

Why plantations are no substitute for native forest timber in Victoria

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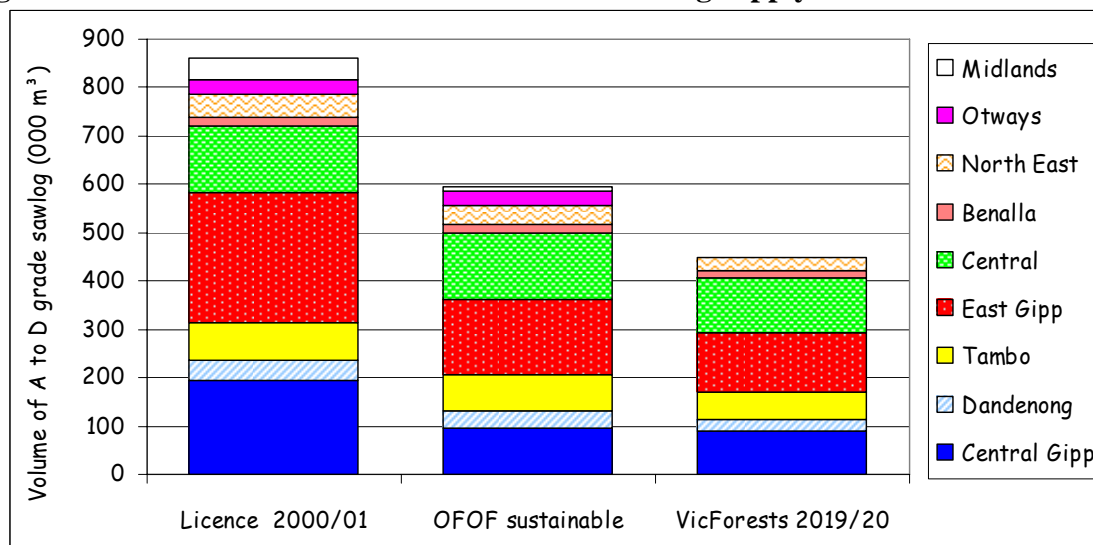
1. Background

The forest and wood products industry in Victoria delivers employment for 39 200 people and output of \$6 080M pa including indirect effects. Native forests account for about 40% of the socio-economic impact and plantations for about 60% (Cameron 2005a, Cameron et al 2004). The plantation impact will increase as the recently expanded young eucalypt plantations reach harvest age. These plantations will provide additional socio-economic impacts primarily in the harvest, haul and processing of logs into wood chips, pulp and paper. Very little of the emerging eucalypt plantation resource will be processed into sawn timber. Emerging hardwood plantations will compliment native forest supply by helping to soften the socio-economic decline associated with reductions in native forest supply but will not substitute for native forest timber.

2. Supply of native hardwood

Supply of hardwood sawlogs from native forests has declined considerably since 2001 and is forecast to decline further (Figure 1). Victorian native hardwood sawmilling capacity now greatly exceeds current and projected sawlog supply leading to considerable inefficiency such as under-utilised capacity, long haul of logs and the inability to exploit economies of scale and scope.

Figure 1: Decline in Victorian native hardwood sawlog supply



Source: Derived from DSE 2002 and VicForests 2005

The associated decline in native eucalypt pulpwood (sourced as residues from integrated harvesting and chipping of mill off-cuts) is also a serious concern. Following the resource reduction under Our Forest Our Future, a substantial proportion of the hardwood pulpwood supplied to Maryvale mill is now sourced from outside Gippsland at significant additional haul cost at a time when the industry faces significant transport issues due to substantial under-investment in infrastructure (Cameron 2004).

3. Australian deficit in wood products

Australia's two billion dollar trade deficit in wood products is dominated by substantial imports of hardwood pulp and white paper made principally from hardwood pulpwood. The recently announced pulping developments at Maryvale, Heywood and Penola will help address Australia's trade deficit in hardwood pulp and white papers and substantially increase demand for Victorian eucalypt pulpwood.

