

## 4.0 Plantation production and products

### 4.1 How much plantation is harvested each year?

In 2003-03 10,110 hectares of plantation was harvested in Tasmania (**Table 9**) from which over 2.5 million tonnes of plantation logs from public and private sources were produced (**Table 10**).

**Table 9:** Plantation harvesting in Tasmania 2002-03

	Thinning	Clearfelling followed by plantation	Clearfelling followed by non-forest use	Total
State forest	1,990	4,120	20	6,130
Private land	1,050	3,620	110	4,780
<b>Total</b>	<b>2,240</b>	<b>7,740</b>	<b>130</b>	<b>10,110</b>

Data source – Forest Practices Board Annual Report 2003-03

### 4.2 Plantation timber - log production

#### 4.2.1 Overview

Currently an estimated 2,500,000 tonnes of plantation logs are produced in Tasmania annually (**Table 10**). Most of these logs (around 70%) are woodchipped some of which are then exported and some used for the production of paper at Wesley Vale and some used for the production of fibre-based panels, e.g. the Carter Holt Harvey MDF plant at Bell Bay. Sawlog, almost exclusively pine, accounts for approximately 22% of the plantation log supply whereas export logs and roundwood account for 6%.

**Table 10: Recent production of plantation timber logs in Tasmania (m3)**

	1999-00	2000-01	2001-02	2002-03
<b>Softwood plantations (public)</b>				
Sawlog (m3)	194,400	173,200	225,200	229,600
Roundwood (m3)	6,700	19,600	6,300	5,300
Export logs (m3)	71,800	81,000	124,300	64,600
Pulpwood (tonnes)	184,500	213,400	213,200	303,000
<b>Total</b>	<b>457,400</b>	<b>487,200</b>	<b>569,000</b>	<b>602,500</b>
<b>Softwood plantations (public + full production figures for Taswood Growers joint ventures)</b>				
Sawlog & veneer (m3)	384,000	341,000	427,000	447,000
Roundwood (m3)	14,000	40,000	12,000	10,000
Export logs (m3)	135,000	163,000	245,000	129,000
Pulpwood (tonnes)	278,000	306,000	292,000	418,000
<b>Total</b>	<b>811,000</b>	<b>850,000</b>	<b>976,000</b>	<b>1,004,000</b>
<b>Softwood plantations (private)</b>				
Sawlogs & veneer (m3)	102,000	97,000	100,000*	100,000*
Pulpwood (tonnes)	297,000	286,000	300,000*	300,000*
<b>Total</b>	<b>399,000</b>	<b>383,000</b>	<b>400,000*</b>	<b>400,000*</b>
<b>Total softwood</b>	<b>1,210,000</b>	<b>1,233,000</b>	<b>1,376,000</b>	<b>1,404,000</b>
<b>Eucalypt plantation (public)</b>				
Pulpwood (tonnes)	7,000	25,000	36,000	120,000
<b>Eucalypt plantation (Private)</b>				
Pulpwood (tonnes)	210,000	238,000	1,000,000**	1,000,000**

Data sources: Forestry Tasmania Sustainable Forest Management Report 2002-03, p57; Forestry Tasmania, Annual Reports 1999-03; Tasmanian & Commonwealth Govts (2002) Sustainability indicators for Tasmanian forests prepared for the review of the Tasmanian RFA.

\*Best estimate due to unavailability of data

\*\*Forecast volume: Banks & Clark<sup>30</sup>

#### 4.2.2 Softwood timber logs

The main softwood product groups are:

- pruned logs, marketed as veneer logs and clearwood sawlogs
- unpruned logs, marketed as standard sawlogs, optional sawlog and small sawlogs
- pulpwood
- roundwood.

##### *Pruned Softwood Logs*

The high site quality of plantation areas are managed under a clearwood regime requiring pruning of the final crop trees to 6.4 metres high. These pruned logs are the premium plantation product. The very best radiata pine logs meet strict specifications

<sup>30</sup> Banks, A & Clark, J (1997). Tasmania's plantation processing industry – job opportunities now and in the future.

for diameter, straightness and centralised pith are sold for slicing and peeling into decorative veneer<sup>31</sup> (8,300 cubic metres in 1997) with the rest actively sought after by the sawmilling industry (48,000 cubic metres in 1997)<sup>32</sup> (refer also to **Section 7.1.1**).

