Expansion of Plantation Forests in the Murray Valley Region of South Eastern Australia: Social Interactions and Prospects

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Abstract

Plantation forestry policy in Australia is driven by ‘The 2020 Vision’, with a national target of trebling plantations from one million hectares to three million hectares between 1997 and 2020. The Murray Valley National Plantation Inventory (NPI) region of south eastern Australia is undergoing social change, has a large plantation resource, and has been earmarked by the forest industry for plantation expansion but has only achieved moderate success. Nestled within this region is a Local Government Area, the Towong shire, which has a significant area of land with capability for Radiata Pine plantations. However, plantation expansion there had been problematic since the 1990s. In this paper, we discuss the key findings of research using a mix of quantitative data (property values, land-use and Census data) and stakeholder interviews to identify the social and economic changes occurring in this region, and the implications for the achievement of regional plans for plantation expansion.

Introduction

Planted forests are increasingly important in global wood supply, and in the provision of a range of environmental and social benefits (Gerrand et al. 2003). In wood production in Australia, the estimated gross value of logs delivered at mill door from plantations as a proportion of the national total increased from 53 per cent in 1999–2000 to 59 per cent in 2004–2005 (ABARE 2006). Apart from timber production, planted forests contribute to stable economic growth at regional levels (Econsearch 2005; Schirmer et al. 2005), are recognised as a positive component in any greenhouse gas amelioration strategy (CSIRO 2004; Turner et al. 2004), and can enhance biodiversity (CSIRO 2004; Hobbs et al. 2003; Race & Freudenberger 2003). However, against these benefits, the public is concerned about impacts on catchment water yield when pastures and crops are replaced by plantations (BRS 2003; CSIRO 2004), an issue being addressed in the National Water Initiative (Council of Australian Governments 2004).

Tensions about plantation forestry are also exacerbated by the coincidence of economic wood supply zones and the more densely settled areas of the ‘populated coastal’ and ‘populated inland’ regions of Australia where populations are generally increasing (Haberkorn et al. 2004; Wood et al. 2001). These social landscapes are undergoing change in terms of demographics, employment, land tenure and management (e.g. Alston 2004; Barr, Wilkinson & Karunaratne 2005; Gray & Lawrence 2001). Thus, whilst the landscape may outwardly look the same in that agriculture is the dominant land-use, differences in values underpin different approaches to land management (Curtis & Robertson 2003). Evidence of this trend is the decoupling of land prices and the agricultural returns from that land as new settlers enter the rural property market (Race et al. 2005).

In this context, in this paper we discuss the findings of research on the expansion of plantation forests in the Murray Valley National Plantation Inventory (NPI) region of south eastern Australia, and provide insight to the social interactions associated with development of new plantations. This broad geographic region is undergoing social change (Bar 2005; Curtis et al. 2000; Curtis, Herrera & Kelson 2003), has a large plantation resource (Gavran & Parsons 2008), and has been earmarked by the forest industry for plantation expansion but has only achieved moderate success. Nested within the Murray Valley NPI region was a Local Government Area (LGA), the Towong shire (Figure 1), which was selected as a case study for more detailed investigation, because plantation expansion there had been problematic, and we researchers had forestry industry buy-in to research specific to that LGA.

We analysed a wide range of secondary data to identify social, economic, agricultural and forestry changes in rural landscapes of the Murray Valley, and conducted in-depth interviews with 44 people representing a range of stakeholders during November 2006 to March 2007.
Plantation Expansion

