Putting Together the Total Package
Farm Forestry Extension in Western Australia

By Richard Moore¹, David Jenkins², Bob Hingston¹ and Glenn Batty¹

1. – Department of Conservation and Land Management, Busselton, Western Australia, 6280.
2. – PO Box 121, Bridgetown, Western Australia, 6255

Abstract

Tree crops have a crucial role in more productive and sustainable farming. This is now the view of many land managers in Western Australia and is based on the knowledge and experience gained over the past twenty-five years. During this time agroforestry research has produced basic information on a range of tree crops integrated with farming and a few innovative farmers have established impressive demonstrations of farm forestry in practice. By the early 1990s the challenge was to develop an effective extension program on farm forestry.

The principles, upon which the farm forestry extension program has been built, include landowner empowerment, guidance to interested farmers on a 1:1 basis, support for all phases of farm forestry (from planning to marketing), and collaboration with key stakeholders. Much of current knowledge has been documented into an information sheet series called TreeNotes, produced jointly by the Department of Agriculture and the Department of Conservation and Land Management.

A key strategy has been to build the confidence and understanding of farmers in farm forestry. The Master TreeGrower Program has been a central plank of this strategy. The Program, which has run nine times in Western Australia, is coordinated through a Natural Heritage Trust project called the WA Farm Forestry Network Development Project. Under this project a “follow-on” program has also been developed to provide past participants with the opportunity to consolidate their knowledge and to renew contact with like-minded farmers. Furthermore a 1-day introductory program has been developed to inform landowners on farm forestry and on the Master TreeGrower Program.

The second main strategy of the extension program has been to develop partnerships with those who influence the decision-making of farmers, especially Community Landcare Coordinators, Department of Agriculture advisers, agri-business consultants and contractors, and Bushcare workers. Obtaining support from these groups and individuals is being tackled on several fronts, including the running of 3-day Introductory Courses on Farm Forestry, working with Regional Plantation Committees and participating in farmer-driven seminars and field days.

Increasing numbers of farmers are using forestry as a tool to make their farms work better and to help build a thriving and pleasing rural landscape. The challenge now is to secure funding to keep going the momentum going.
Introduction

The vision that underpins the farm forestry extension program in Western Australia is a more productive and sustainable agriculture. There is a widespread view that trees, especially trees that can generate financial returns, have a crucial role in helping farmers achieve their economic, environmental and social goals (Greening Australia 1996, Reid and Stephen, 2000). In recent times a strong and consistent view has been emerging that commercial solutions have to be found if any significant impact is to be had on overcoming land degradation, such as dry-land salinity (Frost et al., 2001). Commercial trees are not seen as a panacea, but rather as one of several tools, such as drainage and perennial pastures, which when combined offer farmers solutions to the challenges they face (State Salinity Council, 2000).

A survey of farmers in the Bridgetown district in 1995 provided an insight into their life. Forty farmers and their families were interviewed using an approach called “Participative Rural Appraisal” (Dunn, T., Charles Sturt University, pers. comm. 1995). The approach involved active listening and open questioning, to be as objective as possible during a one-on-one interview. The survey found that farmers had four main areas of concern (Rose, 1996):

1. **Inadequate income** – lower prices and higher costs made it difficult for most farmers to earn sufficient income from the farm. The majority relied on a second job off the farm.
2. **Social isolation** – families felt there was a lack of social activities and an inadequate network of social support. It was also common for children to have to leave home to attend senior high school. In combination these factors made for a stressful life.
3. **Need for diversification** – most farmers could see the need to diversify their sources of income but hadn’t worked out how to achieve this need.
4. **Anti-plantations** – there was a general view that fence-to-fence plantations were a cause of de-population and social decline. However they felt that integrating trees into the farming operation was acceptable but they lacked knowledge on how to do it.

Information from the survey on farmer attitudes to farm forestry was helpful in shaping a farm forestry extension program.

