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THE UNIVERSITY OF MELBOURNE

final report

knowledge for managing Australian landscapes

The Australian Master TreeGrower Program

Building capacity for landscape change

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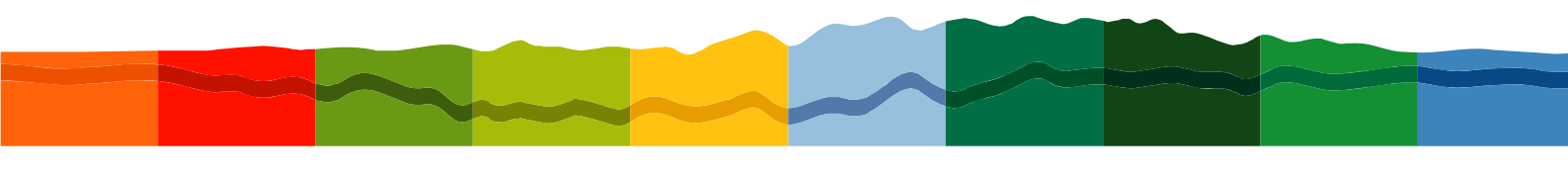


Abstract

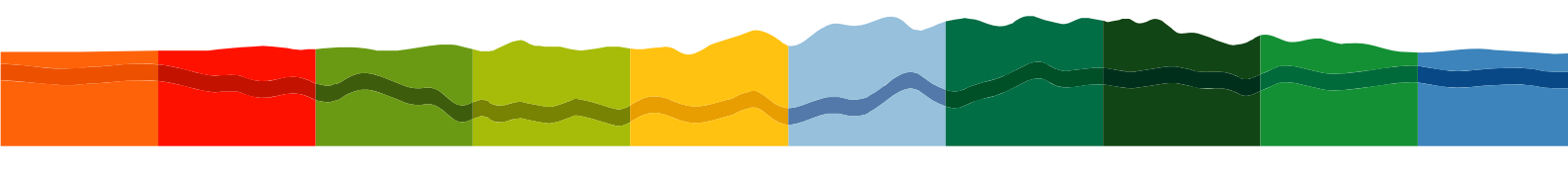
The widespread adoption of agroforestry and native vegetation management is seen as a means of supporting agricultural productivity; increasing the resilience of farming businesses in the face of increasingly uncertain climate and market conditions; reducing the environmental impacts of agricultural management; and enhancing regional biodiversity, aesthetic and cultural values.

Since 1996, the Australian Master TreeGrower Program has delivered more than eighty regional 8-day Master TreeGrower (MTG) courses across Australia involving more than 1700 participants, 100 presenters and 30 partner organisations. During this latest 3-year program the MTG has delivered 21 courses involving over 400 participants. With the support of Land & Water Australia (LWA) in particular the MTG has also worked with the Otway Agroforestry Network and other groups to developed and pilot the Peer Group Mentoring (PGM) concept in which experienced landholders are engaged to support and assist other farmers in their agroforestry and native vegetation management pursuits.

In 2007, an anthropologist, was engaged to undertake a thorough evaluation of the program. The results demonstrate that landholders are prepared to make significant personal investments in revegetation and native forest management and that they are as interested in the land conservation and biodiversity values of trees and shrubs as they are in the agricultural or commercial values. In fact, almost all landholders who complete the MTG program are prepared to compromise the commercial values of their forests in order to sustain and protect natural values. Deans concludes by suggesting that "*the Australian Master TreeGrower Program is an outstanding example of an integrated extension program aimed at supporting farmer adoption of a complex and multifaceted natural resource management practice*" (Reid and Deans 2009).

The review of the Peer Group Mentoring pilot program suggests that landholders greatly value the advice and opinions of other landholders, particularly those with similar land and agricultural management systems, and that it engaging leading tree growers as peer mentors will significantly increase adoption and the quality of vegetation management.

