Socio-Economic Impacts of Land Use Change to Plantation Forestry:

A Review of Current Knowledge and Case Studies of Australian Experience

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Overview

- The debate over socio-economic impacts of plantations
- Extent of current research
- Evidence from Australia on different socio-economic impacts
- New Australian research being undertaken by the CRC for Forestry

Introduction

- Plantation forestry expanding rapidly globally
- Expansion accompanied by considerable debate over impacts of plantations:

"Each year the area of fast-growing tree plantations in the world expands by around one million hectares. The planting of large areas of eucalypts, acacias, pines and poplars has sparked off bitter controversy … Some claim plantations will destroy the environment and displace small farmers. Others say they will help protect natural forests and provide economic growth. Most of the public does not know what to believe." (Cossalter and Pye-Smith 2003: v)

Examples of differing perceptions of socio-economic impacts

Positive perceptions	Negative perceptions
Afforestation leads to revitalisation of rural communities/ population	Afforestation leads to decline in rural population and loss of local culture
Afforestation can improve local/regional service provision	Afforestation leads to loss of rural services (e.g. schools, shops, clubs)
Afforestation provides employment opportunities	Afforestation provides less employment per hectare than alternative land uses
Afforestation leads to land price increases	Afforestation leads to land price decreases
Afforestation has positive impacts for other land use and rural industries	Afforestation has negative impacts on other land use and rural industries

For every type of impact, many questions can be asked…

- 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?

The role of research

- Informing debate through provision of independent data
- To date, relatively few studies in Australia
  - Several perceptions studies
  - Some data on employment in the plantation industry – but limited
  - Few studies have examined other types of socio-economic impact

What do we know from available studies?

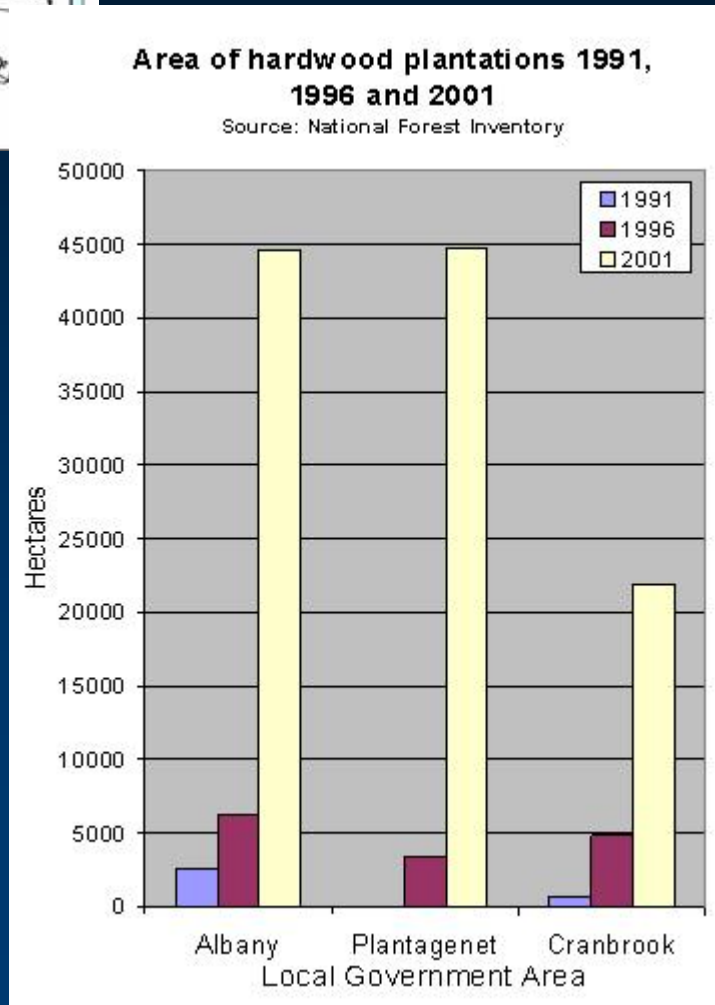
- Some studies in Australia have started to answer questions about the following types of impacts:
  - Rural and town populations;
  - Local and regional service provision;
  - Employment;
  - Other industries – tourism, traditional agriculture; and
  - Land prices.