The first serious research into farm forestry (or “agroforestry” as it was then called) commenced in Western Australia in the early 1970s. The then Forests Department initially studied the combination of wide-spaced pine and grazing livestock. By the early 1990s the Department of
Conservation and Land Management’s agroforestry research program had produced basic information on a range of commercial trees integrated with farming, including pine for softwood, bluegum for pulpwood and eucalypts for high-grade sawlogs (Moore 1992). Information such as growth rates, management requirements, methods of integrating trees with agriculture, production costs and likely wood yields had been produced. It was time to move from a research phase to an implementation phase and to help landowners get started in farm forestry.

From 1993 onwards, and especially after the Farm Forestry Unit was formed within the Department of Conservation and Land Management in 1995, there has been a concerted effort in Western Australia to build an effective farm forestry extension program. This paper outlines program goals, key strategies, major activities and future directions.

**Farm Forestry Extension in Western Australia**

**Goal**

The goal of farm forestry extension in Western Australia is to increase the adoption of farm forestry. This goal hinges on the notion that commercial trees integrated with farming have a crucial role in more productive and sustainable farming methods. Farm forestry is however quite different from conventional agricultural activities and landowners need considerable information and support to be able to assess its relevance and to get started (Black *et al.* 2000). The extension program aims to provide farmers with the necessary information, contacts and services for them to assess whether farm forestry can help them achieve their goals and how they might go about implementing and managing a farm forestry component to their business.

**Underlying principles**

Several principles underpin the farm forestry extension program. They are:

1. **Farmers first.** The farmer is the most important person in farm forestry extension. Unless farm forestry is presented in ways that enable farmers to see that it can meet their needs it is unlikely to be taken up. Increasing the adoption of farm forestry therefore requires an approach that keeps farmers in the “driving seat”.
2. **1:1 support.** For many farmers the decision to try farm forestry involves substantial long-term changes in the way the farm is run, in the demand for resources and possibly in farm income. In evaluating farm forestry many farmers need to be able to evaluate options in detail. This requires advisers who are competent in farm forestry both technically and practically and who also possess well-developed social skills to be able to interact effectively with farmers on a 1:1 basis.

3. **Seeing is believing.** Being able to see real examples of farm forestry can help farmers enormously as they assess whether farm forestry can help them. Therefore the establishment and use of operational examples of farm forestry is a vital element of the extension program.

   Many of the study sites established during the research phase (1973 to 1993) are now valuable demonstration sites. Demonstrations include 25-year-old pine growing at wide-spacing, 20-year-old eucalypts for high-grade sawlogs growing at wide-spacing, managed pine timberbelts and several species of eucalyptus for sawlogs on a range of sites. In addition there are a number of well-managed farm-scale examples of farm forestry across the south west of Western Australia from Geraldton to Esperance.

4. **Support for all phases.** Farm forestry extension requires more than assisting farmers with planning where trees fit on their farm. It also requires support on implementation, economic analysis, tree management, harvesting and marketing.

5. **Collaboration.** Several agencies and organisations are contributing to the development of farm forestry in Western Australia, including the Department of Conservation and Land Management, Department of Agriculture, Forest Products Commission, Water & Rivers Commission, Regional Plantation Committees and regional initiative groups (see Figure 1). The Western Australian Agroforestry Working Group, formed in 1983, provides a valuable forum for communication between the major groups and helps to ensure that there is effective collaboration in and coordination of activities.
Figure 1. The main organisations and groups contributing to the development of farm forestry in Western Australia
Resources

The main contributors to farm forestry extension have been the Department of Conservation and Land Management and the Department of Agriculture. Collaboration between the two Departments has been ongoing since the mid-1980s when they jointly formed the Western Australian Agroforestry Working Group. Since the Commonwealth’s support for farm forestry, through the Natural Heritage Trust, other organisations such as Regional Plantation Committees, GreenSkills and Greening Australia (W.A.) have also contributed.

