An Australian Government Initiative



The Australian Master TreeGrower Program

Development, delivery and impact of a national outreach and education program (1996-2004)

A report for the RIRDC/Land & Water Australia/FWPRDC/MDBC Joint Venture Agroforestry Program

by Rowan Reid and Peter Stephen

February 2007

RIRDC Publication No 06/029
RIRDC Project No UM-44A and UM-63A

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ISBN 1 74151 292 1
ISSN 1440-6845

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Published in February 2007

Foreword

The Australian Master TreeGrower Program is a participatory outreach and extension project managed by the School of Resource Management at the University of Melbourne. The program delivers regional educational courses for farmers and extension agents. It has also prepared and provided extension information and tools, coordinated national extension events and supported regional farm forestry and agroforestry networks.

The program began in 1996 with the financial support of the Myer Foundation. Since 1997, it has been funded by the Joint Venture Agroforestry Program (JVAP), with support by the Natural Heritage Trust and Murray-Darling Basin Commission (MDBC) in some years. JVAP is funded by three R&D Corporations — Rural Industries Research and Development Corporation (RIRDC), Land & Water Australia, and Forest and Wood Products Research and Development Corporation (FWPRDC). The R&D Corporations are funded principally by the Australian Government. State and Australian Governments contribute funds to the MDBC.

By the end of 2004, sixty-three regional Master TreeGrower courses had been conducted involving over 1,240 participants and more than 30 partner organisations. In addition, the program has been integral in the presentation of national extension events, including Agroforestry Expo '99 and the IUFRO Extension Working Party Conference 2001.

This report reviews the justification for the introduction of a participatory education program for farm forestry in Australia and outlines the approach taken by the Australian Master TreeGrower Program. The results of an independent evaluation and impact study are presented, along with data collected by the program coordinators through surveying the course participants. The report is relevant to those interested in effective delivery of participatory education programs with community influence.

The success of the course derives from its responsiveness to feedback, promotion of a uniform structure across the country, use of regional participation, demonstrated commitment to adult learning principles, and acknowledgement of the contribution of farmers to extension. In 2000, the program was awarded the $10,000 Allen Strom Eureka Prize by the Australian Museum for excellence in Environmental Education and the Faculty of Land and Food Resource's Outreach Achievement Award. The report concludes by saying that the program and its previous participants will play an ongoing role in extending farm forestry information within communities, policy and government, and can enhance farmer participation in farm forestry research and development.

This report, a new addition to RIRDC's diverse range of over 1500 research publications, forms part of our Agroforestry and Farm Forestry R&D program, which aims to integrate sustainable and productive agroforestry within Australian farming systems.

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Managing Director
Rural Industries Research and Development Corporation

Acknowledgements

The authors would like to acknowledge the participation of the many farmers, forest owners, private industry members, researchers, regional extension staff, non-government organisations and government agencies that have contributed to or participated in the activities of the Australian Master TreeGrower Program.

We also acknowledge the contribution of Dr Tim O'Meara, Dr Fiona Hill and Ms Josephine Wright who undertook the program evaluation and social impact review from 1997 to 1999 and a number of reviewers who assisted in the production of this report.

Special thanks go to the Myer Foundation and the Joint Venture Agroforestry Program who have supported the development and extension of the Australian Master TreeGrower Program. In particular we would like to thank Phillip Myer, Roslyn Prinsley, Sharon Davis and Rosemary Lott.

Abbreviations

AFFA	Agriculture, Fisheries and Forestry Australia
CAI	Current Annual Increment (cubic metres per hectare per year, m3/ha/yr)
CALM	Department of Conservation and Land Management (WA)
DD&E	Diagnosis, Design and Evaluation
FFL	Farm Forest Line (The National Farm Forestry Information Service)
FFR	Farm Forestry Roundtable
FWPRDC	Forest and Wood Products Research and Development Corporation
GA	Greening Australia
IFA	The Institute of Foresters of Australia
LFR	Faculty of Land and Food Resources, The University of Melbourne
IUFRO	International Union of Forest Research Organisations
JVAP	Joint Venture Agroforestry Program
LWA	Land & Water Australia
MAI	Mean Annual Increment (cubic metres per hectare per year, m3/ha/yr)
MTG	Australian Master TreeGrower
NFFI	National Farm Forestry Inventory
NGO	Non Government Organisation
NHT	Natural Heritage Trust
R&D	Research and Development
RIRDC	Rural Industries Research and Development Corporation
SRM	School of Resource Management, Faculty of Land and Food Resources, The University of Melbourne
UM	University of Melbourne
VFF	Victorian Farmers Federation

Contents

FOREWORD ..... **III**

ACKNOWLEDGEMENTS ..... **IV**

ABBREVIATIONS ..... **IV**

EXECUTIVE SUMMARY ..... **VII**

1. INTRODUCTION **1**

THE UNREALISED POTENTIAL OF FARM FORESTRY 1
THE AUSTRALIAN MASTER TREEGROWER PROGRAM 3

2. FARM FORESTRY EXTENSION **5**

EXTENSION STRATEGIES 5
EXTENSION APPROACHES IN FARM FORESTRY 7
1. PROMOTING PERSPECTIVE-DEPENDENT SOLUTIONS 7
2. FACILITATING FARMER AND STAKEHOLDER PARTICIPATION AND LEARNING 11
A CONCEPTUAL FRAMEWORK FOR FARM FORESTRY 13
APPLICATION OF THE CONCEPTUAL FRAMEWORK FOR FARM FORESTRY 20

3. THE MTG PROGRAM FRAMEWORK FOR REGIONAL PROGRAMS **22**

INTRODUCTION 22
PARTNERSHIPS AND RESPONSIBILITIES 22
THE LOCATION OF PROGRAM SESSIONS 25
THE CONTENT OF PROGRAM SESSIONS 25
PROJECTS, EXERCISES AND COMPETENCIES 26
FOLLOW-UP SUPPORT 31
SAFETY AND INSURANCE 32
PROGRAM DEVELOPMENT 32

4. THE DEVELOPMENT OF MTG **33**

MELBOURNE UNIVERSITY INVOLVEMENT IN FORESTRY EXTENSION 33
FOREST OWNER EDUCATION PROGRAMS IN THE USA 33
THE MTG LEARNING CYCLES 34
CYCLE 1: PROGRAM ESTABLISHMENT 35
CYCLE 2: PROGRAM STABILISATION 36
CYCLE 3: CONSOLIDATION 37
CYCLE 4: FACILITATING SOCIAL LEARNING 39

5. MTG EXPERIENCES, LEARNING OUTCOMES AND IMPACTS **40**

THE SELECTION OF MTG PARTICIPANTS 40
THE MTG PARTICIPANTS 42
THE MTG FRAMEWORK – A PARTICIPATORY FRAMEWORK 47
THE MTG LEARNING ENVIRONMENT 49
THE MTG PARTNERSHIP 51
CONTENT OF THE MTG PROGRAMS 54
MTG TECHNICAL SKILLS DEVELOPMENT 57
SOCIAL LEARNING AND NETWORK DEVELOPMENT IN THE MTG 62
MTG PARTICIPANTS' INVOLVEMENT IN FARM FORESTRY EXTENSION 65
CONCLUSION 69

6. WHAT THE PAPERS SAY 70

INTRODUCTION 70
EXTENSION THEORY AND APPROACHES 70
MTG CONTRIBUTION TO OTHER PROGRAMS 72
IT CAN'T ALL BE GOOD 74

7. WHY THE MTG PROGRAM WORKS 77

INTRODUCTION 77
ELEMENTS OF THE MTG PROGRAM 77
A PHILOSOPHY THAT RESPECTS LANDHOLDER MOTIVATIONS 77
DEMONSTRATED COMMITMENT TO ADULT LEARNING PRINCIPLES 79
PROMOTION OF A UNIFORM STRUCTURE ACROSS THE COUNTRY 82
ACKNOWLEDGEMENT OF THE CONTRIBUTION OF FARMERS TO EXTENSION 86

8. THE MTG ONGOING ROLE - FACILITATING PARTICIPATION AND LEARNING 89

9. REFERENCES 91

APPENDIX 1. MTG EVALUATION METHODS 98

"BEFORE" QUESTIONNAIRE 98
"AFTER" QUESTIONNAIRE 98
TELEPHONE INTERVIEW WITH COORDINATORS: 3-6 MONTHS FOLLOW UP 98
TELEPHONE INTERVIEWS WITH PARTICIPANTS: 6-10 MONTH FOLLOW UP 98
REVIEW WORKSHOPS 99

APPENDIX 2. PUBLICITY AND PUBLICITY 100

Executive Summary

What the report is about

This report reviews the rationale for the introduction of a participatory education program for farm forestry in Australia, and outlines the approach taken by the Australian Master TreeGrower Program. The report includes feedback given by participants and independent evaluations of the program, and comments on the evolution of the program over time. In the final two chapters the authors outline why the program works, and suggest future directions.

With the financial support of the Myer Foundation, the Joint Venture Agroforestry Program (JVAP), the Natural Heritage Trust and the National Farm Forestry Program, forestry staff at the School of Resource Management have developed the Australian Master TreeGrower Program (MTG). By the end of 2004, sixty-three regional Master TreeGrower Programs had been conducted involving over 1,240 participants and more than 30 partner organisations. In addition, the program has been integral in the presentation of national extension events, including Agroforestry Expo '99 and the IUFRO Extension Working Party conference 2001.

Although the focus of the MTG Program is on the design and delivery of education, it is more than just a short course in farm forestry for farmers. It aims to ensure that the development of farm forestry is driven by the aspirations and opportunities of Australian farmers, and supported by the interests of industry, governments and community groups. The MTG Program also provides ongoing support for the farmers and extension agents involved in the course, manages a Master TreeGrower world-wide website, produces a book (currently: *The Farmer's Forest – Multipurpose forestry for Australian farmers*) and coordinates outreach and extension events such as the Agroforestry Expo '99 and the IUFRO Extension Conference 2001.

Who the report is targeted at

The practice and science of extension began with efforts to extend the findings from universities to the public, particularly within the farming sector. Today, extension is more accurately viewed as a continuous, complex and often unpredictable process in which the audience itself plays a critical role in both the development and communication of scientific knowledge and alternative practices. This is particularly the case with complex, multifunctional, long term land management practices like agroforestry. The experience derived from the development and delivery of the Australian Master TreeGrower Program, as outlined in this report, will be of value to scientists, extension agents, policy advisers and industry members working with the farming community to enhance both the productivity and sustainability of the agricultural landscape.

Background

Australia is currently experiencing a dramatic rise in the number of small-scale forest owners and the extent of their forests. International and Australian 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 small-scale independent forest owners in the expectation that this will lead to greater integration of forestry into the rural landscape and complement industrial and government forestry.

A review of recent theory suggested that extension programs concerned with complex, risky and long-term innovations like farm forestry need to concentrate on facilitated social learning, rather than simply the transfer of technology. Farm forestry research and development programs that facilitate farmer and stakeholder participation and learning, are more likely to be effective in the long term than those that

focus on the promotion of perspective-dependent solutions. The MTG Program is an example of the former.

Aims/objectives

Guided by extension theory and a conceptual framework for farm forestry, the MTG Program is designed and delivered nationally in partnership with regional agencies, non-government organisations, industry and farmers. A program framework sets out the preferred program format and delivery techniques and ensures there is uniformity in program delivery nationally despite the variation in regional characteristics and opportunities. The aim was to develop and test a national participatory education and extension program in agroforestry for Australian farmers.

There is an expectation that the MTG will result in greater establishment and management of trees and forests on Australian farms and, ultimately, result in better economic, social and environmental outcomes for Australian rural society. What the 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. Ultimately the MTG Program seeks to support and encourage farmers and other stakeholders to participate in the development of farm forestry opportunities that best reflect the aspirations, challenges and opportunities facing farmers and their communities.

Methods used

The MTG Program staff partner with regional extension providers, industry and various state agencies, to present short regional education courses in agroforestry and farm forestry design, for leading farmers and extension agents.

The conceptual framework for farm forestry adopted by the MTG Program provides a foundation for a new definition of farm forestry and helps define the roles and responsibilities of farmers, consumers, supporters and other stakeholders in farm forestry research, extension and development programs. The definition also distinguishes farm forestry from other types of private forestry, such as forestry undertaken by the industrial or corporate sector.

The framework defines farm forestry as:

> *The commitment of resources by farmers, alone or in partnerships, towards the establishment or management of forests on their land.*

The conceptual framework for farm forestry highlights how individuals and organisations might be able to influence this balance and thereby change the outcomes. Such is the purpose of the MTG Program. Through provision of education, support and encouragement, the MTG Program seeks to strengthen the knowledge, skills, networks and resources of farmers and others within the rural community. By this, they will be better able to influence the design and development of farm forestry in their area.

Results/key findings

The MTG Program has proven to be an ideal conduit for the communication and extension of research and policy, especially where this is presented in a complementary way. The emphasis placed by JVAP on the development of design principles has been fundamental in supporting the approach adopted by the MTG Program. The JVAP publication *Design Principles for Farm Forestry – A guide to assist farmers to decide where to place trees and farm plantation on farms* (Abel et al. 1997) is provided to all participants at the start of each program. Researchers are given the opportunity to contribute to regional programs, where practical and relevant. These presenters are easily incorporated into the MTG Program framework, because of the emphasis JVAP places on understanding processes, highlighting product specifications and developing design principles.

The program has also provided a means of initiating and strengthening the linkages between farmers, extension officers and scientists. This approach encourages and supports more relevant, appropriate and applicable farm forestry research.

A review of the development of the MTG Program based on an action learning cycle highlights three distinct stages: program establishment (1996-1997); program stabilisation (1997 – 1999); and program consolidation (1999-2004). A fourth stage focussing on the facilitation of social learning is now becoming apparent. The results of the continuous monitoring and evaluation program confirm that the program has had an impact on the perceptions, enthusiasm and activity of participants. The farmers believe they are making better farm forestry management decisions and are making a greater commitment to farm forestry on their own property as a result of their participation in the program. They 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 supported by the program.

Extension agencies, professionals and industry organisations also appear to be benefiting from their participation in the program as sponsors, partners or specialist presenters. As a result the MTG Program has been incorporated into the R&D programs of state government agencies and non-government organisations keen on promoting the development of farm forestry, both regionally and nationally.

Farmers are just one of the stakeholders in the future of farm forestry, albeit one of the most important. It is our contention that, until recently, few farmers had the confidence, knowledge and credibility to adequately represent their sector's interest or influence government policy on farm forestry initiatives and research priorities. We believe the MTG Program has been instrumental in providing leverage, guidance and encouragement to hundreds of farm foresters across Australia as well as a point of introduction to stakeholders in government, industry and the non-farming community.

Because of the number of individual landholders involved, the multifunctional nature of trees and forests and the long time frames involved, farm forestry is expected to enhance, rather than restrict, the economic and ecological diversity and resilience of rural landscapes. Those farmers who make a commitment to the establishment and management of forests today are in effect writing a history on the Australian landscape that will be evident for many years to come. The MTG Program seeks to ensure it is a history that they, and the rest of the Australian community, can be proud of.