Currently around 26% of the public softwood plantation estate is managed under a clearwood regime with thinning and high pruning for veneer log production and projections indicate that the veneer supply from softwood plantations will reach an annual yield of 50,000 m<sup>3</sup> by 2010<sup>33</sup>.

#### *Unpruned Softwood Logs*

Unpruned softwood logs: these are also from either the clearwood regime or the knot control regime and are segregated according to grading rules related to diameter, length, knot frequency and size, and straightness<sup>34</sup>.

#### *Softwood Pulpwood*

Softwood pulpwood is generally those sections of the stem not suited to solid wood production and meeting diameter and length criteria<sup>35</sup>.

#### *Softwood Roundwood*

Softwood roundwood: radiata pine treated with a preservative has an extended life in exposed and in-ground situations. Roundwood products include fence posts, strainers, stays, shed poles and lightweight construction poles.

### **4.2.3 Hardwood timber logs**

Tasmania's hardwood (*Eucalyptus globulus* and *E. nitens*) plantation resource is currently managed on short rotations (15-20 years) primarily for pulpwood production. Eucalypt plantation hardwoods are a preferred source for woodchips for the production of high quality paper. The high fibre yield and lightness of colour ensures its superiority to native forest timber<sup>36</sup>. It is a premium product that requires less bleaching than and chemical inputs in its manufacture<sup>37</sup>.

It is assumed that 15% of hardwood planted on State forest will be high pruned to produce sawlogs (category 3)<sup>38</sup> and timber suitable for rotary peeling. Plantation hardwood sawn timber is currently being produced at Forest Enterprises Australia mill at Bell Bay (**Section 4.3.1**). It is estimated that 1,000,000 tonnes of plantation hardwood will be available annually from 2019 (**Section 6.1**). There is also potential to produce sliced veneers from the highest quality plantation hardwoods and about 10,000 m<sup>3</sup> would be required to replace the current supply from native forests<sup>39</sup>. Private plantation owners are not obliged to produce high quality sawlog and much

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<sup>31</sup> [www.forestrytas.com.au/forestrytas/pages/products.html](http://www.forestrytas.com.au/forestrytas/pages/products.html)

<sup>32</sup> Ibid

<sup>33</sup> Banks & Clark (1997). Tasmania's plantation processing industry – job opportunities now and in the future.

<sup>34</sup> [www.forestrytas.com.au/forestrytas/pages/products.html](http://www.forestrytas.com.au/forestrytas/pages/products.html)

<sup>35</sup> Ibid

<sup>36</sup> [www.forestenterprise.com](http://www.forestenterprise.com) - timber and woodchip sales

<sup>37</sup> Ibid

<sup>38</sup> Forestry Tasmania (2002). Review of sustainable high quality eucalypt sawlog supply from Tasmanian State Forest.

<sup>39</sup> Banks & Clark (1997). Tasmania's plantation processing industry – job opportunities now and in the future.

early planting has been specifically focused on the production of short rotation pulpwood<sup>40</sup>.

### **4.3 Plantation forest companies & their products**

#### **4.3.1 Forest Enterprises Australia**

Forest Enterprises Australia (FEA) was incorporated in 1985 and began establishing its own eucalypt plantations in 1987, but expanded into the management of timber plantations on behalf of others in the late 1980s<sup>41</sup>. In June 2000 the company was listed as a public company on the Australian Stock Exchange, however it remains majority Tasmanian owned and is based in Launceston.

FEA currently manages over 20,000 hectares of plantation in Tasmania<sup>42</sup>. Most of its plantation resource is located across the north of Tasmania, but also has significant holdings in the south. The company employs about 50 people plus many additional contractors in seedling nurseries, site preparation, planting, tending and harvesting. The company has been harvesting some of its earliest eucalypt plantations since 1997<sup>43</sup>.

*Sawn timber* - The capacity of the FEA sawmill at Bell Bay is 150,000 m<sup>3</sup>/annum. The mill employs HewSaw technology which is a small diameter log cutter from Finland enabling small diameter logs to be cut<sup>44</sup>. The technology helps to relieve internal stresses and gives high recovery for small diameter logs. FEA recently won an award for applying softwood saw technology to plantation grown *Eucalyptus nitens* to recover sawn timber from trees that are conventionally grown for paper fibre production. Timber as young as eight years can be milled using the technology<sup>45</sup>.

*Woodchips* – FEA’s residue chipping facility has an annual capacity of 100,000 tonnes some of which goes to supply the nearby Carter Holt Harvey MDF plant.

