The Australian Master TreeGrower Program 1996-2004.

Development, delivery and impact of a national agroforestry education program

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Abstract

The Australian Master TreeGrower Porgram is a comprehensive outreach and extension package that aims to ensure that the development of agroforestry is driven by the aspirations and opportunities of farmers and supported by the interests of industry, governments and community groups. By the end of 2004, sixty-three regional Master TreeGrower landholder education programs had been conducted involving over 1240 participants and more than 30 partner organisations making it the possibly the largest outreach program of its type in the world. Although the focus is on the design and delivery of education, the MTG Program is more than just a short course in multipurpose tree growing for farmers.

Australia is currently experiencing a dramatic rise in the number of small-scale forest owners and the extent of their forests. International experience suggests that increasing farmer (or small private owner) participation in forestry can have quite different social, economic and environmental impacts to that of industrial or government forestry. The MTG Program supports the participation of farmers and other independent forest owners in the expectation that this will lead to greater integration of tree growing into the rural landscape. The location, species and management adopted will reflect the interests, aspirations and opportunities facing landholders.

The MTG approach is one of facilitating participatory learning. The program includes transfer of technology, problem solving, education and elements that are aimed at facilitating participatory development. The results of the internal continuous monitoring and evaluation program and two national external reviews confirm that the program has had an impact on the perceptions, enthusiasm and activity of participants. The participants believe they're making better tree management decisions and there is a greater commitment to farm forestry as a result participation in the program. MTG participants are also making a greater contribution to farm forestry research, development and extension within their regions particularly through their participation in regional farm forestry networks.

Acknowledgements
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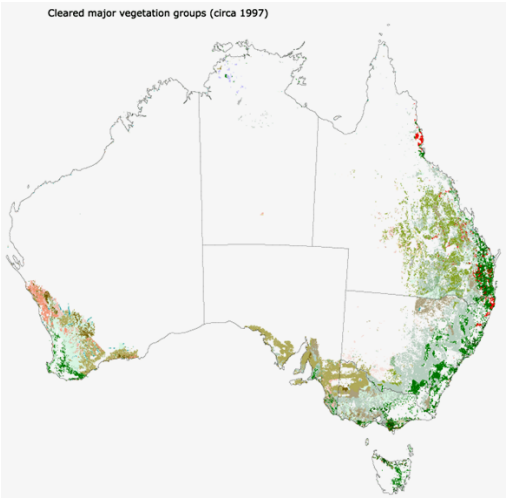
We also acknowledge the contribution of Dr Tim O'Meara and his team who undertook the evaluation and social impact review from 1997 to 1999 and helped establish the philosophy underpinning the program and its evaluation. Special thanks go to the Myer Foundation and the Joint Venture Agroforestry Program who have supported the Australian Master TreeGrower Program since 1996.

The unrealised potential of farm forestry



Much has been made of the great potential for agroforestry to become a valuable contributor to the economic and environmental well being of rural Australia (Reid and Wilson 1985, AACM 1996, Alexandra and Hall 1998). Unfortunately, it is a potential that has largely arisen as a result of the environmental impact that clearing native trees for agricultural development has had over a period of 200 years of European settlement.

Forest clearing has been concentrated in the areas of high agricultural and economic value based on climate, soils and proximity to population centres (Figure 1). Tree cover on working farms is extremely low. Intact native forest is usually only found on land considered unsuitable for agricultural and is commonly in serious decline due to fire, weeds, gazing and isolation. In productive areas a few scattered paddock trees or linear belts along roadways may be the only remnants of once tall and complex forest communities.

Figure 1. The areas of native vegetation cleared for agricultural development EA (2005)

The environmental impact of forest clearing, and the subsequent development of modern agricultural, is estimated to cost the Australian economy more than $2.4b annually (Norris et al. 2001). Dryland salinity, considered to be a direct result of tree clearing, affects more than 4.5 million hectares and over 10,000 km of inland waterways (Norris et al. 2001).

Putting back the bush

The sheer scale of the crisis of salinity, soil erosion, acidity, degraded rivers and loss of native plants and animals shows that 24 million hectares – or over 40 billion trees – need to be planted throughout Australia to address these problems
Then President of the Australian Conservation Foundation, Peter Garrett, In Henry (2002) p.1.

Targeted revegetation of cleared agricultural land is widely recognised the most sustainable solution to the problem of dryland salinity. Trees on farms are also seen as a means of solving problems related to biodiversity decline, nutrient loads, animal welfare, crop productivity and economic diversification (Hajkowicz and Young 2002). Faced with enormity of the problems, it is not surprising that governments, farmers and rural community groups are seriously looking at the potential of the trees themselves to financially underwrite the scale and diversity of revegetation required through the provision of commercial products and services (JVAP 2001).

Conventional plantation forestry is well established in Australia, albeit concentrated in a few strategic locations, almost entirely owned by corporations or state agencies, and based on a narrow range of species targeting large softwood mills or pulp and paper markets. Furthermore, the plantation and timber industry has traditionally been isolated, both physically and socially, from the agricultural sector. Until recently, few farmers had any direct experience with the forest industry.

In the early 1990's, facing concerns about clearing native forest for plantations and the poor returns on low quality sites, the timber industry and government targeted around 2 million hectares of privately owned, cleared farmland in the higher rainfall areas for a dramatic expansion of the national industrial plantation estate (Anon 1997). Since then, somewhat coincidently, the area of plantation forest has increased by more than 600,000 hectares. Most of this has been eucalypt pulpwood plantations funded by companies offering 'tax-effective' investments on agricultural land purchased from farmers in the wetter margins of southern Australia (Stephens 2001).

There are now many published reports documenting the social, economic and environmental impacts of the spread of large-scale monoculture plantations across what was previously farmland (Spencer et al. 1989, Petheram et al. 2000, Schirmer 2000, Hopton et al. 2001, Tonts et al. 2001). In some quarters, plantation forestry development rivals native forest logging as the most controversial political issue in Australian forestry (Drielsma 2000).

Much of the current debate surrounding agroforestry development is aimed at reconciling the clear need for trees to underpin sustainable farming systems across all land types with the competition between industrial plantation forestry and family farming for high quality land in particular areas. Alexandra and Campbell (2003) argue that given commercial tree growing is clearly a powerfully tool in reshaping landscapes more thought should be given to the community, cultural and ecological impacts, in addition to efficient commodity production. In essence, this describes the purpose of the Australian Master TreeGrower Program: to facilitate the exploration and development of agroforestry and farm forestry across rural Australia in a way that reflects the interests, aspirations and opportunities facing rural communities and other interest groups.

