potential for plantation development – both hardwood and softwood (ABARE and BRS 2001). This important work is based on the modelling of the estimated values of agricultural land and of farm business profits across local government areas of NSW. This gives an estimate of the economic (opportunity) cost of plantation development. The Bombala LGA was one of the regions analysed.

The ABARE-BRS analysis identifies the scope for plantation expansion in circumstances where plantation expansion returns are 'estimated to be competitive with existing land uses' (ABARE 2001, p. 66) -that is, where they exceed Estimated Values of Agricultural Land and Estimated Values of Business Farm Profits'. Significant areas around Bombala and Eden are identified as satisfying this criterion. For the Bombala LGA, a total of 10 249 hectares is estimated as the *additional* area which could be justifiably transferred to softwood plantations based on prevailing costs and returns to the competing activities, using 2000 product and input prices.

This analysis could indicate that Willmott Forests' *further planned* establishment of softwood forest of approximately 13 769 hectares from 'today' may be out of balance with current projected woodflow demand. However, there are other factors that suggest these plantings are economically justifiable. They relate to the favourable externalities created by plantations and to the synergies and scale economies that can be captured when regional timber supply and demand reaches a minimum size threshold.

The *base case* ABARE analysis was done without provision for the additional economic benefits that might flow from additional plantation activity with an active market for carbon credits. However, that study did consider the sensitivity of its findings to future developments of this kind. Such a market boosts the attractiveness of softwood plantations as table 4.1 demonstrates. Future carbon credit value estimates typically range between \$10 and \$50 per tonne of CO₂ sequestered. Table 4.1 shows that in the Bombala region even a modest value of \$15 per tonne of CO₂ sequestered through plantation forestry would justify the expansion of an additional 24 444 hectares.

4.1 Bombala region simulated economic plantation and processing capacity^a

	Units	Base case	\$15/tonne carbon credits	\$30/tonne carbon credits	10% increase in mill door price
Economic plantation expansion ^b	hectares	10 239	24 444	35 521	15 061
Sawn softwood capacity after 30 years	'000 m ³	200	400	800	400

^a Sawn softwood capacity does not factor in integrated pulpwood processing. ^b Based on farm business profit benchmark.

Source: ABARE-BRS (2001).

Finding

Whilst there are no firm markets yet established in carbon credits in Australia, any policy change which saw ratification of the Kyoto Protocol or the introduction of a carbon tax and offsets regime in Australia would rapidly generate sequestration demands. Even moderate prices for carbon credits would expand economic plantation areas beyond those planned by Willmott Forests.

Plantation expansion and timber industries synergies

Using generally accepted rules of thumb, the saw log yield of a softwood plantation is accompanied by a pulpwood and chipping yield equal to approximately one third of the logging yield of the forest. Additionally sawmilling operations 'return' between 30 and 40 per cent of the sawn timber volume as mill residue. At present most mill residue is trucked to Tumut or elsewhere out of the Bombala supply zone. Residue and the thinnings from Forests NSW and maturing Willmott Forests plantations in the Bombala supply zone are a resource whose value is not able to be maximised given the current scale of activity of milling operations.

The economics of wood processing is such that when large enough scale is reached with harvesting and sawn timber milling operations, if a local market for residues emerges through the establishment of a fibre board manufacturing plant or some other wood fibre by-product processing, this can have a major flow on effect to milling profitability. Instead of disposing of residues at little margin above recovery and transport costs, a local market for residues has the same effect on the profitability of milling operations as a substantial increase in the mill gate value of sawn timber or, equivalently, a substantial reduction in the *implied* cost of the logs to the milling operation. This in turn means that the mills can afford to pay more for the logs purchased from the plantation sector, increasing *its* profitability relative to competing land uses.

