



Rural Industries Research & Development Corporation

The Short Report

Links between small-scale growers and industry: Principles and practices for commercial farm forestry

SR36

THE FULL REPORT

This is a summary of the full research report, *Links Between Farm Forestry Growers and the Wood Processing Industry*, (UCS-10A, 98/41) available from RIRDC on 02 6272 4819. The researchers, Allan Curtis and Digby Race, can be contacted on Ph (02) 6041 8945 or (02) 6249 2579 respectively.

A great deal has been written about the benefits of planting trees on farms as part of a property management plan and regional forest industry development strategy.

Where landholders plan to make commercial returns from planted trees, it is important to have a strong understanding of the markets for their forestry products. Just like meat fibre and grain products, forest products need processing before markets will buy them.

Forest industries have developed around existing natural forests or large plantation forests and there are limited market openings for small forest growers in Australia.

The National Commercial Agroforestry Strategy identified that difficulty of access to reliable markets was a barrier to widespread adoption of farm forestry. So the Joint Venture Agroforestry Program (JVAP) commissioned research to investigate the principles and practices of effective market links between small-scale farm forestry growers and the forest industry.

What is the incentive for linking forest growers and industry?

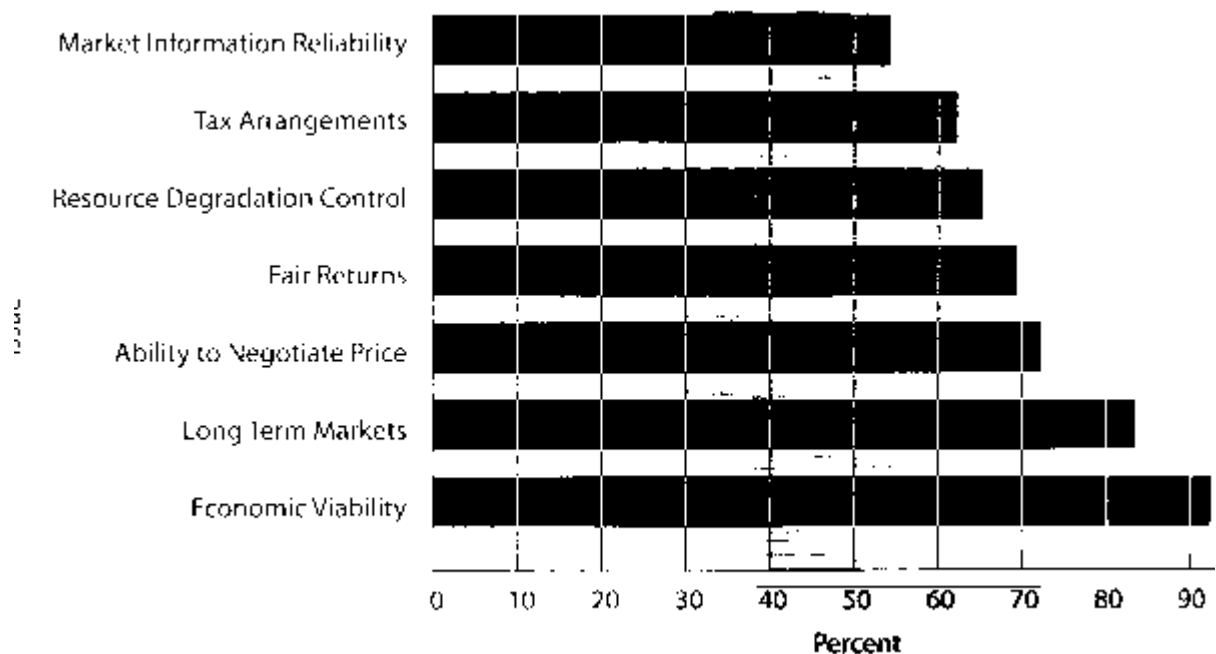
The JVAP research found that existing forest growers identified the issues shown in Figure 1 as barriers to widespread investment in commercial farm forestry. These issues emphasise the importance landholders place on identifying ways to manage risks before investing in commercial farm forestry.