#### **4.3.2 Gunns Limited**

Gunns Ltd was established in 1875 and is now Australia’s largest hardwood forest products company and the country’s largest hardwood sawmiller. It employs over 1,000 people in Australia and New Zealand and has a turnover in excess of \$240 million<sup>46</sup>. Its operations include four hardwood sawmills throughout Tasmania. These produce 500,000 m<sup>3</sup> of sawn timber per year. It has three veneer mills producing decorative sliced veneer, one in the north of Tasmania, one in the south, together processing 20,000 m<sup>3</sup> per year and the third at Christchurch, in New Zealand.

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<sup>40</sup> Forestry Tasmania (2002). Review of sustainable high quality eucalypt sawlog supply from Tasmanian State Forest.

<sup>41</sup> [www.privateforests.tas.gov.au](http://www.privateforests.tas.gov.au)

<sup>42</sup> [www.forestenterprise.com](http://www.forestenterprise.com) - the business

<sup>43</sup> [www.privateforests.tas.gov.au](http://www.privateforests.tas.gov.au)

<sup>44</sup> Branchline October 2003 p6. Forestry Tasmania magazine.

<sup>45</sup> Ibid

<sup>46</sup> Profiles of Northern Tasmania’s core industry sectors. Northern Tasmanian Regional Development board (2002).

Woodchip production and export is Gunn's major business activity and it operates four woodchip export ports in Tasmania. Woodchip exports were predicted to account for 65% of the company revenue in 2002<sup>47</sup>.

The company also produces seasoned framing timber, rough sawn kiln-dried hardwood for further manufacture into hardwood products, such as laminated beams, tongue and groove flooring, overlay flooring, mosaic and block parquetry, mouldings and furniture components.

The company owns its own seed orchards that supply all of the company's seed requirements. This seed is used to grow genetically improved seedlings of both *Eucalyptus globulus* (blue gum) and *Eucalyptus nitens* (shining gum). The company's seedling nursery is capable of growing 13 million seedlings per annum<sup>48</sup>.

The company owns 175,000 hectares of land in Tasmania and manages more than 80,000 ha of plantations of mainly eucalypts. Its plan is to liquidate its remaining softwood plantation resource over the next few years and convert this area to medium rotation eucalypt plantation to produce hardwood pulp<sup>49</sup>.

Gunns have wholesale timber outlets in most Australian capital cities, six "Mitre-10" hardware stores throughout Tasmania, four woodchip export facilities, a Tasmanian based construction company and a plantation investment company (Gunns Plantations Ltd).

#### **4.3.3 Norske Skog Paper**

Norske Skog operates in 15 countries worldwide. Its Australasian division comprises three mills (Boyer in Tasmania, Albury in Southern NSW and Tasman in New Zealand). At the Boyer Paper Mill, near New Norfolk, the principal focus is making newsprint. The company manages 24,500 ha of mostly *Pinus radiata* plantation in Tasmania, most of which is owned by the company, on freehold land or State forest. The plantation establishment program has been reduced in the past few years and currently no joint ventures with private landowners are being established. The main focus of the company is to provide wood to meet Boyer's needs, however other products, such as sawlogs, export woodchips and veneer are produced from the plantation and native forest estate managed by Norske Skog.

At Boyer, the company directly employs 470 people. The Company's total economic contribution to the Tasmanian community from wages and local expenditure on goods is approximately \$110 million per year. Most of Boyer's 280,000 tonnes of newsprint production is distributed to mainland Australia, where it is used by the major publishing houses. This represents about 40% of the newsprint and related grades used in Australia each year.

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<sup>47</sup> Profiles of Northern Tasmania's core industry sectors. Northern Tasmanian Regional Development board (2002).

<sup>48</sup> [www.privateforests.tas.gov.au](http://www.privateforests.tas.gov.au)

<sup>49</sup> Ibid

Norske Skog Boyer utilises two broad types of wood fibre, 75% pine and 15% eucalypt<sup>50</sup>. Recycled newsprint fibre and imported Kraft fibre (imported from New Zealand) is also used at Norske Skog Boyer averaging about 10% of the product content<sup>51</sup>. Pine logs are sourced from a variety of plantations throughout Tasmania with some 50% coming from the company's own plantations in southern Tasmania. Pine chip residues are also purchased from pine sawmills in northern Tasmania<sup>52</sup>. Eucalypt logs are sourced from regrowth and regenerated forests in southern Tasmania, largely from State forest of average age 50 years. No oldgrowth trees are utilised at the mill<sup>53</sup>.