Recommendations

The Master TreeGrower Program will have an ongoing role in delivering courses and other activities, extending research and technical information, and facilitating social learning. The Program has given farmers and other stakeholders the confidence to make better land management decisions, form new farm forestry networks and to engage with communities, industry and government. That is, the influence goes beyond the courses attended, into the community.

Recognised needs for the future are providing training and support for regional extension agents, engaging farmers as extension agents in their own communities, and farmer and stakeholder participation in research and development.



Bridgetown, WA, Master TreeGrowers, 2003

1. Introduction

The unrealised potential of farm forestry

Much has been made of the great potential for farm forestry 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). However, despite a dramatic increase in the number of farmers taking an active interest and the rise in the financial and political support from government, industry and community groups, it remains difficult to ascertain if this potential will ever be realised.

Since the 1970s there has been a dramatic increase in the area of industrial, government and corporate plantation established on cleared agricultural land formally owned by farmers (Stephens 2001). Many landscapes have felt the impact of this expansion and, as a direct result of community and local government concerns, there are now many published reports documenting the social, economic and environmental effects of these large-scale monoculture blue gum and pine plantations (Spencer et al. 1989, Petheram et al. 2000, Schirmer 2000, Hopton et al. 2001, Tonts et al. 2001). In some quarters, plantation forestry development now rivals native forest logging as *the* political issue in Australian forestry (Drielsma 2000).

Although some would view farm forestry as simply a scaled down version of industrial or corporate forestry, none of the impact studies suggest that the widespread adoption of forestry *by farmers* would be meet with similar opposition. In fact, most of the reports suggest that an increase in "*integrated farm forestry*" (Tonts et al. 2001), "*tree growing within farming enterprises*" (Petheram et al. 2000) or "*farm forestry on marginal land*" (Schirmer 2000) would be welcomed by urban and rural communities, local government organisations and environmental groups.

The National Farm Forestry Inventory (NFFI) indicates that over the last thirty years there has been an exponential increase in the area of small grower plantations (Stephens 2001) (Figure 1.1). Small grower plantations (where the farmers own the trees and the land) total more than 67,000 hectares representing approximately 5 per cent of Australia's plantation resource of 1.485 million hectares (as at September 2000) and are owned by an estimated 13,400 landholders. While the majority are monocultures of pine or eucalypt, mixed species plantations constitute more than 10 per cent of this estate. An additional 4,200 landowners are involved in farm forestry through joint venture and leasehold schemes with industrial, corporate or government growers. While the area of privately owned native forest is unlikely to increase at the same rate (being limited to natural regeneration) there is also evidence of a dramatic increase in the active management of these forests for commercial forest products and environmental services (Parsons 1999).

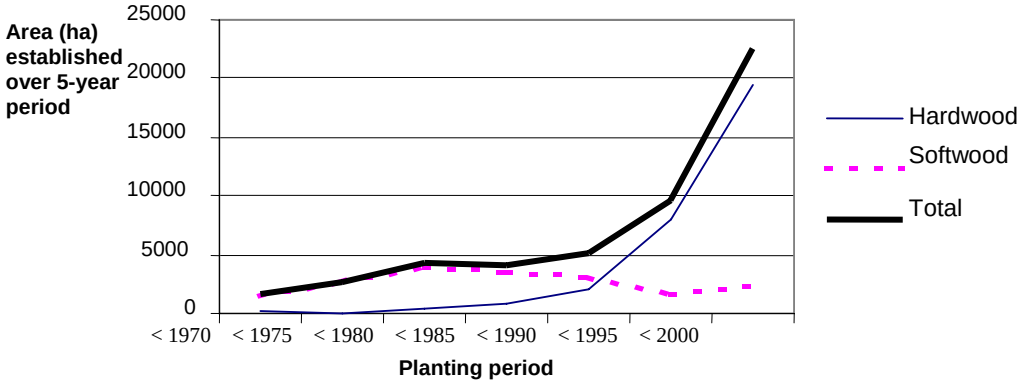


Figure 1.1: The rise in the area of independently owned small-grower plantation in Australia.
Source: NFFIS, Stephens (2001)

Should this trend continue, farm forestry may soon represent a significant proportion of Australia's forest estate while those that own or manage these forests, the *farm foresters*, 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).

As suggested by the diversity of motivations and planting patterns amongst the increasing number of small plantation growers (Stephens 2001, Wilson et al. 1995), we may be witnessing the beginnings of a dramatic shift in the nature and purpose of Australia's forest estate. Bliss (2001), from his research into the relationship between the type and diversity of forest ownership and the corresponding ecological diversity in the forests of Oregon, USA, reports:

> *Where ownership composition is diverse, the forest composition is diverse. Moreover, each ownership type contributes to a different mix of forest conditions to the landscape. Non-industrial private ownerships provide a wild mixture of young to medium aged conifer stands, extensive hardwood stands, as well as pasture, cultivated fields, abandoned cropland and open woodland. This unique mixture contributed ecological diversity to landscapes otherwise dominated by the conifer plantations of industrial forestland, or the maturing stands of Douglas fir found on public forests in the region .(p. 2)*

Bliss argues that the economic and ecological values of small-grower forestry are a direct result of the social character of the sector:

> *Perhaps the least recognised value that family forests bring to the landscape is human value. But it is this human quality that provides the foundation for the other values these forests contribute: the diversity of human aspirations, capacities, values and knowledge drives the diversity in forest conditions. (p. 4)*

This example from the USA reflects experience in New Zealand, Scandinavia and Europe and provides support for those in Australia who argue that farm forestry, and hence farm foresters, warrant special consideration. Where these farmers gain their knowledge, ideas and the confidence to act will be critical in driving the expansion of farm forestry. As in many developing industries, it will be the innovative and progressive farmers who are actively engaged in farm forestry now who will be crucial in defining the future of farm forestry within their regions (Alexandra and May undated). Should they succeed, many might expect to follow.

The Australian Master TreeGrower (MTG) Program is an innovative extension and education program that seeks to support those farmers who have made a commitment to farm forestry and encourages them to take an active role in the development of farm forestry within their region. The program also acknowledges the crucial role of the many stakeholders including industry, government agencies and community groups who, through their own actions, are able to influence farmer participation in farm forestry.

How and where farm forestry develops in Australia will reflect the interests and motivations of the farmers involved and the preparedness of various stakeholders to reward those who are able to provide the products and services the community value. While the timber sector will be focused on their own resource needs, the wider community will make their judgement about the attractiveness of farm forestry expansion on the basis of a suite of social, environmental and economic impacts. In this respect, farmer participation in commercial tree growing has much to offer and is likely to continue to receive broad community support despite concerns amongst those in the timber industry about production efficiencies.

The Australian Master TreeGrower Program

With the financial support of the Myer Foundation, the Joint Venture Agroforestry Program (JVAP), the Natural Heritage Trust and the National Farm Forestry Program, forestry staff at the School of Resource Management have developed the Australian Master TreeGrower (MTG) Program. As part of the MTG Program, staff coordinate the presentation of short regional education courses in agroforestry and farm forestry design for leading farmers and extension agents in partnership with regional extension providers, industry and various state agencies. By the end of 2004, sixty-three regional Master TreeGrower courses had been conducted involving over 1,240 participants and more than 30 partner organisations (Figure 1.2).

This report reviews the justification for the introduction of a participatory education and extension program for farm forestry in Australia (Chapter Two) and outlines the current approach adopted for the delivery of the MTG Program (Chapter Three). This report also describes the evolutionary development of the MTG Program since 1996 (Chapter Four) and present the results of the continuous monitoring, evaluation and improvement process (Chapter Five).

The MTG Program has generated considerable discussion and debate. Chapter Six reports public comments made about the program and outlines examples where various organisations have used the MTG to support their own activities. Possible reasons for the success and popularity of the program are discussed in Chapter Seven before the report concludes with suggestions on how the program might play an ongoing role in extending farm forestry research and technical information, and enhancing farmer participation in the all aspects of farm forestry research and development (Chapter Eight).



Ballarat, Victoria, Master TreeGrowers, 1998

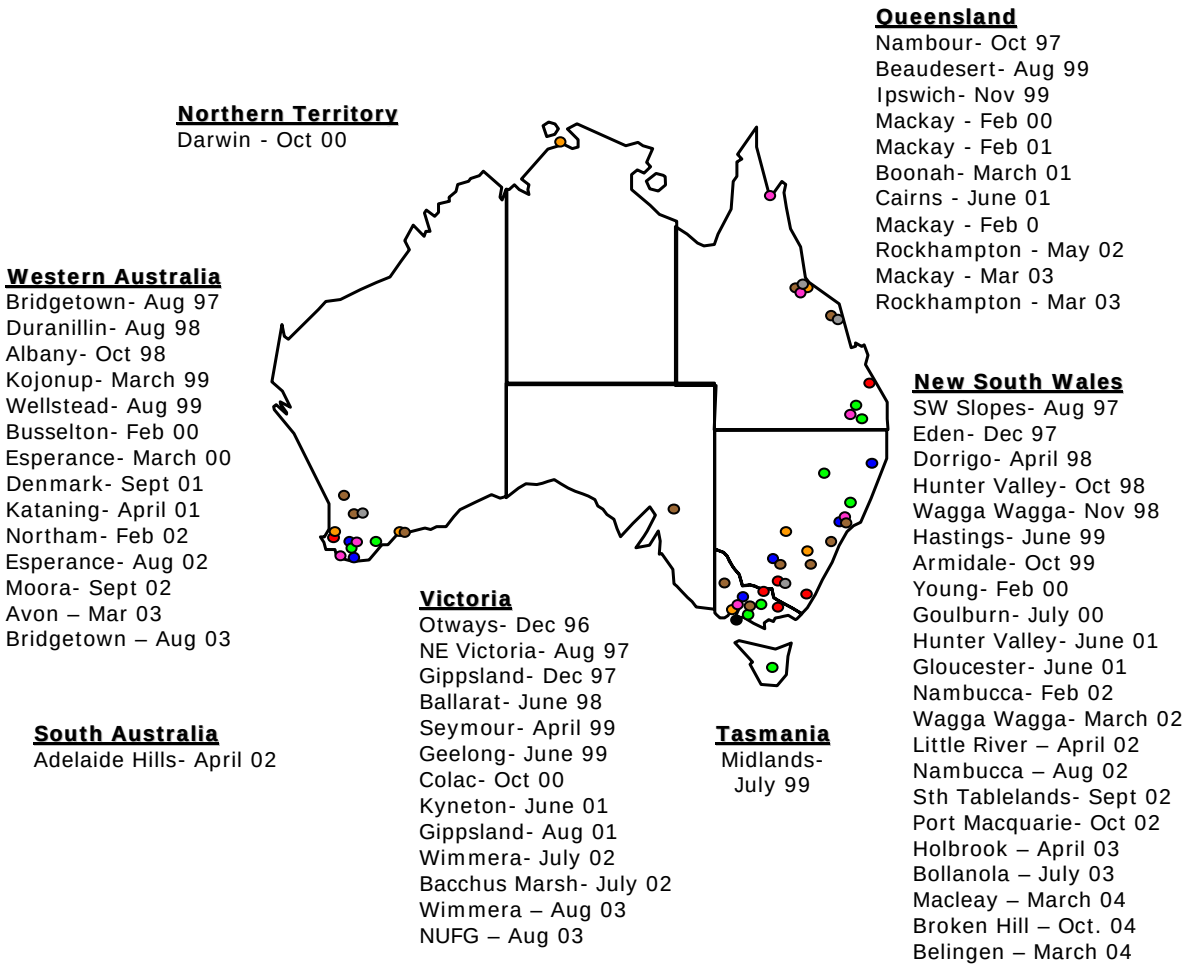


Figure 1.2: Locations of the 63 Master TreeGrower regional programs 1996-2004 inclusive.



Northam, WA Master TreeGrowers, 2002

2. Farm Forestry Extension

Extension strategies

The practice and science of extension began in the late 1800s with efforts to extend the findings from universities in Britain and became established in the agricultural sector with the formation of the Land Grant Colleges in the USA in the early 20th century. At the time the focus was on the development and evaluation of agricultural technologies within laboratories and on research stations controlled by the institutions and their subsequent 'transfer' down to farmers through the process of 'extension' (King 2000). Since then, developments in agricultural extension theory and practice have reflected the recognition of:

- the primacy of farmers in land use decision making;
- the complexity of the farming systems in which these decisions are made;
- the influence that families, acquaintances, communities and institutions have on farmer decisions and their reaction to them;
- the value of indigenous or farmer knowledge;
- the importance of the market-chain from producer to consumer; and
- notions of how and why adults learn.

Debates about social justice, gender equity, the promotion of western values and the right of communities to determine their own direction have also had their influence. The conventional focus of extension was a single event - such as the introduction of an innovation (e.g. a novel production method or product). Today, extension is more accurately viewed as a continuous, complex and often unpredictable process in which the audience itself plays a critical role (Industry Commission 1995).

Reviews of farm forestry extension theory and practice in Australia have largely focused on distinguishing between strategies for information transfer, education and decision support (Black et al. 2000, Race et al. 2001). While acknowledging the shifts in fashion and popularity between strategies over the years both papers argue that there is a role, indeed a necessity, for a complementary suite of all the extension strategies in order to satisfy the interests and opportunities facing the diverse range of stakeholders. Indeed, encouraging a diversity of approaches and providers is seen as far preferable to having a single extension voice or method (Race et al. 2001).

Coutts (quoted in King 2000, p. 9) develops a useful model that links four widely accepted extension paradigms, including technology transfer, on the basis of the complexity of the situation (Figure 2.1). Coutts explains the nature and relationship between the four paradigms as:

> ***Technology Transfer:*** *Extension is a means of pro-actively changing voluntary behaviour in the form of adoption of new (externally developed, already available and tested) technology or management practice by providing information, opportunity and persuasion.*
>
> ***Problem Solving:*** *Extension is a reactive expert (advisory/consultancy) function which is a means of assisting individuals to find solutions to technological or management problems which arise and are inhibiting their desired unit performance.*
>
> ***Education:*** *Extension is a means of pro-active informal education, which seeks to assist individuals to better understand their situation and so enable them to make choices and take action to improve their situation.*
>
> ***Human Development:*** *Extension is a means to facilitate and stimulate individuals and communities to take the initiative in problem definition and seeking solutions and societal concerns/opportunities.*

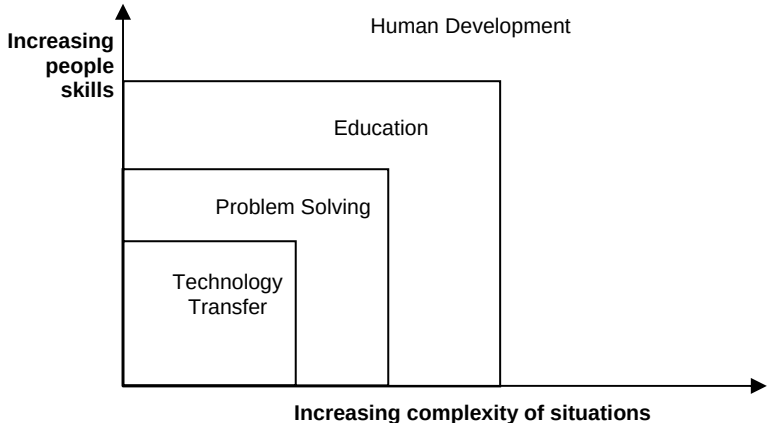


Figure 2.1: Coutts' four paradigms of extension (Coutts 1994, as presented in King 2000, p. 10)

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. While the use of adoption rates as a criterion of project success may be appropriate at the level of technology transfer, alternative measures such as enhanced learning and decision-making are required for the evaluation of projects that involve education and human development (King 2000).