The most important risk forest growers participating in the JVAP research identified was uncertain economic viability of farm forestry. Before most forest growers and industry are prepared to invest in farm forestry they need clear evidence that there are good prospects for commercial returns.

For farmers, these returns need to be at least as good as alternative land uses such as livestock or crop production. For industry, the returns need to be at least as good as forestry investments in other regions or company-owned plantations.

The JVAP research identified that forest industries spread the risks associated with the quantity and quality of timber supplies by obtaining resources from a range of sources – including industry-owned plantations, public plantations, crop share/marketing joint ventures, lease joint ventures.

Figure 1. Current grower issues limiting farm forestry



Do farmers need links with industry for farm forestry to be commercially successful?

While some forest growers have successfully developed farm forestry independent of industry, most choose to establish some link with industry before harvest. However, the JVAP research shows that many of these linkages are not ideal for growers or industry, suggesting that farm forestry would achieve its potential more quickly if these barriers were overcome.

The JVAP research showed that, on their own, demonstrations of the potential for farm forestry to produce raw materials for processing by the forest industry or sale to other forest product markets will be insufficient to stimulate widespread adoption of commercial farm forestry. Some form of direct link with the regional market for forest products is needed to help landholders assess the risks of farm forestry investments.

Since the research was commissioned, rapid development of farm forestry in Western Australia and Tasmania has seen the emergence of a number of mechanisms that formalise linkages between farm foresters and forest industry processors. This emphasises the importance of formal linkages in

developing a viable farm forestry industry.

How do you establish links between forest growers and industry?

The research identified that effective links with forest industries could be developed by small-scale growers using:

- joint ventures — where timber processors invest in on-farm plantations in partnership with the landholder;
- grower cooperatives — where forest growers pool their forest resources to offer the timber industry a large and reliable resource for processing;
- market brokers and consultants — where specialists coordinate forest grower supply with timber industry demand in return for a share of the revenue; and
- on-farm processing — where forest growers add value to their own forest products so that they can sell directly to finished product markets.

Some of these are already widely used — for example joint ventures. However, the research found that farm foresters establishing in new regions were often unaware of the experience of other farm foresters in establishing effective linkages with forest industry markets. There is an opportunity for the forest industry and forest grower organisations to communicate how linkages between forest growers and industry can be established.

How effective are the current links between forest growers and industry?

Consultation with growers, industry and government representatives indicated the issues and possible strategies to improve farm forestry links (see Table 1).

“if farmers want to get into farm forestry as a commercial venture, then they’ll have to understand more than just how to grow trees...they’ll need to understand how the markets work and how the industry thinks.”

“...growers will be best placed if they don’t plant a long way from the mill.”

“... there’s a lot of work involved in getting a good joint venture going... which costs us a lot of time to answer the initial enquiries, inspect the sites, develop site plans, supervise tree establishment, monitor tree performance... all just for 10 ha. So in some respects, joint ventures can be an expensive way for us to do business.”

Table 1. Summary of farm forestry-industry issues and strategies.

Issues	Strategies
Poor structure of regional markets	
Government to improve access to competitive markets by privatising public forests and allowing more transparent sale of public forest resources.	Arrangements to include lease, marketing and cropshare agreements
Insufficient evidence of farm forestry viability to support investment by growers and industry	Regional appraisals of farm forestry viability Findings widely disseminated
Uncertain long term market prospects	Detailed and regular assessments of markets (every 5 years)
Inflexible joint venture arrangements	Investment by forest industry to provide greater assurance of returns
Inconsistencies in Government roles at all three levels	Improved coordination between all levels of Government
Reciprocal involvement of representatives in R&D forums	Recognition that farm forestry viability will vary widely between regions
Unrealistic expectations by growers of low costs associated with farm forestry (marketing, harvesting, & haulage)	Improved information exchange between regional stakeholders
Little coordination amongst discrete, small-scale growers	Grower cooperatives and/or market brokers to aggregate supplies from small-scale growers

How do forest growers want to link with industry?