Plantation forestry policy in Australia is driven by ‘The 2020 Vision’ launched in 1997 by government and the plantation industries, with a national target of trebling plantations from one million hectares to three million hectares between 1997 and 2020. The strategy aimed to convert the annual $2 billion trade deficit in wood and wood products into a trade surplus (Plantations 2020 Vision Implementation Committee 1997). The Primary Industries Ministerial Council of the Australian Government, in April 2005, ‘Endorsed the actions proposed at national and State levels to maintain progress towards the Plantation 2020 Vision target of 3 million ha …’ (Commonwealth of Australia 2005, p. 22). Regional targets for plantation expansion were reported in an analysis of wood availability from plantations over the period 2001 to 2044 (Ferguson et al. 2002). Although these are notional targets estimated by the Bureau of Rural Sciences in 2001, they provide a basis to compare recent expansion against a national prediction of expected regional activity if the Plantations 2020 target was to be achieved. Data for three of the National Plantation Inventory regions in south east Australia – the Green Triangle, Central Victoria, and the Murray Valley – are shown in Table 1. Results for recent plantation expansion (planting years 2001 to 2007) show that the Green Triangle region slightly exceeded its notional target and the Murray Valley region achieved around half of its notional target. In contrast, the Central Victoria region achieved less than one-third of its notional target. In total, these three regions contributed 29.6 per cent of the expansion of the national plantation estate from September 2000 to December 2007.

Since 1997, it is estimated that growers participating in managed investment schemes have financed about 70 per cent of all new plantations in the national estate (Cummine 2005). The remaining investment for new planting has mostly come from governments and timber industry companies, in approximately equal proportions (Kelly et al. 2005). Three forestry managed investment schemes seeking to develop Radiata Pine plantations in the Murray Valley region were offered during 2006–2007, with the plantations to be managed on long rotations (approximately 25 years), and to be marketed to regional processors (Agriwealth 2007; Gunns Plantations 2006; Willmott Forests 2006).

Expansion Targets in North East Victoria

Plantations North East Inc. (PNE) is the private forestry development committee for the north east region of Victoria. Its main objective is to support plantation expansion towards a goal of 25,000 additional hectares from 2006 to 2020 (PNE 2005). This expansion would build on the plantation resource in the 13 municipalities of north east Victoria of 67,740 hectares (Wareing et al. 2002). Expansion of the estate is important for the economic development of the region, as it brings new investment and jobs, and provides a sustainable land use option (PNE 2005).

An assessment of the capability of land in north east Victoria to grow commercial plantations was conducted in 1998. About 810,000 hectares of land in north east Victoria (the Victorian part of the Murray Valley national plantation inventory region) was assessed to have the capability to grow Radiata Pine plantations (Borschmann

### Table 1: Plantation areas at September 2000, notional projections for expansion from September 2000 to 2019, and actual expansion from September 2000 to December 2007, for three plantation regions in Australia

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<tr>
<td>Green Triangle</td>
<td>224 184</td>
<td>262 950</td>
<td>97 936</td>
<td>13 839</td>
<td>13 991</td>
</tr>
<tr>
<td>Central Victoria</td>
<td>49 517</td>
<td>105 886</td>
<td>10 998</td>
<td>5573</td>
<td>1571</td>
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<tr>
<td>Murray Valley</td>
<td>179 454</td>
<td>88 068</td>
<td>14 960</td>
<td>4635</td>
<td>2137</td>
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<tr>
<td>Total</td>
<td>453 155</td>
<td>456 904</td>
<td>123 894</td>
<td>24 048</td>
<td>17 699</td>
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* Estimated from forecasts in Ferguson et al. (2002), based on Bureau of Rural Sciences projections for new plantations on cleared agricultural land, under a ‘high estimate’ scenario, that would result in a national estate of 3.1 million hectares by 2020.
* Derived from estimates provided by the National Plantation Inventory (Wood et al. 2001, p. 19; Gavran & Parsons 2008, p. 8).
The expansion target of Plantations North East is about three per cent of the land assessed as capable of growing Radiata Pine plantations, that is, the net present value of a plantation investment was greater than the market value of agricultural land.