Population impacts – Great Southern region, WA

(Schirmer *et al.* (2005a)

Background:

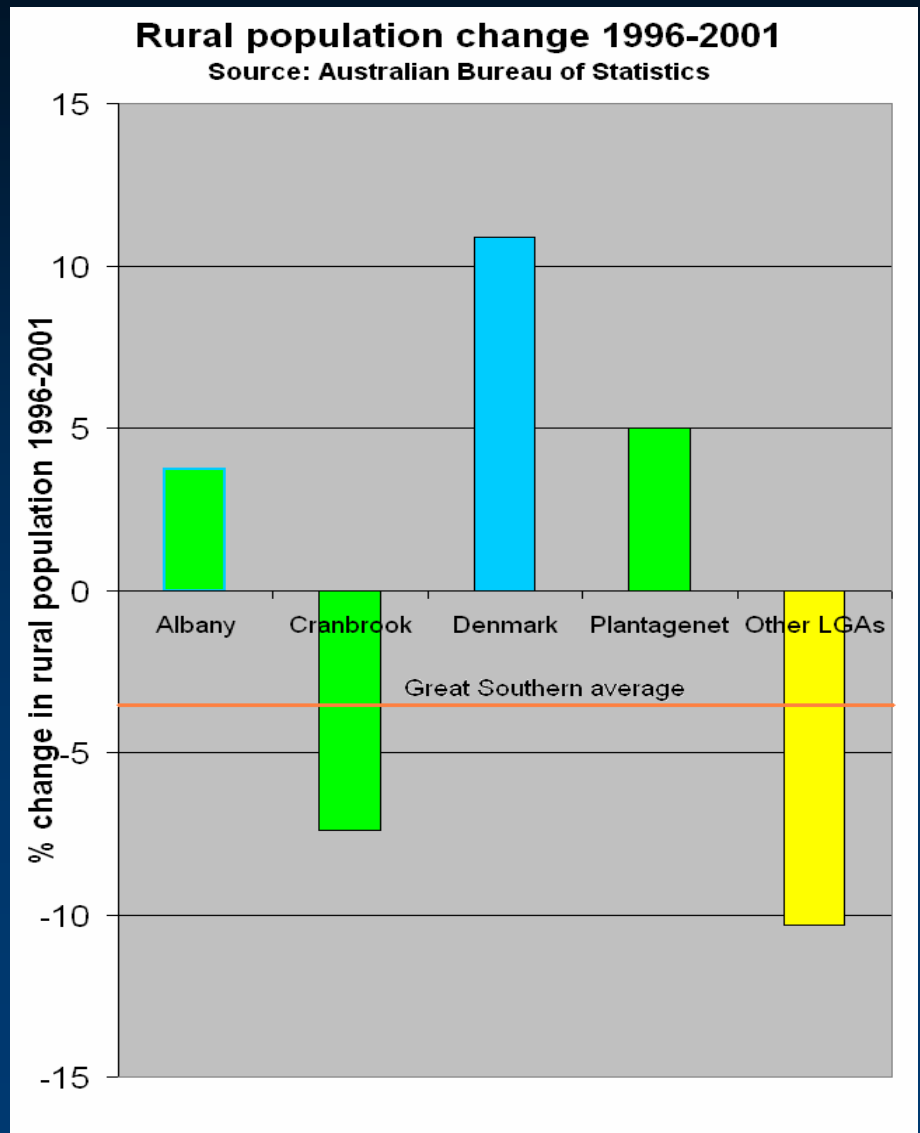
- 12 LGAs; 3 with >2500ha plantations
- Rapidly expanding plantation resource since 1988
- By 2001:
  - over 127,000 ha plantation
  - 93% blue gum
  - plantations established on 10-25% of agricultural land
- Harvesting expanding rapidly since 2001



Population – does expansion of plantation estate impact on rural population?