4. Emerging eucalypt pulpwood demand.

Most of the supply from Victoria's eucalypt plantations will be required for pulping and not available to supplement declining native eucalypt sawlog supply. The Maryvale pulping and bleaching expansion will initially rely on native forest residues supplemented by Gippsland eucalypt plantation pulpwood. The proposed pulping developments at Heywood and Penola will consume most of the emerging supply from eucalypt plantations in the Green Triangle.

5. Why plantation sawlogs are no substitute for native forest sawlogs

Sawing trials have demonstrated that plantation silviculture considerably influences the suitability of plantation grown hardwood sawlogs for sawntimber (Nolan et al 2005).

Sawlogs from **unthinned and unpruned** plantations are generally not suitable for appearance grade sawntimber. They are occasionally suitable for structural sawntimber if grown on good sites and are unsuitable for high strength veneer products. Log size, defects, recoveries, density, durability, drying properties and stress profile of hardwood plantation logs from unthinned and unpruned plantations are significantly poorer than logs from native forests.

Hardwood plantation logs from **thinned and unpruned** plantations of self pruning species are suited to the production of general structural products and some lower quality appearance grade products – the latter at the expense of sawn and grade recovery compared to native logs. Some species and age classes are subject to significant degrade during initial drying.

Sawlogs from such **specially managed** eucalypt plantations are expected to be generally suitable for appearance grade sawntimber or surface (face) veneer production. However the area of such specially managed plantations in Victoria is tiny and needs to be increased but is unable to attract sufficient investment because of the very high initial investment and long rotations required. These specially managed plantations need to be established on good sites with high rainfall at relatively close initial spacing, receive early thinning and pruning and be harvested at much older ages than the bulk of Victoria's eucalypt plantations established for pulpwood production. Essentially no such plantation supply will be available for 30-40 years. Regulatory and other barriers such as high land cost are also likely to impede new planting (Cameron 2004, Cameron 2005b and Cameron 2005c).

6. Gippsland experience with sawing eucalypt plantation logs

Attempts have been made to produce sawntimber from the oldest eucalypt plantations in Gippsland with relatively poor results. These plantations essentially produce low grade sawlogs, mostly D grade sawlog with no B+ sawlogs. The logs are mostly sawn into lower value structural and packaging grades of sawntimber. In Gippsland hardwood plantation sawlog supply is declining and is likely to continue to fall. Five mills have either ceased or plan to cease sawing plantation grown hardwood sawlogs due to lack of profitability.

The existing hardwood plantations have been established primarily to produce pulpwood. They have not received the early pruning and thinning necessary to produce high quality sawlogs and the resulting sawlogs are smaller in diameter and contain more defects including tension wood than native sawlogs. When processed, the resulting sawntimber is generally unsuitable for appearance grade products. Gippsland mills have had difficulty profitably sawing structural sawntimber from plantation-grown sawlogs.

The plantation grown sawlogs are not suited to the present configuration, product mix and markets of most of the existing sawmills that are primarily set up to quarter saw large logs into high-value appearance grade products.

Sawlogs from existing plantations are more suitable for sawing into structural sawntimber in very large mills (i.e. 300 000 m³ pa). Such volumes greatly exceed the current and expected supply from the existing plantations.

7. Future potential of plantation grown sawlogs

A number of challenges will need to be overcome for plantation sawlogs to substitute for native sawlogs beyond 2030-40. Future sawmills using these plantation logs will need to be large to capture essential economies of scale. They will also need new technology to manage the different grades or qualities of plantation logs. Justifying investment in new plantation-based sawmills will require large areas of new plantations to have reached sufficient age to ensure a sustainable supply of sawlogs with low risks in terms of quantity, quality and price.

Attracting the capital for such plantations will be challenging. Procuring sufficient land will require investors to overcome existing impediments to economic returns, including high land cost, community concerns, planning restrictions and possible future demand for water in 'plantation catchments'.

6. References

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