The Farm Forestry Unit, within the Department of Conservation and Land Management, has six Farm Forestry Development Officers working full-time on extension, one each at Moora, Busselton, Kojonup, Katanning, Albany and Esperance (see Figure 2). Together the Unit has more than 70 years practical experience in farm forestry research, management and extension. This experience is practical experience gained “in the paddock”, preparing sites, planting trees, pruning trees, measuring trees and working with farmers. The primary goal of the Farm Forestry Development Officers is to increase the adoption of farm forestry, particularly in the medium rainfall zone (450 to 650 mm/year), but also in higher rainfall areas. They concentrate on working 1:1 with interested farmers to assist them in planning, implementing and managing farm forestry. Their activities complement those of the Department of Agriculture.

Figure 2: Location of Farm Forestry Development Officers with the Department of Conservation and Land Management’s Farm Forestry Unit in Western Australia.
The Department of Agriculture has concentrated on two main aspects of farm forestry development. Firstly researching the effect of trees on the agricultural environment (eg. the impact of trees on water-tables and wind-speeds) and the effect of trees on agricultural production (eg. the impact of trees on crop yields). They have also assessed the economics of farm forestry options and contributed strongly to TreeNotes, an information sheet series on farm forestry. The Department coordinates production and distribution of TreeNotes and have developed innovative methods for its delivery, including fax-backs, web-sites and CD-based decision-support tools (Brooksbank, 2001).

**Key strategies**

The farm forestry extension program in Western Australia has 3 main strategies:

1. Increase farmer confidence and understanding of farm forestry.
2. Build partnerships with those who influence the decision-making of farmers.
3. Raise the awareness of the general community in farm forestry.

**Strategy 1 - Increase farmer confidence and understanding in farm forestry**

Strategy 1 focuses on farmers, especially farmers who are already showing interest in farm forestry. Increasing farmer confidence and understanding in farm forestry is being tackled on several fronts, including:

- The Master TreeGrower Program
- The “follow-up” component to the MTG Program
- The 1-day introductory program on farm forestry
Figure 3 shows diagrammatically the 3 main programs that aim to increase farmer confidence in farm forestry.

- **Master TreeGrower Program**
- **“Follow-up” program** (to the MTG Program)
- **1-day introductory program** (in early stages of development)

**Figure 3.** Main components of farm forestry extension in WA directed at farmers.

**Master TreeGrower Program**

The Master Tree Grower (MTG) Program has a crucial role in building farmer assurance in farm forestry. The Program aims to assist farmers who have started to practice farm forestry to improve their skills and to strengthen their support networks (Reid and Stephen 1999). The philosophy that underpins the Program is one of empowerment – providing farmers who are already committed to farm forestry with the information and contacts to enable them to become more self-reliant, successful and influential farm foresters.

The MTG Program in Western Australia is managed under the *WA Farm Forestry Network Development Project*, a Natural Heritage Trust (NHT) funded project, managed by Trees South West (a Regional Plantation Committee), the Department of Agriculture and the Department of Conservation and Land Management. A total of nine Programs have been run in Western Australia – one each at Bridgetown, Duranillin, Albany, Kojonup, Wellstead, Busselton, Esperance, Katanning and Denmark. This is about 25% of all Programs run nationally.
**The MTG Program partnership.** The Master TreeGrower Program is run as a partnership between the University of Melbourne’s School of Forestry, State and regional bodies and farmers (see Figure 4). Links with industry, researchers and policy makers are also important.

![Diagram](image)

**Figure 4.** The University of Melbourne, State and regional bodies and farmers contribute to the running of the Master TreeGrower Program.

**Melbourne University.** The University of Melbourne provides a framework within which MTG Programs can be developed to suit local needs. The framework includes core topics such as principles of farm forestry design, market opportunities for farm-grown timber, farm silviculture and tree measurement. Program format is eight one-day sessions. Melbourne University also provides course materials such as books (ie. *The Farmer’s Log* and *Design Principles of Farm Forestry*), diameter tape and presentations by course coordinators Rowan Reid and Peter Stephen. Melbourne University presents participants with certificates, gate signs, hats and a recent copy of Agroforestry News and the Australian Forest Growers magazine at completion of Programs.