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

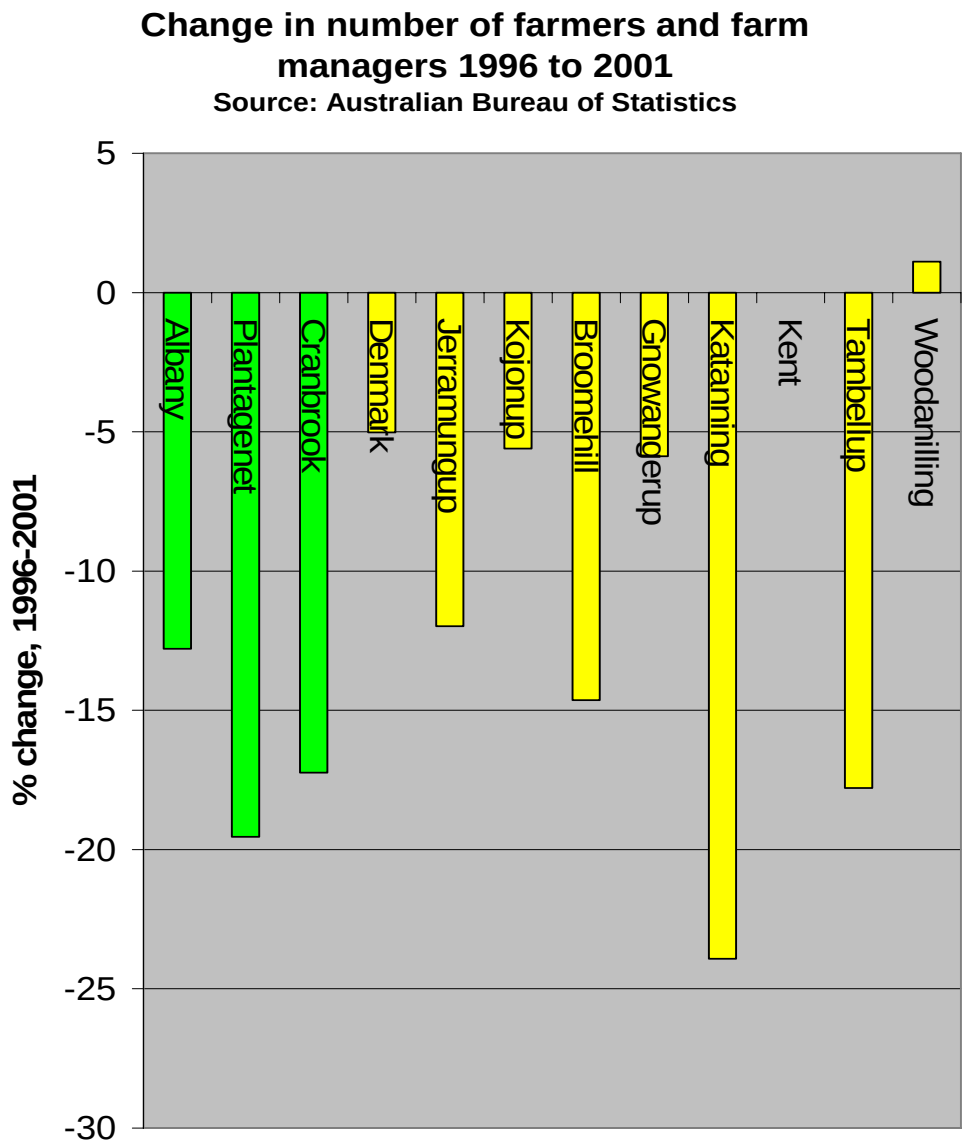
- Green columns = Shires with plantations, blue = seachange Shire, yellow = agricultural Shires
- No evidence plantation expansion causes higher decline in rural population than other rural land use change
- The 3 LGAs with high plantation expansion experienced *less* rural population decline on average than rest of the Great Southern region
- This was most likely because these LGAs have diverse economies