With reference to industrial research and development, Rothwell (quoted by the Industry Commission 1995) presents five 'generations' of the innovation process that also recognise the increasing complexity inherent in the diffusion of innovations that involve greater elements of 'tacit disembodied knowledge': *Tacit* in that it cannot be easily written down or codified and *disembodied* because it is not embodied within a physical object, such as a machine. Rothwell's five generations are:

> ***First Generation = Linear (technology push) model:*** *simple sequential process. Emphasis on R&D. The market is merely a receptacle for the output of R&D.*
>
> ***Second Generation = Market-pull model:*** *also a simple linear sequential process but with emphasis on marketing. The market is the source of ideas for directing R&D. R&D has a reactive role.*
>
> ***Third Generation = Chain-link model:*** *sequential but with feed back loops. Push or pull or push/pull combinations. R&D and marketing more in balance. Emphasis on integration at the R&D/marketing interface.*
>
> ***Fourth Generation = Integrated model:*** *Parallel development with integrated development teams. Strong input supplier and customer linkages. Emphasis on integration between R&D and manufacturing and marketing. Horizontal collaboration (joint ventures etc).*
>
> ***Fifth Generation = Systems integration and networking model:*** *Fully integrated parallel development. Strong linkages with leading edge customers (customer focus at the forefront of strategy). Strategic integration with primary suppliers including co-development of new products and linked information and design systems. Increased focus on quality and other non-price factors.*
>
> (Industry Commission 1995, p.65)

Rothwell's model highlights that, in practice, the knowledge base within any industry is cumulative and that all those involved in the diffusion process (extension agents, farmers, industry etc) play a role in redefining the nature and the application of complex innovations such as farm forestry (Industry Commission 1995). In recognition, the role of the extension practitioner has evolved from one of extending University findings into the community through technology transfer to facilitating change that involves people with different perceptions of reality within larger Institutional and environmental

systems (King 2000). King's presentation of the extension 'world views' provides a useful summary of the different extension strategies and their underlying drivers (Table 2.1). It is her articulation of the likely impetus and agenda that may be most useful in helping us interpret and classify the extension strategies being used in farm forestry.

Table 2.1: Extension 'world views' devised by King (2000, p. 13)

Extension 'world view'	Impetus	Agenda	Theoretical foci
Transfer of Technology	Extending research findings	Production (Changing farms)	Message transmission
Improving Technology Transfer	Poor uptake of technology	Market-orientated farm enterprise (Changing farmers)	Adult learning Adoption behaviour
Farming Systems Research	Heterogeneous environments	Systems orientated innovation (Changing farming systems)	Holistic thinking Systems thinking
Participatory Technology Development	Inequity Inappropriate technologies	Social justice Indigenous knowledge (Changing practice)	Power, community development, gender Organisational learning, group work, team building
Facilitating Participatory Learning	Different realities	Ecological Sustainability (Changing institutions)	Communicative rationality
Facilitating Social Learning	Systems are embedded in larger systems	Merging social justice and ecological sustainability (Changing relationships)	Systems thinking Cognitive processes

Extension approaches in farm forestry

In an attempt to promote and support the development of agroforestry and farm forestry in Australia, governments, universities and community groups have employed a wide range of extension strategies. Their choice naturally depends on how they interpret the nature of the innovation and their appreciation or understanding of their role in the extension process. Some see farm forestry as a collection of discrete *technologies* that can be presented to farmers for their acceptance or rejection, while others consider the innovation itself to be more of a *process* by which farmers define and implement forestry practices. Whereas some may see their role as a *salesperson* or *instructor*, others assume the role of *facilitator* or *educator*.

Irrespective of the strategy or role adopted we see two quite distinct *approaches* being used in farm forestry research, development and extension programs in Australia:

1. The promotion of perspective-dependent solutions; and
2. The facilitation of farmer and stakeholder participation and learning.

1. Promoting perspective-dependent solutions

Governments, the timber industry, community and environmental groups, water authorities, indigenous organisations, and many other groups have all expressed a stake in where and how forests are established and managed on farms (Alexandra and Hall 1998). Indeed, it is the very multifunctional and diverse nature of forests, and the potential of forest management to have significant economic, social and environmental impacts, that attracts the interest and passion of so many (Race et al. 2001). As a direct result, the premise of many farm forestry research, development and extension programs is that there is a particular problem that the promoters believe must be overcome, such as: *Farmers aren't growing enough trees to combat land degradation*, or, *Industry hasn't access to enough timber to*

remain viable in a competitive international market. The reluctance of farmers to establish, manage or protect forests for the reasons that others see as critical generates a range of perspective-dependent problems.

Focusing on a perspective-dependent problem commonly leads to calls for perspective-dependent solutions: More forestry development or management of the type that best reflects a particular perspective becomes the goal of extension, regulatory and educational programs. Because each group has a different perspective this commonly leads to debates over program priorities (such as timber production versus land protection) and direct competition for funding, legislative protection and electoral support.

The research and development programs arising from the perspective-dependent solution approach are predictable: *Research* is limited to refining and evaluating options against pre-defined performance criteria in order to identify the *right answer*, *best-bets*, or *recipes for success*. *Communication* is seen as simply selling the message better than the *competitors* (e.g. tell farmers timber production is more profitable than agriculture). *Extension* focuses on re-educating those who don't share the same priorities or providing instructions to farmers on the implementation of the preferred options. *Cooperation* is seen as bringing like-minded groups together to develop strategies to overcome the apparent obstacles to adoption and to nullify uncooperative groups who threaten specific goals. Finally, where the existing farmers are not interested, or are unable to adopt the preferred options, attention shifts to *restructuring* so that others who are more likely to adopt gain control of the land.

Internationally, the application of a perspective-dependent solution approach to farm forestry development has frequently been shown to be inappropriate. The Food and Agricultural Organisation (FAO), for example, in a review of their own involvement in community forestry projects, highlighted that the obsession with addressing perceived national or international problems such as the *fuelwood crisis* meant that the personal needs of the very rural people they were trying to help were overlooked or even actively suppressed. At best, the farmers had simply rejected the inappropriate solutions imposed on them. At worst, such forestry developments have caused increasing hardship and alienation (Arnold 1991).

Perspective-dependent solution type projects are often evident by their choice of performance criteria used to evaluate promising farm forestry options, the specifications set out for the payment of incentives or by the targets, goals and actions in the project vision and strategies.

Perspective-dependent performance criteria

It is commonplace for interest groups to adopt or support farm forestry research, design and promotion based on narrowly defined performance criteria. For example, the relative profitability of farm forestry options is commonly assessed on the basis of their Net Present Value per hectare (NPV) or Internal Rate of Return without regard for whether these are always the most appropriate performance measures for individual farmers or investors (Reid and Stephen 2000). Since Learmonth and Rabbette (1977) there have been numerous discounted cash flow analyses that demonstrate that particular forestry options are more profitable than the existing agricultural enterprises (for example, Dyason and Lovell 1998; Trapnell and Lavery 1989). Despite the assumption that investment will flow into proven farm forestry options if and when it can be demonstrated that they are more profitable (based on these simple measures) than existing land uses, there is little evidence that farmers respond to such advice.

Other examples of the use of perspective-dependent performance criteria are in the selection of the best species from a species trial or the generation of site suitability maps for particular plantation options.

The implication is that farmers are acting irrationally if they do not accept the solutions identified as the most profitable, practical or sustainable based on the researcher's chosen criteria (Gray and Lawrence 2001). When faced with farmer rejection the focus of the promoters commonly shifts to the *obvious* impediments such as access to investment capital, cash flow problems, lack of economies of scale or uncertainty about harvest security. Some even suggest that education and training is required to *change farmer attitudes* or, worse, the *farmer's culture*, so they might be able act rationally (Alexandra and Hall 1998).

The expectation that extension and education might be used to change farmer attitudes so that they acknowledge the values of the options that others believe are right has been largely discredited (Barr and Cary 1992). Guerin and Guerin (1994) argue that farmers should not be treated as passive recipients whose behaviours can be manipulated though the provision of advice or education. In reviewing the effectiveness of farm forestry extension and development programs it may be more important to question the appropriateness of the performance criteria used to identify promising options rather than the attitudes of those we are trying to influence.

Perspective-dependent solution incentive programs

Many Australian farm forestry programs have focused on providing incentives and support for the development of single purpose forestry solutions. The early government incentive programs that aimed to promote softwood plantations on farms has left a legacy of small, unmanaged pine plantations in most high rainfall areas of Australia. Some more recent programs have adopted a similar approach and could result in similar outcomes.

Hurley (1986) reviewed the Victorian Farm Forestry Agreement Scheme (1967- 1986) that provided landowners low-interest loans for the establishment of conventional *Pinus radiata* plantations for industrial wood production. Assistance was provided on the basis that the plantations would be managed in the same way as the ideal regime for bulk-wood production used in state owned plantations. Hurley suggests that this regime was unsuitable for many private growers and they may have been better off to manage their plantations on a silvicultural regime that maximises the output of high quality veneer logs rather than volume (p. 186). The scheme was discontinued soon after Hurley's study but not before many of the landowners involved began raising concerns about the suitability of the regime being promoted and expressed regrets about their participation in the program.

More recent examples include subsidies for the establishment of eucalypt plantations in Victoria and mixed species plantations in Far North Queensland:

- The Victorian State Government sponsored FFORNE Scheme provided direct grants to farmers for the establishment of plantations in an attempt to demonstrate to investors and industry that hardwood (eucalypt) sawlogs can be grown on cleared agricultural land in the North Central and North East Regions. By spring 1998, an estimated 1 730 ha had been established (Anon 1999).
- The Community Rainforest Reforestation Program in Far North Queensland encouraged more than 500 landholders to allow the project to establish a total of more than 1 600 hectares of farm forestry through the provision of subsidies (Creighton and Sexton 1996).

In both cases, the plantation design and management prescriptions were based almost exclusively on the promoter's objectives (soil types, species, establishment methods, planting pattern, size of plantation etc) and the work carried out by contractors engaged by the program promoters. Although no independent reviews of the success or otherwise of these recent programs have been published experience would suggest that they are likely to create similar problems to the earlier subsidy programs.

The provision of incentives that are linked to the adoption of predetermined farm forestry options may simply encourage farmers to accept what are in effect inappropriate designs (given their own circumstances) with no guarantee that the forests will be managed to provide the anticipated benefits. Dhubhain and Wall (1999) report how Irish farmers willingly accepted attractive incentives aimed at increasing timber production despite having no intention of managing the forests for wood products.

Just because a farmer has been encouraged to plant a timber-focused forest design doesn't mean they will suddenly adopt the timber-focused aspirations and motivations of the program promoters.

Perspective-dependent strategies and blue prints

Another illustration of the perspective-dependent solution approach is the propensity for interest groups to develop strategies or blue prints for the implementation of their particular vision. *Plantations for Australia: The 2020 Vision* is one example well known to those involved in farm forestry extension. In this case industrial plantation companies with the support of their peak industry bodies (Plantations Australia, Australian Forest Growers and the National Association of Forest Industries) devised the strategy and were successful in winning federal government endorsement (Commonwealth of Australia 1997). The focus is unambiguously on removing the apparent impediments to private investment in commercial timber production plantations. The expectation is that this will deliver a resource base of such magnitude as to be internationally competitive, and that positive economic, social and environmental outcomes will therefore flow to rural communities.

Despite concerns raised at many public meetings, the target of the 2020 Vision remains to treble Australia's plantation estate by 2020. When pressed, proponents have argued that the target is simply a guide to the scale of reform they see as necessary. However, as the Farm Forestry Program Mid Point Review (Hassall & Associates 1998 p. 27) highlighted, problems may arise when simplistic targets and *blue prints* are blindly endorsed and promoted: "*Regional programs appeared to vary in their approach to the 2020 Vision. Some appear to be adopting the target of trebling the plantations regardless of specific regional constraints or the question of certainty and risk about the financial returns from such long term investments"*.

Although the strategy does highlight many important anomalies affecting private forestry (such as competition policy issues), the goals and actions are clearly perspective-dependent. For example, while acknowledging the potential for plantations to provide environmental benefits the strategy is careful to stress that these should "*not dominate commercial requirements*" (Action 23, p. 21). The strategy also adopts a view that forestry is in direct competition with agriculture and that this might be overcome by releasing "*to regional farming communities, on a regular basis, information on the profitability of plantations relative to competing agricultural enterprises*" (Commonwealth of Australia 1997, p. 20).

It should not be surprising that the strategy has received a hostile reaction from many farming communities and other stakeholders who sense that their interests have been overlooked by governments that have endorsed a strategy that is clearly based the perspectives of a few closely aligned stakeholders (Schirmer 2000). Pearson et al. (2000, p. 13) highlight that: "*it is evident that the needs and aspirations of different stakeholder groups, namely industry, government and farm producers, are quite disparate…. indicating a need to appreciate the context in which these groups operate and their differing agendas and motivation for action*".

The same might be said of the many environmental strategies focused on water quality, salinity and nature conservation that also advocate perspective-dependent visions, goals and actions for rural landscapes. Gray and Lawrence (2001) are scathing of way scientists, policy makers and extension agents in modern agriculture have adopted a reductionist focus on the individual components of the agriculture system rather than seeking to take an integrated, holistic approach that acknowledges the interconnections between the environment, society and economy, and the diversity inherent in the interests, resources and aspirations of farmers and their rural communities.

The complexities inherent in sustainable farming and the primacy of farmers in making land management decisions mean that a perspective-dependent solution-based approach to land management recommendations is unlikely to be effective (Campbell 1994). Farmers are essentially self-directed learners who seek out knowledge which is most relevant to their current needs and problems and integrate it into their own frame of reference (Guerin and Guerin 1994). Once they determine for themselves that farm forestry is profitable, appropriate, involves an acceptable level of risk, is

compatible with their farm and private goals, and can be easily integrated into existing farm practices, then adoption will follow relatively quickly (Guerin and Guerin 1994, Barr and Cary 1992). In forestry in particular, adoption alone is no guarantee of an ongoing commitment to management that is so often required in order for farm forestry to be effective in meeting the long-term interests of industry and the community.

2. Facilitating farmer and stakeholder participation and learning

There are many different, yet equally rational, ways of viewing complex situations such as those faced in natural resource management. Any particular problem, as identified by an individual farmer or interest group, is commonly part of an interrelated network of problems all drawn from different perspectives. In this context, the development of plantations for timber production cannot be viewed in isolation from land degradation, biodiversity, native forest logging, the future of small rural communities, agricultural production and other related issues. Rather than using a set of independently conceived perspective-dependent solutions as the basis for natural resource management interventions it may be more appropriate to describe the whole thing as a *mess* (Ison et al. 1997). Untangling a mess requires patience, an understanding of the interaction between the various pieces and acknowledgement that there are no simple solutions to a messy situation - only an opportunity for redirection (Sampson 1996).