Redefining agroforestry and farm forestry

Plantation impact studies suggest that an increase in *integrated farm forestry* (Tonts et al. 2001) or *tree growing within farming enterprises* (Petheram et al. 2000) would be a less controversial alternative. Schirmer (2000) reports that amongst those in the rural communities where industrial forestry is seen as a threat, farm forestry or the *development of plantations on agricultural land owned by farmers* (p. 27) is seen as very different to industrial plantation forestry despite the fact that it may involve the same species grown in a similar manner. Although some within the industry (Prosser 1995) argue otherwise, Alexandra and Hall (1998, p.15) highlight the importance of clearly distinguishing farm forestry from industrial forestry because *the lumping of all forestry together tends to blur the issues which are important to farm forestry*. Pearson et al. (2000, p. 20) agreed adding that the *acceptance of farm forestry is made more difficult when it is confused with issues which relate to plantation or industrial forestry.*

What clearly distinguishes farm forestry from corporate, industrial or government forests is ownership. Not just ownership of the land or the trees, but ownership of the decision to do it and how it is done. Farm forestry and agroforestry are terms that relate to the process by which these forests are established and managed rather than the type, arrangement, purpose or location of the trees: *Agroforestry and Farm Forestry are the commitment of resources by farmers, alone or in partnerships, towards the establishment or management of forests on their land.* (Reid and Stephen 2001)

Farm forestry and agroforestry are therefore about choice; farmers choosing to commit their resources to the development and management of forests for, amongst other things, commercial return. Farmers may establish and manage their forests for any mix of the benefits they might provide. They may place an emphasis on a single outcome, such as timber production or biodiversity, or they may seek to balance a range of benefits in a multipurpose planting. A forest initially established or managed for wildlife or land protection might later be harvested for timber or valued for its beauty. Forests on farms may increase agricultural production or simply displace it. They might be sustainable, even improve economic, social and environmental capital, or they may deplete these assets. The farmer, or their partners, may profit from farm forestry or come to regret their involvement. Making a commitment to forestry is not necessarily a good decision – it is simply a decision.

Farmers, the emerging sector of Australian forestry

The Australian National Farm Forestry Inventory (NFFI) indicates there has been an exponential increase in the area of small grower plantations in recent years (Stephens 2001) (Figure 2). By 2001, an estimated 13,400 landholders small grower owned a total of more than 67,000 hectares or approximately 5 per cent of Australia's plantation resource. An additional 4,200 landowners were involved in farm forestry through joint venture and leasehold schemes with industrial, corporate or government growers. There is also evidence of a dramatic increase in the active management of native forests on farms for commercial forest products and environmental services (Parsons 1999).

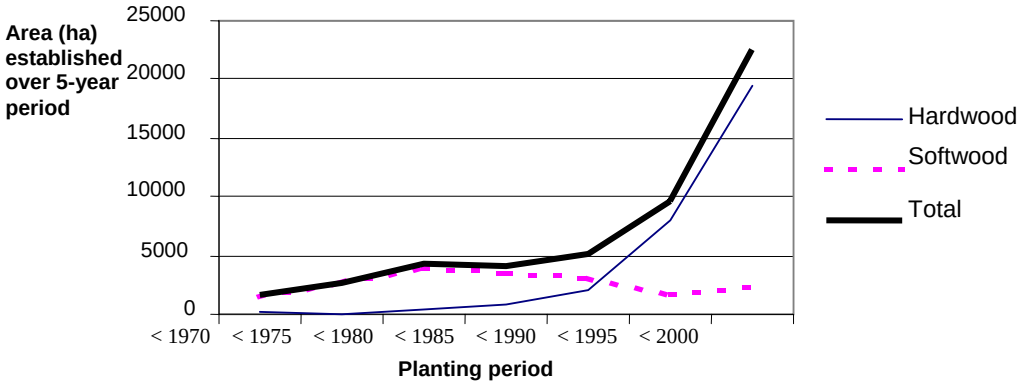


Figure 2: The rise in the area of independently owned small-grower plantation in Australia.
Source: NFFIS, Stephens (2001)

Should this trend continue, farmers could build in number to the point of being one of the largest sectors of the forest industry (larger than the number of professional foresters or timber workers). In North America this is already the case with more than 10 million non-industrial private forest owners collectively managing approximately half the national forest estate and surpassing the combined timber production from both industrial and government forests (Biles 2001).

The diversity of motivations, interests, resources and opportunities inherent amongst small forest owners (Stephens 2001, Wilson et al. 1995) suggests we may be witnessing the beginnings of a dramatic shift in the nature and purpose of Australia's forest estate: *Where ownership is diverse, the forest composition is diverse. The diversity of human aspirations, capacities, values and knowledge drives the diversity in forest conditions* (Bliss 2001 p. 2-4). The apparent economic, social and environmental values provided by small-grower forestry are a direct result of the social character of the sector. Rather than try and change farmers, or displace them, the Australian Master TreeGrower program is seeking to change the practice of forestry so that it is both relevant and attractive to the farming community.

The Australian Master TreeGrower Program

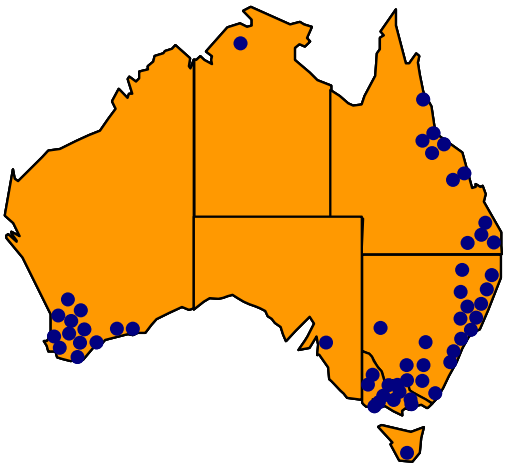
The focus of the MTG Program is on farmer decision-making. Farmers are encouraged to learn the skills, seek out the knowledge and form information networks that will give them the ability and confidence to design, establish and manage multipurpose farm forestry systems and to negotiate the sale of farm forestry products and services. Industry, government and community groups interested in the products or services trees on farms provide are encouraged to articulate their own product or service specifications and outline their preparedness to reward those who deliver these.

Whilst there is an expectation that the MTG will result in greater establishment and management of trees and forests on Australian farms what these forests look like and how they are managed is not predetermined – this will depend on the interests, aspirations and ingenuity of the farmers, researchers, academics, community groups, policy makers and industry players involved.

The MTG regional programs

At the heart of the MTG program is a short regional educational course (of approximately 42 hours) for farmers in the design and evaluation of personally appropriate tree growing plans. The university conducts these regional programs in association with local organisations such as government agencies, community groups or industry bodies. In all cases, local representatives, financially supported by the region, have taken on the role of regional coordinator.

Between 1996 and 2004, 63 regional MTG programs were conducted across Australia involving more than 1240 participants (Figure 3). Local experts or specialist presenters, including region timber processors and log buyers, reinforce the links between participants and those within the region who can provide ongoing support.



