

New Generation Plantations: Integrating trees in rural landscapes



Stage 1: Research report

What was this study about?

Forest plantations are a major source of wood products in Australia. However, although there is an increasing demand for wood and wood based products globally as well as in Australia, there has been an overall decline in Australia's plantation area in the past 5 years, with almost no new plantations established during this period. As well as providing timber and wood, tree plantations can provide a range of benefits to landowners, such as to stabilise soil, as wind breaks, to improve productivity, and to diversify income.

This report summarises findings from the first stage of a multidisciplinary research project: *Next Generation Forest Plantation Investment*. The overall objective of the project is to design and test new models to support landscape approaches to forest plantation investment that will meet the needs of landowners, industry, capital investors and other stakeholders. The aim of this first stage of the study was to better understand the views of landowners about integrating trees on their land. Findings from the study will contribute to developing new models for integrating trees in rural landscapes. Funding for the project is through the Commonwealth Government's Voluntary Matching Program, co-funded by Hancock Victoria Plantations Ltd, Midway Ltd, Australian Paper, AKD Softwoods and OneFortyOne Plantations Ltd. The research is conducted through the University of Melbourne, with additional support from Swinburne University of Technology. Forest and Wood Products Australia administer the project on behalf of the Department of Agriculture and Water.

Research objectives and method

Thirty-four interviews with landowners were undertaken during October to December 2017. The aim of the interviews was to investigate the benefits and barriers landowners and land managers associate with establishing trees on their properties, and to identify ideas about how plantations could be integrated with existing agricultural land uses.

Interview participants

Interview participants were owners and managers of agricultural land in the south west of Victoria (16 participants) within a 200km radius of Colac and Mt Gambier, and in Gippsland (18 participants) within a 200km radius of Morwell. Participants in the interviews were engaged in a range of agricultural enterprises, including dairy, horticulture, forestry, beef, wool and prime lambs. The size of rural landholdings varied from 11ha to 11,331ha (median 268ha), with an average long-term annual rainfall between 520mm to 1500mm. All participants had previously engaged in some form of tree planting on their properties, with just over one third (12) having some association either directly or indirectly with trees planted where the intention was to harvest the trees in the future. Most tree plantings were established with the objective to provide shade and shelter for stock and pasture, for

environmental benefits such as to control soil erosion or to improve farm management such as excluding steep or unproductive land.

Research findings

[What benefits are associated with tree plantations?](#)

Interview participants associated many benefits with integrating trees on their properties. The benefits can be grouped into three categories:

1. *Economic benefits.* Economic benefits included increasing on-farm production, e.g. providing shade and shelter to improve lamb and sheep survival, improved pasture growth and milking rates, to improve ease of farm management, such as subdividing land and the creation of lane systems, or to exclude unproductive or steep land, as well as commercial returns from the sale of timber and wood products.
2. *Social benefits.* Social benefits included improving the amenity and aesthetics of the rural landscape, improving human comfort and enjoyment, satisfaction from seeing trees growing, and increasing workplace safety.
3. *Environmental benefits.* Environmental benefits included increasing biodiversity, providing habitat for birds, animals and beneficial insects, as well as increasing flora diversity.

[What barriers and risks are associated with tree plantations?](#)

New models for integrating trees in the rural landscape need to address the perceived barriers and risks associated with commercial and other plantings. Interview participants identified a range of barriers to planting trees, particularly where the intention was to harvest the trees for commercial return in the future. The most commonly expressed barriers to integrating trees in agricultural enterprises included:

- The time required to establish and manage the trees, particularly where trees were not the main business of the enterprise and were perceived to conflict with the core business of the landowner. Tree planting was generally not a priority relative to other on-farm activities.
- The costs associated with planting and managing trees, including fencing and labour costs, as well as costs associated with returning land to pasture once trees were harvested.
- Perceived poor commercial returns from planting trees for harvest particularly in relation to other agricultural activities. This barrier included concerns about delayed returns and the perceived impact on cashflow of allocating land to trees.
- Uncertainty relating to factors affecting growth (e.g. drought, pests, frosts, fire, species suitability) and uncertainty about future timber demand including domestic and global market outlooks. Regulatory and legislative uncertainty was also a concern, e.g. changes to harvesting guidelines, issues with the use of roads.
- Concern about the time committed to growing commercial tree plantings and the associated loss of flexibility for on-farm activities.

Implications for developing new models integrating trees in the rural landscape:

The objective of the interviews was to better understand landowner's views so that new models for integrating trees in the rural landscape more closely align with the overall aims and needs of landowners. It was clear from the interviews that individual landowners have very different needs and expectations relating to integrating trees within their agricultural enterprises. It is vital that new models complement rather than compete with existing agricultural enterprises and that model options are matched to the specific needs of individual landowners. Factors that should be taken into consideration include the area available for trees, species selection, the shape and location of tree plantings (e.g. placement to maximise shelter, to enhance on-farm activities and management), planting, management and harvesting arrangements, while commercial frameworks and returns should consider the long-term opportunity cost for using the land.

Where to from here?

The landowner survey is one of three research streams within this project. Other streams include a spatial land assessment to identify areas within Victoria suitable for establishing trees with the intention to harvest commercially, a financial sector survey and business model design component, and a national and global benchmarking analysis examining the outcomes of models used to establish trees in the past. Together with the other research streams, findings from the interviews will be used as a way of learning from past experiences to design more sustainable and attractive models for integrating trees within the rural landscape that meet the requirements of landowners, industry, capital investors and other stakeholders.

Finally, thank you to the interview participants

We are very grateful to the interview participants who so generously gave their times to help with this research, particularly at such a busy time of the year.

If you would like more information about the project, or if you have any comments or suggestions, please do not hesitate to contact:

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