Ison et al. (1997) define simple problems, or difficulties, as circumstances in which there is common agreement about their nature, effects and potential solutions. Simple problems are ideally solved using the transfer of technology model (TOT) as presented in Figure 2.2

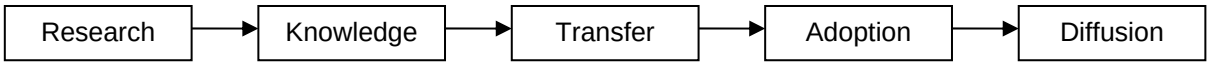


Figure 2.2: Graphical representation of the Transfer of Technology Model

The effectiveness of TOT is clearly demonstrated by the real advancements achieved in farm forestry resulting from the use of fertilizers, herbicides, new genetic material, and the innovative solutions that are now commonplace such as tree planting tools and electric fencing. However, Ison et al. (1997) and others (such as Geber 1992; Farrington 1998; Gray and Lawrence 2001), question the appropriateness of the TOT for guiding the development of complex, multifaceted, land management systems such as farm forestry, land protection and nature conservation.

The infinite possibilities inherent in farm forestry, and the fact that farmers' needs, resources and aspirations are so varied, means that there are simply no *best-bet* species, spatial arrangements or management *recipes* that will be suited to more than a few growers within a region. This would suggest that an alternative objective for farm forestry extension is required. One that enable farmers to play a greater role in determining whether their participation in forest establishment and management can indeed provide real and sustainable improvements in their own quality of life (Byron 2001). Greater involvement also requires that farmers take greater responsibility for decisions made within a social, economic and environmental environment that is unavoidably dynamic and uncertain (Frank and Chamala 1992).

This thinking seeks to shift the focus of extension away from getting farmers to grow forests in order to solve the problems that others perceive as critical, to one of empowering rural communities to the point that they are able to articulate, design and implement forestry practices that best meet their own individual and community needs. The degree to which the outcome of such a process will also meet the needs or interests of particular industry sectors, governments agencies, conservation groups or other *outsiders* will largely depend on the degree to which there are shared goals, a capacity and willingness amongst farmers to act, adequate rewards for farmers who provide the services or products sought by others, and the degree to which penalties are imposed for non-compliance.

This approach also suggests that although there is a clear justification for the application of a *farming systems* (Ison et al. 1997; Petheram and Clark 1998) or *farmer first* approach (Chambers et al. 1990, Scoone and Thompson 1994), it is also critical that the interests of non-farming stakeholders and their right to participate in rural development is also acknowledged (Lanyon 1994). Extension therefore becomes a process of achieving change through "*facilitating social learning*" (King 2000) that encourages farmers, communities, industry and governments to clearly define their own interests and expectations and to publicly acknowledge where the costs and benefits lie. While TOT is clearly a useful tool, extension must also "*facilitate and stimulate individuals and communities to take the initiative in problem definition and seeking solutions*" (Coutts 1994).

Frank and Chamala (1992) call this process of stakeholders and farmers working together – although not necessarily for the same result – the Participative Action Model (PAM) and argue that it is based on the concept of empowerment and associated freedom of choice. Lanyon (1994) coined the term *Participatory Assistance* to describe the role played by extension agents who are focused on achieving a good outcome for the farmer based on their particular situation and relationship with stakeholders. The approach also seems compatible with Rothwell's *fifth generation* model of the innovation process which focuses on integration of the innovation into the systems in which they are expected to perform and the importance of engaging the suppliers and customers, as well as the user, in the development process (Industry Commission 1995).

Application of the participation and learning approach

Based on these arguments we have sought to distance our farm forestry education, extension and outreach programs away from the promotion of single purpose *best-bet* options or *solutions* towards the provision of assistance, support and facilitation to both farmers and stakeholders to encourage their participation in a dynamic process of farm forestry diagnosis, design and evaluation. Other examples of how this approach may be manifest in research and development in farm forestry may help illustrate the distinction:

- **Design principles** – Focus research and education on the principles inherent in the function and design of farm forestry systems and their interaction with other land uses. An example is the *Design Principles for Farm Forestry: A guide to assist farmers to decide where to place trees and farm plantations on farms* (Abel et al. 1997) published by JVAP.
- **Decision support tools** – The provision of mechanisms that allow users to evaluate farm forestry options against *their own* preferred performance criteria. Although there are many decision support tools for farm forestry evaluation (such as the Agroforestry Calculator, White 2000) few allow the option of varying the performance criteria.
- **Outcome-orientated codes of practice** – The application of codes of practice that encourage managers to adopt appropriate management practices based on accepted environmental and social management objectives. For example, the recently released Environment Management Guide for Victorian farmers (VFF 2001) outlines the key elements of landholders' environmental responsibility under eight management objectives while avoiding specifying management actions or directing the day-to-day operations.

All these acknowledge the crucial role that farmers play in determining how they integrate farm forestry into their management systems and the fact that they are, ultimately, the ones that must carry the responsibility for their decisions. The interests and responsibilities of governments, communities and industry are also acknowledged. Such stakeholders are able to use a range of techniques to influence farmer decisions in order to serve their own needs or to meet their social and environmental responsibilities.

The MTG Program seeks to apply the same approach to farm forestry extension and education. To guide the MTG Program and help define our own role and the role of others, we have devised a conceptual framework for farm forestry based on the participation and learning approach.

A conceptual framework for farm forestry

A conceptual framework is a group of concepts that are broadly defined and systematically organised to provide a focus, a rationale and a tool for the integration and interpretation of information. A widely accepted conceptual framework for farm forestry is required in order to provide a common understanding of what farm forestry is, help identify who might be able to influence its development and to assist in defining the roles and responsibilities of all those involved. Unlike a strategy that outlines how a group or organisation hopes to achieve their particular vision, a conceptual framework seeks to present an objective explanation of a process without pre-empting or supporting any particular outcome.

The conceptual framework for farm forestry presented below acknowledges that there is a wide range of individuals and organisations that have an interest in farm forestry and that they may use their own influence to try to sway farmers and other stakeholders in order to achieve the outcomes they desire. As a result the framework is dynamic and pluralistic, in that it is inclusive of all perspectives, rather than judgemental (Race et al. 2001). It suggests that the result, in terms of the type, location and nature of farm forestry development, will reflect the balance of the knowledge, resources, power and influence of those participating in the process, and the physical, economic and social environment in which these interactions take place.

This does not mean that everyone must accept the current balance of power and influence or the pace and direction of farm forestry development. Quite the opposite: the framework actually highlights how individuals and organisations might be able to influence this balance and thereby change the outcomes. Such is the purpose of the MTG Program. Through the provision of education, support and encouragement the program is seeking to strengthen the knowledge, skills, networks and resources of farmers and others within the rural community so that they are better able to influence the design and development of farm forestry in their area.

The conceptual framework for farm forestry development is built on four simple constructs:

1. Farm forestry is the commitment of resources by farmers, alone or in partnerships, to the establishment or management of forests on their land.

2. Stakeholders in farm forestry include all those who have an interest in, are affected by, or can influence farmer commitment to farm forestry.

3. A stakeholder can influence the future of farm forestry by changing the factors that affect farmer decisions, the way farmers react to those factors or even the farmers themselves.

4. Having the opportunity to make, or influence, land management decisions carries with it an ethical responsibility to society and to the land.

Construct No. 1

Farm Forestry is the commitment of resources by farmers, alone or in partnerships, to the establishment or management of forests on their land.

Defining farm forestry and agroforestry

Most formal definitions of agroforestry and farm forestry focus on the role the trees play and their location or arrangement: The federal government has suggested that farm forestry is "*the incorporation of commercial tree growing into farming systems; it can take many forms: plantations on farms, woodlots, timber belts, alleys, wide-spaced tree plantings, and native forests*" (Department of Primary Industries and Energy 1995, p. 1). The anticipated or desired advantages are commonly included in

these definitions: "*It improves agricultural production by providing shelter for stock and crops. It also provides substantial environmental benefits such as water table and salinity reduction*." (Department of Primary Industries and Energy 1995, p. 1). Likewise the National Farm Forestry Roundtable (FFR Unpublished cited in CSIRO 2001, p. 1) defined farm forestry as the "*incorporation of commercial tree crops into farming systems to complement conventional agriculture with new products, as well as provide a capacity to enhance agricultural productivity and achieve better resource management*."

In Australia, the term *farm forestry* is commonly used interchangeably with *agroforestry* (Race and Curtis 1996, Robins et al. 1996) although, for many Australians, the latter tends to refer to cases where crops are grown, or pasture grazed, from amongst widely spaced commercial trees (CSIRO 2001). For example, Cole-Clark (1999, p. 1) in a NSW Department of Land and Water Conservation publication suggests, "*Agroforestry is, strictly speaking, the production of a timber product and an agricultural product from the same parcel of land*." This view may reflect the fact that many people first became aware of the term when introduced to designs involving wide spaced pruned pines grown over grazed pastures that were widely promoted during the 1980s (Reid and Wilson 1985).

While representing the National Association of Forest Industries, Prosser (1995) produced a diagram aimed at defining where farm forestry sat within a spectrum of forestry options (Figure 2.3). Using two axis depicting the degree of emphasis on timber production and the scale of planting, the model suggests that farm forestry fits, albeit uneasily, between the two extremes of *Landcare Plantings* and *Industrial Forestry*. This approach to defining farm forestry was later adopted by many authors including some from government (Donaldson and Gorrie 1996).

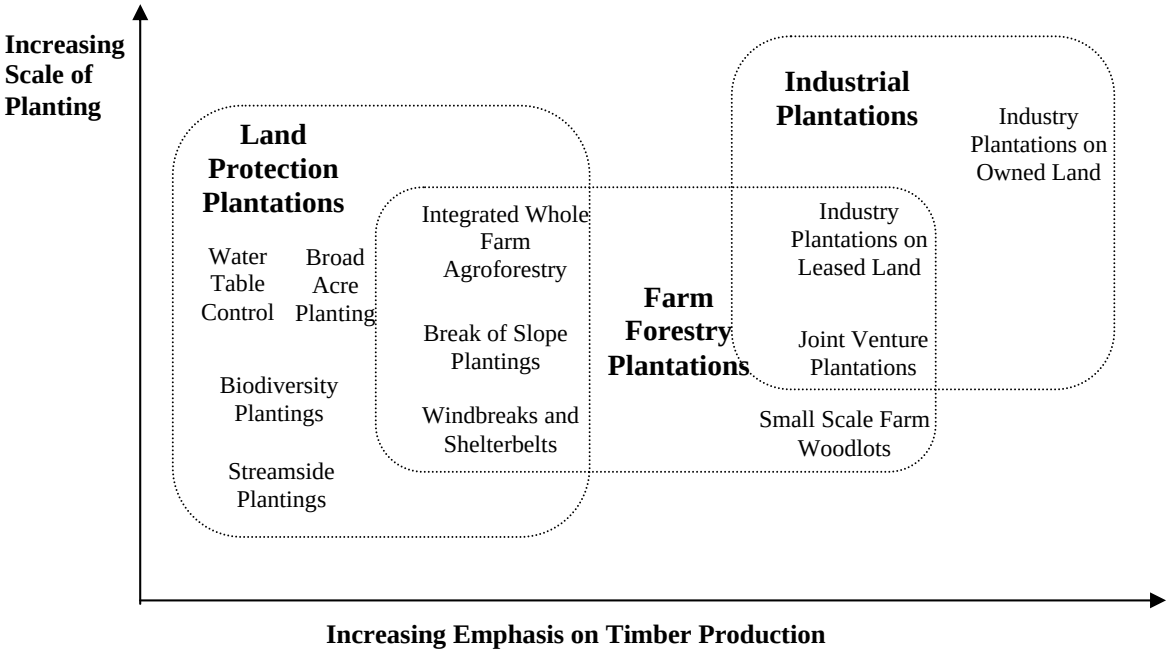


Figure 2.3: Diagram used to define farm forestry by Prosser (1995).

Discussion and debate over the definitions of farm forestry continues, particularly with regard to its association with large scale industrial forestry. Alexandra and Hall (1998, p.15) highlight the importance of clearly distinguishing farm forestry from industrial plantation 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 "*language is important and acceptance of farm forestry is made more difficult when it is confused with social, stakeholder and environmental issues which relate to plantation or industrial forestry*." Social research reported by Schirmer (2000) confirms 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.

It is important to have a clear and widely supported definition that distinguishes farm forestry. We agree with Alexandra and Hall (1998, p. 21) when they argue that "*detailed definitions of plantation 'types' are required, not for pedantic reasons but because, by accurately recognising the differences, policies and programs can be targeted accurately*."

In 1999, the National Policy Director for Australian Forest Growers acknowledged that political forces had been instrumental in driving sectoral and government support for particular definitions during the 1990s (Cummine 1999). He suggested that the industrial sector, while initially keen to discredit farm forestry, were nonetheless seeking to promote the concept of a seamless continuum between industrial forestry and farm forestry when funding for the National Farm Forestry Program was increased in 1995. There may be a similar motive in the increasing use of the all-encompassing term *private forestry* (NRE 2001). Cummine (1999) argued that there are important differences between the sectors and concludes his review by supporting the farm forestry definition devised and promoted by the Australian Master TreeGrower Program.

We have argued for many years (Reid and Stewart 1994, Reid 1995, Reid 1996, Reid and Stephen 1999) that it is not appropriate to simply define farm forestry as a predefined set of land use practices or to distinguish it from other forms of revegetation on the basis of scale or intention. Nor is it proper to embellish the definitions with attractive outcomes that suggest the farm forestry is more profitable or sustainable than alternative land uses. We argue that what clearly distinguishes a *farm forest* or *agroforest* from a corporate, industrial or government forest is ownership. This is 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 therefore terms that relate to the process by which these forests are established and managed. We advocate the following definition:

Farm Forestry (or agroforestry) is the commitment of resources by farmers, alone or in partnerships, towards the establishment or management of forests on their land.

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. Their priorities may vary over the farm and change over time. 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. Focusing attention on the decisions that farmers make regarding the establishment and management of trees and forests, rather than the forest itself, provides the basis for this conceptual framework and a focus for the development of an effective farm forestry extension program.

Farmer decision-making

Carroll and Johnson (cited in Race and Fulton 2000 p. 45) define decision making as a process by which a person, group or organisation identifies a choice or judgement to be made, gathers and evaluates information about alternatives, and selects from among the alternatives. Farmer interest in forestry may initially be driven by an attractive vision of what forestry might offer them, their family or community. As they consider the opportunities, they will continually evaluate them against their

personal beliefs, aspirations and constraints. Commitment will only follow if they are able to identify an attractive proposition, access the resources required and build confidence in their ability to overcome the inevitable risks. Once they have made a personal commitment (e.g. established the trees or entered into an agreement) future success will depend on maintaining confidence, making repeated commitments as required and maintaining personal satisfaction. An initial commitment does not guarantee future satisfaction and may be a poor measure of success.