There are lessons arising from the MTG for those involved in natural resource management extension, policy and research. To support the adoption of complex and multifaceted land management practices extension programs and activities must engage farmers, interest groups and government agencies over an extended period of time and acknowledge the contribution and interests of all those involved. In particular, the review of the MTG highlights the importance of farmer-to-farmer communication and the development of information networks that provide a mutually respectful communication link between landholders and the researchers, policy makers, industry and government agencies that influence their land management decisions.



Background

In 1996, with support from the Myer Foundation, Rowan Reid ran the first Australian Master TreeGrower course in partnership with the Otway Agroforestry Network. Most of the participants were farmers but there were also nurserymen, contractors, government extension agents and Greening Australia field officers. Over the next year courses were run in Western Australia, New South Wales, Victoria and Queensland. Based on the success of this pilot program the Joint Venture Agroforestry Program began funding the Australian Master TreeGrower Program (MTG) in 1998. Then, in 2006, in addition to their contribution through the JVAP program, Land & Water Australia provided additional funding to broaden the scope of the program to involve native vegetation management more generally.

Land & Water Australia Project objectives

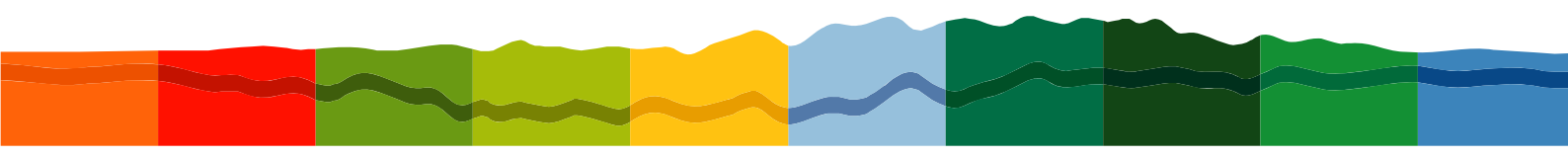
Stimulate and facilitate greater integrated vegetation management practices on farms by engaging hundreds of farmers in regional native vegetation management 2-way communication programs alongside key national and regional scientists, catchment planners and industry members.

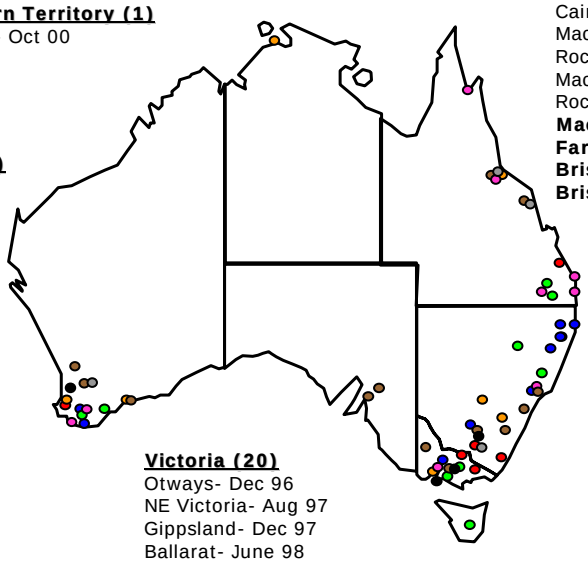
1. Involve farmers in the identification and evaluation of potentially practical and locally appropriate methods of native vegetation management highlighting specific research and development needs.
2. Encourage and support farmer participation in the development, research and communication of potential native vegetation management practices and policy initiatives.