#### **4.3.4 Paperlinx - Wesley Vale & Burnie**

The Paperlinx Wesley Vale and Burnie mills on Tasmania's northwest coast together employ over 500 people and have ongoing relationships with 140 local contractors<sup>54</sup>.

The Burnie Mill no longer produces any hazardous by-products and both mills have eliminated dioxin emissions. Chlorine has been completely eliminated from the Wesley Vale Mill's bleaching processes and now uses hydrogen peroxide<sup>55</sup>.

##### *Wesley Vale Mill*

The Wesley Vale Mill is equipped with two pulp mills, a paper machine and an off-machine coater. The mill can produce 40,000 tonnes of pulp and 135,000 tonnes of coated and uncoated papers for publishing, business forms and printing<sup>56</sup>. Fibre sources at Wesley Vale include plantation pine and plantation eucalypt.

##### *Burnie Mill*

The Burnie Mill has two paper machines and can produce 128,000 tonnes of paper every year<sup>57</sup>. Most of the paper is for forms-grade photocopying, offset printing and base grades of paper which are then coated at the Wesley Vale Mill<sup>58</sup>. The main fibre source for the Burnie Mill is imported pulp.

#### **4.3.5 Auspine**

Auspine Limited is Australia's largest non-government producer of Radiata Pine<sup>59</sup>. The Scottsdale is a sawmill, preservative treatment plant and a woodchipping operation. Auspine Tree Farms in Northern Tasmania harvests plantation radiata pine under access agreements.

Multimillion dollar expenditure on state-of-the-art technology for large and small diameter logs has upgraded log-sorting, and increased sawing accuracy, optimised

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<sup>50</sup> Norske Skog Boyer, Environmental Management Plan 2001, p32.

<sup>51</sup> Norske Skog Boyer, Environmental Management Plan 2001, p35.

<sup>52</sup> Norske Skog Boyer, Environmental Management Plan 2001, p32.

<sup>53</sup> Ibid

<sup>54</sup> [www.reflex.com.au/about\\_make\\_wesburne.aspx](http://www.reflex.com.au/about_make_wesburne.aspx)

<sup>55</sup> Ibid

<sup>56</sup> Ibid

<sup>57</sup> Ibid

<sup>58</sup> Ibid

<sup>59</sup> Profiles of Northern Tasmania's core industry sectors. Northern Tasmanian Regional Development board (2002).

sawlog utilisation, further improved quality control, kiln systems, and preservation treatment, while reducing production costs. Auspine at Scottsdale employs 152 permanent staff, and around 20 casual employees<sup>60</sup>.  
Volume of production – 68,000 m<sup>3</sup>/yr

#### **4.3.6 French Enterprises Pty Ltd**

French Enterprises is a private family owned company primarily involved in the milling of Tasmanian grown radiata pine. The company employs around 135 people at its Scottsdale sawmill, producing high-grade softwood timber products, including treated pine for Tasmanian and interstate markets. Supplementary to the milling operation, French Enterprises Pty Ltd has steadily increased its plantation interests. Today the company owns and manages 473 hectares of private radiata pine plantations and has joint venture interests totaling 362 hectares. All plantations are managed with a view to producing the highest quality veneer and pruned radiata pine sawlogs. Volume of production – 49,000 m<sup>3</sup>/yr.

#### **4.3.7 Carter Holt Harvey**

Carter Holt Harvey – CHH - (formerly Starwood) is at Bell Bay on the Tamar River. The plant was commissioned in 1998 and was purchased by CHH in December 2002.

CHH is Australia's largest medium density fibreboard (MDF) plant. Medium density fibreboard is a high quality engineered timber product offering superior qualities of consistency of finish and density, freedom from knots and natural irregularities, as well as having the characteristics of strength, durability and uniformity not always found in natural timber. It has excellent machine-ability due to its homogenous consistency. These characteristics make MDF particularly suited for use in flooring, panelling, manufacture of furniture, cabinets, and mouldings, as well as structural applications. CHH is unique for it is the only MDF plant in Australia which produces both a 100% pine and a eucalyptus/pine blended MDF<sup>61</sup>. The plant is able to produce up to 120,000 tonnes of MDF per annum<sup>62</sup> and employs 105 people.