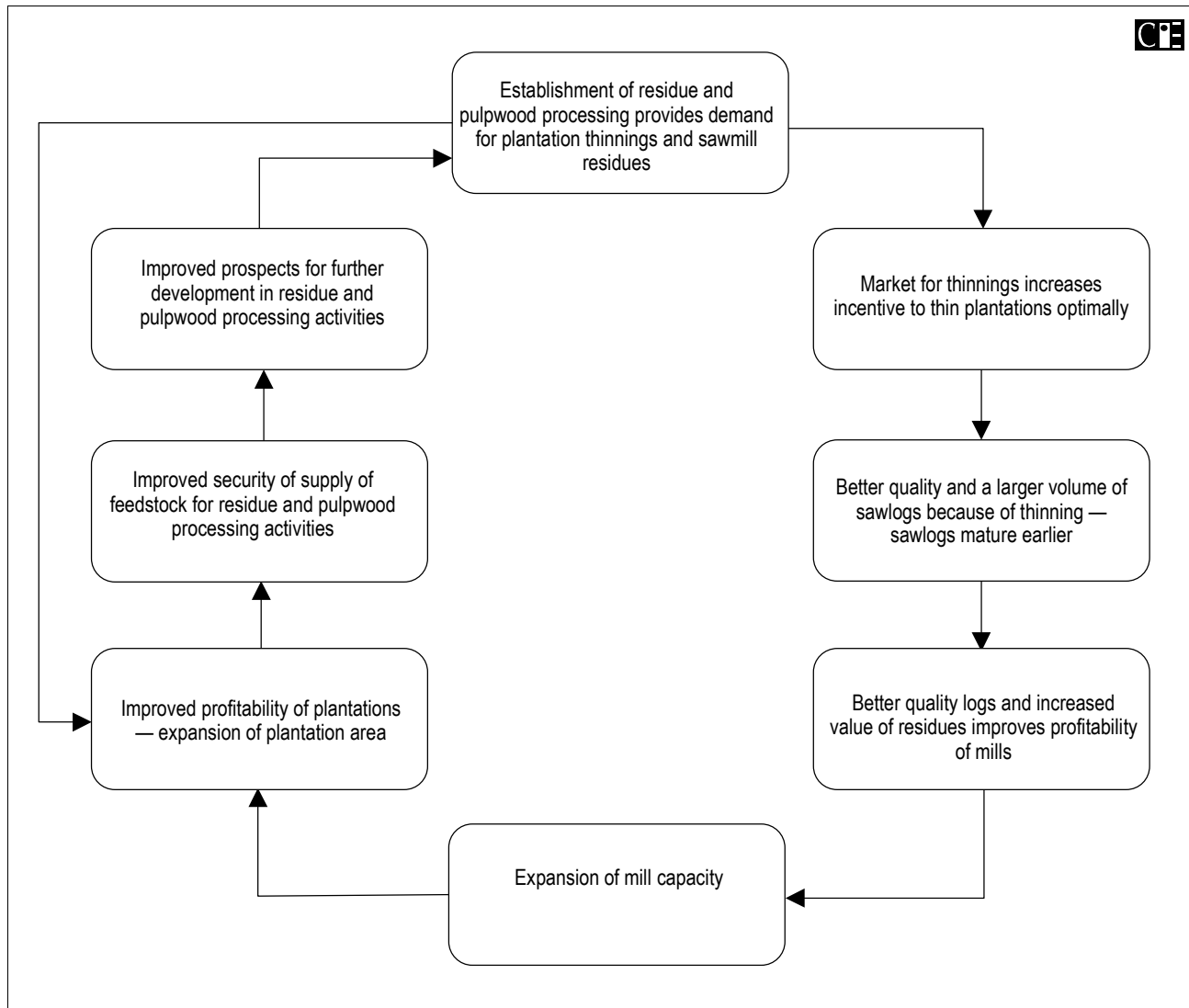
To put this in perspective ABARE-BRS have estimated what the likely impact would be on plantation profitability and extensiveness of a 10 per cent increase in the mill door price of sawlogs for the Bombala mills. The size of warranted plantation activity is very sensitive to such an increase, expanding by almost 50 per cent. (See ABARE-BRS 2001, Appendix G, table 29.)