Participants usually pay a modest registration fee. The money raised pays for facilities, food, buses, copying and other local course related expenses. As a non-accredited course, the participants do not pay an enrolment fee to the university. The university contributes staff for presentations (usually the introduction, measurement, silviculture, and closing sessions) and course material including books, diameter tapes, MTG hat, gate signs and certificates. Presentations are held at a range of venues across each region so as to allow easy access to farms, forests and businesses for field tours.

Figure 3: Location of Master TreeGrower regional programs, 1996-2004.

The content of program sessions

Whilst every program is different they all follow a similar eight-day framework (Table 1). This ensures consistency and uniformity while at the same time allowing individual regions to adapt the content to suit their own requirements. The MTG Program is principally a design program that encourages participants to construct their own establishment and management plans evaluated against their own performance criteria. Hence, after the introduction, the program begins by exploring market opportunities and works backwards to project design on their own farms. By the end of the program participants are expected to be able to critically design and evaluate unique multipurpose farm forestry systems that meet their land management objectives and constraints while having the potential to produce a commercial product or service.

There are many problems which require design as much as they require analysis. It is with design that we construct and create solutions. It is not a matter of removing the cause of the problem but of constructing a solution. Design includes all those aspects of thinking involved in putting things together to achieve an effect.

Edward de Bono (1992) Teach your child how to think p. 22

Table 1. The MTG Framework for regional programs

1. Mastering trees on farms (1 day)
Agroforestry is about farmers growing trees to meet their own needs (shelter stock and crops, control land degradation, provide wildlife habitat and generate income). Introduction to the design and management of multipurpose forests on farms and the responsibility of the landholder and others.

2. Trees for conservation & profit (3 days)
Review the prospects for timber (sawlogs, firewood etc) and non-wood products (oils, bush foods etc) and the emerging markets for carbon, biodiversity and other environmental services. Learn how to measure and monitor forest growth and values. Gain skills in tree establishment and management.

3. Integrating trees into our farms (3 days)
Field tours and expert presentations explore opportunities for multipurpose tree growing on the participants' own properties. Topics reflect farmer and community interests such as biodiversity, shade and shelter, native forest management, salinity control, soil protection and landscape design.

4. Shaping future landscapes (1 day)
Review research and development needs in the region. Support an agroforestry network or Landcare group. Conclude with the presentation of MTG gate signs and certificates to completing participants.

The MTG extension approach

Coutts (1994) provides a useful model that links three generally accepted extension paradigms with a higher level one he calls Human Development (Figure 4). With each level there is an increasing emphasis on the assumption that, given the opportunity and assistance, people will make better decisions for themselves and, ultimately, for their communities. Ison et al. (1997) define simple problems as those where there is common agreement about their nature, effects and potential solutions. Simple problems are ideally solved using the transfer of technology model (TOT). However, many (such as Geber 1992; Farrington 1998; Gray and Lawrence 2001), question the appropriateness of the TOT alone for complex, multifaceted, land management systems like farm forestry, land protection and nature conservation.

Problem solving support is appropriate for dealing with many of the specific concerns facing farmers such as growing trees to control land degradation or shelter stock and crops. Education is fundamental to developing forestry management plans that balance a range of economic, environmental and social interests within a set of personal constraints. Human Development refers to facilitating and stimulating individuals and communities to take the initiative in development.

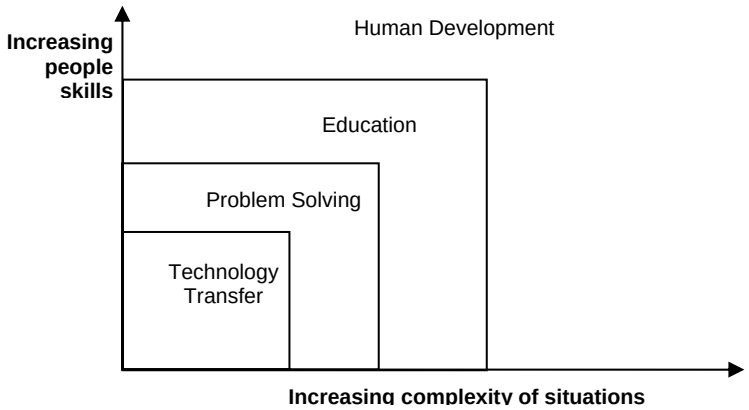


Figure 4: Coutts' four paradigms of extension (Coutts 1994, as presented in King 2000, p. 10)

Extension can contribute to landscape change through the process of *facilitating social learning* (King 2000) or *human development* (Coutts 1994). This includes providing encouragement and support for farmers, communities, industry and governments to clearly define their own interests and expectations and to actively negotiate mutually beneficial outcomes. Frank and Chamala (1992) call this process the Participative Action Model (PAM) while Lanyon (1994) coined the term Participatory Assistance to describe the role played by extension agents who are focused on achieving a good outcome for landholders based on their particular situation and relationship with stakeholders.

Led by the Joint Venture Agroforestry Program, agroforestry R&D in Australia has moved away from the identification and promotion of single purpose best-bet options or solutions (TOT) towards supporting farm forestry diagnosis, design and evaluation. This encourages a pluralistic, evolutionary and accountable approach to development (Anderson 1998, Race et al. 2001): *pluralistic* in that it works towards a diversity of outcomes in recognition of the diversity inherent in the economic, social and environmental landscape; *evolutionary* by encouraging innovation and adaptation in response to changing circumstances over time; and *accountable* by asking the farmers to accept responsibility for land use decisions and requiring stakeholders to be answerable to the wider communities for their actions (or inaction).

The MTG offers participants the technologies and problem solving elements they have come to expect from extension providers, whist practising the diagnosis and design approach (education) and building the empathy, networks and confidence required for them to take on a role in agroforestry development (human development). Black et al. (2000, p. 89) say of the MTG program that by actively *involving landholders in understanding and applying basic principles, the diagnosis and design approach contributes more effectively to the development of a culture of continuous learning about agroforestry.*

Farmers commonly enter the program seeking information and advice on the technical aspects of farm forestry, however by the end most appreciate the significance of what the program is offering:

> *Wasn't clear on real purpose (originally thought it was purely education/extension program) until Rowan gave 1st, even 2nd talk, I realised how successfully the program was being run - seemed possibly too unstructured and to short on hands-on info till then.*
>
> (Cairns Qld, June 2001. Data from 'After' survey)

Who are the Master TreeGrowers?

By the end of 2004, 1240 participants had completed the MTG. Twenty-five per cent were female. Programs run in the more traditional broad-acre agricultural regions tended to have more participants that gained most of their income from a farming business, whereas those programs run closer to populated centres have more participants that derive an income off-farm (Figure 5). Of the 17% that did not own a property, 13% derived an income from a nursery or tree contracting business and 38% from providing a tree support service (i.e. extension officers). Many others were looking to buy property.