Table 2 summarises the findings of the JVAP research into the existing arrangements of forest growers in the Green Triangle, Tasmania and south west WA, and the arrangements they were likely to pursue.

The JVAP research identified trends suggesting regional differences in the action forest growers may take when increasing their investment in farm forestry. For example, there appears to be less enthusiasm in Tasmania for joint ventures with industry than there is in the “green triangle” and WA. This difference may reflect a perception by forest growers in Tasmania that the current joint ventures in their State offer little advantage to growers; growers have the option to join a marketing cooperative; or that they can make time-of-harvest sales. Enthusiasm for joining a marketing cooperative was much higher in WA than in the other regions studied.

Table 2. Arrangements growers would adopt

Arrangement	Extent likely to pursue			
	n=	Definitely/ Very likely	Likely	Possibly/Not likely
Join a marketing cooperative	98	53%	38%	10%
Contact industry at harvest time	95	49%	27%	24%
Use government agency to assess market	96	32%	49%	19%
Enter a short term joint venture with industry	97	26%	50%	24%
Enter a long term joint venture with industry with regular contract reviews	97	25%	52%	23%
Enter a long term joint venture with industry	96	19%	41%	40%
Use a broker/private consultant to negotiate sales	95	20%	58%	22%

How does industry want to link with forest growers?

Industry requires forest resources for processing that:

- provide a continuing and planned supply over time;
- guarantee the supply of a volume of resource over time;
- are competitively priced; and
- are of competitive quality.

The forest industry is critical to a viable farm forestry, and it is important to treat the industry as a client and key stakeholder. The onus is on forest growers to engage industry on terms which meet the commercial needs of forestry industries.

How do you know if links between forest growers and industry are effective?

The JVAP research shows that links between forest growers and industry are effective when they include:

- identifying/developing competitive regional farm forestry markets;
- establishing processes that identify and effectively communicate credible information to enable informed decision-making by forest growers;
- industry demonstrating that it is acting in 'good faith' with growers receiving a fair share of farm forestry profits;
- demonstration of a long term commitment to farm forestry within regions— for example by

- investment in farm forestry plantations by forest growers, or processing infrastructure by industry along with provision of extension foresters to work with forest growers; and
- farm forestry stakeholders able to negotiate (or choose) from a range of grower-industry arrangements.

More information on joint ventures

The majority of forest growers thought that joint ventures were a cost effective way of managing many of the risks associated with farm forestry investments. Joint ventures are discussed in more detail below. For more information about marketing cooperatives and other linkage arrangements, see the Full Report.

What is a joint venture?

Joint ventures are legal contracts between two or more groups which combine land, capital, management, and market resources to produce a commercial product such as timber or pulpwood. Typical partners in a farm forestry joint venture are landholders (providing land and/or management) and industry (providing initial finance/capital, farm tree management advice and markets for forest products).

Returns from the joint venture are typically shared between partners according to a negotiated agreement which is determined by the contributions from each joint venturer. The market value of timber at harvest normally determines the size of the returns. By 1997, joint venture arrangements had contributed to the establishment of 82,900 ha, or 8% of Australia's forestry plantations.

What are the benefits of a joint venture?

Joint ventures benefit forest growers by providing:

- financial support with full/part-establishment costs;
 - stable, annual income with lease payments;
 - guaranteed financial returns;
 - reduced market risk with an assured sale;
 - silvicultural advice; and
 - physical support with tree establishment and management.
- Joint ventures benefit forest industry by providing:
- increased supply of forestry resources;
 - resource security without the need to purchase land;
 - access to productive farmland for tree growing close to mills;
 - different sources of supply; and
 - good public relations with regional communities.