Methods used

The Australian Master TreeGrower project and this review cover a number of activities jointly funded by LWA and JVAP:

1. The 8-day regional MTG course – 21 conducted since late 2005 involving 413 participants.
2. Workshops and meetings with regional, state and national stakeholders to encourage them to adopt participatory diagnosis and design principles in the development and delivery of their programs (including 7 regional workshops involving CMAs and State Agencies since 2005).
3. Development, delivery and participation in numerous field days, conferences and workshops to provide practical knowledge, the theoretical basis for our activities, the results of the project and to promote the MTG program and JVAP.
4. The development, delivery and review of the Peer Group Mentoring concept through the development and delivery of 3 regional PGM projects.
5. The involvement of Wayne Deans, an anthropologist, to undertake a thorough evaluation of the MTG including a review of past evaluations, course participant before and after surveys, observations of program activities, discussions with partner organisation and regional program coordinators and a statistically valid telephone survey of past participants.
6. A major review of the philosophy, practice and impact of the MTG program since its development in 1996 using the data gained from Deans' research, and drawing on the many independent reviews of the MTG and comments provided by past participants and others associated with the program. The MTG approach was then tested against the 27 social principles of extension developed by Vanclay (2004).





Queensland (15)
Nambour- Oct 97
Beaudesert- Aug 99
Ipswich- Nov 99
Mackay - Feb 00
Mackay - Feb 01
Boonah- March 01
Cairns - June 01
Mackay - Feb 0
Rockhampton - May 02
Mackay - Mar 03
Rockhampton - Mar 03
Mackay – April 06
Far North Qld – Oct 2006
Brisbane (South) Mar 09
Brisbane (North) – Mar 09

Northern Territory (1)
Darwin - Oct 00

Western Australia (16)
Bridgetown- Aug 97
Duranillin- Aug 98
Albany- Oct 98
Kojonup- March 99
Wellstead- Aug 99
Busselton- Feb 00
Esperance- March 00
Denmark- Sept 01
Kataning- April 01
Northam- Feb 02
Esperance- Aug 02
Moora- Sept 02
Avon – Mar 03
Bridgetown – Aug 03
Serpentine – June 05
Perth – June 09

New South Wales (30)
SW Slopes- Aug 97
Eden- Dec 97
Dorrigo- April 98
Hunter Valley- Oct 98
Wagga- Nov 98
Hastings- June 99
Armidale- Oct 99
Young- Feb 00
Goulburn- July 00
Hunter Valley- June 01
Gloucester- June 01
Nambucca- Feb 02
Wagga- March 02
Little River – April 02
Nambucca – Aug 02
Sth Tablelands- Sept 02
Port Macquarie- Oct 02
Holbrook – April 03
Bollanola – July 03
Macleay – March 04
Broken Hill – Oct. 04
Belingen – March 04
Holbrook – Dec 05
Hunter – June 06
Port Macquarie – April 06
Manning – Nov 06
Kempsey – May 07
Moree – May 08
Dorrigo – May 08
Hunter – May 08

South Australia (2)
Adelaide Hills- April 02
Adelaide Hills – May 06

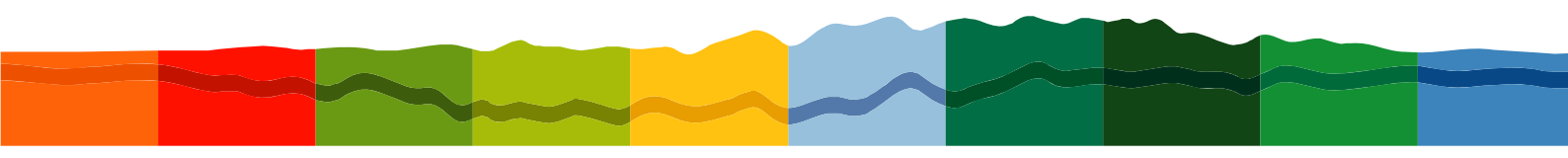
Victoria (20)
Otways- Dec 96
NE Victoria- Aug 97
Gippsland- Dec 97
Ballarat- June 98
Seymour- April 99
Geelong- June 99
Colac- Oct 00
Kyneton- June 01
Gippsland- Aug 01
Wimmera- July 02
Bacchus Marsh- July 02
Wimmera – Aug 03
NUFG – Aug 03
Upper Goulburn – Oct 05
Bendigo – Dec 05
Otway – May 06
Gippsland – Oct 06
Bendgio – Sept 08
Otway – Dec 08
Wimmera – July 09

Tasmania (1)
Midlands-
July 99

Figure 1 Location of the 85 regional MTG courses conducted since 1996 showing (in bold) the 21 programs delivered during the most recent JVAP funding period.