The diversity among participants is also evident in terms of the size of their property, rainfall and soil types, on-farm activities (e.g. cropping, wool, lamb, beef, dairy, orchards), involvement in forestry joint ventures, available resources of land, cash and labour, and their knowledge and experience in planting and managing trees. O'Meara and Wright (1999) suggest that this diversity is an essential ingredient in extending participants' and presenters' networks and empathy with the many different interests in farm forestry thereby forging stronger alliances for the future development of farm forestry in their region.

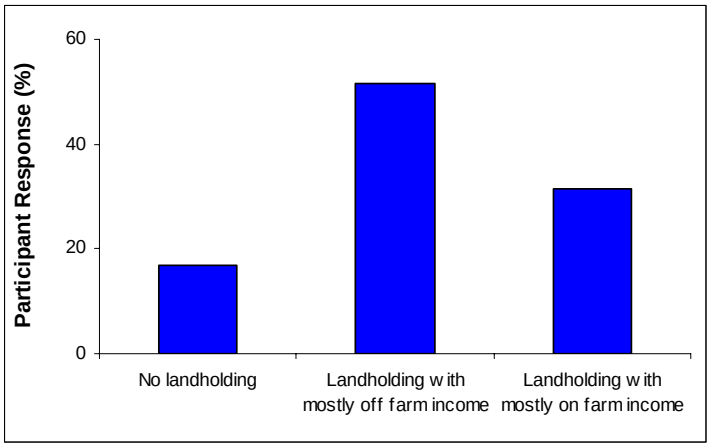


Figure 5: Participants landholding background and income source.
(Data derived from 'Before' Questionnaire where participants are asked: "Which of the following best described your situation?" ~ 761 with 1 non-response).

Participants' knowledge and interests

The experience and knowledge of farmers is rarely acknowledged by extension programs, natural resource professionals or even other landholders. O'Meara and Wright (1999) believe that, for some, this had led to a feeling of isolation and neglect prior to the MTG Program. Being involved in the MTG does show participants just how much they have learned on their own by observation, reading, talking to others, and through their own trial and error and put this knowledge in context. For some, recognition by the MTG Program of their existing knowledge and the realisation that they share common goals with other landholders was a revelation.

> *Thought program was excellent. Particularly in the way it encouraged and valued people with hands on experience to share their knowledge.* (Armidale NSW, October 1999)

> *Feeling that I wasn't crazy for wanting to encourage my native forest to grow with a bit of silvicultural help and growing fat trees not lots of tall skinny ones.* (Gloucester NSW, June 2001. Data from 'After' survey)

Previous studies (Wilson et al. 1995, Alexander et al. 2000) suggest that while many Australian farmers grow trees for shelter (75%), land protection (50%). nature conservation (30%) and aesthetics (10%), very few (about 1%) saw commercial timber production as a primary purpose. MTG participants report that, financial return, including commercial timber production, is an important motivation but that this must not come at the expense of other short term or personal interests (Figure 6). Indeed, balancing apparently conflicting objectives in the design of multipurpose forests is the focus of much of the course content, particularly the participants' own presentations.

There are strong personal motivations underpinning participants' interest in tree growing that come to light as they become more comfortable with the program and the group. These include issues such as passing the farm on in a better state or creating a more aesthetically pleasing environment (Vanclay 1992). There are also constraints or concerns that limit their preparedness to adopt some conventional forestry practices. Some express concerns about growing the species or designs common to industrial forestry as they wish to be seen by others as farmers not a foresters.

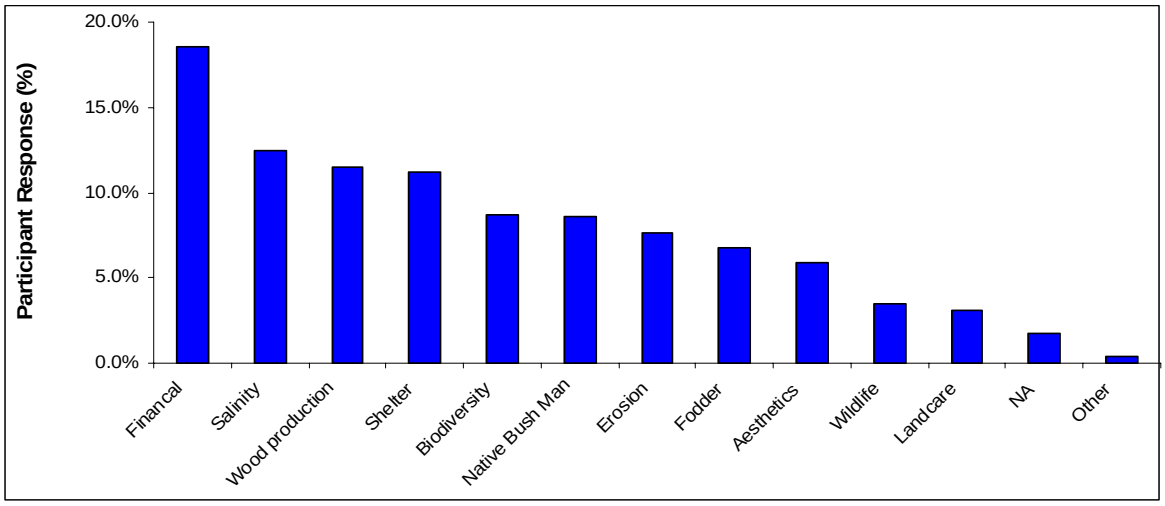


Figure 6: Reasons for planting trees as stated by participants in the response to the question 'What are your main reasons for planting trees?' Reponses classified by program managers.

Content of the MTG Programs

When asked to identify the 'most useful' topics (Figure 7) many identified forest measurement and silviculture. This is probably a reflection of the limited focus they have received in other extension programs where the tendency is to focus on planting trees and not confusing farmers with the science of forestry. The MTG places a great deal of emphasis on handing over the tools and language of forest management to landholders (MTG Diameter Tape):

> *Silviculture – very appropriate and practical with inclusion of 'hands on' experience.* (Katanning WA, 2001)
>
> *Practical aspects and site visits because can't get this from books.* (Kyneton Vic, June 2001)

Likewise those topics considered least useful were those they saw as 'irrelevant', 'not practical', or 'poorly presented':

> *Tax – boring. Stuff on Pines. Not interested* (Ballarat Vic, June 1998)
>
> *Salt and salinity. I don't have that problem.* (Busselton WA, February 2000)
>
> *Native Forest Management. Not relevant to my situation.* (Busselton WA, February 2000)