Joint ventures are also a way to expand forest resources in agricultural areas without displacing farming families or losing rateable land for local government.

What joint venture options are available?

'Lease' joint ventures result in regular payments made to landholders which are indexed over an agreed period. This overcomes cash-flow problems associated with farm forestry. However, 'lease' joint ventures require ongoing investment by industry to fund the regular payments.

‘Cropshare’ joint ventures involve the landholder and industry/government partners contributing inputs throughout the life of the treecrop and sharing a proportion of returns. Returns for landholder and industry partners are not available until harvest and are based on market prices at harvest.

‘Market’ joint ventures guarantee a sale for the grower, and are usually based on market price at the time of harvest. The grower is required to offer the industry partner the first option of purchase, but if a better price can be found, the grower may sell to another purchaser.

‘Cost recovery’ joint ventures differ from other schemes by operating on a cost recovery basis through a government arrangement. The ‘Oil Mallee’ joint venture operated by CALM in the cereal cropping districts of WA is an example of this.

‘Grant’ joint ventures as run by the Department of Conservation and Natural Resources in Victoria, subsidise landholders in northern Victoria for tree establishment. Approved landholders must contribute \$500/ha to the partnership with DCNR, which organises the establishment and management of selected eucalypts for the first 18 months. The intention of the scheme is to create sufficient supply to attract a hardwood sawlog processor to the region.

How can joint ventures be improved?

Those participating in the research suggested:

- Joint ventures should encourage partners to focus upon improving the value of the product rather than necessarily the percentage share of the arrangement.
- Joint ventures should aim to include multiple products (e.g. pulpwood, sawlogs) and a range of species to attract greater interest from prospective grower and industry partners.
- While long term joint ventures provided some market security for growers and resource security for industry partners, problems arose when contracts were longer than 20 years. Long term contracts prevent joint ventures adapting to market changes. This degree of inflexibility can disadvantage both landholders and industry. One option to overcome this problem is to recalculate the shares to partners using ‘actual’ costs (e.g. for establishment, silviculture) rather than ‘budgeted’ costs. Using the budgeted costs approach may penalise partners for any efficiencies they could achieve. If a large proportion of a region’s timber supply is controlled under joint ventures, this situation may constrain market forces.
- Use ‘forward marketing’, as developed for producers of commodities such as wool and wheat, to minimise the impact of market fluctuations. This option may prove helpful for small-scale growers who operate without industry contracts, but the growers could need some marketing expertise (eg. market broker).
- There is some scope to develop long-term supply arrangements that allow for costs and prices to be reviewed and renegotiated at regular periods (e.g. every 5 years). This has the benefit of incorporating updated market forecasts.
- Industry could offer lower lease payments combined with free seedlings and/or an option to purchase a share in the treecrop (e.g. ‘split-area’ joint venture).

Other linking arrangements

What about market cooperatives?

Cooperatives form to aggregate the supplies of small-scale growers and to attract better prices. It is important that there is access to competitive markets if good returns are to be secured for small-scale growers. Experience from Tasmania suggests that an effective grower cooperative needs substantial financial resources (eg. \$150,000/year) to initiate, develop and maintain markets

that provide better returns for members.

The JVAP research found that effective grower cooperatives in Australia and overseas have diversified their income away from reliance upon timber sales. Aggregate supplies from two or more cooperatives can improve market returns by increasing the volume and/or continuity of the members' resource. This is particularly important for cooperatives with low timber through-put or discontinuous timber sales.

Other features of an effective grower cooperative noted by informants included:

- well scheduled planning, establishment, silvicultural, and harvesting operations;
- staffing flexibility (so can respond to fluctuating demands of members and markets); and
- strong leadership with sound management expertise.

Marketing brokers and consultants are used by regional planning groups and grower cooperatives to seek accurate appraisals of regional markets. They are commonly used in New Zealand and the United States, and more recently are starting to be used in Australia.