Table 1 The location, partners and participants in the 21 regional MTG programs run during the LWA UME73 funding period

Location	Local Partner	No. of grads	Comments
Upper Goulburn – Oct 05	John Woodley with support from local industry. Local government and the Goulburn Broken CMA	45	First program to be run by an individual who sought local sponsorship from industry, Councils and the CMA. Largest Regional MTG program
Bendigo – Dec 05	Run by the State Government Agency	35	Run by government agency in support of their farm forestry extension program
Holbrook – Dec 05	Murray CMA with support from Computershare	16	First program delivered with corporate sponsorship. Supported by past MTG participants
Adelaide Hills – May 06	Computershare Mount Lofty Private Forestry Australian Forest Growers (local branch) PIRSA and Forestry SA	20	The MTG seen as important in promoting landholder participation in the local AFG branch. Excellent support from sponsors, partners and participants with links to the local CMA.
Otway – May 06	Otway Agroforestry Network Corangamite Catchment Management Authority	20	Strong regional group well supported by CMA programs. Outstanding integration of the MTG program into the delivery of services to members.
Mackay – April 06	Local AFG Branch Central Queensland Regional Forestry Association	19	Isolated area with developing private forestry opportunities. MTG important in building the profile of the local AFG branch and the developing PFDC
Hastings – April 06	Mid North Coast Farm Forestry Hunter –Central Rivers CMA	11	Supportive CMA keen to use the MTG to develop an agroforestry culture in the region. The strong 'small catchment' demography means that it is difficult to run larger regional programs in the area (links to Manning course)
Hunter – June 06	Greening Australia - NSW Hunter –Central Rivers CMA	14	Program focused on managing native forest regrowth. Despite low numbers this program is likely to result in a franchised Native Forest Management MTG program in NSW and SE Qld coordinated by GA.
Gippsland – Oct 06	Gippsland Private Forestry GAN – AFG Branch Dev Tree – Peter Devonshire	16	Important traditional private forestry region that has a long history of small scale forestry. This program was able to engage with many private timber industry players including processors, harvesting contractors and consultants.
Far North Qld – Oct 2006	Private Forestry North Queensland	12	Cyclone Larry interrupted plans for the FNQ MTG but it was considered important to go ahead with the program in order to support affected landholders, promote 'lessons from Larry' and highlight new opportunities. A group of up to 10 indigenous landholders attended various components of the program (only one is included in the final figure).



Manning – Nov 06	Hunter –Central Rivers CMA	15	Supportive CMA keen to use the MTG to develop agroforestry in the region. The strong 'small catchment' demography means that it is difficult to run larger regional programs in the area.
Kempsey – May 07	Northern Rivers CMA Mid North Coast Farm Forestry	19	Led by an independent regional farm forestry network this MTG program aimed to support and develop the group and build its links with the regional CMA
Moree May 08	Border Rivers Gwydir CMA, GA Exchange	21	Led by an officer of the CMA this programs focused particularly on biodiversity.
Dorrigo May 08	Mid North Coast Farm Foresters	20	Led by an independent regional farm forestry network this MTG program aimed to support and develop the group and build its links with the regional CMA
Hunter May 08	Hunter Farm Forestry and Hunter Regional Landcare	15	Led by an independent regional farm forestry network this MTG program focused particularly on private native forest management
Bendigo Sept 08	Northern United Forestry Group and the North Central CMA	20+	Led by an independent regional farm forestry network this MTG program aimed to support and develop the group and build its links with the regional CMA
Otways Dec O8	Otway Agroforestry Network, Corangamite CMA	16	Led by an independent regional farm forestry network this MTG program builds on the success of the Otway PGM program
Brisbane (South) 09	AgForests and SE Qld Catchments	17	First MTG programs run with AgForests and SEQ Catchments
Brisbane (North) 09	AgForests and SE Qld Catchments	22	First MTG programs run with AgForests and SEQ Catchments
Perth – June 09	Trees South West and AVONGRO with support from Forest Products Commission	20	The MTG seen as important in promoting landholder participation in the local AFG branch. Excellent support from sponsors, partners and participants with links to the local CMA.
Wimmera – July 09	Wimmera Agroforestry Network with support from the Wimmera Catchment Management Authority	20	The MTG seen as important in promoting landholder participation in the local AFG branch. Excellent support from sponsors, partners and participants with links to the local CMA.
Total	**21 Regional Programs during the most recent funding period**	**413**	**Partnerships with State Agencies, CMAs, GA, PFDCs, AgForests, AFG branches and regional landholder groups**