However, change in type of population

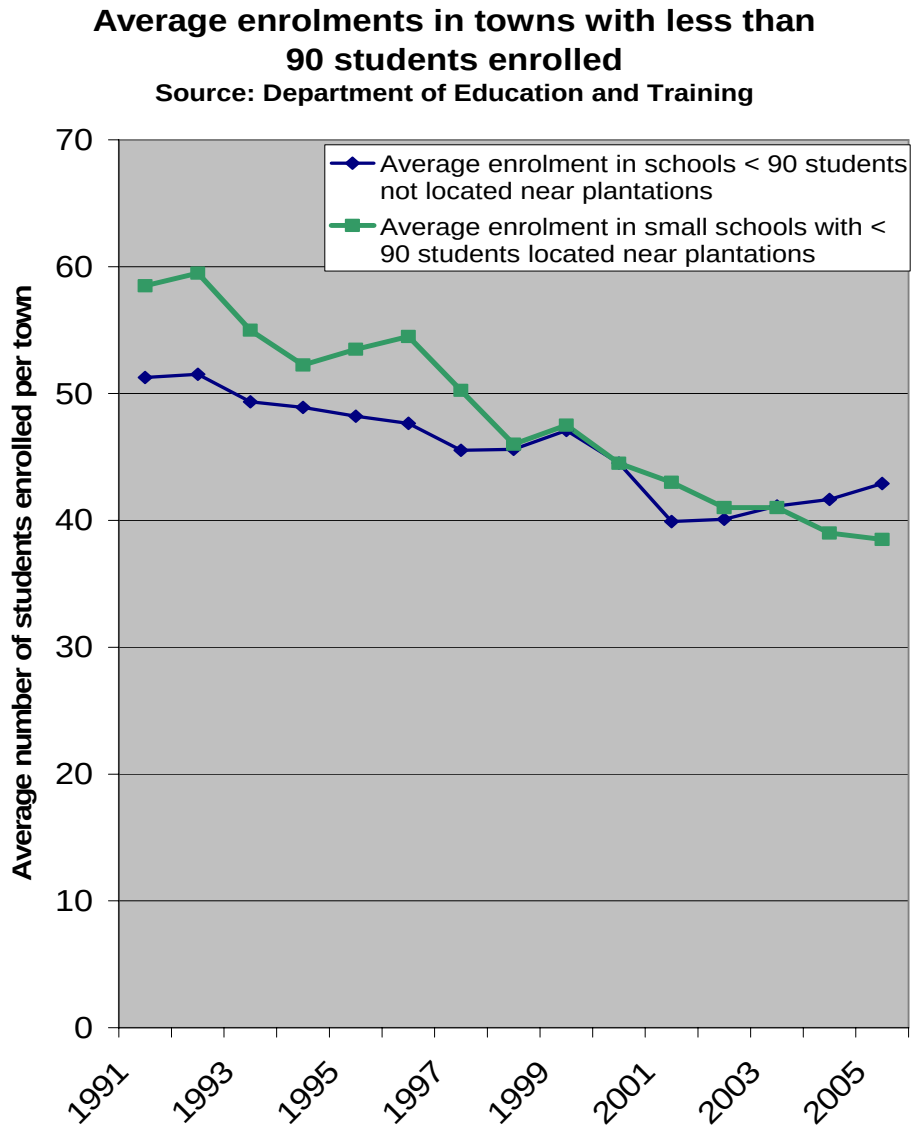
Great Southern region (Schirmer *et al.* 2005)

- 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



Services

- School enrolments in Great Southern region (Schirmer *et al.* 2005)