On-farm processing is generally poorly developed in Australia. It can overcome problems such as small, discontinuous supply, remote location and resources unsuitable for industrial processing, but it requires experience and the investment of capital. Nevertheless, it may improve farm forestry viability for small-scale growers by developing alternate products and by value-adding (eg. harvesting, debarking, milling). Another JVAP research project — Utilisation Practices For The Farm Forester — which looks at opportunities for on-farm processing of farm-grown timber, has recently been completed. This research found that the on-farm processing system with the greatest potential is portable sawmilling. The research also found that the factor with the greatest influence on the fortunes of a particular sawmilling operation is the amount received for the sawn timber. This highlights the importance of marketing in small-scale timber production.

What more needs to be done?

Forest growers and timber industry managers identified the following research and development needs to strengthen linkages between forest growers and forest industry:

- feasibility studies to demonstrate the economic returns from farm forestry in regions with suitable land within 150 km of forest industry processor or major transport infrastructure;
- development of niche forest products for areas more than 150 km from forest industry processor or major transport infrastructure; and
- establishing sawing and drying requirements and best practice guidelines for on-farm processing of farm grown timber.

Other Agroforestry & Farm Trees Research Publications

Agroforestry from Existing Timber Resources

by D Thompson

Currently there are extensive areas of native forest on private land in the Northern Tablelands of NSW. This report examines the potential benefits to landowners of managing these privately owned native forests through financial assessments on four farms. Also examines the potential benefits to landowners of more intensive forest management and marketing approaches.

1999, 93pp, Pub no 99/151 \$15

Commercial Prospects for Low Rainfall Agroforestry

by A Zorzetto and P Chudleigh

While commercial agroforestry in the low to medium rainfall zones of Australia is unlikely to be as profitable as in the high rainfall zone due to lower growth rates, less established infrastructure and greater distances to markets, significant prospects do exist. This report therefore, assesses the commercial opportunities for growing a range of tree species in the medium to low rainfall areas of Australia, and establishes priorities by commercial product and species type to assist resource allocation in R&D funding.

1999, 104pp, Pub no 99/152 \$15

National Low Rainfall Tree Improvement

by P Bulman, M Underdown & D Bush

Proceedings of the National Low Rainfall Farm Forestry Tree Improvement Workshop, held to establish priorities and formulate a coordinated approach to low rainfall tree improvement. As a result of the workshop, a national collaborative research program has been established to produce improved seed for low rainfall zones. The Australian Low Rainfall Tree Improvement Group (ARTLIG) will focus on the breeding of hardwoods, softwoods and short rotation biomass crops for low rainfall zones of southern Australia.

1999, 96pp, Pub no 99/66 \$15

Trees Face the Acid Test

by A D Noble & P J Randall

A short report of an unpublished full research report on the impact of trees and fodder shrubs on soil acidification. The research has broken new ground in defining the potential of trees to counteract this damaging phenomenon.

1999, 8 pp Short Report No. 59, free

Practical Farm Forestry - Whole Farm Case Studies

by Campbell White & Assoc & A Black

Despite various policy initiatives over the past six years, the uptake of farm forestry in Australia has been slow. One major factor for this is uncertainty. This report seeks to support farmers in their decision making, decrease uncertainty and promote the faster development of the industry by documenting ten 'real life' case studies of farms across southern Australia. These studies show a multitude of approaches to the solution of common land resource management and economic challenges and demonstrate how individuals have combined commercial opportunities and environmental attributes to produce a forest resource which was achieving many benefits simultaneously.

1999, 134pp, Pub no 99/99 \$15

What's Happening in the Farm Forestry Market?

by Australian National University

A short report that collates all eight editions of the Australian National University's regular national market reports for farm forestry (up to June 1999). These reports provide reliable information on structural timber prices, pulplog prices, log and agricultural product prices beyond 2000, cost of tree seedlings and cuttings, stumpage, log exports, cost of log transport, and woodchip markets and prices.