Results/key findings

The results demonstrate that the MTG is very much more than a short educational course for farmers: The Australian Master TreeGrower Program is an outstanding example of an integrated extension program aimed at supporting farmer adoption of complex and multifaceted natural resource management practices. The program has been run across the country from very dry inland areas to the wet coastal strip. Twenty-eight percent of the 250 MTG participants surveyed were female. Although most participants are landholders with mostly off-farm income (52%), 32% of respondents are primarily reliant on the agricultural productivity of their land for income. Around ten per cent of participants had no significant land holding but were involved in vegetation management on farmland as extension agents, contractors, nurseryman or consultants.

After completing the MTG program MTG participants, on average, significantly increased the proportion of their farms under forest cover (Figure 2). Participants in the MTG program are interested in planting trees and managing their native vegetation for a wide range of values (Figure 3). The commercial aspects of forestry are often seen as a bonus rather than the sole reason for growing and managing forests. With greater confidence, knowledge and information networks (Figure 4) it is likely that the forests grown by past participants not only better meets their aspirations but also the interests of the wider community.

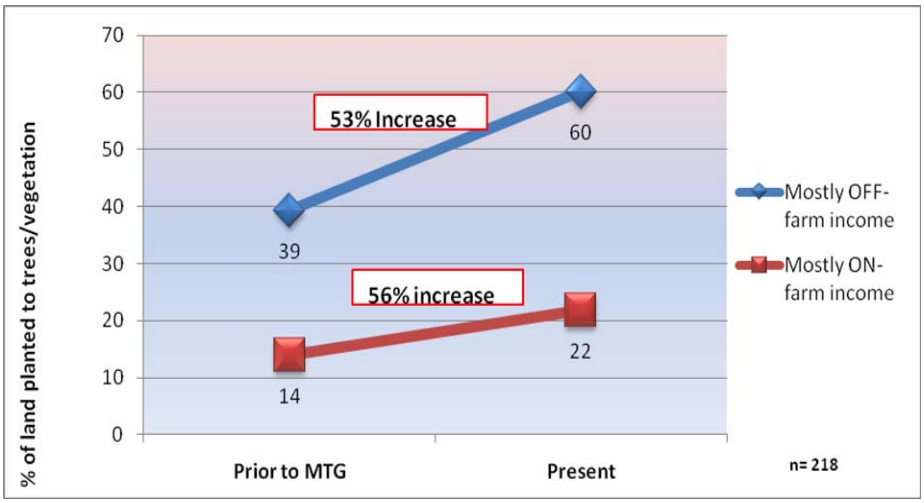


Figure 2 Change in planting by landholder type

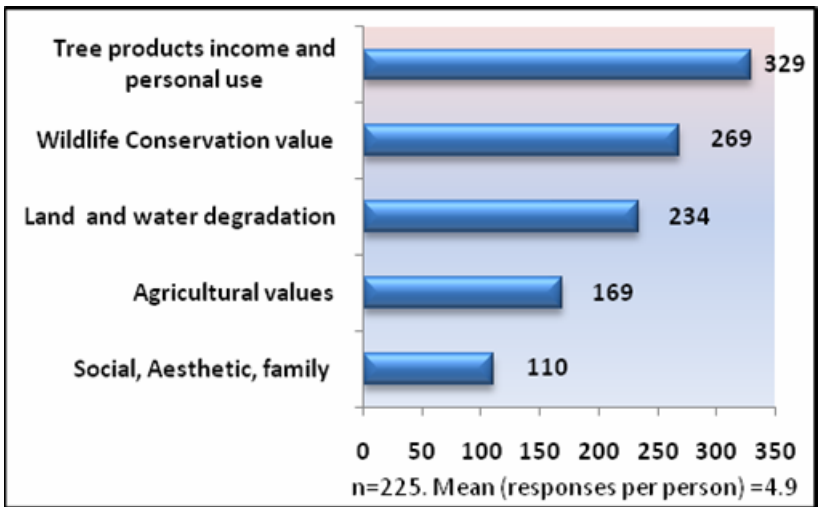


Figure 3 What is your purpose in establishing and managing trees or vegetation on your farm?

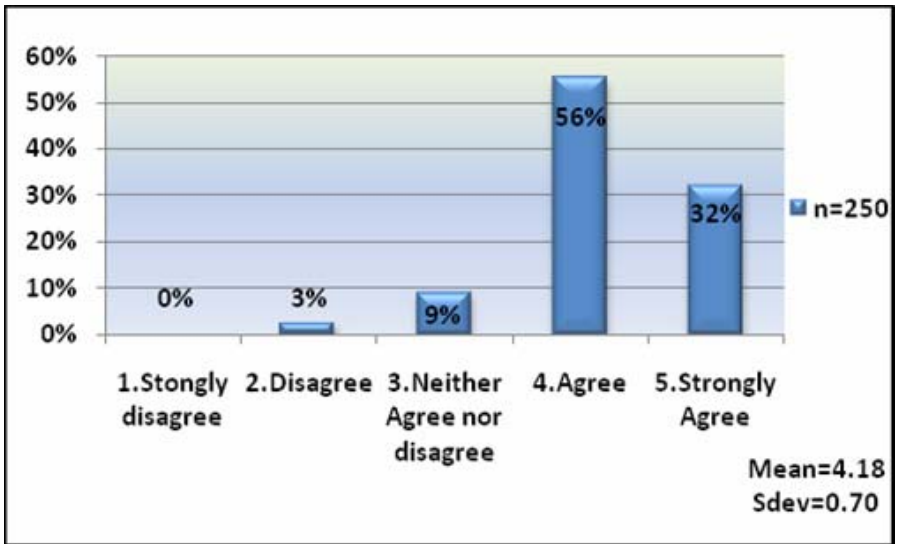


Figure 4 From my involvement with the MTG I now have greater confidence to plan and design tree growing projects.

Peer Group Mentoring

The MTG program has been working alongside the Otway Agroforestry Network in the development of the Peer Group Mentoring concept. In 2007 an introductory PGM discussion and training day was then conducted for a group of landholders involved in the Australian Sandalwood Network in the Avon region of the Western Australian wheat belt. The MTG then provided $10,000 to AVONGRO (a regional farm forestry development group) to fund the project including paying the PGMs to act as mentors. In 2008 a third PGM project was initiated with a group of sawlog growers in south west WA with the support of funding from the local catchment management authority. Both groups have since participated in technical training sessions and PGM review workshops and are receiving ongoing support from the MTG to continue and expand their PGM projects (Table 2).

