Socio-economic impacts of plantation industry expansion

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Overview

- Conflicting perceptions about impacts of plantations
- Different types of socio-economic impact
- What research has been undertaken?
  - Population impacts
  - Service provision
  - Employment – quantity, location
  - Land prices
- Conclusions from current research
- New research – the CRC for Forestry’s Communities project
Introduction

- Plantation forestry expanding rapidly in several regions of Australia

- Multiple other changes occurring at same time
  - Farm amalgamation and deregulation
  - Changes in many agricultural industries (productivity, technology, employment)
  - Seachangers and treechangers
  - Over 1986 to 2001, 22% of Australia's farming families left the land (ABS 2003)

- How does plantation sector expansion affect regions?
Many different perceptions of plantations...

Farmers warned of blue gum invasion

CONCERNS have been expressed that small rural communities like Denbarker could be lost to major tree plantations. Already, more than 8000 ha of blue gums have been established on farming properties in the region — 4000 ha of that being planted in 1994.

About 1000 ha have been planted by CALM in an area bounded by Cape Biche, Rocky Gully and Walkley as part of its aim to plant 20,000 ha of trees in the next 10 years in integrated tree farming.

Another 800 ha have been taken up by Bannings Tree Farms, but the majority of plantations are the result of large companies taking on whole-farm planting.

The desertion of the agricultural industry in this region is in the hands of the community, according to CALM’s State acting manager, Gavin Ellis.

He said CALM encouraged farmers to take on integrated planting practices.

“The problem is the difficulty in convincing landowners that they can plant trees and continue with their farming activities — the two areas can work together,” he said.

The community is concerned about whole-farm plantings, which will lead to people leaving rural communities and thus in turn impact on the amount of money spent in small towns.

“There is also the social impact. The less people there are in the region the more isolated people who stay will feel,” Mr Ellis said there were also concerns about fire management and loss of farming land.

“This has been generated by whole farm change, why we get land farming,” he said.

Mr Ellis said he was not concerned about the whole farm change.

“My view is that the change is necessary due to the need for a wider economic base in rural areas. We are concerned about the impact on land management and the availability of land for farming.

“Gauged

A simple analysis of the potential value of blue gums can be gauged by comparing the cost and returns over the rotation.

On an average site, CALM estimates that $1000 per hectare per year of blue gum planting can be achieved. However, the cost of establishment is $2000 per hectare.

But when comparing the economic returns from the crop allowances for the rotation, the assumption that the crop is the same as the rotation, and the availability of sufficient capital and the willingness of farmers to plant blue gum plantations in an alternative crop...
Many questions about socio-economic impacts...

- **Employment**
  - How much employment does the plantation sector generate? Where is the employment located? What sort of jobs are there? How does the employment compare to alternative land uses? What are the flow-on impacts?

- **Rural population and businesses**
  - Does expansion of plantation estate have an effect on rural population levels? On the type of people living in a region? On service provision (inc. membership of rural fire brigades)? On land prices?

- **Rural culture and landscape**
  - Does expansion of plantations affect the culture of rural communities and rural landscapes?

- **Neighbours**
  - What impacts does establishment of plantations have on neighbouring landholders (social and economic)

- **Type of plantation/tree planting**
  - Do different types of plantations have different impacts (e.g. farm forestry, larger plantations)
Conflicting answers to many questions...

- Following slides give statistics from a 2004 mail survey of 500 residents in Bombala region, NSW
- 62% response rate – 261 respondents
- Further information:
  
  Julia Pickworth, Social Sciences Programme
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Population perceptions

- Plantations bring new people into the area:
  - Disagree: 23
  - Neutral: 18
  - Agree: 56
  - Don't know: 4

- Plantations cause people to leave the area:
  - Disagree: 28
  - Neutral: 17
  - Agree: 48
  - Don't know: 7

- There is a growth in population associated with plantation jobs:
  - Disagree: 39
  - Neutral: 16
  - Agree: 37
  - Don't know: 9