CHH is situated within close proximity to the Port of Launceston at Bell Bay and exports product to Southeast Asia, New Zealand, Melbourne and Sydney. CHH has also invested in pine plantations in the region, which are managed by Forestry Tasmania.

#### **4.3.8 Tasmanian Wood Panels P/L**

Tasmanian Wood Panels P/L is a particle board manufacturer located at Wesley Vale in the State's north. Volume of production is approximately 42,000 m<sup>3</sup>/yr.

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<sup>60</sup> Profiles of Northern Tasmania's core industry sectors. Northern Tasmanian Regional Development board (2002).

<sup>61</sup> Ibid

<sup>62</sup> Ibid

### 4.3.9 Tasmanian Fibre P/L

Tasmanian Fibre P/L is a joint venture between Forest Enterprises Australia (FEA) and Neville Smith Timber Industries (NSTI). The joint venture aims to provide wood fibre to both domestic and export markets with raw material sourced from a combination of sawmill residue and FEA's eucalypt plantations. The project will have an initial capacity to export 300,000 tonnes of woodchips per annum and employ 10 people<sup>63</sup>.

## 4.4 Summary of plantation forest products

An overview of the product flow from Tasmania's plantations is given in **Table 11**. Products manufactured from the plantation resource in 2003 are summarised in **Table 12**.

**Table 11:** Summary of plantation products in 2002-03

	Volume	%
<b>Logs</b>		
Hardwood woodchips (tonnes)(a)	1,120,000	44%
Softwood pulpwood (tonnes)	718,000	28%
Sawlog (m3)	547,000	22%
Export logs (m3)	129,000	5%
Roundwood	10,000	<1%
	<b>2,520,000</b>	
<b>Products</b>		
Newsprint (tonnes)(b)	310,000	30%
Paper (tonnes)(c)	302,000	29%
Sawn timber & veneer (m <sup>3</sup> )	232,000	22%
MDF (tonnes)	120,000	11%
Particle board (m <sup>3</sup> )	42,000	4%
Treated pine (m <sup>3</sup> )	40,000	4%
	<b>1,046,000</b>	

(a) Latest data not available - based largely on the volume forecast by Banks & Clark (1997)

(b) Produced with input from native forest regrowth (~20%) and imported pulp (~10%)

(c) 42% is manufactured from imported pulp at Paperlinx Burnie

Currently an estimated 41% of Tasmania's plantation grown timber is exported as whole logs and woodchips. An estimated 40% of softwood pulpwood is exported and an estimated 70% of plantation hardwood is exported as woodchips. This is where Tasmania has a huge opportunity. Downstream processing more of this timber locally has the potential to significantly increase wealth in Tasmania (see **Section 7.1.3**). For example, export pulpwood used locally for expansion in panel and paper production and whole logs for establishment of rotary peeled veneers for plywood and LVL (laminated veneer lumber).

<sup>63</sup> www.forestenterprise.com – FEA enters into joint venture

**Table 12:** Breakdown of forest products processed from primarily plantation feedstock

			Particle board (m3)	Sawn timber & veneer (m3)	MDF (tonnes)	Newsprint(a) (tonnes)	Paper(b) (tonnes)	Treated pine (m3)
PAPERLINX	woodchip mill and a pulp and paper mill	WESLEY VALE					174,000	
PAPERLINX	pulp and paper mill	BURNIE					128,000	
NORSKE SKOG PAPER MILLS (AUSTRALIA) LIMITED	pulp and paper manufacture	BOYER				310,000		
CARTER HOLT HARVEY	medium density fibreboard	BELL BAY			120,000			
TASMANIAN WOOD PANELS (AUST) PTY LTD	Particle board	WESLEY VALE	42,000					
AUSPINE LIMITED	sawmill	TONGANAH		68,000				
FRENCH ENTERPRISES PTY LTD	sawmill	SCOTTSDALE		49,000				
FOREST ENTERPRISES AUSTRALIA TIMBER P/L	wood processing works	BELL BAY		100,000				
AUSPINE LIMITED	timber preservation plant	TONGANAH						7,000
KOPPERS TIMBER PTY LTD	timber preservation plant	LONGFORD						32,500
OTHER (eg TTC/Gunns)	sawn timber			15,000				
<b>TOTAL</b>			<b>42,000</b>	<b>232,000</b>	<b>120,000</b>	<b>310,000</b>	<b>302,000</b>	<b>39,500</b>

(a) Produced with input from native forest regrowth (~20%) and imported pulp (~10%)

(b) 42% is manufactured from imported pulp at Paperlinx Burnie

## 5.0 Current plantation forest employment

### 5.1 Manufacturing sector

Tasmania's plantations are a significant generator of manufacturing employment, particularly in the production of paper products, sawn timber and panels (**Table 13**). The performance of plantation timbers, in terms of processing and employment, is compared to the native forest industry in **Table 14**.