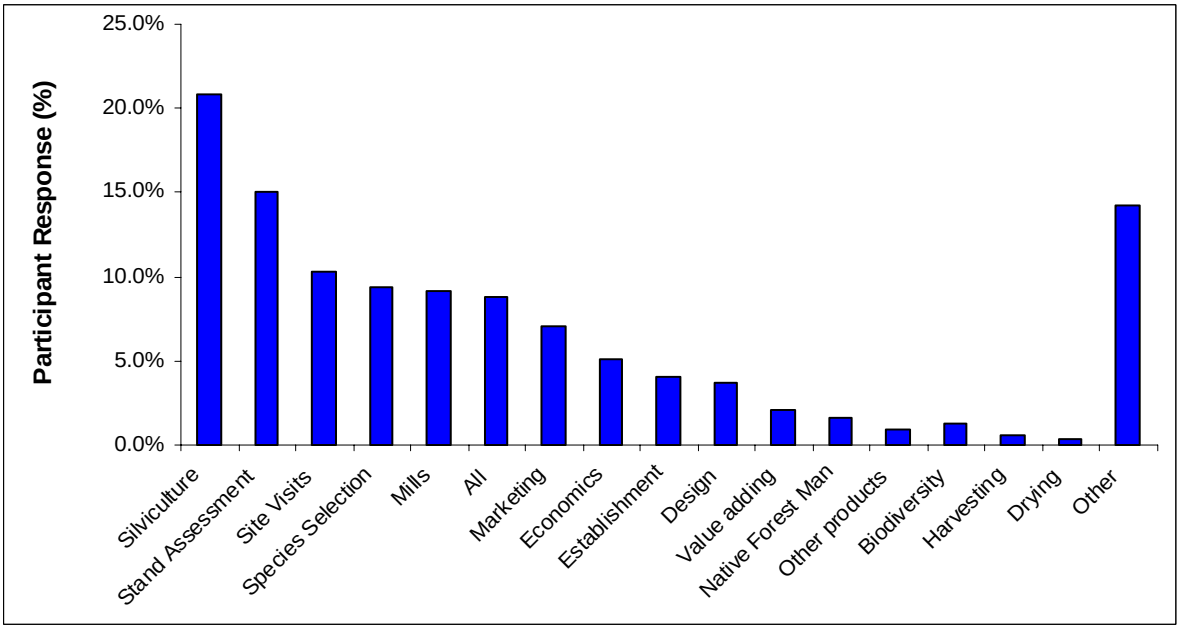


Figure 7: Topics listed as 'Most Useful' by participants.
(Data derived from 'After' Questionnaire where participants are asked: "Which topics covered in the Master TreeGrower Program were most useful, and why?" ~ 772 participants provided 1,280 'most useful topics').

Having been subjected to many extension programs that only focus on the positive aspects of tree growing some participants saw the MTG as a refreshingly credible source of unbiased information:

> *The people with all the know-how were so practical. You dread it when people come out from universities with all their degrees, but it stood out so much - there was nothing 'airy fairy'. They gave all the negatives, how you wouldn't make much money, how it takes ages for change in salinity. Nothing was biased.* (Duranillin WA, August 1998. 'Phone' interview June 1999)

> *I know everybody was wrapped with the course and they got a lot out of it and there were some fantastic comments. They all certainly developed from the course, whether they thought forestry was better or worse, it didn't really matter they were much more well informed of what they were getting into.* (Geelong Vic, June 1999. Coordinator interviewed September 2001)

On ground impacts

> *MTG graduates are growing and managing significantly more trees more successfully as a result of their participation in the program.* (Evaluation report by O'Meara and Wright 1999)

> *The Master TreeGrower Program has had a significant impact on the capacity and skills of people who work in farm forestry. Not only has the course delivered good information it also delivered the information in a way that is mindful of the local environment and the questions and needs of course participants. This attention to local relevance and individual requirements is an outstanding feature.* AgInsight and Agknowledge (2002, p. 22)

Whilst it is difficult to derive reliable quantitative results in terms of the area of trees planted or managed there is considerable qualitative data that does support the view that participants are more enthusiastic about tree management and better skilled to produce a markedly improved product:

> *I used to hate chopping down trees. I still do, but I now see it as essential for getting good diameter out of trees. Rowan turned me around on that, showed that thinning really pays off..*
> (Participant interview cited in O'Meara and Wright 1999).

> *MTG helped a lot of people realise just planting a tree is not the only answer to every thing*
> (Duranillin WA, August 1998. Participant interviewed July 1999).

At the end of the MTG Program virtually all participants responded positively to the seven simple evaluation questions presented in the 'After' survey (Figure 8). Participants reported that they now:

- understand farm forestry much better (Question 1);
- have much better practical abilities in farm forestry (Question 2);
- can provide much better advice on farm forestry (Question 3);
- can evaluate opportunities for farm forestry much better (Question 4);
- can develop farm forestry projects much better (Question 5);
- understand much better the farm forestry interests of other people in the region (Question 6); and
- have much better opportunities for networking on farm forestry issues (Question 7).

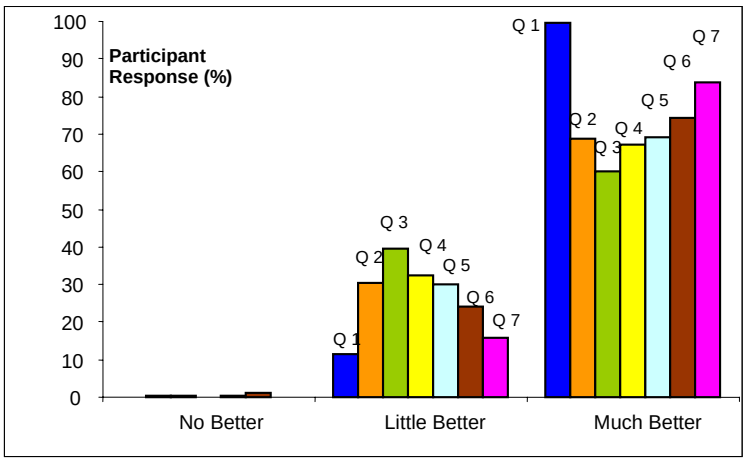


Figure 8: Evaluation of participant's responses to the MTG Program at the last session of the Program. (n ~745. Data taken from Questions 1 to 7 of the 'After' Survey).