If wood costs are approximately 40 per cent of mill costs and the *effective* cost of logs to the mill is reduced by 25 per cent through residue sales, this is equivalent to a 10 per cent reduction in overall mill operation costs. Gains of this size are realistic if local processing demand for residue emerged. Any such reduction in mill operations costs would raise the competitiveness of local sawn timber output on both domestic and export markets, stimulating demand for wood intake, uptake of any excess capacity designed into new mills in the region and encouraging the expansion of capacity of existing mills.

There is a 'virtuous circle' involved as demonstrated in chart 4.2. The development of local markets for pulpwood logs from thinnings and sawmill residue has an impact on the economics of plantations and sawmills. Thinnings help to reduce the period within which sawlogs reach maturity, raising the return on Forestry Operations. At the same time a market for residues raises mill profitability and the economic scale of Processing Operations. And the larger the scale of these combined forestry and Processing Operations the better the prospects of an economically sized panel plant or similar fibre Processing Operations. Security of supply of attractively priced (and therefore preferably locally sourced) residue and pulpwood has to be assured on a sufficient scale for a plant of economic size to be established.

Work completed in the mid 1990s by Margules et al. (1995) suggests that the ability of softwood sawmill products to compete with larger scale New Zealand mills increases significantly when the mill scale rises to *outputs* of 200 000 cubic metres and above. Cost advantages of as much as 40 per cent on an import replacement cost basis can be achieved at this level of production. A new mill with a 400 000-tonne/cubic-metre intake capacity would provide such advantages.

4.2 Scale and integration influences on softwood forestry and wood processing



In its 1997 report on industry development opportunities for the southern NSW forest industry, Margules Poyry (1997) anticipated that by 2010 'a medium density fibre board (MDF) plant predominantly based on softwood will have been constructed in the Bombala supply zone' (p31). They envisaged an intake capacity of 250 000 to 300 000 cubic metres growing to possibly 500 000 by 2020. Such a plant would use sawmill residue from expanded milling operations, round-wood from thinnings and some hardwood input as part of the mix. (Plantation hardwood in the supply zone is available for wood chipping.) That study also predicted, with increasing international acceptance of softwood based *plywood*, the establishment of a plywood or laminated veneer manufacturing plant of 120 000 cubic metre capacity would be established in the supply zone by 2020. If for instance veneer log intake were to rise from zero to 10 per cent of a total saw milling intake of the region given the price difference between veneer and saw logs this would be equivalent to an increase in the

effective (weighted average) mill door price of local logs supplied of as much as 50 per cent. This would help to further underwrite plantation expansion.

Finding

A shift in scale of local softwood Processing Operations, combined with expanded plantation activity supplying both sawlogs and pulpwood and integrated pulpwood and residue processing would set up a 'virtuous circle' in integrated forestry and forest product activity in the Bombala region through the shift in costs and profitability created. Increased plantation size would play a part in such a shift.

Achieving security of supply through new Willmott Forests plantings

All of the above points to a case for enhanced wood supplies and additional plantings in the supply zone to satisfy the combined demands of expanded sawn timber mill output and local demand for pulpwood and residues to satisfy the requirements of an economic scale MDF or particle board plant. There is also the primary consideration of the security of supplies for the existing and planned milling operations given that whilst Forests NSW are likely to replant existing areas as they are cleared there do not appear to be plans for expanded planting.

Appendix A table A.1 illustrates likely wood balances in the supply zone with and without further new plantings by Willmott Forests, and with conservative and expansionary output scenarios for the proposed new timber mill and Willmott Forests' own operations. Sawlog volumes from Willmott Forests' own plantations become sufficient to support its own expanded Processing Operations by about 2019. Until that time, while increasingly able to source from its own harvesting, Willmott Forests will rely on Forests NSW and supplies from outside the region. By that year Willmott Forests will be supplying about one third of the region's total sawlog supply of approximately 600 000 tonnes. This is sufficient to supply expanded operations of existing mills to 200 000 tonne intake capacity and a new mill operating at design capacity of 400 000 tonnes or a combination using 600 000 tonnes.