Agricultural Value of Land

Longitudinal data on sale price of rural properties in regions where agriculture is the dominant land-use can be used to examine trends in the market value of land in relation to its underlying potential for agriculture and, by inference, for forestry. A customised data set was obtained through the office of the Valuer-General for statistics on rural property sales for selected LGAs for properties 10 hectares or more in area from 1995 to 2005. It is argued that by calculating the differential between the land value realised in the market, and the expected value of the land for agricultural use, an indication of whether landholders reside in an ‘agricultural production’ landscape or a ‘lifestyle’ landscape is provided. That is, where there is a large differential between the land and the estimated value of the land for primary production, then it is likely that farmland is being purchased for both farming and non-farming purposes, and landholders are deriving a significant proportion of their income from off-farm sources (Race & Stewart 2007).

The value of land today can be represented as the discounted sum, or present value, of the expected value of future income or rents, with the opportunity cost of investing in the land being the discount rate (Alston 1986; Clark et al. 1993). A method was developed to estimate the present value of estimated net farm income in perpetuity for each year during 1995 to 2005, as an indicator of the value of land for agriculture, which was then compared to the median sales prices realised for rural properties in different LGAs (Stewart, Race & Curtis 2007). The results (Figure 2) indicated that land in the Towong shire was purchased primarily for its agricultural value during 1997 to 2005 – thus an agricultural production landscape. In contrast, the results for LGAs closest to Melbourne (e.g. Mitchell, Murrindindi) indicated that land prices on average appeared to be beyond reach of a viable agricultural enterprise, and ownership of rural land was uncoupling from agriculture.

Demographic Changes

Demographic changes in the Towong shire were studied during 1991 to 2001 (Stewart, Race & Curtis 2007). Where forestry companies are most interested in expanding plantations in the Towong shire (Statistical Local Area Part B), population density declined to 0.6 people per square kilometre. In addition, despite the total population in the Murray Valley increasing by 5.4 per cent during the 10-year period of 1991–2001, the total population in the Towong shire declined by 8.0 per cent. Following this period of decline (1991–2001), the total population in the Towong shire stabilised during 2001–2006; however, it appears to be ‘ageing’ – with the median age in the two Towong Statistical Local Areas (SLAs) increasing by between seven and eight years during 1991–2001. Also, there was a decline by 23.8 per cent in the size of the population of children (0–14 year old cohort), and a decline by 24.0 per cent in the size of the youth population (15–24 year old cohort) in the Towong shire during 1991–2001. Towong shire as a whole experienced a slight decline in the number of people employed in ‘agriculture, forestry and fishing’ during 1991–2001; however, agriculture still accounted for nearly 29 per cent of employment in the Shire – the single largest employment category in the Shire.

Farming in the Towong Shire

In the Towong shire, beef production was the most common farm enterprise (60 per cent of farms in 2005), followed by dairying (24 per cent of farms). This balance has remained relatively stable during 1997–2005. The concentration on these two enterprises was more pronounced than in the wider Murray Valley region. Beef production is playing an increasing role in the agricultural sector of the Towong shire; however, this is largely undertaken by enterprises of ‘small’ economic size – which tend to find it difficult to maintain growth in real income. Beef farms in Victoria, on average, did not make a business profit over the decade 1996–1997 to 2005–2006. Expressed as per farm averages, the age of the owner manager of beef farms was 63 years, compared with 59 years for all agricultural industries in 2004–2005 (Stewart, Race & Curtis 2007).

Results from interviews, however, showed that farmers regarded the Towong shire as a productive and reliable farming area mainly because of its rainfall, though isolation was the main disadvantage identified. Given the Towong shire’s support for reserving prime agricultural land for farming, it was seen to be relevant to define the characteristics of a ‘viable farm’. However, this proved to be difficult, because of the different contexts in which farm enterprises were operated and of the varying aspirations of the operators. In a client base of a financial institution of more than 200 farm businesses in north east Victoria and southern New South Wales (mainly beef and dairy enterprises), about 70 to 80 per cent of clients had off-farm income, most of which would earn more off-farm than on-farm. A senior staff member of another financial institution operating in the same general area reported that off-farm income was increasing.