1999, 28pp Short Report No. 65, free

An Investigation of Aleppo Pine for Low Rainfall Farm Forestry

by RST Technology Pty Ltd

Assesses the feasibility of extending Aleppo pine planting into lower rainfall farmlands for both ancillary agricultural benefits and timber production purposes. The adequacy of mechanical properties of the timber species has also been bench marked against *P. radiata*.

1999, 81pp, Pub no 99/16 \$10

Native Forests on Farms

by M Parsons

Proposes strategies to develop the sustainable management of private native forests on farms – an essential, yet sometimes overlooked resource for agroforestry. Well managed native forests provide important regional biodiversity and other conservation benefits while also offering farms income from timber products.

1999, 47pp, Pub no 99/21 \$10

Agroforestry Over Shallow Watertables: Impact of Salinity on Sustainability

by P Thorburn

Documents the findings of a May 1997 workshop which explored how we can use trees in the fight against rising watertables and salinity. Includes a section on 'best bets' guidelines for revegetating areas with shallow, saline watertables. Fourth in a water and salinity issues series.

1999, 59pp, Pub no 99/36 \$15

The Ways Trees Use Water

by T Hatton

Addresses the key questions about the role of trees in restoring the hydrological balance: Are certain species better water-users than others? Will more efficient users grow quicker? Are different planting configurations better? Does root structure allow greater access to groundwater? Fifth in a water and salinity issues series.

1999, 116pp, Pub no 99/37 \$20

Processing Trees on Farms

by I Hanson & M Stewart

Examines forests and plantations as a resource. Surveys the extent of farm forestry plantings and the economic benefits of farm forestry. Details processing of individual products such as sawn timber, posts, poles and piles, wood based panels, pulp, paper, and paperbound and on-site timber processing.

1997, 50pp, Pub no 97/20 \$20

Farm Forestry in Australia: A Research Update

by *Digby Race and Lisa Robins*

Provides a summary of current farm forestry R&D activities across Australia, and aims to inform more widely on the status of farm forestry research, policy and funding in Australia. Presents the recommendations from a biennial national meeting of the Research Working Group (RWG) 11 (Farm Forestry) held in April 1998 in Canberra.

1998, 44pp \$10 98/103

Agroforestry with High Value Trees

by *Dr D Lamb & G Borschmann*

Describes the early results of two trials to examine the growth of several high-value rainforest tree species when grown in farm plantations in southeast Queensland. A potential solution to the cessation of logging high-quality tropical rainforest timbers from the state's wet tropics forests and subsequent decline in the market supply of these timbers.

1998, 60pp \$10 98/142

National Classification of Catchments

edited by *Jane Coram*

Presents a catalogue of fifteen generic hydrogeological models of groundwater systems that describe the broad characteristics of salinisation across Australia. Developed in response to the urgent need to predict the likely occurrence of catchment salinisation across the continent and to identify the most appropriate and cost-effective land uses for managing rising groundwater and mobilisation of salt into waterways. No 3 in a

series on "Water & Salinity Issues in Agroforestry".

1998, 62pp **\$10** 98/78

Agriculture as a Mimic of Natural Ecosystems

by EC Lefroy & RJ Hobbs

Details outcomes of a workshop which brought together agriculturalists and ecologists from around the world to explore the concept of natural agriculture systems. Presents a broad approach for the development of such systems. Attempts to identify the steps required to replace the growing external demands of existing managed systems with natural ones.

1998, 32pp **\$10** Pub no 98/066

How Trees Affect Soils

by AD Noble & PJ Randall

Reviews the evidence to support both the positive and negative effects of trees on the chemical and physical properties of soils. Extensive clearing of native vegetation has badly affected our natural resources.

Replacing trees in the landscape is seen by many as a way to slowly reverse the degradation.