A simple linear model of decision-making in farm forestry that captures the essences of similar models of farmer decision-making in farm forestry (Race and Fulton 2000), while recognising the long time frame involved, is presented in Figure 2.4. While acknowledging that such simple linear interpretations of complex human behaviour are problematic, the model does indicate how failure may occur at any stage, even well after the trees are planted, and that the decision to adopt is not in itself necessarily a good measure of future success.

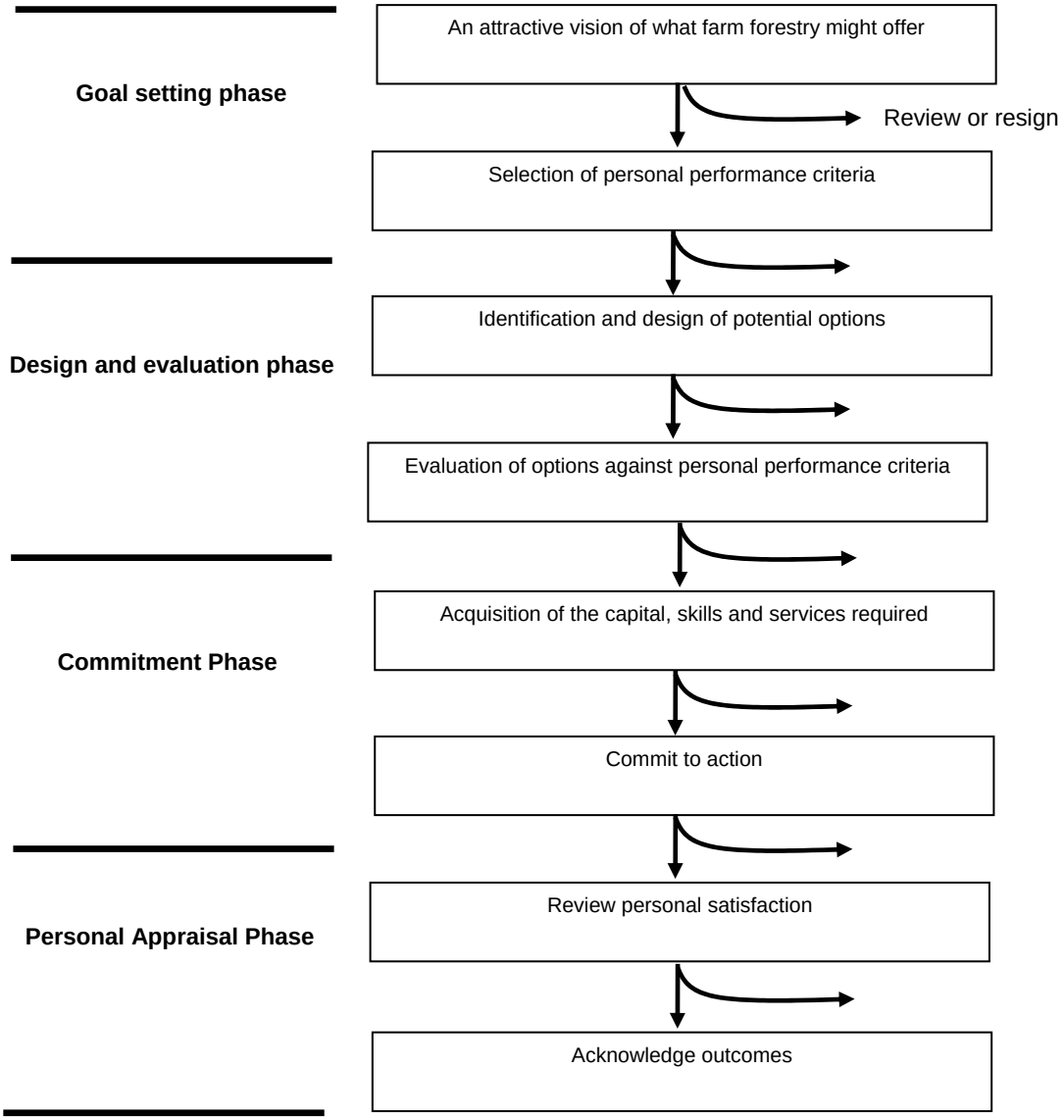


Figure 2.4: Simplified model of decision making and review of personal satisfaction

By rights, personal satisfaction can only be assessed against an individual's own performance criteria. Our experience suggests that farmers rarely assess the value of long-term and multifunctional forests on the basis of single criteria and they will commonly change the range and priority of their performance criteria over time. Ultimately, they will judge their satisfaction with the total package of financial, environmental and social benefits that they have been able to capture - or that they expect - relative to their investment and exposure to risk. Where the costs of apparent failure (poor growth, tree mortality, low prices, etc.) are low, farmers may still be able to justify success on the basis of knowledge gained, experience or the increased confidence they have for future commitments. By the same token, even if farmers have profited from their commitment to forestry they may remain dissatisfied if they believe they were not fairly rewarded or that they missed out on other opportunities.

Construct No. 2

Stakeholders in farm forestry include all those who have an interest in, are affected by, or can influence farmer commitment to farm forestry.

Interested or concerned stakeholders will independently assess the potential or real impact of farm forestry against their own performance criteria and may seek to influence what farmers do in an attempt to achieve the outcomes they would prefer. Although many individuals and organisations will actively pursue this interest some stakeholders may be unaware that they are able to influence farmer decisions. Many more will only recognize that they have an interest in farm forestry once the farmer's decisions have been made and the impact on them becomes apparent. Further, successful outcomes, as assessed by individual farmer satisfaction, may not represent a good outcome for a particular stakeholder.

For this framework, stakeholders other than the individual farmer or those who share ownership, include:

- Those whose opinion or welfare the farmer values, such as family and friends;
- Governments and community organisations that set or enforce societal laws and community norms;
- Providers of services and support to the farmer; and
- Consumers, purchasers or receivers of the economic, environmental and social outputs (both good and bad) of land management decisions.

Farm forestry *consumers* will generally be interested in a particular outcome, such as an increase in timber production or the reduction in soil erosion. They will often describe their own goals in terms of quantities: area under a particular type of land management, tons of timber produced or increase in water quality. Consumers also include those who might be primarily focused on stopping a particular practice such as a community group trying to stop plantation development or an environmental group trying to halt logging. Any action a consumer takes will invariably be focused on achieving their particular desired outcome.

Alternatively, there are stakeholders who work to support farmers and other stakeholders achieve their own goals. This may be driven by association but may also reflect a confidence in the others' judgement. Similarly, providers of services and support to farmers (such as tax accountants or agricultural advisers) will only be interested in farm forestry if it is expected to be rewarding for the client.

By describing the interests and actions of stakeholders in this way the framework encourages disclosure of the motives of those who are able, or are trying, to influence the decisions of individual farmers. Accepting that wealthy or influential stakeholders do sometimes seek to nullify or pressure others in order to better achieve their own preferred outcomes highlights the inherent imbalance of power amongst the stakeholders. Working to shift the balance of power so that the interests of particular individuals or organisations might be better realised may be the primary focus of some intervention programs.

Construct No. 3

Stakeholders may influence the future of farm forestry by changing the factors that affect farmer decisions, the farmers' reaction to those factors or even the farmers themselves.

Much has been written about the factors that influence farmer decision making with some authors focusing particularly on farm forestry (Alexandra and Hall 1998, Pearson et al. 2000, Race and Fulton 2000). While it is customary to list them, suffices to say they include a wide range of economic, social, political and environmental factors and that their relevance and consequence to particular individuals varies tremendously.

Being *outsiders* to the private decisions of farmers suggests that stakeholders can only seek to influence the outcome of farmer decisions by working to either:

- Change the balance of factors that influence farmer decisions (the stimuli);
- Change the reaction of farmers to the existing set of factors (the reaction); or
- Change the farmers themselves (the reactor).

Stakeholders have a range of legitimate and illegitimate (illegal or unjust) tools they can use in an attempt to directly or indirectly influence the outcome of farmer decision-making. Commonly used tools that **change the stimuli** include economic subsidies or incentives, legislation, tax law and joint venture proposals introduced by governments and industry (AFFA 1999). There may also be other powerful stakeholders who have little interest in forestry per se but are able to change important stimuli that impact a farmer's farm forestry decisions such as bank managers, neighbours, and family members. Those stakeholders without the power to directly influence farmers, such as conservation groups, may try to lobby, educate, persuade or assist those who do. In any event, there is also a range of stimuli that are out of the control of even the most powerful stakeholders such as the international market price of agriculture and forestry products and the weather.

Tools that **change farmer reaction** to stimuli include the provision of knowledge or experience, persuasion and encouragement. Although realising a change in a farmer's reaction is difficult to achieve, and even more difficult to measure, for many stakeholders this remains their only means of influencing farmer decisions. The most influential stakeholders in this respect will be those that are respected by the farmer. Such stakeholders may include: family members, friends, popular heroes, community and religious leaders, political and community groups, research and education organisations and respected advisers. Farmers may also expect to change their reaction to stimuli as they grow, their family situation changes, or they establish new business or personal relationships. If the community in which the farmer see themselves shifts this is likely to pull on the individual as they assess their reluctance to change against their desire to maintain their ties with others.

Working to **replace the farmer, or reactor**, with one who is more likely to provide the outcomes preferred by the stakeholder, is also an option. This may be achieved by changing the stimuli in a way that encourages the existing farmers to sell their forestland or land suitable for forestry to preferred owners. Existing farmers, for example, may find they are unable to capture the same tax benefits from forestry that are available to high income earners investing in forestry prospectus companies. Alternatively, they may not be able to afford to enjoy the non-commercial values of forestry, like lifestyle and wildlife protection, that may be strong motivators for lifestyle landowners. The population of farmers in any community is dynamic. Stakeholders can work to hasten or redirect the trends in ownership in an attempt to support those farmers who are more inclined to commit to a particular outcome.

Construct No. 4.

Having the opportunity to make, or influence, land management decisions carries with it an ethical responsibility to society and to the land.

An underlying assumption of a conceptual framework of this type is that government and the broader community will support and maintain a legal and social environment in which farmer and stakeholder rights and responsibilities are respected, protected and broadly understood. For example, the degree to which land tenure and property rights are seen as secure (such as the right to harvest) will clearly affect farmer confidence in long-term projects like forestry. However, the rights of the individual farmer are not paramount. There are legal and moral obligations placed on landowners by any community that grants and protects the right for people to control such basic natural resources as land, water and forests.

Other stakeholders must also assume responsibility in accordance with their involvement and potential to influence private land management decisions. Individuals and organisations that knowingly profit from another's loss, or from the degradation of natural resources, could be considered unethical. This would also suggest that those with knowledge of impending threats to the land or society, such as rising saline watertables or the Greenhouse Effect, have a responsibility to highlight these issues and work to avoid such damage.

Balancing the rights and responsibilities of rural, urban and international communities with those of the individual, private organisations and governments is not a new challenge. How society deals with inequity in power, the diversity of interests and breaches of the societal laws, norms or attitudes is itself a reflection of community ethics.

Aldo Leopold (1987) first wrote in 1949 of the extension of the concept of ethics from simply dealing with the relationship between individuals and society to one that includes the land as an "*evolutionary possibility and ecological necessity"*:

> *An ethic, ecologically, is a limitation on freedom of action in the struggle for existence. An ethic, philosophically, is a differentiation of social from anti-social conduct. These are two definitions of the one thing. The thing has its origin in the tendency of interdependent individuals or groups to evolve modes of co-operation. The ecologist calls these symbioses. Politics and economies are advanced symbioses in which the original free-for-all competition has been replaced, in part, by co-operative mechanisms with an ethical content.. (p. 202)*

Since Leopold introduced the concept of a land ethic we have seen evidence of the "*greening of western society*" through a "*process of change in the guiding ideologies and socio-economic practices of people and communities as they incorporate concerns about the environmental health*" (Gray and Lawrence 2001 p. 149). The rise of the Landcare movement, the increasing participation of the urban community in debates about forest and land management, and the interest consumers are now showing in the certification and labelling of farming and forest products, are all evidence of the changing land ethics within our own society.

Although the rise in land ethics may mean that more farmers are now aware of the impact their land management decisions have on environmental degradation this alone may not be sufficient to change farming practices in light of the overriding importance of their short term objectives. However, new laws, regulations and assistance programs provided by the community though government or non-government providers can directly influence market forces and the actions of other stakeholders that, in turn, drive land use change (AFFA 1999, VFF 2001). As Buttel (in Gray and Lawrence 2001 p. 155) points out:

> *A cornerstone in the shift toward more sustainable societies will, almost invariably be the establishment of incentives and regulations that make unsustainable behaviours costly and that encourage the development of appropriate technologies.*

This approach was endorsed by the Federal government's discussion paper on natural resource management (AFFA 1999) and supported by farmer organisations (VFF 2001). However, the community may only accept the loss of individual rights and the increased cost to taxpayers if the mechanisms also reflect the dominant community ethics of the time and are beyond reasonable doubt as to their effectiveness.

Gray and Lawrence (2001) also debate the degree to which there are also changes in community ethics in support of sustaining and enhancing the social environment within rural Australia in light of the pressures of globalisation on farming practices, education, telecommunications and community services. Because of the potential of farm forestry to impact (both positively and negatively) on environmental, social and economic welfare, developments will be increasing guided and influenced by changing community ethics. The degree to which this may lead to changes in the way farm forestry projects are designed and managed in the future might be evident from the rapid changes in the way public native forests are valued and managed in response to changing community ethics.



Agroforestry Expo, Eden, NSW, 1999

Application of the Conceptual Framework for Farm Forestry

Pluralistic, evolutionary and accountable

The application of the conceptual framework does not mean that all stakeholders need to be given equal influence or the opportunity to veto the initiatives of others. Rather, it acknowledges the right of each stakeholder to use their own power and influence, within limits set by community law and ethics, to participate in a process of social learning and negotiation that will ultimately define the future of farm forestry. What a stakeholder is prepared to pay, or give up, in an attempt to achieve their preferred outcomes is their choice. While, the final decision to commit to a particular farm forestry outcome is made by the farmer, the interest and responsibility for the outcomes may be shared with many others.

By agreeing to the *process* characterised by the conceptual framework, stakeholders need not agree to a common *blueprint* that assumes it is possible, or just, for a small number of stakeholders to attempt to predetermine the type, scale, location and purpose of future forests on farms. There is no single set of performance criteria or a superior knowledge base that can be used to select the best set of outcomes for all circumstances and little prospect of any numerical targets set now being considered valid in the future.

Rather than trying to prescribe their preferred options stakeholders might be better served if they seek to negotiate with farmers in an attempt to encourage a commitment to options that produce at least some of the outcomes they are interested in. Consumers of the products and services of farm forestry need only pay for the outcomes they are able to capture or relate to their particular ethical responsibility.

Through negotiation and trade, farmers may begin to see stakeholders as *purchasers* of the various products or services provided by their forests or partners in rural environmental, social and economic development.

This encourages a pluralistic, evolutionary and accountable approach to directing the development of farm forestry (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) that directly or indirectly influence farmer behaviour.

