The Otway Agroforestry Network and the Australian Master TreeGrower Program: Writing our own history on our landscape - with trees

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Andrew Stewart[1] and Rowan Reid[1,2]
[1] Otway Agroforestry Network, C/-Post Office, Birregurra, 3241
[2] Australian Master TreeGrower Program, Melbourne School of Land and Environment, The University of Melbourne, Victoria, 3010 . rfr@unimelb.edu.au, www.mtg.unimelb.edu.au

Born of the land

Since its inception in 1993, the Otway Agroforestry Network (OAN) has led the way in assisting farmers integrate trees into their farming landscapes for both conservation and profit. The group's success is based on an approach that encourages landholders to identify opportunities and design forests that slot neatly into their faming, family and community environment. The diversity of activities that we are now seeing in across our landscape simply reflects the physical, social and economic diversity inherent within our community.
The approach we are using is one that the Australian Master TreeGrower Program (MTG) has been extending nationally since 1996 when the OAN hosted the first MTG course. Since then, more than 80 courses (each of more than 50 hours) have been conducted around Australia involving more than 1600 participants and 30 partner organisations. Building on this success, the OAN and the MTG have now developed a Peer Group Mentoring Program that trains experienced tree growers from within the community and pays them to work alongside other farmers.

Both the Otway Agroforestry Network and the Australian Master TreeGrower Program arose out of our own concerns, experience and interests. They have flourished because of the support of many hundreds of landholders, farmers and family forest owners and the backing of some far-sighted people in government and academia. The Otway Agroforestry Network is an incorporated community group and has received support through a number of federal, state and regional programs including, most recently, Caring for Country. The Australian Master TreeGrower Program is currently a research project of the University of Melbourne's School of Land and the Environment that is jointly funded by the Joint Venture Agroforestry Program and Land and Water Australia.

Using one of our properties as an example, this paper illustrates the linkages between landholders (and their families) as individuals, the Otway Agroforestry Network as a regional community group that supports them, and the Australian Master TreeGrower Program as a national education and extension imitative.

Yan Yan Gurt West – Andrew Stewart's family farm

My family settled here over 100 years ago and my children are the 5th generation to live on this land. After studying, working and travelling I returned to the farm in 1992 with my wife Jill. We now have 3 children and supplement our farming income with part-time off-farm work. Today, our 230 ha farm looks completely different to what it was like 16 years ago. The property has been transformed from 3.5% tree cover (plantations and remnant vegetation) in 1992 to 15% tree cover in 2008. About 36,000 trees and shrubs have been established over the past 16 years. The farm is not only a much more aesthetic and pleasant environment to work in, but more productive due to changes in stock and pasture management and protection of land and livestock with revegetation.

By 2003, the farm produced 1600 prime lambs, joined 82 heifers, maintained 3.5 ha of remnant vegetation and 30 hectares of plantations. More than half of the plantation area is being managed for commercial timber production. These plantings are growing into a source of farm income whilst providing other benefits to the property and the sheep and cattle enterprises. The integration of farm forestry with Landcare has generated some income by running tours for various groups including universities and international study groups. Other than the sale of Christmas trees, our first commercial timber harvest in 2007 of pulpwood grown under a joint venture yielded almost $30,000.

Back in 1992 the area was essentially cleared of native trees and shrubs with just a few patches of remnant vegetation and some isolated areas of regrowth scrub. After being away for a few years I was able to look at the farm with fresh eyes. What I saw was salinity, gully erosion, stream bank erosion, waterlogging, a lack of shade and shelter and a lack of ecological balance. There was also a lack of land class subdivision, with paddocks being too big for effective grazing management. The farm system and the catchment were not sustainable. Without fundamental change it was not going to support our young family. There had to be a better way to manage the natural resource base.

Having made the commitment to stay, a whole farm plan was developed (Figure 1), which incorporated objectives of the management plan for the Yan Yan Gurt creek catchment, developed by the East Otway Landcare Group. Farm forestry has been a catalyst for a wide range of landcare, water quality, landscape, habitat and animal productivity. The plan includes development of riparian buffer strips (Figure 1; nos. 13, 14 & 18) and linkage of wildlife corridors. We have added another dimension by moving the fences out wider than conventional landcare plantings and adding wide spaced trees for high pruning for sawlog production (Figure 1; nos. 7,13,14, 16 & 17).