**State and regional bodies.** State and regional bodies provide strong support to the state coordinator, through farm forestry development officers in each region, in organising and running Programs. Support includes publicity, administration, and arranging venues, field sites and presenters.
Farmers. Participating farmers also contribute to planning Program details. A local coordinator, usually a farmer who has completed a Master TreeGrower Program, is selected to assist with arrangements, such as topics of local interest, presenters and sites to visit.

Flexible approach. Within the framework provided by Melbourne University there is flexibility to include topics of particular local interest. For example, if participants express interest in oil mallees, an appropriate presenter and field visit is organised. After participants have completed 3 or 4 sessions, the often have ideas on what they are most interested in learning about and value the chance to choose between several possible topics. For example, at a recent Program, participants were asked if they would prefer to spend time looking in more detail at soils or sawmilling. The itinerary of the field trip was changed to accommodate the participant’s preferences.

Participant feedback. One of the most frequent comments from participants is that the Program enables them to visit sites and to see real examples of farm forestry. A frequent comment from participants is that the chance to visit participant’s properties is the best way to evaluate farm forestry options. Examples of feedback are two responses to the question “…which topics were most useful?” (Stephen and Reid, 2000 & 2001).

- “Site visits – easy, interesting, inspiring”
- “Visiting actual timber growth and learning of other’s experiences”

The practical hands-on approach also tends to be much appreciated by participants.

- “Enjoyed the hands-on component at Rob Johnstone’s”
- “Measuring tree stands & wood volumes, practical value on how much wood & where it is”

Caters for a range of levels. Programs invariably have participants with a range of levels of understanding, from “novice” to “advanced”. This is a positive aspect, as the “advanced” participants are models and a source of practical experience and inspiration for others newer to farm forestry.

Networking. A crucial feature of the Program is the opportunity for participants to make contact with a range of people involved in farm forestry, including like-minded farmers, agency
specialists and business people (eg. nurserymen, tree planting contractors, millers and wood buyers). Participants frequently comment that they find immense value in being able to chat informally with presenters. In addition the Program provides opportunities for key individuals involved in farm forestry development to meet together informally and to compare notes. For example, staff from the Forest Products Commission, who might be delivering on sharefarming schemes, could have the opportunity to hear the latest finding from the Department of Agriculture on a relevant topic such as the impact of trees on water tables.

Attracting participants. The Program demands eight days of a farmers time, a substantial commitment most farmers are unlikely to make lightly. It is therefore not surprising that at times it has taken considerable effort to find 15 to 20 farmers to sign up for a Program. Various methods of attracting participants have been tried and the most effective appear to be:
1. Following up letter of invitation with a personal phone-call.
2. Farmers hearing from their peers about the Program; ie. by word of mouth.
3. Promotion by Community Landcare Coordinators, especially those who have participated in the 3-day Introductory Course in farm forestry.

The “follow-up” component to the MTG Program
A “follow-up” component to the MTG Program has been developed. It aims to provide past participants with opportunities to consolidate their skills and knowledge on topics of their choice and to renew contact with farmers of a similar mind. Past participants are consulted to find out what topics they want to learn about. Responses to questionnaires show that silvicultural techniques, assessment of soil types, management of remnant-bush and species selection are topics of most interest.

The main “follow-up” activity to date has been plot establishment, tree measurement and silvicultural techniques. Plantings owned by “master tree growers” are commonly used as sites to establish plots, measure trees, calculate growth rates and wood volumes and practice silvicultural skills, such as selection of crop trees and pruning. As well as consolidating fundamental forestry skills the sessions produce real data on wood production from local examples of farm forestry. The data from 28 sites across the State is the beginning of an
inventory of the farmer-owned forestry resource. It is envisaged that the growth data will be collated, published and distributed to all “master tree growers” with comments on performance and recommended management.