The conceptual framework and the Australian Master TreeGrower Program

The MTG Program is an instrument by which staff of the School of Resource Management (University of Melbourne), the funding bodies, regional partners, industry, researchers and even the participants themselves are seeking to influence the development of farm forestry. Our own interest is in supporting farmers and others within the rural community so that they are better able to influence the design and development of farm forestry in their own area. Some may also be able to influence policy and programs at the state and national level.

The MTG Program was designed specifically for those farmers who have made a demonstrated commitment to farm forestry. It was recognised that these farmers are often at a critical phase of the process that requires they maintain their enthusiasm and commitment for many more years in order to retain the prospects of success. The confidence and enthusiasm of these leading farmers will have an important role in encouraging, supporting and assisting others within their community. The contribution the MTG Program plays in the development and support of farm forestry networks also provides a venue of communication and negotiation between farmers and stakeholders.

The focus is therefore on farmer decision-making and their motivations, aspirations, resources and constraints. Consumers are encouraged to articulate their own product and service specifications and outline their preparedness to implement rewards or penalties for farmers. 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. King (2000) might classify the program as an example of *Facilitating participatory learning* with potential to contribute to *Facilitating social learning* (Table 2.1). 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).

By adopting this conceptual framework for farm forestry, the MTG Program seeks to support and encourage farmers and other stakeholders to participate in the development of farm forestry opportunities that best reflect the aspirations, challenges and opportunities facing farmers and their communities. There is an expectation that this will result in greater establishment and management of trees and forests on Australian farms and, ultimately, result in better economic, social and environmental outcomes for Australian rural society. What the 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.

3. The MTG Program Framework for Regional Programs

Introduction

From experience gained from more than 38 regional MTG Programs and feedback from a comprehensive and continuous monitoring and evaluation program (see Chapter 4) involving participants, partners and observers, we believe we have developed a practical and compelling framework for the design and delivery of the program. We believe that the framework ensures there is consistency in the intent and content of regional programs across Australia while allowing sufficient flexibility to respond to local circumstances and the individual aspirations and needs of regional participants and supporters.

The MTG Program framework provides for short regional educational programs (of approximately 42 hours) in agroforestry and farm forestry design and management for leading farmers. The objectives of the MTG Program are to:

1. Facilitate farmer involvement in the development of agroforestry and farm forestry within their regions by providing education, experience and support to selected tree growers and their advisers.
2. Help farmers recognise the interests of governments, industry and community groups in their revegetation and forest management activities and encourage mutually beneficial partnerships and marketing arrangements.
3. Provide farmers with simple and practical approaches for the preparation of farm forestry plans, measurement of forest product and service, and project evaluation.
4. Encourage farmers to play a more active role in the management and support of regional grower groups and programs.
5. Establish a regional and national peer group of Master TreeGrowers that provides support for farmers involved in farm forestry and contributes to regional extension and development programs.
6. Support regional, state and national farm forestry, agroforestry and Landcare programs by providing an education program that can be tailored to their requirements.
7. Encourage open, strong and sympathetic communication about farm forestry between farmers, advisors, regulators, researchers and industry.

This chapter outlines the MTG Program framework highlighting the role and responsibilities of the partners and participants in the program, the structure of the eight MTG sessions and the nature of the projects and exercises.

Partnerships and responsibilities

The School of Resource Management conduct each MTG Program in association with one or a number of regional coordinating groups or organisations. These coordinating groups may be formal or informal farmer networks, government agencies, non-government organisations (such as Greening Australia) or industry bodies. In all cases the one or two local representatives, supported by the regional groups, have taken on the role of regional coordinator. The participants and presenters also became partners in the program once involved.

Each partner has a particular role and responsibility:

Role of the School of Resource Management

The program managers from the School of Resource Management (University of Melbourne) coordinate the MTG Program nationally. Their role has been to oversee the development and delivery of all regional programs to ensure quality of content and consistency in approach.

To help initiate and conduct regional programs the School of Resource Management:

- provide introductory information to potential regional coordinators, sponsors and participants;
- contribute to regional planning meetings with key stakeholders to help explain the program and seek their support;
- attend and present at appropriate sessions where required (commonly the program managers attend the introduction, measurement, silviculture, evaluation and closing sessions); and
- undertake an evaluation, including surveying participants at the beginning and the end of the program.

During the regional program, the School of Resource Management supplies each participant with the following:

- a copy of *The Farmer's Forest: Multipurpose Forestry for Australian Farmers*, the manual of the MTG Program;
- a copy of *Design principles for farm forestry: A guide to assist farmers to decide where to place trees and farm plantations on farms* published by the Joint Venture Agroforestry Program;
- a MTG Tape and other equipment for measurement and evaluation;
- a Master TreeGrower hat;
- a certificate acknowledging their participation (this is not a formal university qualification); and
- a Master TreeGrower farm gate sign.

Follow up support for the participants provided by the School of Resource Management includes:

- the development and maintenance of a web site (www.mtg.unimelb.edu.au);
- an occasional newsletter;
- opportunities to participate in regional, state and national farm forestry events;
- an ongoing free telephone and electronic advice service;
- the offer to support regional farm forestry network activities; and
- MTG refresher courses in association with regional groups.

Role of the Regional Partners and Coordinator

Having taken on an MTG Program, it is incumbent on the regional organisations to support their regional coordinator. In most cases the coordinator has been financially supported by one of the regional partners. Many organisations also provide additional support such as the provision of facilities (meeting rooms, offices, photocopying, etc), staff for specialist presentations, access to research sites and other lands under their control, use of vehicles and the use of their name in support of the program.

In the past, regional coordinators have included landowners, government or NGO staff, and employees of regional forest industry programs. It is critical that the coordinators have, or quickly win, the confidence of local farm foresters and other stakeholders within the region. The program managers acknowledge that the regional coordinator carries the greatest responsibility during the running of the regional programs.

The role of the regional coordinator is to:

- liaise with the School of Resource Management before and during the program;
- involve participants, regional sponsors and industry in the design of the program;
- oversee the selection of participants and appropriate presenters;
- ensure that their program is conducted in a safe, fair, equitable and financially prudent manner; and
- take responsibility for the day-to-day running of the program.

Role of the Presenters

The program puts great emphasis on involving local *experts* or *specialists* including local business operators to reinforce links between participants and those within the region who can provide ongoing support. Presenters are expected to provide a clear synopsis of the important principles or points they wish to convey and then facilitate discussion within the group about the implications for them as farm foresters. Presentations are commonly complemented with written notes or supporting documents where possible. Feedback from programs suggests that presenters need to be made aware of their audience's experiences, interests and likely requirements and encouraged to base their presentation around this.

We have found that most presenters are happy to provide their services freely and welcome further contact with participants suggesting that they believe the program is supporting their interests and those of their organisation. This includes government agency staff involved in policy, extension and research, industry members such as sawmill owners or contractors, and even private consultants. Despite this, we have strongly supported the payment of a fee to non-participating landowners whose properties are visited during the program or others who would not necessarily be expected to gain from their involvement in the program.

Role of the Participants

The program aims to support those individuals, particularly farmers, who have demonstrated their practical commitment to farm forestry, their desire to learn and their likely influence on others within their region. While farmers are the key targets of the Master TreeGrower Program we have been keen to involve a small number of local extension agents and service providers as participants in recognition of their experience and contribution to farmer decision-making. Twenty is considered a manageable number of participants to ensure effective group dynamics and program viability. Partners and other family members of farmers participating in the program have been encouraged to attend as they wish.

The selection of participants has been by nomination and invitation. Outstanding growers, industry members and experienced extension agents have been asked to suggest individuals who they believe had the potential to play an important role in the development of farm forestry within their region. Although people have been welcome to nominate themselves, it has been considered preferable not to advertise widely for candidates as this has led to disappointment among those who miss out. The participants must also be keen to share their own experiences and knowledge and be willing to work with others in identifying and defining farm forestry opportunities in their region.

Participants pay a registration fee of approximately $100. The fee is set by the regional organising body and as such varies between regional programs depending on program requirements and local sponsorship. The regional organising body uses the money raised to pay for facilities, presenters, copying and other course related expenses. The program managers approve the final program registration fee. As a non-accredited course, and because of the funding provided by the program sponsors (JVAP and the NHT), the participants have not had to pay an enrolment fee to the University of Melbourne.

Minimum Standards for Participants

Minimum standards are set to ensure that every graduate has earned their certificate. These are as follows:

- participants should make every effort to attend all sessions;
- every participant should complete a project or presentation; and
- participants should be willing to share their experiences and ideas with the group and treat other participants with respect.

The final decision on whether a participant would be awarded a certificate and gate sign has been left up to the regional coordinator. If a participant misses too many sessions for legitimate reasons, they might be encouraged to make up the lost sessions by organising an event such as a field day on their own property (if not already visited) or by preparing a report or service for the group. The coordinator might also consider their participation, contribution and commitment to the program and to farm forestry in the region. A clear statement of the program requirements is set out for participants at the first session.



Beaudesert, Qld, Master TreeGrowers, 1999

The location of program sessions

Master TreeGrower Programs are conducted *within* regional communities rather than *from* educational institutions. Participants are drawn from within a social and/or geographical catchment based on the natural environment, social networks, farming systems, market opportunities or farm forestry interests. Presentations have been held at a range of venues including community halls, government offices and private venues across the region so as to allow easy access to farms, forests and businesses for field tours. It is important that the region, and the participants, take ownership of the program by using the facilities available within their communities where appropriate.

The content of program sessions

In a short course it is impossible to cover all the technical aspects of tree growing and private forestry. The program simply provides participants with some of the guiding principles and management tools that may help them develop and evaluate appropriate agroforestry and farm forestry designs. Encouraging the development of a peer group of active growers with strong links to regional specialists and industry is considered a critical outcome. The MTG Program is not an alternative to traditional field days or skills based training courses, nor is it an introduction to farm forestry for novice growers. The MTG Program aims to develop regional farm forestry peer groups with the confidence to critically analyse farm forestry opportunities presented to them.

The School of Resource Management has developed a session plan for regional programs to follow (see Box 3.1). This 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 session plan is flexible and depends on regional land management constraints and the participants' requirements and interests.

The MTG Program is principally a design program that encourages participants to construct their own establishment and management plans and evaluate these against their own performance criteria. Landholders are encouraged to review their own land management constraints and aspirations (physical, economic or social), search out market opportunities for farm forestry products and services, and consider opportunities for designing farm forestry systems that meet their goals and market specifications. By the end of the program participants are expected to be able to critically design and evaluate unique multipurpose farm forestry systems that meet land management objectives and constraints while having the potential to produce a commercial product.

The emphasis of most regional programs has been on the potential for the production of commercial products and services from the revegetation of private farmland. In some areas there has been a greater emphasis on native forest silviculture or non-timber products and the sessional plan can be adjusted to suit these requirements. In future it is expected that there will be programs that are primarily concerned with community participation in the management of publicly or collectively owned land areas (such as community and indigenous forest management).

The location, timing and balance between field and seminar work during the program is very flexible. Although the basic format is for eight, one-day sessions totalling around 42 hours, regions have adapted this to suit their own circumstances (such as a mix of evening seminars and day trips). In any event, it has been considered imperative that the emphasis on participatory learning is not threatened and that the program is delivered over a period of at least a month, preferably two, to allow time for participants to build relationships and reflect on their experiences and learning during the program. Programs have been run over longer periods; however, this is not a preferred option due to the time lag between sessions hindering the social development between the participants.

Although the regional coordinator is responsible for finalising the regional program and organising events they are encouraged to discuss their ideas and plans with the program managers. The School of Resource Management reserve the right to withdraw Australian Master TreeGrower status from a regional program if it is considered necessary to retain the credibility of the national program.

Preliminary Session

One to two months before the program is expected to run, the program managers generally meet with the regional coordinator(s), sponsoring groups and leading regional farm foresters to explain the MTG Program and discuss the proposed plan. This is important so that all groups understand each other's interest in the program and that clear objectives for the program are set early. It is often useful to hold this meeting in association with a public seminar or field day, during which potential participants can be introduced to the program, contribute their ideas and consider their involvement. Introductory farm forestry courses are being trialled and may provide an opportunity to prepare participants and sponsors for a regional MTG Program.

Projects, exercises and competencies

Participants' Projects

All participants have been required to prepare and present a farm forestry project during the program. Farmers are encouraged to base their project on one of their own farm forestry projects even if the trees are yet to be planted, and to follow the Diagnosis, Design and Evaluation approach. This approach begins by describing the primary reasons for undertaking farm forestry, outlining the economic, social and environmental design constraints, and defining what they consider to be the important criteria for success. Farmers would then outline what they have done, or plan to do, highlighting lessons learnt and expectations for future management.

Those participants without land have undertaken a similar project on someone else's farm or made a special presentation on a topic of interest to the group. As an example, a carpenter doing the program in Ballarat provided an excellent presentation on grade stressing of timber and what this means for a grower. Participants are asked to present their findings to the group, preferably by oral presentation accompanied by written notes or completed design proforma (see chapter two ‘Integrating Farm Forestry Into Your Farm’ in the ‘The Farmer’s Forest’, and ‘the Master TreeGrower Project Example’ on page 161).

If possible the presentations are done on-site when the group visits the property of each farmer participant. Where this was not practical presentations have been made at any appropriate time during the program (not necessarily at the end). The notes are often prepared as *farm tour notes* and used in the future by the farmer if they conduct further tours.

MTG Exercises

In addition to the project presentation, the participants are also expected to complete two exercises during the program. The first is the Tree and Stand Measurement Exercise involving the use of the MTG Tape, which is usually completed in Session 3. The second, done later in the program, is the Economic Evaluation Exercise. Along with the Design Project these represent the core skills-based learning elements of the Australian Master TreeGrower Program and are common to all programs delivered across Australia.



Darwin, NT, Master TreeGrowers measuring and sampling a Teak plantation, 2000

Box 3.1. MTG Framework and Associated Learning Outcomes

Session 1: Introduction to Agroforestry and Farm Forestry Design (6 hrs)

Content

- Introduction to the MTG Program and the Diagnosis, Design and Evaluation approach to project planning.
- Sharing of participants' experiences, interests and aspirations and the identification of common motivations.
- Site inspection of leading farm forestry properties with an emphasis on the design approach as an illustration of how participants might present their own experiences.

Learning Outcomes

- An appreciation of the potential to design unique farm forestry systems to match individual circumstances and an understanding of the Diagnosis, Design and Evaluation approach.
- An appreciation of the need to understand the realities of the markets for forest products and services and the marketing process.
- An understanding of the need for compromises in agroforestry and farm forestry designs to attain multiple benefits and attract commercial interest.
- An increased awareness of the range of experiences and interests amongst the group.

School of Resource Management Contribution

The program managers will attend the first session in order to hand out introductory material including books and hats. Both are available to make presentations on The Master TreeGrower Program and Farm Forestry Diagnosis, Design and Evaluation and to facilitate a workshop on farmer interests in farm forestry.

Session 2. Market Opportunities for Farm Forestry Products & Services (6 hrs)

Content

- Visits to mills and market outlets to discuss forest products specifications, processing methods, market trends, pricing and marketing issues. Emphasis is on product specifications (e.g. *target log* and *target stand*), prices and market access.
- Hear an industry perspective on marketing and pricing of farm forestry products and services.
- Review existing and potential harvesting, marketing and transporting methods and costs.