**Table 13:** Major plantation based manufacturing employers in Tasmania

Company	Total manufacturing jobs	Plantation manufacturing jobs
Norske Skog Paper(a)	470	353
Paperlinx Wesley Vale	290	290
Paperlinx Burnie(b)	232	0
Auspine	172	172
French Pine	135	135
Carter Holt Harvey	105	105
Forest Enterprises Australia	50	50
Tasmanian Fibre P/L	10	10
<b>Total</b>	<b>1,464</b>	<b>1,115</b>

Data source: Direct inquiry and web site information

(a) Feedstock is approximately 75% softwood plantation

(b) Feedstock is imported pulp

**Table 14:** Employment - plantations versus native forests

	Manufacturing jobs(a)	Timber harvested (m3)	Area logged 2002-03(b)	Sawn timber produced(c) (m3)
<b>Plantations</b>	<b>1,115</b>	<b>2,520,000</b>	<b>10,110 ha</b>	<b>232,000</b>
Manufacturing jobs/timber harvested = 0.44				
Sawn timber/volume harvested = 0.09				
<b>Native forests</b>	<b>1,936</b>	<b>6,000,000</b>	<b>35,320 ha</b>	<b>163,300</b>
Manufacturing jobs/timber harvested = 0.32				
Sawn timber/volume harvested = 0.03				
<b>Total</b>	<b>3,052</b>	<b>8,520,000</b>	<b>45,430 ha</b>	<b>395,300</b>

(a) ABS total timber industry manufacturing jobs (Nov 2003) were 3,400

(b) Forest Practices Board Annual Report 2002-03

(c) ABARE – Australian forest and wood product statistics 2003-04

- There are currently 1.4x the manufacturing jobs per m<sup>3</sup> of timber harvested from plantation forests than from native forests. This is poorer than in 1997 when plantations supported 3x more manufacturing jobs than native forests<sup>64</sup>.
- Woodchips and pulpwood now constitute 72% of plantation product whereas it was 60% in 1996<sup>65</sup>.
- Plantations account for 29% of timber harvested in Tasmania yet generate 37% of the manufacturing jobs.
- In 2002-03 plantations produced 59% of Tasmania's sawn timber yet they represented just 22% of the area logged.
- Plantations currently produce three times more sawn timber per m<sup>3</sup> harvested than native forest.

## 5.2 Total employment

Total plantation related employment in Tasmania is estimated at 2,012<sup>66</sup> which includes, harvesting, loading, transport, processing and administration.

# 6.0 Future plantation resource availability

## 6.1 Plantation resource forecast

Tasmania's plantation timber resource is predicted to expand rapidly, particularly the hardwood resource. In ten years it is expected that there will be 10x more plantation hardwood available and 17x more than current in 20 years (**Table 15; Figure 5**).

The resource availability predictions are based upon the plantation establishment rate continuing at the current rate which is 9,400 ha/yr for hardwood and 1,950 ha/yr for softwood. This is an important and contentious issue as plantation expansion is currently occurring largely due to clearfelling and conversion of native forest (**Section 3.6**). For further plantation expansion and resource availability to be ecologically, ethically and economically sustainable then the predicted expansion must be based upon the use of unproductive agricultural land or as farm forestry ventures (**Section 7.3.1**).

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<sup>64</sup> Banks & Clark (1997). Tasmania's plantation processing industry – job opportunities now and in the future.