Other “follow-up” activities to which “master tree growers” have been specifically invited include:

- Talks by visiting experts; eg. on wood properties of young eucalypt logs.
- Courses, such as the milling and seasoning course run by the Timber Technology Centre at Harvey (Forest Products Commission).
- Hands-on training in thinning and pruning.
- Invitations to participate in subsequent MTG Programs held in their area; eg. invitations to attend farm visits and course dinners.

Some of those who have participated in “follow-up” activities have commented that, after a break from doing the MTG Program, it was helpful to come together again and to be able to talk through ideas they had been mulling over since doing their original Program.

**One-day introductory program on farm forestry**

Four one-day introductory programs on farm forestry have been run in various regions of Western Australia and more are planned. The one-day program is aimed at farmers who are interested in farm forestry to the extent that they want to know what their farm forestry options are and where to go for more information and assistance. It also enables the MTG Program to be promoted and helps to gauge the level of local interest in running a Program. The one-day program needs to be developed further as it is seen as an effective way of attracting future participants.
Strategy 2 – Build partnerships with those who influence farmers

Strategy 2 of the extension program in farm forestry focuses on those who influence the decision-making of farmers. This group includes Community Landcare Coordinators (CLCs), Department of Agriculture advisers, agribusiness consultants, Bushcare workers, nurserymen, contractors and bankers. It is important that these people are aware of farm forestry and what it can do for farmers. Most importantly they need to know where to direct farmers should they require information and assistance. Several activities have been developed to address this aspect. They are shown diagrammatically in Figure 5 and include:

- Three-day introductory course on farm forestry
- TreeNotes
- Seminars and field days.
- One-day introduction to farm forestry

---

**Figure 5.** Main components of farm forestry extension in Western Australia directed at those who influence farmers.
Three-day introductory course on farm forestry

The 3-day introductory course on farm forestry is specifically aimed at those who influence the decision-making of farmers, especially Community Landcare Coordinators, Department of Agriculture advisers and field operatives with the Forest Products Commission. The course has 3 main themes:

1. Farm forestry in practice – what is it and what are farmers getting from it.
2. Commercial wood production – tree cropping options, markets, products and returns.
3. Fitting farm forestry into farming – planning, implementation, management and marketing.

Four courses have been run and more are planned. It is considered important that the courses are continued because there is a rapid turnover of Community Landcare Coordinators on short-term contracts.

Seminars and field days

Seminars and field days provide opportunities for those who influence farmers (as well as farmers themselves) to become better informed on farm forestry. Events are numerous and range from official occasions with formal presentations to casual events “in the paddock”. They are organised by the range of government and non-government organisations and cover the diversity of farm forestry topics. Regional Plantation Committees have played a particularly important role in organising farm forestry seminars. Examples of recent events include:

2. Trees – Future Dollars for Esperance, a seminar organised by South East Forest Foundation in Esperance.
3. Farm forestry and Local Government, a workshop organised by Trees South West in Nannup.
4. Sandalwood Field day, a field day organised by Department of Agriculture, Albany.
5. Agroforestry Expo 2000, a one-day expo held at Boyup Brook.
**TreeNotes**

TreeNotes were introduced in 1997 as a series of information sheets on farm forestry. They are produced jointly by the Department of Agriculture and the Department of Conservation and Land Management. As a consistent and up-to-date statement of technical information on farm forestry they provide a helpful foundation for much of the farm forestry extension program. Thirty-eight TreeNotes have been produced and more are planned.

**One-day introduction to farm forestry**

Although the 1-day introduction to farm forestry is designed primarily for farmers (see page 12), it is also a useful way for advisers to find out about farm forestry in their area.
Strategy 3 – Raise community awareness of farm forestry.

The third strategy in Western Australia’s farm forestry extension program targets the general community. Major activities, which raise community awareness in farm forestry, include using the popular media and running Agroforestry Expo.