Learning Outcomes

- Identification of product and service specifications and requirements of existing processors and markets.
- Establishment of communication links between growers, industry and markets.
- An understanding of the marketing chain from purchaser to end-user.
- An appreciation of the relationship between product specifications and price.
- An understanding of local processing techniques and likely developments in the industry.
- An understanding of some of the costs involved in harvesting and marketing tree products and services.

Session 3. Tree and Forest Measurement and Monitoring (6 hrs)

Content

- Demonstration and discussion of tree and forest measurement terminology and techniques.
- Discussion of the selection of appropriate measures of forest growth, yield and production of products and services.
- Measuring exercise completed by participants.
- Introduction to the calculation of tree and forest parameters including the use of computer based spreadsheets.
- Introduction to the principles of silviculture.

Learning Outcomes

- An appreciation of the need to measure and monitor trees and forests.
- Skills training in the use of simple tree and stand measurement equipment (e.g. the MTG Tape).
- An understanding and use of simple forestry calculations.
- An introduction to the relationship between tree measurements and management.
- Completion of a farm forestry measurement exercise (i.e. tree height, DBH, stand volume, basal area and MAI).

School of Resource Management Contribution

The program managers are available to conduct the measurement exercise including an introduction to the principles of farm silviculture. MTG tapes, plot sheets and computer spreadsheets are provided.

Session 4. Silviculture Principles- Growing the Target Forest (6 hrs)

Content

- Review or completion of presentation on silvicultural principles (depending on what was covered in Session 3).
- Presentation and discussion of the various silvicultural practices that may be appropriate for the types of products and services being considered by the group.
- Visits to industrial, government and farm forestry sites and hearing managers justify their silvicultural regimes for the provision of products and services.

Learning Outcomes

- An understanding of the links between silvicultural management, costs, risks and product quantity and quality.
- An appreciation of the reasons for the silvicultural regimes adopted by industrial and government forest owners in the region.
- An understanding of the silvicultural management options available to growers to meet market specifications.

Sessions 5, 6 and 7. Appropriate Agroforestry & Farm Forestry Design (3 x 6 hrs)

Content

- During these three sessions, it is anticipated that field tours will largely involve inspections of participant's own properties and their presentations.
- For each property (or perhaps each morning/afternoon), there may be a theme (such as salinity and farm forestry, wildlife, taxation etc) and experts/specialists invited to facilitate, contribute and encourage discussion on issues related to that theme.
- Appropriate experts would be given the opportunity to make short presentations on the principles of design related to their expertise before going onto sites and participating in real life problem solving discussions.
- Presentations on farm forestry evaluation (economic, social and environmental), and government policy and regulation may be scheduled as themes.

Learning Outcomes

- An appreciation of the diversity in farm forestry design options and issues in multipurpose design and evaluation.
- Further development of relevant themes that will benefit participants (related to issues highlighted in the first session).
- Experience in conducting a farm tour or presentation.
- An understanding of the compromises or balances necessary to achieve an appropriate design that meets a farmer's expectations within their management constraints.

School of Resource Management Contribution

The program managers are available to present an MTG Economics exercise that incorporates the evaluation of farm forestry projects using discounted cash flow analysis. This exercise would be ideally set on one of the participant's properties and incorporate an analysis of an existing or proposed project.

Sessions 8. Closing Session

Content

- Completion of the presentation of projects by participants (on or off farm).
- An interesting concluding event or presentation: (e.g. prominent speaker, debate or site visits).
- Debate and discussion on the value of the program and completion of the evaluation forms.
- Presentation of Master TreeGrower certificates and gate signs.

Learning Outcomes

- Strengthening of the relationships and empathy among the participants and a celebration of the achievements made during the MTG Program and the participant's shared experiences.

School of Resource Management Contribution

The program managers are keen to attend the final sessions to congratulate participants, the coordinators and their supporters. Certificates of appreciation, gate signs and ideas on the ongoing role of Master TreeGrowers in the extension of farm forestry in their region are provided by the program managers.



Dorrigo, NSW, Master TreeGrowers, 1998

Competencies: Forest Growing and Management training package

Although the MTG Program has been designed as a non-accredited program, the content has linkages to several recognised training packages. Those training packages and related competencies that are relevant to the Master TreeGrower Program are listed below. Those shown in bold are currently being promoted to participants.

Conservation and Land Management Package

- Plan the implementation of revegetation works (RTD4020A)
- Support resource management change processes (RTD4801A)
- Produce maps for land management purposes (RTD4507A)
- Supervise natural area restoration works (RTD4510A)
- Manage natural area restoration programs (RTD5003A)

Rural Business Management Sector of the Agricultural Training Package

- Establish and maintain effective working relationships (AG4206BM A)
- Collate information (AG4201BM A)
- Implement a property improvement plan (AG4207BM A)
- Manage pastures, fodder and crop production (AG5205BM A)
- Manage physical and natural resources (AG5207BM A)

Horticultural Training Package

- **Plan revegetation works (RUH HRT401)**
- Plan a tree planting program (RUH HRT404)
- Develop a tree pruning program (RUH HRT 405)
- Develop a planting program (RUH HRT 511)
- Conserve natural resource areas (RUH HRT518)

The Forest Growing and Management sector of the Forest and Forest Products Industry Training Package (FP199).

Level 4 Competencies of the Forest Growing and Management Unit:

- Conduct an instrument survey (FPIFGM044A)
- Manage stand health (FPIFGM063A)
- Manage propagation operations (FPIFGM113A)
- Manage stem improvement (FPIFGM117A)
- Provide and manage interpretations programs (FPIFGM119A)
- Conduct a pests and diseases assessment (FPIFGM131A)
- **Conduct a stocking assessment (FPIFGM132A)**
- **Conduct a wood volume / yield assessment (FPIFGM133A)**
- Conduct a site factor assessment (FPIFGM134A)
- Interpret and use aerial photographs for forest management (FPIFGM155A)

Level 5 Competencies of the Forest Growing and Management Unit:

- Implement sustainable forestry practices (FPIC5080A)
- Develop a stock production & planting program (FPIFGM001A)
- Develop an inventory program (FPIFGM073A)
- Manage tending operations - native forest (FPIFGM115A)
- Manage stand nutrition (FPIFGM118A)
- Manage tending operations – plantations (FPIFGM127A)
- Conduct tree breeding operations (FPIFGM136A)
- Plan timber extraction activities (FPIFGM143A)
- Arrange contract (FPIFGM156A)

The MTG Program has been developed so that these competencies may be tested and participants can achieve accredited outcomes leading to a Certificate IV or Diploma from one of the four training packages outlined above. (A qualification [certificate or diploma] cannot be gained from completing a MTG Program. Additional competencies will need to be gained from other programs or assessment

procedures to build-up the required number of competencies to achieve a recognised qualification – see individual training package documentation for qualification requirements).

The testing of interested participants' competencies could occur at the end of each session. For example, those participants interested in such a system could have their skills and knowledge assessed:

- at the end of session 3, in *Conducting a stocking assessment* (FPIFGM132A) or 'Conducting a wood volume / yield assessment' (FPIFGM133A) from the *The Forest Growing and Management sector of the Forest and Forest Products Industry Training Package*
- at the end of session 4, in *Managing stem improvement* (FPIFGM117A) from *The Forest Growing and Management sector of the Forest and Forest Products Industry Training Package*

Regional coordinators are able to assess those participants interested in achieving recognition for their skills and knowledge, but this must be organised and planned with the program managers prior to the commencement of the program to ensure that the requirements of the training program and assessment procedures are met. The cost of competency assessment is additional to the standard MTG Program fees. It is important that the core objectives of the MTG Program are not compromised by attempts to meet additional training requirements and that the MTG Program is recognised as being more than simply a package for the presentation of a set of competencies.

Follow-up Support

Following the program, participants and partners are encouraged to maintain links with each other and with the university. Follow-up services provided by the School of Resource Management include:

- a commitment to support regional farm forestry networks;
- the MTG www site: www.mtg.unimelb.edu.au;
- a willingness to respond directly to enquiries from MTG participants;
- a preparedness to contribute to refresher courses for MTG participants on topics such as silviculture or tree measurement;
- efforts to encourage and support MTG participation in national farm forestry events such as Agroforestry Expo '99 and the IUFRO Forestry Extension Conference 2001; and
- the preparation and distribution of an occasional newsletter that is sent to all graduates of the program.

The most important role of the University after the completion of the program is to provide participants and partners the opportunity to access greater information and support networks including academics and researchers. Farmers are able to contact the program coordinators who will direct them to appropriate sources of information or people who might be able to assist them. To date this service has been provided in an informal manner as required. However, the recent development of the national farm forestry information service will greatly enhance the ability of the MTG Program to service the information needs of participants.

National farm forestry information service

Farm Forest Line (FFL) is a national farm forestry information service provided by the Australian Forest Growers organisation in association with Melbourne University's School of Resource Management and Energy Strategies information services (www.farmforestline.com/index.html). The project received seed funding from the NHT through Agriculture, Fisheries and Forestry Australia's Farm Forestry Program. The FFL greatly enhances the University's ability to service the information needs of farmers and extension agents involved in the MTG Program. The information service provides farmers and other users with direct access to a wide range of practical, scientific and theoretical information on farm forestry as well as the opportunity to seek out expert responses to their own particular questions or concerns.

Safety and insurance

Safety throughout the program is an important issue that needs to be considered by all participants, presenters and coordinators, particularly during field trips to industrial sites, isolated farms and commercial forests. Insurance (Public Liability, Accident and possibly Professional Indemnity) is the responsibility of the coordinating group(s). Each coordinator is required to be sure that they, their organisation, and the participants have appropriate insurance cover. Participants who host farm visits must have public liability insurance and are advised to contact their insurance company and inform them they are conducting a farm forestry related tour. It should not be assumed that the involvement of the University of Melbourne provides cover for the program or participants.

The School of Resource Management requires that:

- all those participants with current first aid certificates to level 1 be identified during Session One and made known to the whole group;
- all relevant emergency contacts be listed and distributed to the group during Session One. This should include all emergency agencies and the closest hospital location;
- a clear map is provided of each location visited;
- an itinerary for each session (trip) to be left with an appropriate person within the coordinating group(s) home office;
- the responsible person (owner or manager) or authority (public land) must be notified if field tours include inspections or activities on private land or in public forests;
- all members of the group must wear appropriate clothing and footwear, and respect all appropriate safety procedures (such as hard hats, smoking bans, vests, etc) when visiting industrial sites (mills, harvesting operations etc) and public forests;
- a mobile phone to be available at all locations for emergency situations;
- a well equipped first aid kit to be available at all sessions and everyone to be made aware of its location; and
- all identifiable hazards should be assessed for all activities and appropriate action taken to eliminate or reduce the potential risk. All identifiable hazards for each session should be communicated to all participants.

Program development

The MTG Program framework has provided a flexible, dynamic and responsive structure that seeks to ensure that participants can fully explore and analyse issues of regional importance, while still ensuring credibility through a nationally uniform sessional plan. Although the framework has evolved since the initial pilot program funded by the Myer Foundation in 1996, the core elements have remained largely intact. Incremental improvements have been based on the growing experience of the program managers and the results of the monitoring and evaluation that began in 1997. This evolution is discussed in the next chapter.



Regional Coordinators: Andrew Stewart (Vic.) and David Jenkins (WA)

4. The Development of MTG

Melbourne University involvement in forestry extension

The formation of the Faculty of Land and Food Resources (LFR) (an amalgam of the Faculty of Agriculture and Forestry and the Victorian Colleges of Agriculture and Horticulture) at the University of Melbourne during the mid 1990s necessitated a review of the role of the university in technical education, outreach and community development. The Faculty now provides practical and professional training and outreach services and undertakes both pure and applied research across a wide range of rural disciplines, including forestry and land rehabilitation.

The inaugural dean of the new institution, Dr Falvey, pointed to the Faculty's commitment to educational outreach as being in common with the Land Grant College system in the USA highlighting the following elements:

- a strong practical orientation to agriculture through industry involvement;
- the linking of research, education and extension as a continuum;
- inclusion of processing and marketing as an integral part of agriculture;
- bringing together producers and processors with scientists; and
- providing services at the level required by clients (Falvey 1995).

The newly formed Faculty defined *outreach* as the provision of knowledge through non-accredited courses and other informal mechanisms (Falvey 1995). The advantages to the University from being involved in such activities were seen to include:

- promoting the Faculty's traditional courses and research programs;
- increasing applications by potential undergraduate students;
- improving the Faculty's profile in obtaining research grants and contracts;
- improving staff practical experience and empathy with clients;
- providing feedback to enhance the relevance of teaching and research; and
- gaining public support for the continued role of the Faculty (Falvey 1995).

In the fields of Landcare, farm trees, agroforestry and farm forestry, lecturing staff of the School of Resource Management had already been involved in informal outreach activities including presentations to farmers, attendances at field days and meetings, participation in community groups, members of government and industry committees and the presentation of information though the mainstream and rural media. A United States study tour of Land Grant Universities involved in non-accredited landowner education programs in 1996 led to the development of a proposal for greater participation of Melbourne University academic staff in farm forestry outreach through the concept of the Australian Master TreeGrower Program.

Forest owner education programs in the USA

Independent privately owned woodlands produce over half of the nation's wood supply in the USA (Biles 2001). Nearly 10 million non-industrial private forest owners control approximately 32 per cent of the softwood timber and 72 per cent of all the hardwood timber in the country (Argow 1996). The idea of university forestry academics training landowners or volunteers and encouraging them to work with other forest owners arose during the early 1980s with the development of two independent programs (Fletcher and Reed 1995). The programs were:

- The *Master Woodland Manager* pilot project in Oregon. This program began in 1983 with the aim of encouraging participants to better manage their own forestlands for timber and to have them reach and motivate non-active forest landowners.

- The *Coverts Program* in Vermont and Connecticut, sponsored by the Ruffed Grouse Society. This program trained volunteers in wildlife management to work with non-active woodland owners in New England.

Similar programs are now run in more than 14 states across the USA. The forestry extension units of the respective state based Land Grant Universities run all programs. The courses generally involve between 24 and 85 hours of instruction including fieldwork and classroom work. The topics covered vary with the locations and forest types but generally include tree identification and biology, forest silviculture, harvesting and marketing, wildlife management and investment planning (Fletcher and Reed 1995). Participants do not undertake any written assessment but do receive recognition through the form of a certificate, badge and/or cap. On completion, the participants are commonly expected to contribute a similar amount of time promoting forestry management within their community. Evaluation suggests that most do become very active as promoters of woodland management and users of forestry extension services (Fletcher and Reed 1995).

Although a great deal was learnt from observations of American programs and from discussions with participants, program leaders and observers, the Australian MTG Program was not developed as a copy of any particular example. We gained confidence to develop a participatory education program for Australian farmers based on the ideas expressed in the conceptual framework presented in Chapter 2. Although some of the US programs are clearly aimed at facilitating farmer and stakeholder participation rather than seeking to promote perspective-dependent solutions, few adopt a diagnosis, design and evaluation approach (Reid and Stephen 2001) in their delivery.