Whether or not the MTG Program has dramatically changed practices in the short-term, it does appear to have been successful in building the confidence of participants to further investigate opportunities, their ability to evaluate options against their own performance criteria and their enthusiasm to publicly debate and discuss farm forestry issues:

> *The program provided an excellent overview of farm forestry, gave us the tools required for doing our own research for our own purposes.*
>
> (Hastings NSW, June 1999. Data from 'After' survey)

> *From a personal basis I don't know if anything has greatly changed, except that I feel more confident in the work that I am doing. The more background that you can get, the more confident you become. That has been a boost that way.* (Colac Vic, October 2000. Participant interviewed in September 2001)

Although the technical content is very important to the participants, for many of them it is the network development and peer learning that results from their participation that makes the program unique:

> *The interaction with other MTG was probably one of the biggest advantages. Being able to discuss with other tree growers various solutions to problems, particularly landcare type issues, but integrating forestry into it. Just drawing on your own experiences can be fairly limiting, but when you got a dozen people interacting with all their combined experiences it is pretty important.* (Otways Vic. Participant interviewed in September 2001)

> *MTG regional programs have resulted in the formation of core groups of farm foresters who network with one another to their mutual advantage. Some groups show a high level of cohesion and intra-group association.*
>
> (O'Meara and Wright 1999)

Since the 1999 review there have been some formalised networks developed as a direct result of regional MTG Programs and an increasing investment by the program in support for regional and national information networks. In their review of farm forestry extension, Black et al. (2000, p. 97) point out that: *the MTG has both built upon and contributed to a strengthening of regional agroforestry networks*.

The involvement of participants in the communication and development of farm forestry within their own communities is difficult to measure. How they present themselves publicly may provide some indication. Prior to 1999, approximately 40 per cent of MTG participants had placed their MTG gate sign in a prominent position outside. Many of the other 60 per cent appear reluctant to display the gate sign:

> *On my desk. Too embarrassed to put on front gate. A bit pretentious. I'm a modest person.*
>
> (Duranillin WA, August 1998)

> *In the backroom. A bit embarrassed to put it up – may be on the gate at the shearing shed.*
>
> (North East Vic, August 1997)

> *I often look at it. I am concerned at response and interpretation from neighbours.* (Eden NSW, December 1997)

A Western Australian program coordinator observed that when a second MTG Program was started in one region many of the farmers involved in the first began to display their signs despite a lapse of almost two years. With more than 1000 farmers having completed the course across Australia, the MTG program is now widely known and few concerns have been raised about the name or the sign in recent years.

Farmer-to-farmer extension is happening and is undoubtedly influence farmer actions. However, exactly how and where this transfer of information occurs and its perceived credibility or value is difficult to judge. The potential for MTG participants to act as positive change agents is beginning to be recognised:

> *It has helped prepare people to go on and establish other networks which is the lasting impact. I was thinking that it was important to keep that 24 together, but now those 24 are now probably interacting with maybe 100 people in ways we never thought of. They are the change agents out there and really effective ones.*
>
> (Geelong Vic, June 1999. Program coordinator interviewed in September 2001)

> *I think the MTG Program is terrific. Going to those farm forestry extension conferences is, you know, pretty daunting first off because as you have all those people entrenched in (government agencies), the MTG gives you a bit of a boost as you can now start talking the same sort of language.* (Otways Vic, December 1996. Participant interviewed in September 2001)

This has some important implications both for the development of farm forestry and the interaction between professionals or farm forestry experts and landholders. As the coordinator of the Bridgetown WA (August 1997) commented during a telephone interview (conducted in July 1998): *Industry people are [now] being spoken to on equal terms, which makes them feel uncomfortable.*

Beyond extension and education

> *I just wish it could be more, but I don't know what that more is. I wish it gave me all the answers…. It did what it was supposed to do. It stirred the pot. It creates interest, creates action, gets things happening, asks questions, makes people think. Not necessarily creating answers, but maybe working towards that.*
>
> (Otways Vic, 1996. Participant interviewed September 2001)

The MTG Program represents a new approach to farm forestry extension in Australia and has been extremely successful in stimulating farmer interest, enhancing their knowledge and skills and spreading this knowledge into the wider farming community. The evaluation process has shown that the success is partly due to a social learning and development process that involves the farmers themselves along with regional interest groups and professionals. Many authors, not themselves involved with the MTG, have noted the contribution of the MTG Program:

Agroforestry Research and Development Priorities for Northern Australia (Turvey and Larsen 2001):

> *The Master TreeGrower course has had a strong and positive effect on elevating the understanding and technical capacity of growers in the Northern Territory and this could be replicated elsewhere* (p. 32). *Several of the tree growers spoke very highly of the course, the learning experience, and the education obtained from this short course* (p. 40).

Victorian Sawlog Farming Project – Community Consultation (Dimopoulos et al. 2001):

> *Education programs including the Master TreeGrowers course were considered to contribute very positively to the professionalisation and assisted prospective farm foresters maximise the benefits of tree growing for commercial and other benefits.* (p 140)

The Identification of Training Needs in Farm Forestry Project (Doig 2001):

> *There are excellent programs such as field days and Master Tree Grower's programs, all of which deliver high quality information. Training and gaining skills in a less formal situation such as the Master Tree Grower offers a very practical format for people.* (p. 145)

Revegetation Information and Training Needs of WA Extension Intermediaries (Lloyd 2001):

> *Although found to be one of the least used revegetation information and training formats among Intermediaries, the MTG was amongst the most preferred.* (p. 290)

The reaction of the forestry professionals

Not all observers have been wholly supportive of the program. In its first year a number of letters were published in the Institute of Foresters Newsletter highlighting concerns amongst professional foresters:

> *The term 'Master' is generally used for someone that has honed their trade over many years and is at the pinnacle of their chosen career. I hardy think that a farmer who has undertaken some tree planting on his/her property and has successfully completed 30 hours of training should be put in this category!* Cooper (1997)

In response, other foresters wrote in support of the MTG (Hall 1997, Lyons 1997). Hall (1997) argued *these courses can only help to further our cause and facilitate a greater awareness in the general community of the forestry profession.* Although supportive of the need to acknowledge the experience and contribution of leading farmers Lyons (1997) adds: *I strongly agree that 'Master TreeGrower' is an erroneous title.* Poynter (1998), in a later edition, suggested that the experience of professional industrial foresters was being bypassed or ignored by the program.

Criticism by forestry professionals has abated over time. Many have since been involved with the program and can now see the benefits from increasing the forestry knowledge base amongst land managers and the wider community. Timber processors and contractors have always been very supportive and clearly welcome the opportunity to show farmers their facilities and share their ideas about future markets and opportunities.

Why the MTG Program Works

The MTG Program has provided a tangible example of an extension program that is focused on facilitating participation and learning rather than just the promotion of particular solutions. The apparent success of the program and the willingness of a wide range of stakeholders to participate should give those working in all aspects of farm forestry research, education and development the confidence to explore participatory extension and development approaches in their own work.