- 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 may be a response to decline – not a cause



Employment – how much is generated?

Several studies 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]**

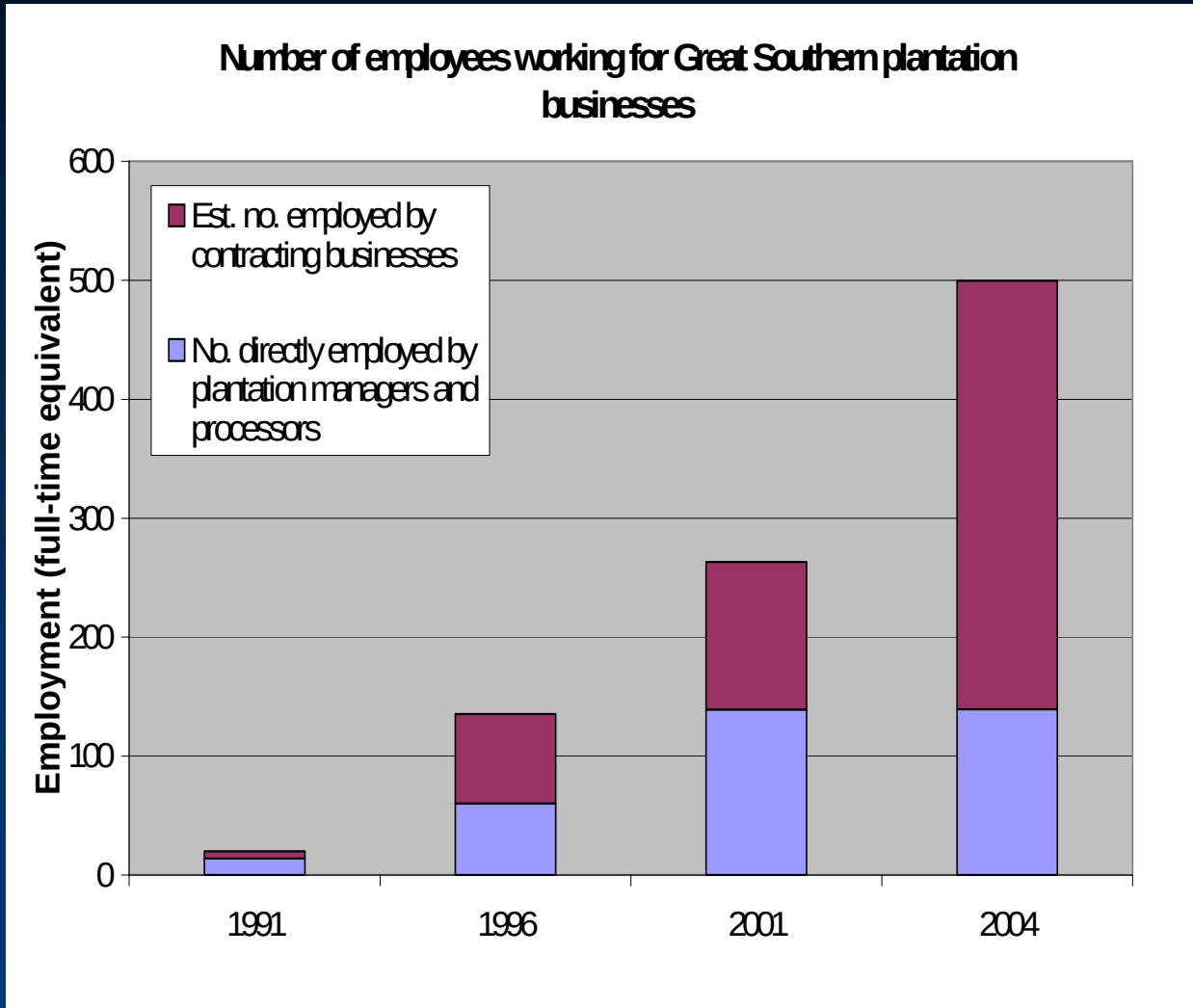
Which part of the industry generates the most employment?