Despite increasing land prices, farmers were active buyers of rural property in the Towong shire. A farmer observed that land was mainly being purchased by local people and absentee landholders – hence, not many people were coming to live in the district. Some farmers were getting off-farm work by managing lifestyle farms for absentee landowners.

Views about the future of agriculture in north east Victoria were both optimistic and pessimistic. Farmers held the view that beef production would continue to be the predominant form of agriculture in the foreseeable future. Three farmers interviewed were optimistic about...
the future of the beef industry, because of such factors as increasing demand for quality-assured product in the Asia-Pacific region. Views within the Department of Primary Industries about the future of agriculture in north east Victoria were both optimistic and pessimistic. Other interviewees reported that older farmers tended to depreciate the capital value of their farms – they let pastures and fences run down, and do not carry out the necessary environmental works.

A senior staff member of the Towong shire was concerned in the short term about the impact of recent drought on the resilience and resources of the farming community. The broader view held by the interviewee about farming in the Shire was that it is very much a traditional agricultural area, was only a marginal land use in many parts of the Shire, had little innovation save for some trials of alternative crops, and had difficulty maintaining parity with other areas because of the large distance to markets and the nature of the terrain that often precluded the use of modern transport systems.

There were reservations amongst farmers in the Towong shire about the approach to land-use planning by local government. One commented that local government should not be overly prescriptive about land use. Another said that restricting land uses other than agriculture in large parts of the Shire limited opportunities for 'lifestyle' properties which were a means of attracting people to the region – an outcome sought by council and community. However, one farmer who was disillusioned by agriculture believed that local government should zone rural areas exclusively for farming.

**Plantation Forestry in Towong Shire**

Plantations in the Towong shire are almost all softwoods that were mostly established by the State during the 1960s to the mid-1980s. In that period, land used by the State for plantation development was public land cleared of native forest and purchased farmland. It was government policy to use 'marginal' farmlands for plantations wherever possible. The government’s commitment to phase out by 1987 the clearing of native forest for softwood plantations, and community concern about the purchase of farmland for softwood expansion, led to the decline and ultimate cessation of softwood plantation expansion by the State in north east Victoria. There has been little investment in new industrial-scale softwood plantations in north east Victoria since the early 1990s when the State divested management of its plantations.

Towong shire had 16,747 hectares of plantations in 2005, with three-quarters was owned by one industrial grower. Towong shire has a significant area of farm forestry softwood plantations – at 2004, 23 owners had 1,475 hectares of plantations mostly established under a range of incentives offered by government and industry. However, farm forestry softwood growers in the Towong shire have experienced great difficulty in accessing softwood markets, though in a recent development, growers have come together as a marketing group and contracted logs for sale to a large forestry company.

Towong shire has no processing of plantation wood products because the scale of plantations in the Shire is not sufficient to support local processing – all plantation logs are hauled to processing centres in other Local Government Areas in Victoria and New South Wales. It is most unlikely that any significant investment in local processing would develop, even if the plantation estate expanded in line with the vision of PNE – it is more likely that existing industries elsewhere would increase their capacity at their present locations.

Most of the region is too far from an export woodchip facility to attract MIS for short rotation woodchip plantations – the dominant form of new forestry investment in other forestry regions (e.g. the Green Triangle region). There was widespread concern in the rural community about MIS, particularly the perception that the tax arrangements for MIS created market distortions for land and water resources at the expense of farmers.

The over-riding concern was the impact of plantations on local communities – loss of farms and employment, causing families to move away. The loss of only several families in a small farming valley was regarded as sufficient to have a significant effect on the social capital of the community. Many of the concerns raised about plantation expansion were similar to those raised when the Victorian government established The State Plantations Impact Study in 1988, in response to community opposition to the government’s program for expanding softwood plantations on farmland in north east Victoria. The Towong shire formed the ’Towong Shire Plantations Committee’ in 1996, in response to community concern about plantations, and it has been an effective community forum, with little concern about plantation forestry at present – but there were views that there would be concern if plantations expanded markedly.