**Popular media.** Most organisations involved in farm forestry development use radio, newspapers and TV to deliver news and information on farm forestry. The Department of Agriculture has particular expertise in this area and employs a communications person to coordinate a program of events. The WA Network Development Project managed by Trees South West, coordinates the distribution of Agroforestry News. Most managers of significant farm forestry projects take it upon themselves to communicate their work to the wider community.

**Agroforestry Expo.** Agroforestry Expo, which was first run in 1999, showcases the variety of options available to farmers and key facets of the industry from farm planning and site preparation through to harvesting and processing the timber. The Expo’s theme, “Trees for farmers, catchments and communities”, reflects the vision of farm forestry benefiting individuals and the communities they live in while addressing land degradation. The Expo, which attracted over 800 visitors in its first year and stimulated substantial coverage in the media before and after the event, undoubtedly brought farm forestry closer to the broader community. The Expo is held biennially.
Current issues and future directions

Funding. The placement of full-time farm forestry specialists in regional centres across the medium rainfall zone of the South West is a major step forward for farm forestry extension. The challenge now is to secure funding to keep the momentum going. Options for funding include Commonwealth and State funding, and private sponsorship. A major private sponsor is currently being sought to carry the MTG Program forward when Natural Heritage Trust funding runs out early in 2002.

Continuing and extending the MTG Program. The MTG Program is considered a highly effective element of the overall extension program. Evidence for this assessment comes from two main sources; feedback from the 150 farmers in Western Australia who have completed Programs and findings of a survey of farmers and advisers in the Albany region. The feedback from the 150 participants is overwhelmingly positive, as indicated by responses documented in Program evaluations by Stephen and Reid (2000 and 2001). The Albany survey also confirms farmer’s high opinion of the Program. When asked to list farm forestry activities that stood out in their mind, the most common and the most positive response was their involvement in the Master TreeGrower Program (Power 2001). The University of Melbourne deserves to be recognised for instigating such a highly successful extension initiative.

It is now obvious that a full-time coordinator is required to run the MTG Program, to attract new participants and to further develop the introductory and “follow-up” components. Aspects to be developed and run include:

- Advanced modules (eg. management of native forest and assessment of soil types)
- Inventory of tree growth (ie. continuation of joint project with the Farm Forestry Unit, currently involving 28 sites)
- Use of real local data on wood production for economic analyses, to show farmers what can be achieved.
- Bringing past participants and potential new participants together at field days.
Incorporating farm forestry into mainstream agricultural education and extension. The Education and Information Transfer Program of the Cooperative Research Centre on Plant-based Management of Dryland Salinity will be investigating how to make farm forestry an integral part of mainstream agricultural education and extension programs. Funding for a range of farm forestry education and extension programs nation-wide, including the Master TreeGrower Program, is a possible outcome. The possibility of extending the MTG Program into agricultural colleges, such as the Denmark Agricultural College, is being explored.

Improving the introductory program. There is a need to improve the introductory program that targets those landowners who are interested in farm forestry but who haven’t started yet. An important aim would be to attract more farmers to the Master TreeGrower Program. Work is required to improve the format, obtain funding and start running an introductory program on a regular basis.

Conclusion

An effective extension program in farm forestry has been developed in Western Australia. The program focuses on providing farmers with support and encouragement to fit forestry into their farming enterprises. The Master TreeGrower Program is a central plank of the program. Introductory and “follow-on” components are being developed to attract new participants and to provide opportunities for past participants to continue improving their skills and confidence. Increasing numbers of farmers are using forestry as a tool to make their farms work better and to help build a thriving and pleasing rural landscape. The challenge now is to secure funding to keep going the momentum going.
References


Greening Australia (1996) Farm forestry in Australia: integrating commercial and conservation benefits. pp. 54


Rose, B. (1996) Bridgetown-Greenbushes and Boyup Brook Rural Survey – Results and Conclusions, Department of Agriculture, Manjimup