A key element of the design is the land class fencing (Figure1; nos 2, 6, 8, 12, 13, 14, 15 & 19) which largely defined the location and purpose of the revegetation. Hence, the integration of commercial and non-commercial trees and shrubs tends to be along drainage lines and landclass boundaries. Stream sides and drainage lines have been revegetated with a choice of species and pattern of planting that provide environmental benefits as well as prospects for commercial timber production. The trees and shrubs provide shelter, land protection, enhanced aesthetics and improve the water quality flowing from the property. A long-term view has been adopted to achieve improved and sustainable agricultural production and to develop income security with commercial trees playing an integral role as superannuation. It was considered that strategic revegetation could halt the spread of dryland salinity in the lower parts of the landscape.

What we have found

Whilst we know we are receiving many benefits from the trees it is difficult to measure the benefits. With all the variables involved it has not been practical to establish experimental controls and besides we simply do not have the time and resources to perform rigorous scientific studies. However, we are confident about making certain statements based on observations and some real agricultural production measurements:

- With 15 % revegetation our stocking rates have not declined.
- The plantation system has offered considerable benefit to deep rooted, perennial herb summer fodder crops such as chicory and plantain by reducing evapotranspiration from hot north westerly winds. This allows us to better meet prime lamb production targets and hence improve marketing options and profitability.
- 104 species of birds have been recorded on the property including magpies and large numbers of ibis which have been eating insects such as grass hoppers and cock- chaffer grubs.
- We scan ewes 90 days after joining. Twin bearing ewes are placed in the best sheltered paddocks with the best alpacas (to reduce fox predation of newly born lambs). The twin bearing ewes are gaining significant benefits from the tree shelter. The plantation system also gives us greater flexibility and confidence for choice of lambing time.
- Fencing out creeks and drainage lines has made the property safer for stock, easier to muster and a healthier environment. The wet and boggy areas, which are more prone to harbouring diseases have been eliminated from the grazing system. Fortunately, these areas are often the best places for productive trees because they are low in the landscape thus offering seedlings some protection and commonly have greater moisture and nutrient concentrations.

- In wet years waterlogging is reduced, which makes the property more trafficable and healthy.
- A badly salt scalded area has now been transformed from a scar on the landscape into a bird haven and place of beauty as well as providing a safe haven for off-shears sheep; turning a problem into an opportunity. There are now a number of off-shears havens scattered through out the property ready for use when the big bad event comes. And it will occur as it is only a matter of time.
- The aesthetics of the property has improved greatly over the past 14 years and the property is a far more enjoyable place to work leading to better psychological health and probably physical health for all those involved.
- Strategic and biodiverse revegetation has had a significantly effect on increased property value thus improving equity percent and borrowing power.
- The biodiverse plantations may increase the populations of predatory spiders that predate red legged earth mite that can devastate legumes such as clover. Parasitic wasps living in the plantations may be predating cock-chaffer grubs, which can destroy pastures.
- I can remember a big blow shooting our top soil out to the ocean. Now that we have 15 % of the property revegetated with trees and shrubs it is far less likely to happen.
- The web of plantations throughout the property reduces spray drift.
- In drought times it is much easier to find a “stock sacrifice” paddock that is low in the landscape and well protected by plantations from all directions.
- Commercial trees can provide useful income and on-farm employment options whether it be from the sale of timber, seed, Christmas trees or from conducting farm tours for students, farmers, government agencies and international groups.

Traditionally, farmers consider risk management in terms of insurance, fodder and water conservation or alternative investments off farm. By the same token, farmers would generally view commercial tree growing as a risky investment that takes a long time to mature. We’ve found that, by integrating multipurpose trees, agroforestry is a means of reducing risk and turning time into an opportunity.

Given that we intend to stay and pass the farm onto our children in a better state we need to balance the short term need for income with the long term goals of environmental sustainability, management flexibility and income diversification. We look to turn or current land management problems into solutions which address environmental issues and increase farm productivity in the short medium term whilst, at the same time, developing a resource (timber, seed, carbon, aesthetics or other tree products and services) that we, as a family, can farm in the future. By first identifying and reducing risk and then focusing on supporting agricultural production any future return from the trees is really a bonus.