- For mature softwood plantation industry, approx. 2/3 employment in processing, 1/3 in growing + harvest + haulage to mill
- Hardwood bluegum plantations
  - Starting to collect data
  - Employment in growing and harvest similar to that generated by softwood plantations
  - Processing – need to collect more data as harvesting expands to see if patterns of employment are similar

Location of employment – Great Southern (cont.)

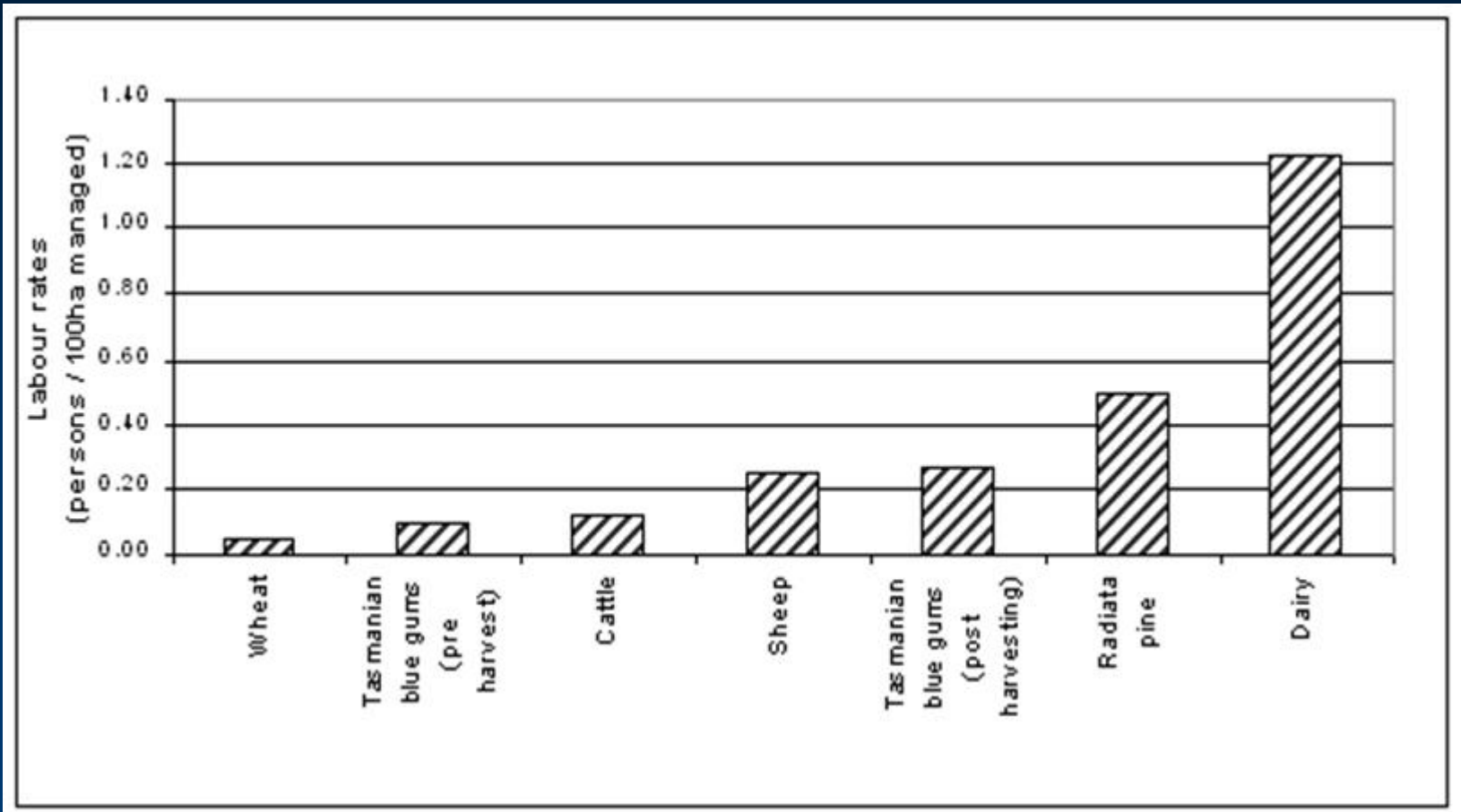
(Schirmer *et al.* 2005a)