The PGM model is based on sound extension principles and clearly complements the extension approach adopted by the MTG. In their review of the adoption of conservation practices Pannell *et al.* (2006) argue that:

- social and information networks would be important influences on the decision to proceed to trial (2006:1409)
- the more difficult the decision, the more the decision maker will engage and re-engage with their personal support network (2006:1411)
- peer expectations of continued commitment or personal support and encourage will reinforce commitment and provide a buffer against setbacks (2006: 1411)
- one should expect adoption behaviour to be influenced by the personality of the decision maker, their social networks, personal circumstances and family situation (2006:1411)

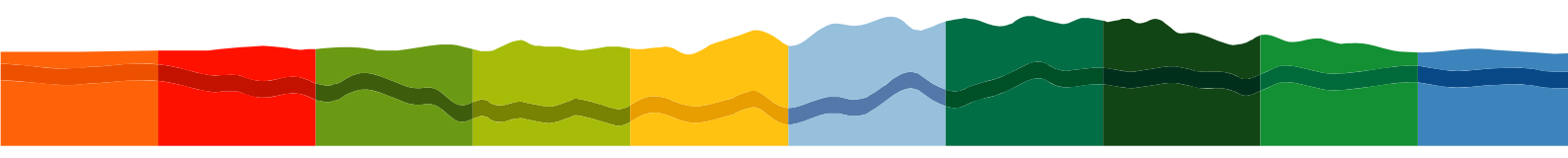
One further quote from their paper has particular resonance with the PGM concept:

> *A history of respectful relationships between landholders and advocates for the innovation, including scientists, extension agents, other landholders and private companies, is positively related to adoption through enhanced trust in the advice of the advocates* (Pannell *et al.*, 2006:1412)

The MTG has been extremely successful in stimulating farmer interest, enhancing their knowledge and skills and spreading this knowledge into the wider farming community. Some participants become active in providing advice, or at least talking to other farmers about tree growing, through their involvement in regional groups, conducting field days on their own land, their work as contractors or nurseryman, or as PGMs. Whether this flow of information between landholders and other practitioners is acknowledged or not, it is a critical part of the extension process.

Table 2 Agroforestry Peer Group Mentoring projects, partners, activities and outcomes

PGM Pilot Programs	Training and Review Activities	Outcomes
1. Otway Agroforestry Network (14) Federally funded through the Corangamite CMA. MTG provided Rowan's time and costs.	• 2005 – 12 participants (mostly past MTGs) came together at Beech Forest to formalise the site visit process that was to develop into the PGM project • 2007 – 17 participants attended a 2-day PGM training course at Apollo Bay led by Dr Digby Race. • PGM Service Manual developed containing proposed processes, responsibilities, payment and reporting systems and supporting reference material • 2007 – technical training day for mentors in tree measurement and marketing • 2008 – Dinner meeting with mentors to discuss and review processes and roles • 2008 – tree growth, plot establishment and measurement training session for mentors • 2008 – Dinner meeting to develop skill matrix, resource needs and the way forward	• Mentors completed more than 35 site visits to new member's properties with management team members and were made available for follow-up support. • Directly assisted 33 existing members who wanted advice or to share experience on the design, establishment or management of agroforestry projects. • Establishment of 'satellite' extension projects in areas with low participation • Group attendance at the Albury AFG conference • Assistance in the design and delivery of the Heytesbury MTG course to demonstrate the role of PGMs •
2. Australian Sandalwood Network (21) Partly funded by the MTG ($10,000 plus Rowan's costs) and administered by AVONGRO with the support of the WA Forest Products Commission.	• July 2007 Introductory training day • Feb 2008 Technical training day with Dr Geoff Goodall • March 2009 Refresher and review workshop	• Although only a few of the Sandalwood PGMs undertook mentoring of other growers under the program the enthusiasm remains high • One PGM approached more than 20 landholders and assisted many with their applications for host species • Some had received PGM payments for presentations at field days and seminars
3. WA Sawlogs Growers (8). Funded by the South West Catchment's Council and administered by Trees South West with the support of the WA Forest Products Commission.	• Feb 2008 Introductory training day (Bunbury) • Winter 2008 – Technical training for PGMs led by Bob Hingston in tree measurement and silviculture • Dec 2008 – PGM Review Meeting	• Six PGMs undertook a total of 14 paid mentoring visits during 2008. 10 of the visits were self generated (not referred). • One PGM took it on themselves to promote the project locally with success