- There is a loss of community services because of people leaving the area due to plantations:
  - Disagree: 36
  - Neutral: 22
  - Agree: 35
  - Don't know: 8
<table>
<thead>
<tr>
<th>Statement</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>The plantation industry has created career opportunities and increased employment in your region</td>
<td>22</td>
<td>12</td>
<td>60</td>
<td>6</td>
</tr>
<tr>
<td>Pine plantations are the economic future of your area</td>
<td>42</td>
<td>19</td>
<td>36</td>
<td>4</td>
</tr>
<tr>
<td>Plantations have negative impacts on other industries</td>
<td>26</td>
<td>19</td>
<td>48</td>
<td>7</td>
</tr>
<tr>
<td>There have been changes to the price of land as a result of plantations</td>
<td>2</td>
<td>9</td>
<td>82</td>
<td>7</td>
</tr>
<tr>
<td>Plantation companies buying land provide farmers with a way to leave the land</td>
<td>10</td>
<td>15</td>
<td>73</td>
<td>3</td>
</tr>
</tbody>
</table>
How has research contributed to answering questions?

Few questions explored, limited number of studies:

1. Studies of perceptions, of impacts on identity/sense of community (several, but generally at times of high conflict)
2. Studies examining independent evidence of impacts on socio-economic characteristics of rural communities:
   1. Population (3 studies)
   2. Services (1 study)
   3. Employment (several studies)
   4. Land prices (3 studies)

More research currently beginning with the CRC for Forestry’s Communities project
**Identity:** How does introduction of plantation forestry affect the culture and identity of rural regions?

- Several studies (e.g. Lane 1997, Kelly and Lymon 2000, Petheram *et al*. 2000)
- Documented range of views on impact of plantation expansion on culture and identity of rural regions
- All found that expansion of plantations *change* people's perceptions of their region and the community in it
- Some experience these changes as predominantly negative, some as positive, some a mixture
- Quantitative studies typically find considerable variation in perceptions of plantations (e.g. Pickworth 2005)

- Members of rural communities do not have a single/common belief about impacts of plantation expansion on culture, identity
Population: How does expansion of plantation industry impact rural population levels?

- Simple question; difficult to answer
- Rural areas experiencing multiple types of change at any given time – all may influence population levels
- Different types of plantation sector change may have different impacts
  - Expansion of plantation estate on agricultural land
  - Establishment/expansion of processing facilities
- Other than perceptions studies, only data available is from 2005 Bureau of Rural Sciences study (Schirmer et al. 2005a,b)
Rural population – Great Southern region, WA
(Schirmer et al. 2005a)

- 12 LGAs; 3 with >2500ha plantations
- Rapidly expanding plantation resource since 1988
- By 2001:
  - over 127,000 ha plantation
  - 93% blue gum
  - plantations established on 10-25% of agricultural land
- Harvesting expanding rapidly since 2001
Population – does expansion of plantation estate impact on rural population?

Great Southern region (Schirmer et al. 2005a):

- No evidence plantation expansion causes higher decline in rural population than other rural land use change.
- The 3 LGAs with high plantation expansion experienced less rural population decline on average than rest of the Great Southern region.
- This was most likely because these LGAs have diverse economies.

![Rural population change 1996-2001](chart.png)
However, change in **type** of population

Great Southern region (Schirmer et al. 2005a)

- Rapid plantation expansion accelerated shift of farmer population
- Plantation managers represent cultural change for many regions
- However similar rates of decline in farmers occurred in some non-plantation areas
Impacts of processing expansion on population?
(Schirmer et al. 2005b)

- South West Slopes of NSW
- A region with a mature 110,000ha softwood plantation estate
- Over 1991-2004, volume harvested & processed more than doubled
- Plantations mostly in LGAs of Tumut, Tumbarumba, Holbrook, Gundagai, Wagga Wagga
- Processing facilities in & near towns of Albury, Holbrook, Humula, Tumut, Tumbarumba, Wagga Wagga
- Processing growth has contributed to town population stabilisation/growth in Tumut, Adelong, Tumbarumba Particularly strong growth in working age population
- Housing & skills shortages were associated with population growth
Services

- School enrolments in Great Southern region (Schirmer et al. 2005a)

- Enrolments in small schools over 1991-2004:
  - declined avg 34% in plantation regions
  - declined avg 17% in non-plantation regions

- However, school enrolment declining more rapidly in plantation regions several years before plantations established

- Plantation expansion a response to decline – not a cause

![Graph showing average enrolments in towns with less than 90 students enrolled.](image)
Employment – how much is generated?