Without new plantings by Willmott Forests, sawlog and pulpwood supplies to its operations in the longer term become significantly riskier. Willmott Forests' contracts with Forests NSW expire in 2014 (although renewal is not ruled out). With smoothing of woodflows from its other plantations Willmott Forests could continue to operate its expanded mills, but not beyond 2028 without new plantings. The long term future of incremental investments in Willmott Forests' regional milling operations, and the

expanded injections into the regional economy accompanying that expansion will therefore depend on this wood security from new plantings.

If Willmott Forests failed to expand its own Processing Operations because of an inability to reduce security risks to acceptable levels through increased plantings, the regional economy can be expected to forego between \$1 million and \$5 million in annual value added, depending on whether expansion was to 200 000 or 300 000 tonnes intake by the Company's mills. These forfeited benefits are not distant benefits but relatively immediate. Significant expansion 'now' in processing capacity needs the assurance of long term future wood security. Without it, Willmott Forests would have to decide whether significant capacity expansion in the short term can be justified in the face of wood supply insecurity in 20 years.

Finding

The region faces risks of foregone or postponed expansionary processing investment and jobs growth if regional wood security is not enhanced through net additional plantings.

Resource security concerns do not necessarily mean investments in mill expansions and new mills will not occur. Wood supplies from outside the region can be used to supplement local supplies. The NSW Department of State and Regional Development reports that in the case of the Murray Valley 'wood basket' area for instance some 267 000 cubic metres of sawlogs and pulpwood and 87 000 cubic metres of residue are imported annually to satisfy softwood processing needs in that region. However, wood balance deficits in a number of adjoining supply regions make 'imports' more problematic as mill feedstock.

Any *new* Bombala mill operating at 300 000 tonnes or more intake capacity will face regional sawlog deficits of approximately 200 000 tonnes from 2027 to 2034, without new Willmott Forests plantings, after which time they would be dependent on the availability of wood from the 30 year rotation of existing State Forest plantations. This prospect also requires an examination of the scope for increased plantings within the region by Forests NSW and others. The long lead times involved between plantation establishment, first thinnings and maturity mean that if mill establishment or expansion is reliant on the majority of supplies being assured from local sources, significant plantation expansion will be required in the next 3 to 5 years. The future need to haul logs from plantations outside the supply zone erodes profit margins and may result in deferred investment decisions until local resource security is better assured.

If a 500 000 tonne capacity MDF plant were established in the Bombala supply zone it could rely primarily on plantation thinnings and saw mill residue from local operations. However, in the absence of planned new plantings by Willmott Forests' persistent regional pulpwood deficits would be experienced from 2019 onwards (see Appendix A, table A.2). Apart from several years prior to 2014, regional pulpwood supplies from existing and new plantings and residues from the expanded and new mills, there will be pulpwood supplies which are more than sufficient to meet the needs of a 500 000 tonne plant. Without new plantings, significant and persistent deficits of between 62 000 and 86 000 tonnes are likely to emerge in 2024.

Additionally, should wood security risks created by no new plantings cause deferral or cancellation of saw mill investments, the lack of *residue supplies* would undermine the profitability of a pulpwood processing plant. Economies of scale are a feature of panel board plants fed by pulpwood and mill residue supplies. Information produced by Carter Holt Harvey (2004) which operates variously sized softwood panel plants in Australia suggests that production costs (excluding wood costs) fall from about \$120 per cubic metre/tonne to \$100 as intake capacity increases from 270 000 to 450 000 per annum. This underlines the importance of achieving adequate scale in these operations to compete domestically and to attain export competitiveness.

Summing up

The earlier chapters of this review have documented the impact, past and present, of Willmott Forests' activities on the regional economy of the Bombala region. They show an economy heavily reliant on agriculture, forestry and forest product activities functioning in a region with an ageing demographic (average farmer age of 58) and net outward migration of younger age brackets. Inward migration, by contrast is supported by retirees moving to the area as a lifestyle choice.