<sup>65</sup> Ibid

<sup>66</sup> Extrapolation from: Burns, K., D. Walker & A. Hansard 1999. Forest plantations on cleared agricultural land in Australia. Australian Bureau of Agricultural and Resource Economics, Canberra. Research Report 99.11

**Table 15:** Forecast of Tasmanian plantation timber availability

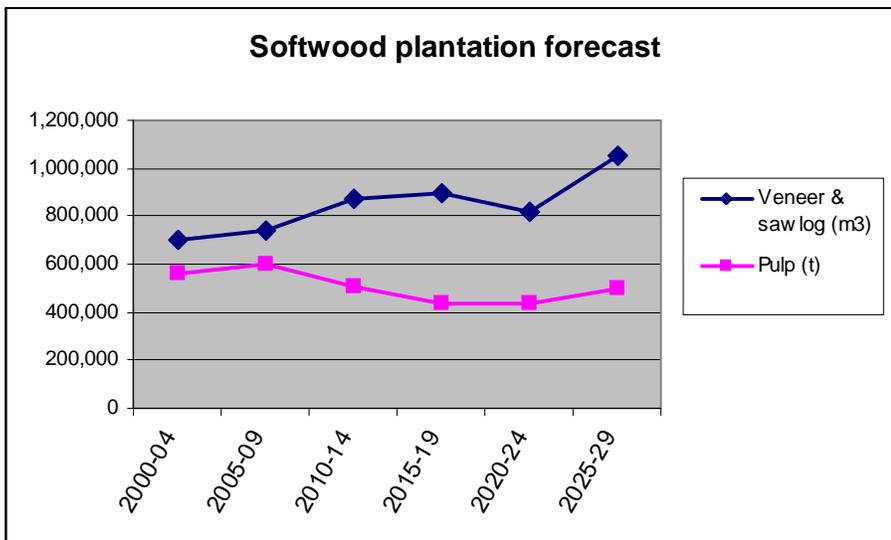
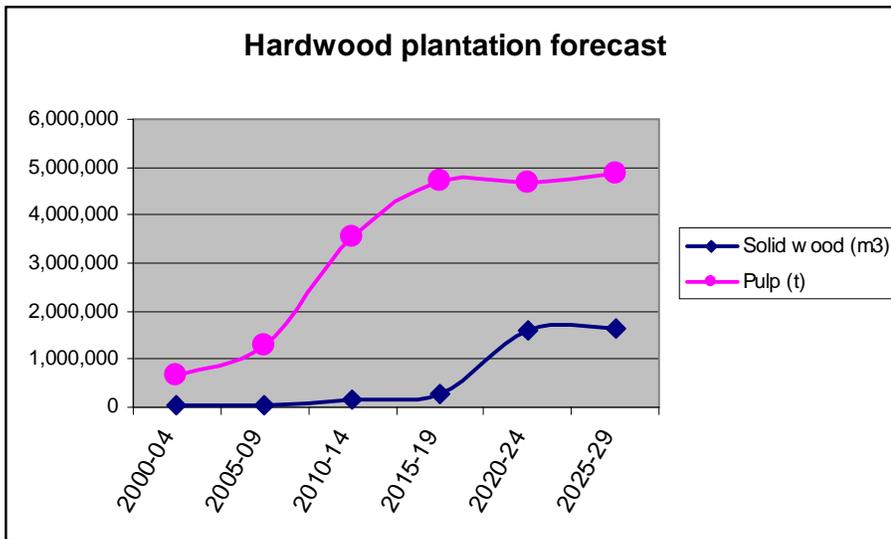
(Data presented in m<sup>3</sup> as average annual volume over five year periods)

		<b>2000-04</b>	<b>2005-09</b>	<b>2010-14</b>	<b>2015-19</b>	<b>2020-24</b>	<b>2025-29</b>
<b>Hardwood</b>	Solid wood(a)	20,000	20,000	140,000	270,000	1,600,000	1,620,000
	Pulp	680,000	1,290,000	3,530,000	4,720,000	4,660,000	4,860,000
	<b>Total</b>	<b>700,000</b>	<b>1,310,000</b>	<b>3,670,000</b>	<b>4,990,000</b>	<b>6,260,000</b>	<b>6,480,000</b>
<b>Softwood</b>	Veneer & sawlog	700,000	740,000	870,000	900,000	820,000	1,050,000
	Pulp	56,000	600,000	510,000	440,000	440,000	500,000
	<b>Total</b>	<b>1,260,000</b>	<b>1,340,000</b>	<b>1,380,000</b>	<b>1,340,000</b>	<b>1,260,000</b>	<b>1,550,000</b>

**Data source:** Tasmanian & Commonwealth Governments (2002) RPDC report RFA update p46

(a) Available for a variety of uses such as rotary peeling, sawn timber, laminated veneers

**Figure 5: Plantation hardwood and softwood timber forecast**



Despite significant growth in the plantation hardwood resource, hardwood solid wood production from plantations will not make a significant contribution to available sawlog volume before about 2017 onwards (**Figure 5**).