LEGEND

"Yan Yan Gurt West" Plantings

1	Fenced remnant native vegetation & direct seeding.
2, 3	Blue Gum timberbelts, 1993.
4	Remnant native trees.
5	Seed orchard of Sugar Gum and Spotted Gum, 2002-3.
6	Shelterbelts of native species1987
7	Radiata Pine planting at break of slope, 1997.
8	Shelterbelt on saline intercept.
9	Historic pine shelter belt, ~1910.
10	Shelterbelts of native species1970
11	Cypress shelter belt, 1950s.
12	Block planting on saline site & wetlands, 2003.
13	Block planting in micro-catchment (Shining Gum)1999
14	Native plantings along creek for sawlogs(Shining Gum, BlueGum, Spotted Gum, Blackwood 1994).
15	Shelterbelt on saline site, 1990.
16, 17	Block plantings of Radiata Pine for sawlogs, 1994-1996
18	Native plantings along creek for sawlogs(Shining Gum, Blue Gum Spotted Gum, Blackwood 1995).
19, 20	Blue Gum timberbelts, 1993.

Other Private Property

21	Radiata Pine plantations, 1960s.
22	Blue Gum plantation along eroded Yan Yan Gurt creek, 1993.
23	Native trees for sawlogs and pulp (Shining Gum, Blue Gum, Spotted Gum, Sugar Gum, Blackwood), 1997

Figure 1. Aerial view (April, 2000) of Stewart's property "Yan Yan Gurt West" (boundary marked around nos. 1-20) and part of the Yan Yan Gurt Creek catchment

The Otway Agroforestry Network

Incorporated through the Victorian Farmers Federation, the Otway Agroforestry Network (OAN) is a non-profit community group with around 150 financial members. The OAN began in 1993 as a federal government supported farm forestry project managed by a small group of landholders from two large Landcare groups in the region. Unlike many other government sponsored farm forestry projects the OAN didn't focus on the establishment of demonstration site and trials.

The emphasis was always on community development. If farm forestry was going to work for farmers it would be the landholder themselves who would be the demonstration of its potential – not a patch of trees and roadside sign! Since its inception the OAN has raised more than $1 million from federal and state government farm forestry and landcare programs.

In late 1996, the OAN partnered with the University of Melbourne in the delivery of the first MTG program. Many of the participants of the first and subsequent Otway MTG programs have since played an active role in the management and delivery of OAN projects and are now involved as advisers and peer mentors. The OAN peer group support and mentoring program involves paying past MTG participants to assist other farmers identify, design and implement multipurpose tree growing project on their farms.

The idea is simple. Landholders interested in learning more about growing trees receive a site visit from an experienced tree grower who can listen to the landholder's interests and concerns. If the landholder is interested the experienced tree grower may develop a site report that reviews the problems and opportunities facing the landholder and suggests possible management options or planting designs. If they wish to make a commitment to a project the same or a different experienced tree grower is available to act as a mentor to help guide the landholder through the implantation of the project, provide encouragement and be available to respond to any problems as they arise. More than 100 site visits have been completed by the network and peer mentors are beginning to work with landholders as they implement their projects.

Landholders as peer mentors in agricultural development

Although the value of using peers as a means of encouraging farmers to adopt new practices is widely recognised there are few studies that have examined the influence that neighbours and family members have on a farmer's decision-making and even fewer successful attempts to develop effective mechanisms for harnessing it (Guerin and Guerin 1994). One very useful study by Phillips (1985) highlighted the important role that intimates and non-expert acquaintances, many of them being other farmers, had on the major decisions taken by dairy farmers in New Zealand.

Phillips found that although professionals or experts were effective at introducing new ideas and information to a farming community (the fuel) they actually played a very minor role in terms of validation and support. The best the conventional extension agent could expect to do was provide good information, which was timely, holistic in nature and empathetic to the learners' objectives. Whilst technical expertise may *get them in the gate,* Phillips suggests that it was the extension agent's interpersonal communication and helping skills, and their ability to build trusted relationships with the farmer and their *intimates,* that largely determined their effectiveness. People vary in their social distance from the learner. The main factor is the degree of intimacy: how well the person is known, trusted and liked. On first meeting, a stranger cannot help but be near the outside, but as the individual gets to know the stranger, and watches them interact with others, trust can develop.

The MTG purposely bring a group of farmers with a common interest in trees together. Initially they may know only two or three others in the group, but because the program involves shared learning experiences, the opportunity for individuals to present their own experiences (often on their own farms), many social activities (lunches, bus trips, evening dinners) and a collective sense of belonging and achievement (the MTG title, hat and sign), trusted relationships commonly develop. Based on this model, the Otway Agroforestry Network developed the formal farmer-to-farmer peer support and mentoring program trains and supports experience tree growers to act as supportive 'intimates' for other farmers in their community.