Whilst structure and content is important, there are clearly other issues about the approach and character of the MTG that have contributed to its success. The MTG Program involves education, skills training, network development and leadership preparation. All these aspects are nested within a program that:

- has a philosophy that puts the landholders motivations first while acknowledging the legitimate interests of a wide range of other stakeholders;
- is committed to adult learning principles (see Knowles 1990, Vella 1994 and Fells 1999);
- promotes a uniform structure that emphasises learning and creative thinking;
- adopts a flexible framework that is responsive to the needs and interests of participants;
- encourages farmers to take responsibility for their decisions regarding market opportunities, forest design and tree management;
- provides on-the-job support, mentoring and professional training to extension staff; and,
- acknowledges the contribution of farmers to farm forestry extension, research and development.

Recommendations for those considering developing participatory forestry programs of this type:

- encourage regional ownership;
- let participants judge the market opportunities for themselves;
- hand over the tools and language of forestry;
- share the principles of silvicultural management not just recipes;
- allow for multipurpose design based on the balance of landholders priorities;
- don't shy away from risks, rather focus on risk management strategies;
- anticipate that the forestry profession may be a barrier;
- avoid focusing on timber production at the expense of other interests;
- ask specialists to discuss not lecture and to participate in problem solving with participants;
- support formal and informal landholder networks; and,
- provide follow-up support in the form of newsletters, meetings and refresher courses.

The MTG - Facilitating Participation and Learning

Farmers are just one stakeholder in the future of farm forestry, although arguably one of the most important. Until recently, few farmers had the confidence, knowledge and credibility to adequately represent their interests or try and influence government policy on farm forestry initiatives and research priorities. The Master TreeGrower Program has been instrumental in providing farmers with the leverage, guidance, encouragement and a point of introduction to those in government, industry and the non-farming community.

Farm forestry is likely to become an important component of Australia's rural landscape involving many thousands of farmers providing forest products and services to local, national and international markets. Because of the very number of individual landholders, the multifunctional nature of trees and forests and the long timeframes involved, farm forestry is likely to enhance, rather than restrict, the economic and ecological diversity and resilience of rural landscapes. Where farm forestry will develop and what form it will take is more difficult to determine.

As Finley (2000) suggests, those farmers who indulge in forestry *will be writing a history on the landscape*. The MTG Program seeks to ensure it is a history that these farmers, and the rest of the Australian community, can be proud of.

References

AACM (1996) Commercial Farm Forestry in Australia, Development of a Strategy Framework. Rural Industries Research and Development Corporation, Canberra.

AgInsight and Agknowledge (2002) The intangible contribution of the Master TreeGrower Program. Rural Industries Research and Development Corporation, Canberra.

Alexander, F., Brittle, S., Ha, A., Gleeson, T. and Riley, C. (2000) Landcare and farm forestry: Providing a basis for better resource management on Australian Farms. ABARE report to the Natural Heritage Trust. Commonwealth of Australia, Canberra.

Alexandra, J. and Andrew Campbell, A. (2002) Plantations and sustainability science – The environmental and political settings. In Prospects for Australian Plantations, 2002. AFFA, http://www.daff.gov.au/corporate_docs/publications/pdf/rural_science/forest_vegetation/plant_conf02/pap_4_campbell.pdf

Alexandra, J. and Hall, M. (1998) Creating a viable farm forestry industry in Australia – what will it take. RIRDC Publication No 98/74, Rural Industries Research and Development Corporation, Canberra.

Anderson, J. (1998) Extension for multiple interest forestry. In: Johnson J. E. (ed) Proceedings of a Symposium - Extension Forestry: Bridging the gap between research and application. IUFRO, July 19-24, Blacksburg Virginia.

Biles, L. (2001) What America's federal and state governments want from private forests: their preparedness to fund programs related to government being a stakeholder in private forestry? Paper presented at the IUFRO Working Party (S6.06-03) Symposium Forestry Extension - Assisting Forest Owner, Farmer and Stakeholder Decision-Making. 29 Oct – 2 Nov, Lorne, Australia. http://www.anu.edu.au/forestry/IUFROFE2001/index.html.

Black, A. W., Forge K. and Frost, F. (2000). Extension and advisory strategies for Agroforestry. RIRDC Publication No. 00/184, Rural Industries Research and Development Corporation, Canberra.

Bliss, J. (2001) Extension and the future of family forests: Making connections. Paper presented at the IUFRO Working Party (S6.06-03) Symposium Forestry Extension - Assisting Forest Owner, Farmer and Stakeholder Decision-Making. 29 Oct – 2 Nov, Lorne, Australia. http://www.anu.edu.au/forestry/IUFROFE2001/index.html.

Commonwealth of Australia (1997) Plantations for Australia: The 2020 Vision, Canberra.

Cooper, N. (1997) Farm Forestry qualifications. Letter to the Editor. IFA Newsletter Vol 38(4).

Coutts, J. (1994) Process paper policy and practice – a case study of the introduction of a formal extension policy in Queensland, Australia. Wageningen Agriculture University, The Netherlands.

de Bono, E. (1992) Teach your child how to think. Penguin

Dimopoulos, M., McKay, E., Kevin, T. and Stewart, A. (2001) Including the Community: Community Consultation and Communication in the West Victoria RFA Private Forestry Project. Paper presented at the IUFRO Working Party (S6.06-03) Symposium Forestry Extension - Assisting Forest Owner, Farmer and Stakeholder Decision-Making 29th Oct – 2 Nov 2001. http://www.anu.edu.au/forestry/IUFROFE2001/index.html.

Doig, M. (2001) Self-Assessment in Farm Forestry Extension: Future directions. Paper presented at the IUFRO Working Party (S6.06-03) Symposium Forestry Extension - Assisting Forest Owner, Farmer and Stakeholder Decision-Making 29th Oct – 2 Nov 2001. http://www.anu.edu.au/forestry/IUFROFE2001/index.html.

Drielsma, H. (2000) A CRC partner's view of farm forestry. In: Race, D. (ed) Socio-economic research to support successful farm forestry. Selected papers and abstracts from the ANU Forestry colloquium, 28 February 2000, Canberra: 1-10.

EA (2005) Effect of clearing on native vegetation, Environment Australia, Australian Natural Resource Atlas: http://audit.ea.gov.au/ANRA/vegetation/vegetation_frame.cfm?region_type=AUS&region_code=AUS&info=veg_clearing

Farrington, J. (1998) Organisational roles in farmer participatory research and extension: Lessons from the last decade. ODI Natural Resource Perspectives No. 27, 4 pp.

Fells, R. (1999) Adult learning and action learning- A real workplace learning approach, Journal of Agricultural Education and Extension, 6(2), 73-81.

Finley, J. (2000) Writing a history on the land through stewardship. Australian Farm Journal 9(11) 31:33.

Frank, B. and Chamala, S. (1992) Effectiveness of extension strategies. In: G. Lawrence, F. Vanclay and B. Furze (eds) Agriculture Environment and Society: Contemporary Issues for Australia. Macmillan, South Melbourne, Vic:122-140.

Geber, J.M. (1992) Farmer participation in research: A model for adaptive research and education. American Journal of Alternative Agriculture, 7(3) 118-121.