Willmott Forests' current activities in plantation establishment, mill acquisition and operation have helped to moderate these changes by maintaining a demand for working age labour within the region. This demand has occurred despite the closure of a hardwood mill and the threat to survival of one of the two softwood value adding mills. The reopening of the Bright Street Processing facility has assisted in the reinstatement of at least 36 jobs in Bombala. Most of these employees fall within the critical 'young family' age group which has subsequently sustained both medical and educational services above critical threshold levels.

Direct contributions of the combined operations through local wage and other expenditure exceed \$2 million annually, and processing outputs valued at approximately \$16 million. The combined Forestry and Processing operations provide employment for more than 135 people within the region.

Regional economies with a significant forestry and forest product base depend on sustainable wood flows to underpin investment decisions in mill upgrades and new mill establishment.

Recent studies of the Bombala region have produced clear indications that expanded softwood plantation areas are justified in economic terms. Expected returns to the timber growing activity relative to those from agricultural land use, when measured in terms of expected profitability underpin this conclusion.

Expansion of private plantations on the scale planned by Willmott Forests – of a further 13 000 plus hectares – will be justifiable given the possible synergies they allow, from the expansion of Processing Operations integrated with the use of pulp logs and mill residues to produce panel board products. Any development of a market in carbon credits will augment the economically viable plantation area in the region.

A Appendix A

A.1 Indicative regional sawlog supply demand analysis

Year	Est. Willmott processing capacity	Willmott supply demand balance — no new planting ^a	Willmott sawlog demand balance with new planting	Total regional sawlog supply	Total regional demand (new mill at 300k capacity)	Regional sawlog demand balance no new planting	Regional sawlog demand balance new planting (new mill at 300k capacity)	Regional sawlog demand balance new planting (new mill at 400k capacity)
	m ³	m ³	m ³	m ³	m ³	m ³	m ³	m ³
2004	150 000	-11 600	-11 600	208 400	220 000	-11 600	-11 600	-11 600
2005	150 000	-11 600	-11 600	208 400	220 000	-11 600	-11 600	-11 600
2006	200 000	-36 600	-36 600	463 400	500 000	-36 600	-36 600	-136 600
2007	200 000	-36 600	-36 600	463 400	500 000	-36 600	-36 600	-136 600
2008	200 000	-36 600	-36 600	463 400	500 000	-36 600	-36 600	-136 600
2009	200 000	-19 300	-19 300	480 700	500 000	-19 300	-19 300	-119 300
2010	200 000	-19 300	-19 300	480 700	500 000	-19 300	-19 300	-119 300
2011	200 000	-19 300	-19 300	480 700	500 000	-19 300	-19 300	-119 300
2012	200 000	-19 300	-19 300	480 700	500 000	-19 300	-19 300	-119 300
2013	200 000	-19 300	-19 300	480 700	500 000	-19 300	-19 300	-119 300
2014	200 000	6 800	6 800	506 800	500 000	6 800	6 800	-93 200
2015	200 000	-58 200	-58 200	441 800	500 000	-58 200	-58 200	-158 200
2016	200 000	-58 200	-58 200	441 800	500 000	-58 200	-58 200	-158 200
2017	200 000	-58 200	-58 200	441 800	500 000	-58 200	-58 200	-158 200
2018	200 000	-58 200	-54 420	441 800	500 000	-58 200	-54 420	-154 420
2019	300 000	-1 100	2 680	598 900	600 000	-1 100	2 680	-97 320
2020	300 000	-1 100	2 570	598 900	600 000	-1 100	2 570	-97 430
2021	300 000	-1 100	2 394	598 900	600 000	-1 100	2 394	-97 606
2022	300 000	-1 100	2 589	598 900	600 000	-1 100	2 589	-97 411
2023	300 000	-81 100	-38 082	518 900	600 000	-81 100	-38 082	-138 082
2024	300 000	68 600	111 415	668 600	600 000	68 600	111 415	11 415
2025	300 000	68 600	110 385	668 600	600 000	68 600	110 385	10 385
2026	300 000	68 600	133 947	668 600	600 000	68 600	133 947	33 947
2027	300 000	68 600	107 072	368 600	600 000	-231 400	-192 928	-292 928
2028	300 000	68 600	106 123	368 600	600 000	-231 400	-193 877	-293 877
2029	300 000	68 600	104 002	368 600	600 000	-231 400	-195 998	-295 998
2030	300 000	-278 700	140 387	21 300	600 000	-578 700	-159 613	-259 613
2031	300 000	-278 700	405 334	21 300	600 000	-578 700	105 334	5 334
2032	300 000	-278 700	92 705	21 300	600 000	-578 700	-207 295	-307 295
2033	300 000	-278 700	74 819	21 300	600 000	-578 700	-225 181	-325 181