Five studies since 2000 in major plantation growing regions

- **Direct employment**
  - 0.2-0.3 FTE/100ha growing plantations (softwood and hardwood)
  - 1.0-1.6 FTE/100ha harvesting and processing (softwood)

- **Flow-on employment** estimates vary depending on model
  - Usually 1.3-2.3 indirect jobs for every direct job

- **Comparison with alternative land uses**
  - Only one study – and that is several years old (Petheram *et al.* 2000)
  - We need better data
Location of employment

- **Plantation expansion: Great Southern region (Schirmer et al. 2005a)**
  - Rapid increase in employment occurring as harvesting expands
  - Local employment increasing over time:
    - 64% of direct employment in GS in 2003
    - 43% in 1996-97
  - Most employees located in regional centres rather than in smaller towns

- **Mature plantation industry: South West Slopes, NSW (Schirmer et al. (2005b))**
  - 92-94% of direct employment generated by plantations located within South West Slopes over 1991-2003
    (to point of processed products leaving mill door; 1,680 direct jobs in 2002-03)
  - Some consolidation of employment around particular towns over this period
    (mostly shifting to Tumut, Tumbarumba)
Does plantation forestry influence land prices?

Three studies

- Two concluded demand for land for plantation forestry can lead to land price growth (Tonts et al. 2001, Schirmer et al. 2005a)
- Third found that higher land prices paid for plantation land, but that some land sales for other purposes attracted similar prices (SMLRG 2005)
Rural land prices in Great Southern region

- Plantation expansion can result in high land value growth
- Recent improvement in agriculture has seen high growth in prices of agricultural land

Rate of increase in average land prices, for sales > 40 ha, 1988-2004

Source: Department of Land Information

- All high plantation Shires (Albany, Cranbrook, Plantagenet)
- Very high plantation areas (west Albany, west Plantagenet)
- Non-plantation coastal areas - Denmark
- Non-plantation areas (Broomehill, Gnowangerup, Katanning, Kojonup, Tampbellup, Woodanilling)
- Non-plantation areas outside the GS (Narrogin, Pingelly, Wagin, Boddington)
Rural land prices (2)

- Extent of impact depends on proportion of land market taken up by plantation sector

Proportion of total land sales involving sale of agricultural land to the plantation sector in ‘high plantation’ LGAs
Source: Department of Land Information (WA)
Conclusions from current research

- Impacts vary depending on type of plantation industry established
  - Extent of downstream processing
  - Location of processing, firms in relation to plantation estate

- Plantation expansion appears to be associated with socio-economic *change*, not socio-economic *decline*, at LGA scale

- More research is needed – and is happening
Project 4.3

Communities

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CRC for Forestry Communities project

Goals:
• Understand the costs and benefits of plantation forestry, to help industry and rural communities plan for change
• Understand community attitudes to plantation forestry
• Develop effective strategies for community engagement

Timeframe:
• 2005-2012
Research regions

- Western Australia
- Tasmania
- Green Triangle & Central Victoria (separate project examining multiple types of land use change inc. plantations)
- Comparing different plantation regions important to understand different impacts of plantations in different regions

Activity

CRC for Forestry
Researching sustainable forest landscapes

Utas
ANU
UMelb
SCU

Utas
Sub-projects

4.3.1: Socio-economic costs and benefits of commercial forestry
   Leader: Jacki Schirmer (ANU)

4.3.2: Attitudes and values to commercial forestry
   Leader: Kathryn Williams – (UMelb)

4.3.3: Feasible and effective strategies for industry partners to engage with local communities
   Leader: Frank Vanclay (Utas)

4.3.4: Participatory modelling to inform stakeholder dialogue about trade-offs between production, water, biodiversity, visual amenity and other community requirements
   Leader: Jerry Vanclay (SCU)
Further information?

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