- Rapid increase in employment occurring as harvesting expands
- Most employees located within GS: 64% by 2003, compared to 43% in 1996-97
- Most employees located in regional centres rather than in smaller towns



Employment: How does it compare to other land uses?

- Data below is for Western Victoria in 1999 (Petheram *et al.* 2000)
- Need to ensure employment compared up to same stage in chain of production



Land prices

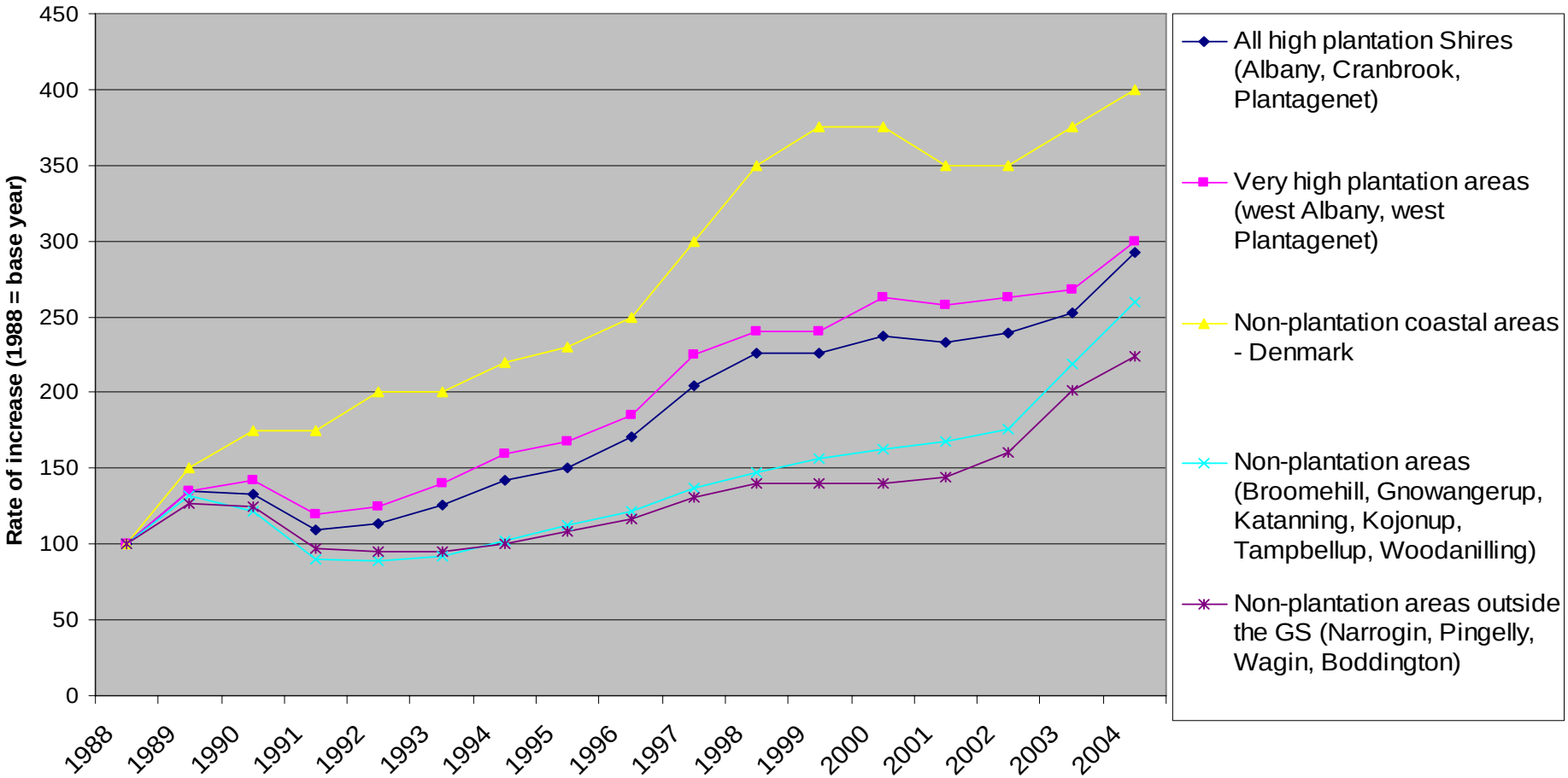
- Does plantation forestry displace other land uses through influencing land prices?