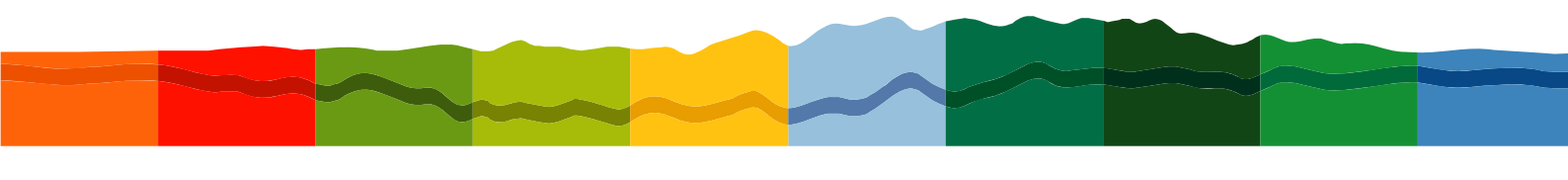


Implications for stakeholders

There are lessons arising from the MTG for those involved in natural resource management extension, policy and research. To support the adoption of complex and multifaceted land management practices extension programs and activities must engage farmers, interest groups and government agencies over an extended period of time and acknowledge the contribution and interests of all those involved. In particular, the review of the MTG highlights the importance of farmer-to-farmer communication and the development of information networks that provide a mutually respectful communication link between landholders and the researchers, policy makers, industry and government agencies that influence their land management decisions.

Agroforestry and other complex natural resource management practices require comprehensive, multifaceted and integrated extension packages that are credible to the farming community and independent of particular industry or government agendas. The role of the university as the custodian of the program suggests that there is a role for academic educational and research organisations in the development and delivery of agricultural extension, especially when they are able to form mutually supportive partnerships with state and regional organisations.

For governments and industry seeking changes in private land management in order to achieve environmental or economic outcomes, this research highlights the importance of forming constructive partnerships with other organisations and groups - even if they represent an alternative interest - and present extension programs that are primarily focused on assisting landholders achieve their own goals first. The extent to which this will lead to greater production of forest products or improved environmental outcomes will party depend on the ability of governments and industry to facilitate or directly deliver real rewards to those who, either working alone or in partnership with others, deliver the benefits being sought.



Conclusion

In his review of agricultural extension principles Vanclay (2004) opens his paper stating:

> *Agriculture has long been thought of as a technical issue involving the application of science, and the transference of the outputs of that science via top down process of technology transfer. It is not.*
>
> *Agriculture is farming, farming is people. The survival of agriculture is dependent on the survival of viable rural communities. Sustainability has multiple bottom line implications, containing environmental, social and economic dimensions.*

This research supported by LWA and JVAP has demonstrated that the MTG model works in building social capacity that ultimately results in adoption of agroforestry practices, the development of better regional programs and improved environmental outcomes. It is clear that the MTG is able to evolve over time in response to changing environmental and economic circumstances and the interests of the wider community, industry, government and the landholders themselves. The program also provides a mechanism for developing strong partnerships between national research and educational institutions and programs (including the University of Melbourne, JVAP, CSIRO and the CRCs) and regional agricultural and forestry extension services.

The MTG has developed a proven structure that produces tangible outcomes for eco-systems services. Evaluation of the program shows that it is:

- Grounded in empirical research
- Using established methodologies for delivery
- Transferable across regions
- Accountable for delivering returns on educational investment
- Adaptable to support the conflicting goals and trade-offs of the large stakeholder base in NRM
- Novel and innovative
- Building on and empowering existing interactive infrastructures (Past MTG's, CMA, GA, Landcare, Community groups, Educational institutes, Government initiatives and policy)
- Ethical and of the highest standards

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