1998, 125pp **\$15** Pub no 98/016

Biological Control of Scarabs Causing Eucalyptus Dieback

by AJ Campbell & GR Brown

Investigates the theory that maintaining or recreating the natural vegetation (trees and shrubs) on farms would retard tree mortality rates by allowing natural control agents of scarabs (parasitoids and predators) to function normally. Suggests this would be a less costly and risky solution than tree planting in pasture areas.

1998, 90pp **\$10** Pub no 98/003

Hardwood Species for Scrimber Production

by David Sheriff, CSIRO

Evaluates the growth, productivity and economic viability of selected tree species found suitable for scrimber (reconstituted timber) production and compares the growth of several hardwood species with that of *Pinus radiata*.

1998, 30pp **\$10** Pub no 98/004

Carob Agroforestry in the Low Rainfall Murray Valley

by A Curtis, D Race & B Booth

Presents the results of a feasibility study into the development of a viable carob industry in the low rainfall Murray Valley region. Assesses four economic scenarios for carob agroforestry using a range of different plantation scales and management options.

1998, 35pp **\$10** Pub no 98/008

Links Between Farm Forestry Growers and the Wood Processing Industry

by Allan Curtis & Digby Race

Identifies and assesses the current status of the linkages between small scale forest growers and industry, and recommends a series of strategies for improvements to the current status quo. First in a series of four reports which address key impediments to the widespread adoption of commercial farm forestry.

1998, 75pp **\$10** Pub no 98/041

Priority Setting for the Joint Venture Agroforestry Program

by AACM International

A report commissioned to identify priorities to aid in developing a five-year plan for the Joint Venture Agroforestry Program that has been investing in research and development for practical agroforestry products, increased agricultural productivity and sustainable management of natural resources within the agricultural environment.

1998, 112pp **free** Pub no 98/042

Agroforestry and Hydrology: What Do We Need to Know?

by R Stirzaker, D O'Connell & R Prinsley

Report of a 1996 workshop which cross-examines the current state of knowledge relating to the impact of

trees on hydrology, thereby defining research gaps and priorities. Concentrates on the technical aspects of trees and hydrology rather than on policy or economics. First in a series on "Water & Salinity Issues in Agroforestry".

1996, 16pp **\$10** Pub no 96/012

Agroforestry Water Use in Mediterranean Regions of Australia

by G P Raper

Presents a critical review of the research to date on tree water use in Mediterranean climates of southern Australia and the implications of tree water use on groundwater. Also presents a simple model to predict the annual tree water use. No 2 in the "Water and Salinity Issues in Agroforestry" series.

1998, 75pp **\$10** Pub no 98/063 (Free Short Report also available)

The Potential for Tropical Agroforestry in Wood and Animal Feed Production

by JB Lowry & J Seebeck

Assesses the potential for agroforestry in Australia's wet-dry tropics based on trees for both wood and animal feed production. Several timber species are identified which can promote grass production and quality below the tree canopy as well as supply dry-season feed to grazing animals, thus substantially boosting pastoral production.

1997, 85pp **\$20** Pub no 97/073

Design Principles for Farm Forestry

by the Joint Venture Agroforestry Program

A guide to assist farmers to decide where to place trees on farms and in farm plantations. Explains the interaction of trees with other agricultural enterprises and the environment. Provides methods for calculating the economics of planting trees.

1997, 102pp **\$16** Pub no 97/048

Integrating Trees with Livestock Grazing

by Phillip Haines, Agriculture Victoria

Explores four ways in which the use of conventional fencing can be replaced by cheaper options. These include using trees of low palatability, trees that recover well from browsing, the use of repellents to protect trees from browsing, and training of sheep through conditioned feed aversion to avoid eating eucalypt seedlings.

1997, 30pp **\$10** Pub no 97/047

On-site Processing for Farm Forestry

by M Stewart and I Hanson, University of Melbourne

Investigates portable sawmilling as the on-site processing system with the most potential to help maximise the value of farm grown timber. Discusses general issues, analyses financial costs of operations and compares two typical portable sawmilling strategies.