^a Includes currently contracted supplies of 130 000 m³ per annum from Forests NSW until 2014.

Sources: Willmott Forests and CIE calculations.

APPENDIX A

A.2 Indicative pulpwood demand and supply balance — Bombala region

Year	Total regional est. pulpwood supply volumes	Total regional est. residue Supply volumes ^a	Total regional estimated pulp chip supply volumes	Est. min. MDF or particleboard capacity ^b	Total regional est. pulpwood demand volumes	Total regional est. pulpwood demand balance w/o new planting	Total regional est. pulpwood demand balance with new planting
2004	343 600	891 00	552 700	-	120 000	432 700	432 700
2005	343 600	891 00	552 700	-	120 000	432 700	432 700
2006	343 600	165 000	628 600	-	120 000	508 600	508 600
2007	343 600	165 000	628 600	-	120 000	508 600	508 600
2008	343 600	165 000	508 600	500 000	500 000	8 600	8 600
2009	290 200	165 000	455 200	500 000	500 000	-44 800	-44 800
2010	290 200	165 000	455 200	500 000	500 000	-44 800	-44 800
2011	290 200	165 000	455 200	500 000	500 000	-44 800	-44 800
2012	290 200	198 000	488 200	500 000	500 000	-11 800	-11 800
2013	290 200	198 000	488 200	500 000	500 000	-11 800	-11 800
2014	383 300	198 000	581 300	500 000	500 000	81 300	81 300
2015	383 300	198 000	581 300	500 000	500 000	81 300	81 300
2016	383 300	198 000	581 300	500 000	500 000	81 300	81 300
2017	383 300	198 000	581 300	500 000	500 000	81 300	81 300
2018	383 300	198 000	581 300	500 000	500 000	81 300	209 460
2019	284 600	198 000	482 600	500 000	500 000	-17 400	110 760
2020	284 600	198 000	482 600	500 000	500 000	-17 400	107 043
2021	284 600	198 000	482 600	500 000	500 000	-17 400	101 050
2022	284 600	198 000	482 600	500 000	500 000	-17 400	107 677
2023	284 600	198 000	482 600	500 000	500 000	-17 400	242 474
2024	183 500	198 000	381 500	500 000	500 000	-118 500	134 476
2025	183 500	198 000	381 500	500 000	500 000	-118 500	134 330
2026	183 500	198 000	381 500	500 000	500 000	-118 500	8 933
2027	183 500	231 000	414 500	500 000	500 000	-85 500	49 063
2028	183 500	231 000	414 500	500 000	500 000	-85 500	45 746
2029	206 500	231 000	437 500	500 000	500 000	-62 500	61 325
2030	206 500	231 000	437 500	500 000	500 000	-62 500	173 831
2031	206 500	231 000	437 500	500 000	500 000	-62 500	45 860
2032	206 500	231 000	437 500	500 000	500 000	-62 500	42 717
2033	206 500	231 000	437 500	500 000	500 000	-62 500	37 650

^a Estimated residue volumes based on expanded Willmott mill capacity to 200 000 then 300 000 and a new 300 000 tonne mill. The same residue volumes would apply to other combinations with the same total mill intake. ^b The assumed plant capacity is 500 000. In reality there may be some ramp up period.

Source: Willmott Forests estimates based on 5 year averages for wood flows.

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