- Schirmer *et al.* (2005) found:
  - In Great Southern region, plantation forestry had a strong influence on land price for land suitable for plantations
  - Other factors influenced price growth on other types of land
  - Even in years of highest demand, in plantation regions 50-70% of land sales were to land uses other than plantations

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

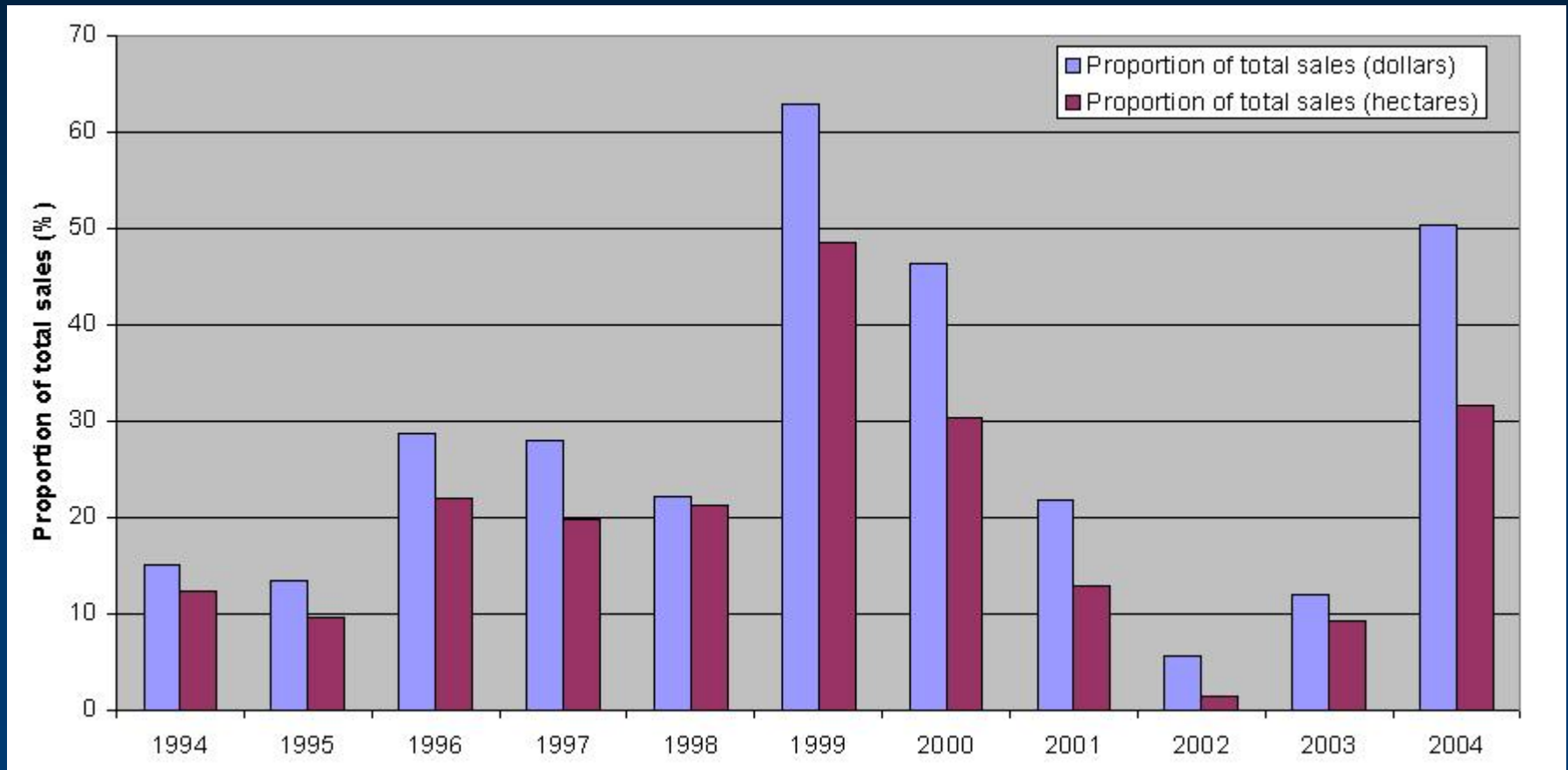


Rural land prices (2)

- 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)



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Researching sustainable forest landscapes

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

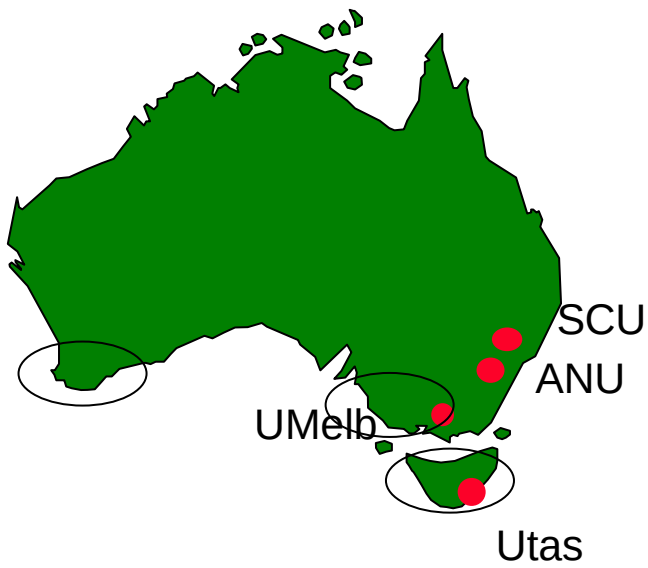
Timeframe:

- 2005-2012

Research regions

- Western Australia
- Tasmania
- Green Triangle & Central Victoria
- Comparing different plantation regions important to understand different impacts of plantations in different regions

Activity



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Conclusions

- Considerable debate over socio-economic impacts of plantations
- Researchers need to develop robust methodologies to ensure they provide independent, robust information to help inform debate
- Currently relatively little research – but evidence suggests that research has a key role to play in challenging some common views about impacts of plantations
- The CRC for Forestry's 'Communities' project will help by improving research methods, and filling in some of the gaps in current research

Further information?

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References

Kelly, G. and Lymon, K. 2000. *To trees, or not to trees? An assessment of the social impacts of the plantation industry on the Shire of Plantagenet.* School of Psychology, Curtin University of Technology, Perth.

Lane, R., 1997. Frontiers of green: pine plantations and local communities. National Conference on Australian Forest History. *Australia's Ever-Changing Forests. Proceedings* 155:165.

National Forest Inventory. 2004. *National Plantation Inventory Update – March 2004.* Bureau of Rural Sciences, Canberra.

Petheram, J.; Patterson, A.; Williams, K.; Jenkin, B. & Nettle, R. (2000). *Socioeconomic impact of changing land use in South West Victoria.* Institute of Land and Food Resources, University of Melbourne, Melbourne. Online at www.gtplantations.org/publications

Schirmer, J.; Parsons, M.; Charalambou, C.; and Gavran, M. 2005a. *Socio-economic impacts of plantation forestry in the Great Southern region of WA, 1991 to 2004.* Report produced for FWPRDC Project PN04.4007. Forest and Wood Products Research and Development Corporation, Melbourne

Schirmer, J.; Parsons, M.; Charalambou, C.; and Gavran, M. 2005b. *Socio-economic impacts of plantation forestry in the South West Slopes of NSW, 1991 to 2004.* Report produced for FWPRDC Project PN04.4007. Forest and Wood Products Research and Development Corporation, Melbourne