1998, 188pp **\$20** Pub no 98/079 (Free Short Report also available)

Trees for Profit - Integrated Economic Model

by Bill Loane, VIC Department of Natural Resources & Environment

A short report of research that demonstrates, through a series of 8 trials, the benefits of tree growing for multiple benefits - particularly wood production and salinity control on land and water. Provides a view of the positive impact that a new farm forestry industry along the lines of Trees for Profit could have on a region's industrial structure.

1997, 8pp Short Report no 21, **free**

Alley Farming in Australia

by R Stirzaker & EC Lefroy

Describes the scientific principles of alley farming. Includes an economic analysis of a whole farm using this system. Reviews international literature relevant to Australia. Considers research priorities for Australia.

1997, 71pp **\$25** Pub no 97/029 Short Report No 8 available free

Tree Performance Databases and Selection Systems

edited by T Vercoe & B Clarke

Proceedings of a 1995 meeting which represent the current status of a range of different databases and tree selection systems. A natural starting point for those people interested in the field. Systems covered fall into 3 broad groups: models, selection systems and observational databases.

1997, 57pp **\$16** Pub no 95/022

Trees for South Eastern Australia

by Tim Vercoe & Bronwyn Clarke

Gathers growth and associated site, management and genetic information to be used to predict tree performance. Summarises trial results and recommends future work. Aimed as a research report rather than for on-farm use.

1996, 75pp **\$10** Pub no 96/005

Low Rainfall Agroforestry

Proceedings of a 1992 workshop coordinated by RIRDC and the Land and Water Resources Research and Development Corporation. Covers opportunities and constraints of low rainfall agroforestry, promising products derived from woody species, riparian vegetation as buffer strips, use of trees to maintain soil fertility, and planting and management for nature conservation.

1992, 103pp **\$10** Pub no 92/007

Commercial Farm Forestry in Australia

by AACM/CIE

This 3 book kit presents a blueprint for the development of a national commercial farm forestry strategy. It contains A Resource Book, A Quantitative Assessment (first ever quantitative economic assessment of the contribution of farm forestry to the national economy) and A Synopsis, an easy-to-use overview of these two documents.

1996 **\$40** Industry groups **\$20** Landcare groups Pub no 96/026 Short Report No 34 available free

Black Wattle & its Utilisation

by AG Brown & Ho Chin Ko, CSIRO

Presents important information on Black Wattle - a fast growing and adaptable tree indigenous to Australia - including its natural distribution in Australia, its ecology and preferred environment, soils and the details of the features that make it such as special tree. An abridged English version, based on the central material published in the 1991 Chinese edition. 1997, 400pp **\$25** Pub no 97/077

Creating a viable farm forestry industry in Australia — what will it take?

by J Alexandra & M Hall

A short report on the major outcomes of a study to investigate what policies the Joint Venture Agroforestry Program will take to create a viable, self-supporting, plantation-based, farm forestry industry in Australia. The outcomes identify impediments and suggest policy actions to overcome identified concerns.

1998, 12pp Short Report no 35, free

Farm Forestry Newsletter

A RIRDC/LWRRDC/FWPRDC Joint Venture Agroforestry Program Newsletter, free

The biannual newsletter of the Joint Venture Agroforestry Program, which aims to develop practical agroforestry and farm forestry systems. It promotes commercial production and forest products, increased agricultural productivity, and sustainable management of natural resources within the agricultural environment. Issued twice a year, last issue April 1998, 8pp Phone Jenny Baxter, (02) 6272 3736, to receive copies.

1998-99 Agroforestry Research-in-Progress

by RIRDC

Short summaries of all agroforestry continuing and completed research projects funded by the Joint Venture Agroforestry Venture in 1998-99. 1999, 55pp, Pub no 99/100 free (see online version)

R&D Plan for the Joint Agroforestry Program 1998-2002

by the Joint Venture Agroforestry Program free. Online version at <http://www.rirdc.gov.au/pub/aft5yr.htm>

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