**Opportunities for Plantation Forestry**

The main purpose of softwood plantations is sawlog production for conversion to sawn timber, primarily for use in the domestic housing and timber market. There is increasing demand for softwood logs from primary processors in the Murray Valley, but the major primary processors generally do not invest in plantation wood production under their current business models. However, the increased demand for softwood logs by processors is reflected in the plantation expansion plans of a number of forestry companies in the Murray Valley. Most activity is financed by forestry MIS and this is most likely to remain the main source of new investment in the short term. Nearly all new plantations are being established in southern New South Wales in LGAs adjacent to the Towong shire.

There are significant areas of suitable agricultural land for conversion to plantations in the Towong shire based on the productive capability of the land and the economic haulage distances to major regional processors. However, accessing land in the Towong shire is currently considered too challenging for plantation expansion by MIS companies because of experience with, and perceptions of a relatively difficult planning environment (i.e. controls on land use and clearing native vegetation) for plantation development. While there is a perception amongst plantation companies that plantation forestry is not a preferred land-use in the Towong shire, the forest industry is likely to focus its expansion activities in other regions where the planning environment is relatively supportive of their activities.
Discussion

PNE has a target of 25,000 hectares for the expansion of plantation forests in north east Victoria by 2020, which represents about three per cent of the land in the region assessed by Borschmann (1998) as capable of growing Radiata Pine plantations. However, achieving expansion in line with this target has proved particularly challenging. For instance, even though the Towong shire remained the most attractive LGA for forestry based on the market price of land in relation to its agricultural value, Shire’s planning scheme discourages plantation forestry from prime agricultural land in the Farming Zone and further restricts plantations in areas covered by planning overlays.

A key planning issue identified by the Towong shire is the balancing of development against the desire to protect high quality agricultural lands and natural resources. However, forestry has demonstrated that it is a significant contributor to economic activity in the Shire – for instance, in 2000–2001, the stumpage value of plantation products per hectare of plantation land was about 30 per cent higher than the farm gate value of agricultural commodities produced per hectare of farmland (Stewart, Race & Curtis 2007).

Demographic statistics show trends in terms of decreasing population in parts of the Shire, particularly of the children and youth cohorts, and increasing median age. Beef farming is a dominant land-use in the Shire, and data on farm profitability for beef farms across Victoria show volatile returns and a low return to equity over the past 34 years (ABARE 2007). Tensions about plantation forestry in the Towong shire will continue as this economic wood supply zone sits in a social landscape undergoing change and a local government policy environment that supports the primacy of agriculture on land that is economically suitable for development of new Radiata Pine plantations.

Within the 2020 Vision for plantation expansion, the regional challenge is to develop an appropriate plantation estate that will provide sufficient resource to allow processing industries to operate at internationally competitive levels (Roberts 2005). Forest policy is problematic at a national level in many respects because the impacts occur at the local level. Regional forums are essential for negotiating the forestry debates. We should be prepared, and expect (and encourage) these debates to continue. It is unrealistic, perhaps unhealthy, to expect that land-use in contested landscapes will ever be resolved in a definitive way, no matter how much regulation and planning put in place, because of the dynamic of social, economic and environmental changes in these multifunctional landscapes.

Acknowledgements

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References


Figure 1. Towong shire (Statistical Local Areas (SLAs) Towong (S) – Pt A and Towong (S) – Pt B), nested in the Murray Valley National Plantation Inventory (NPI) region as at 2001.


Figure 2. Ratio of median sale price of rural land to an index of the value of land for agriculture in the Victoria part of the Murray Valley, 1997 to 2005.