Making a commitment to forestry is not necessarily a good decision – it is simply a decision. With a focus on the decisions that farmers make, rather than the forest itself, the purpose of agroforestry development and

extension programs shifts from the promotion of predefined commercial tree growing options to improving the quality of the decisions that landholders make regarding the design and management of trees on their own land.

The Australian Master TreeGrower Program

The Australian Master TreeGrower Program (MTG) is a participatory outreach and extension project conceived by Rowan Reid and delivered nationally by The University of Melbourne. Commencing in 1996, the program has delivered regional short-courses, prepared and provided extension information and tools, coordinated national extension events and supported regional farm forestry and agroforestry networks. By the end of 2008, eighty-five regional Master TreeGrower courses will have been conducted involving over 1,750 participants and more than 30 partner organisations. The program has been supported by the federal government's Joint Venture Agroforestry Program for more than 10 years and, more recently, by Land and Water Australia.

Farmers are encouraged to learn the skills, seek out the knowledge and form networks that will give them the ability and confidence to design, establish and manage multipurpose farm forestry systems and negotiate the sale of farm forestry products and services. Although the program includes the *Transfer of technology* (e.g. measurement methods) and *Problem solving* (e.g. the design project) there are elements that are aimed at providing *Education* (e.g. visiting sawmills to learn about timber markets) and facilitating *Human development* (e.g. sharing ideas about the future development needs for farm forestry in their region) (Coutts 1994).

The MTG framework (Table 1) ensures consistency and uniformity throughout Australia while at the same time allowing individual regions to adapt the content to suit their own requirements. How regions fill-in the basic 8-day session plan is flexible and depends on regional land management constraints and the participants' requirements and interests.

Table 1. Whilst every program is different they all follow a similar four-part framework

The four parts of the Australian Master TreeGrower course
1. Mastering Forests on Farms (1 day) Agroforestry is about farmers making a commitment to the establishment and management of trees and related vegetation for the reasons they think are worthwhile. Their commitment can be influenced by motivations and support of environmental, commercial and social stakeholders. This first session explores the forest-related interests of the participants and regional stakeholders.
2. Trees for Conservation and Profit (3 days) Review of the regional prospects for farmer production of forest products (timber, bush foods, oils etc) and environmental services (carbon, biodiversity and water quality). Participants will learn how to measure and monitor forest growth, productivity and services and gain understanding and skills in tree establishment and forest 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 and the design of appropriate agroforestry and vegetation management projects. Topics reflect farmer and community interests and may include biodiversity, shade and shelter, commercial forest products, soil and water quality and landscape design.
4. Shaping future Landscapes (1 day) Economic evaluation of the risks and rewards associated with establishing and managing forests on farms. A review of the research and development needs to support agroforestry in the region and the role of farmer groups and information networks. Conclude with the presentation of the MTG gate sign and certificates to completing participants.

The MTG and Peer Group Mentoring

Landholders who grow trees do influence the attitudes, and possible the actions, of their neighbours and peers. Acknowledging this, many aspects of the design and delivery of the Australian Master TreeGrower Program seek to facilitate peer support and enhance the quality of the information being disseminated. We have begun be developing a mentoring training package and supporting the development of mentor groups in Western Australia.

It is important to recognise that those that act as peer mentors do not need to be experts in all aspects of tree growing in order support other landholders through the design and management agroforestry systems on their farms. However, they must appreciate that what is appropriate for one landholder might not suit another. They must also be able to direct their peers to others in the community who may be able to help.

The MTG program provides an ideal basis for the development peer mentoring and support programs. The program is built around a group of landholders which share and interest in tree growing. They work together with extension agents, contractors, industry members and catchment planners to explore the need and the potential for forestry to contribute to both private and community goals. The shared experience builds empathy within the group and an understanding of the farm forestry interests of other people in their region. Being involved in the program expands their personal information network and their understanding of where to source information and support for their own activities (Reid and Stephen 2007).

Conclusion

Working together, the OAN and the MTG have supported a *process* by which farmers actively participate in the design and development of appropriate forestry and vegetation management options: appropriate for each farmer, each farm, each catchment and each community. Rather than simply promoting the small number options judged as being economically viable by off-farm experts this approach assists landholders explore opportunities for tree growing and management that complement their specific interests, concerns and resources. For good reason, the plantings commonly marry conservation and production and are integrated with existing farming practices (Reid and Stewart 2006).

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