Gray, I. and Lawrence, G. (2001) A future for regional Australia: Escaping global misfortune. Cambridge University Press, 247 pp.

Hall, J. (1997) Master Tree Grower – a positive program. Letter to the Editor. IFA Newsletter 39(1).

Hajkowicz, S.A. and M.D. Young (Eds) (2002) *Value of returns to land and water and costs of degradation*, A consultancy report to the National Land and Water Resources Audit, CSIRO Land and Water, Canberra. http://audit.ea.gov.au/anra/people/docs/national/Final%20Audit%20Report%20Vol1.doc

Henry D. (2002) Environmental demands for plantations and small-lot forestry in the Australian landscape. The needs and opportunities, impediments and solutions. In Prospects for Plantations 2002, AFFA, Canberra. http://www.daff.gov.au/corporate_docs/publications/pdf/rural_science/forest_vegetation/plant_conf02/pap_1_henry.pdf

Hopton, H., Schmidt, L., Stadter, F. and Dunkley, C. (2001) Forestry, land use change and water management: A Green Triangle perspective. In: Nambier, E.K.S. and Brown, A.G. (eds) Plantations, Farm Forestry and Water. Proceedings of a national workshop, 20-21 July 2000, Melbourne. RIRDC Publication No. 01/20.

Ison, R.L., P.T. Maiteny and S. Carr (1997) Systems methodologies for sustainable natural resources research and development, Agricultural Systems, 55(2): 257-272.

JVAP (2001) Operational Plan. http://www.rirdc.gov.au/programs/aft.html.

King, C.A. (2000) Systematic Processes for facilitating social learning: Challenging the legacy. Thesis presented to the Swedish University of Agricultural Sciences.

Knowles, M. (1990) The Adult Learner: A Neglected Species, Gulf Publishing, Houston.

Lanyon, L.E. (1994) Participatory assistance: An alternative to transfer of technology for promoting change on farms. American Journal of Alternative Agriculture, 9(3) 136-142.

Lloyd, S. (2001) Revegetation Information and Training Needs of Western Australia's Extension Intermediaries: A Qualitative and Quantitative Market Research Report. Paper presented at the IUFRO Working Party (S6.06-03) Symposium Forestry Extension - Assisting Forest Owner, Farmer and Stakeholder Decision-Making 29th Oct – 2 Nov 2001. http://www.anu.edu.au/forestry/IUFROFE2001/index.html.

Lyons, A. (1997) Farm Forestry Training. Letter to the Editor. IFA Newsletter 39(1).

Norris R.H., Prosser I., Young B., Liston P., Bauer N., Davies N., Dyer F., Linke S. and Thoms M. (2001) The assessment of river conditions (ARC) – An audit of the ecological condition of Australian rivers. Final Report submitted to the National Land and Water Resources Audit Office http://audit.ea.gov.au/anra/water/docs/river_assessment/River_assessment.pdf

O'Meara, T. and Wright, J. (1999) Evaluation of the Australian Master TreeGrower Program. Rural Industries Research and Development Corporation, Canberra (unpublished).

Pearson, C., Coakes, S. and Aslin, H. (2000) Social research to support successful farm forestry. In: Socio-economic research to support successful farm forestry. RIRDC Publication No. 01/13, Rural Industries Research and Development Corporation, Canberra.

Petheram, J., Patterson, A., Williams, K., Jenkin, B. and Nettle, R. (2000) Socioeconomic impact of changing land use in south west Victoria. Summary Report and Recommendations, September 2000, Faculty of Land and Food Resources, The University of Melbourne, Melbourne, 20pp.

Parsons, M. (1999) Native Forests on Farms, RIRDC Publication No. 99/21, Rural Industries Research and Development Corporation, Canberra.

Poynter, M. (1998) Farm forestry – another view. Letters, IFA Newsletter 39(3): 48-50.

Prosser, M. (1995) An industry perspective on farm forestry. Paper presented to the Graduate Certificate in Forest Science (Farm Forestry), The University of Melbourne, Melbourne.

Race, D., Buchy, M. and Fulton, A. (2001) A dynamic context: Farm forestry extension in Australia. Paper presented at the IUFRO Working Party (S6.06-03) Symposium Forestry Extension - Assisting Forest Owner, Farmer and Stakeholder Decision-Making 29th Oct – 2 Nov 2001. http://www.anu.edu.au/forestry/IUFROFE2001/index.html.

Reid, R. and Stephen, P. (2001) The Farmer's Forest: Multipurpose Forests for Australian Farmers. School of Resource Management, The University of Melbourne, Melbourne.

Reid, R. and Wilson, G. (1985) Agroforestry in Australia and New Zealand. Goddard and Dobson, Melbourne. 256pp.

Schirmer, J. (2000) It's not easy being green: Perceptions of the 2020 Vision for plantation forestry in Australia. In: Race, D. (ed) Socio-economic research to support successful farm forestry. Selected papers and abstracts from the ANU Forestry colloquium, 28 February 2000, Canberra: 22-39.

Spencer, R., Bigsby, H., Campbell, A., Hoare, J., Jellinek, L., Reid, R. and Senanayake R. (1989) Consultant's report to State Plantation Impact Study, May 1989, Report prepared for the Steering Committee by the Centre for Farm Planning and Land Management, University of Melbourne, Melbourne.

Stephens, N. (2001) The contribution of farmers and individual landholders to commercial plantation development in Australia. Paper presented at the IUFRO Working Party (S6.06-03) Symposium Forestry Extension - Assisting Forest Owner, Farmer and Stakeholder Decision-Making 29th Oct – 2 Nov 2001. http://www.anu.edu.au/forestry/IUFROFE2001/index.html.

Tonts, M., Campbell, C. and Black, A. (2001) Socio-economic impacts of farm forestry. RIRDC Publication No. 01/45, Rural Industries Research and Development Corporation, Canberra.

Turvey, N. and Larsen, P. (2001) Agroforestry Research and Development Priorities for Northern Australia. Report for the JVAP. RIRDC Publication No. 01/142, Rural Industries Research and Development Corporation, Canberra.

Vanclay, F. (1992) The social context of farmer's adoption of environmentally sound farming practices. In G. Lawrence, F. Vanclay and B. Furze (eds) Agriculture Environment and Society: Contemporary Issues for Australia. Macmillan, South Melbourne, Victoria pp.94-121.

Vella, J. (1994) Learning to Listen. Learning to Teach: The Power of Dialogue in Educating Adults Jossey-Bass Publishers, San Francisco.

Wilson, S.M., Whitham, J.A.H., Bhati, U.N., Horvath, D. and Tran, Y.D. (1995) Survey of trees on Australian farms: 1993-4, ABARE Research Report 95.7, ABARE, Canberra.