Based on the number of programs, number of participants, geographical spread, institutional participation and funding, the Australian MTG is now the largest forestry outreach program of its type in the world. As a result of conference presentations made by Rowan Reid on a return visit to the USA in 2000 (Reid et al. 2000) and the participation of American extension agents from Land Grant Colleges in both Agroforestry Expo ’99 and the IUFRO Forestry Extension Conference 2001 we believe that the MTG is now beginning to have an influence on the design and delivery of similar programs in the USA.



Oregon, USA, private tree grower

The MTG learning cycles

The MTG is an educational program supported by a framework for landholder learning, action and participation in the development of farm forestry on their farms and within their regions. Although a number of core elements of the MTG were in place prior to the first regional program (Reid 1996a) the framework itself as presented in the previous chapter has evolved over time as a result of experience, testing of ideas, suggestions from participants and coordinators, recommendations of reviewers and changing circumstances. In this respect, an action learning cycle (see Revans 1983, Grundy and Kemmis 1990, Pedler 1997, McGill and Beaty 2001) provides a useful means by which to review the development and evolution of the MTG Program since 1996.

Action learning models emphasise the notion of continual improvement and learning grounded by experience. Development and improvement of an ongoing program, like the MTG, based on the

increasing knowledge and experience of those involved can be represented as a series of cycles. Figure 4.1 illustrates the major research and learning cycles the MTG Program has evolved through since 1996. The first cycle covers the period of program establishment and correlates well with the development of the initial funding proposal for the first year of delivery. A second cycle of program stabilisation followed (1997-1999) with funding support from the JVAP and included support for a team of anthropologists to work with the program managers. The third cycle (1999-2002) of consolidation saw the number of programs delivered per year increase and the expansion of the program into non-traditional farm forestry regions including the Northern Territory and low rainfall areas. A forth cycle focussing on the facilitation of social learning (King 2000) is now becoming apparent. Using the action learning model this chapter briefly describes the program's evolution since 1996.

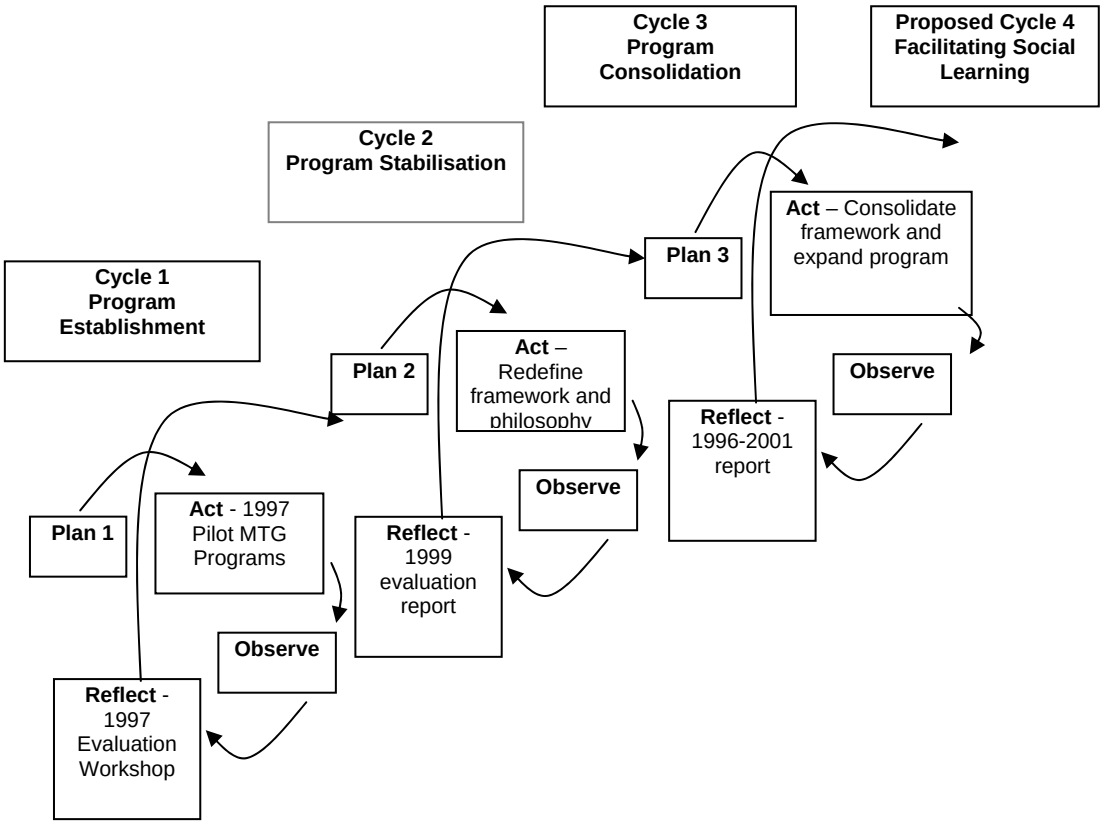


Figure 4.1: Major action learning cycles associated with the MTG Program.

Cycle 1: Program Establishment

The impetus for the establishment of the MTG Program came from Rowan Reid's study tour looking at the involvement of the American Land Grant Colleges in landholder forest management educational programs. This was coupled with a personal belief that those farmers who had made a commitment to farm forestry in Australia required far greater support and assistance in order to maintain their commitment, enthusiasm and management over time. With funding from the Myer Foundation in 1996, the MTG Program was launched with the delivery of eight pilot MTG Programs across Australia. Personal observations, experiences and a survey of all participants undertaken in December 1997 (summary results presented below) suggested that the program was successful in providing landholders with an enjoyable and stimulating learning experience and highlighted the core elements of successful programs.

December 1997 Participant Evaluation Survey

Results from a mailed survey to 135 MTG participants in December 1997 (response rate of 39 per cent) indicated that 98 per cent of participants believed the program was 'good value'. The program's strengths as indicated by the participants (in order of importance) included:

- Networking/social interaction between participants
- Site visit/inspections
- The program structure (*'Flexibility of the program', 'Delivery of presentations in situ rather than lecture theatre')*
- Presenters (*'Good diversity of speakers where a large number of experts were accessed. Made the course 'fresh and stimulating')*
- Interaction between participants and presenters/industry (*'Gained a clear understanding of industry needs')*
- Coordinator/coordination (*'Key farmer convening the course')*
- The participants (*'Cohesive/keen group of people'*)
- Learning aspects and building confidence (*'Feeling at ease to discuss and ask the silly question', 'A good learning experience')*
- Information presented (*'Range of topics/projects/information/sites', 'good local information')*

(Stephen and Reid 1997 unpublished)

The success of the pilot was instrumental in winning ongoing funding from the JVAP. An evaluation workshop help in December 1997 involving participants, coordinators and supporters led to a number of initiatives to shore-up the program framework and the underlying philosophy and principles. As Rowan Reid stated *"There is still much work to do in reassuring industry, governments and the forestry profession that the program has a role to play in developing a farm forestry culture in Australia"* (Stephen and Reid 1997, unpublished, p. 4). There were also some changes made to the delivery including:

- Directing the program back onto participants properties and using their work as examples from which participants and experts could discuss farm forestry possibilities (to the question 'Is it a good idea to put more responsibility on participants' 74 per cent of participants said 'Yes', *'Greater participation, interaction and responsibility would foster awareness of success/failure'* (Otways participant).
- Inviting experts onto participants' properties, not to give lectures, but to facilitate, contribute to and encourage discussion on relevant aspects of farm forestry.
- Encouraging participating landholders to present their projects on their own properties. The written project could then form the basis of field day notes.
- Increasing the length of the Program by one session thereby holding an individual session on silvicultural practices and another on tree measurement.

Cycle 2: Program Stabilisation

By 1998 the program's eight-session framework had been clearly defined. However, questions remained about the strength of the underlying philosophy and the most appropriate method of assessing impacts. An independent team of anthropologists lead by Dr Tim O'Meara of the University of Melbourne was engaged to review the extension approach adopted by the program and to establish a formal evaluation process. The 'before' and 'after' survey of participants developed is still used and has provided a large data set related to participants' perceptions of the programs strengths and weaknesses. Telephone interviews conducted by the team of participants and coordinators, their observations made during direct participation in the programs and a comprehensive review of secondary documentation allowed them to gain a close, first-hand knowledge of the program, the participants and underlying philosophies. From these data sources the team reported against the evaluation objectives as stated in the project agreement between the University of Melbourne's School of Resource Management and the JVAP. Those objectives were:

- Review the extension methodologies and philosophies employed by the MTG Program; and
- Conduct a research project to evaluate the influence of the course on landholder behaviour.

(The second funding agreement between the University of Melbourne and the JVAP outlined in the project documentation 'Continuation and expansion of the Australian MTG R & D Program' [UM-44A]) stated the specific evaluation objective as: *"An annual social impact report reviewing the impact of the MTG Program on the attitudes and activities of landowners involved"*). The evaluation team reported on these objectives in September 1999 (O'Meara and Wright 1999, unpublished). Their major findings are stated in the shaded box below.

The recommendations from the 1999 evaluation were that the program *"should continue on its present course and speed of development providing local MTG Programs around Australia, and where there is sufficient demand and local expertise, providing additional programs in areas that have already been served."* Except for some minor recommendations for the MTG Program to provide, either independently or in collaboration with other organisations, local introductory mini-programs, the basic premise of the 1999 evaluation was 'more of the same'.

Cycle 3: Consolidation

Since 1999 regional MTG Programs have been conducted regularly: nine in 1999, seven in 2000, nine in 2001, fourteen in 2002, eight in 2003 and three in 2004. While most programs had previously been conducted in areas with an established history of commercial forestry there was increasing interest coming from areas generally considered marginal for timber production. In 1999, programs were conducted in a very low rainfall area north-east of Albany in Western Australia and in low rainfall areas of Tasmania (Midlands) and south-east Queensland (Beaudesert). In each case the program built on the strong interests of landowners in tree planting for land protection. In 2000, the MTG extended into the tropics with programs in Darwin and Mackay, where the interests of landowners was mainly focused on the production of high quality cabinet timbers from native and exotic rainforest species.

The expansion of the MTG Program into dryland and tropical regions tested the application of the MTG framework. The response, as gauged by the results of the participant questionnaires (see Chapter 5) and the increased demand for MTG Programs in these regions, has laid to rest any questions about the appropriateness of extending the MTG model into areas where farm forestry is in its infancy or where timber is not the primary motivation of tree growers. In 2000, Rowan Reid returned to the USA for 3 months study leave based at PennState University. During this time he researched the North American landowner education programs in more detail, presented the results of the MTG Program at a number of conferences and developed the conceptual framework for farm forestry (Chapter 2).



Kojonup, WA, Master TreeGrowers, 1999

September 1999 Evaluation of the Australian MTG Program- Report to JVAP

The Master TreeGrower Program (MTG) has been diligent and innovative in performing its contractual obligations and highly successful in meeting the goals of donors and participants. In particular the MTG:

- *Is stimulating the active involvement of farmers in the establishment, management and marketing of trees and forest products;*
- *Is encouraging enhanced landholder participation in regional and national farm forestry research and extension; and*
- *Has developed and is implementing a course delivery model that satisfies participants' needs.*

Virtually all participants surveyed throughout mid-1999 gave a positive response to every one of the seven closed-end evaluation questions… Given the option of responding either 'no better', 'a little better', or 'much better' to each question, the majority of participants report that after completing the eight-week MTG Program, they now:

- *Understand farm forestry much better,*
- *Have much better practical abilities in farm forestry,*
- *Can provide much better advice on farm forestry,*
- *Can provide opportunities for farm forestry much better,*
- *Can develop farm forestry projects much better,*
- *Understand much better the farm forestry interests of other people in their region, and*
- *Have much better opportunities for networking on farm forestry issues.*

Formal written and telephone surveys of MTG graduates during this evaluation show that:

- *MTG graduates are enthusiastic about their participation in the program.*
- *The MTG is highly responsive to the needs of local farmers, employing a stakeholder participation model that allows the participants to share responsibility for designing and implementing their local programs as well for designing and implementing their own farm forestry projects.*
- *The dynamic of MTG groups is highly positive, and some groups achieve considerable cohesion.*
- *The MTG appears equally successful for women as for men in meeting skill-building, confidence-raising, networking, and technical goals.*
- *MTG graduates can approach farm forestry professionals with broader understanding and more confidence than before the program.*
- *There is significant public demand for similar, but shorter programs run at an introductory level.*
- *There is sufficient demand for MTG Programs to be introduced into new regions across Australia and to provide additional programs in some regions that have already been served.*

The evaluation team has also found that:

- *The Program's emphasis on direct participation and control of local programs by local farmers and other participants is a key factor in its success.*
- *The Program's highly participatory approach allows participants to adapt the basic structure of the program to fit their local conditions, which in turn serves the participants' real needs, increases their confidence, and makes them aware that they are making valuable contributions to the program.*
- *Bringing a strong majority of advanced, private farm foresters together in their local programs with a few other leaders from the contract nursery, planting and logging industries, plus leading representatives of local extension, academic and consulting services, and environmental groups, helps extend the participants' and presenters' networks and their understanding of the different interests involved in farm forestry, thus helping to forge stronger alliances for the advancement of farm forestry.*
- *Participant farmers are better informed in making decisions about whether or not to invest their own time and resources in farm forestry projects, including decisions by a very few farmers to reduce their investments in farm forestry because of their increased awareness of risks or to reduce their plantings to levels they can manage successfully, both of which help avoid the negative examples that have plagued some other farm forestry extension programs.*
- *Participants do report increased confidence and performance in discussing farm forestry with and providing informal advice to their neighbours, hosting farm walks on their properties, often for a fee, and for a few participants, providing advice on farm forestry for a fee.*

In summary, the MTG is an innovative program that is well designed, well run, and greatly valued by its graduates.

O'Meara and Wright (1999 unpublished)

Cycle 4: Facilitating social learning

The beginnings of a fourth cycle are now emerging. The formation of new farmer groups and cooperatives, the development of MTG introductory and refresher courses and the increased participation by farmers in regional extension programs and strategy development, have all been intricately linked to regional MTG Programs. More directly the MTG Program has been involved in the coordination and management of other initiatives such as Agroforestry Expo '99, the International Forestry Extension conference in 2001 and the Agroforestry News magazine. The revised manual for the program (*The Farmer's Forest – Multipurpose Forestry for Australian Farmers*) was published in late 2001 and has been sold widely, further extending the influence of the program.

While the MTG Program is, on one level, simply a participatory learning program for farmers, there are clearly elements of the program that are indicative of something much more akin to King's (2000) highest extension world view: the facilitation of social learning (Table 2.1). Similarly, the response amongst participants and partner organisations is indicative of Coutts' (1994) most sophisticated extension paradigm: that of human development. At this level, extension is seen as a means of facilitating and stimulating individuals and communities to take the initiative.



First Indigenous Master TreeGrower Program, NSW, 2002

5. MTG Experiences, Learning Outcomes and Impacts

This section reflects on the past eight years of the MTG Program, highlighting important findings related to the selection of participants, the participants, the MTG framework, technical skill development, social learning and development, and involvement by participants in extension. From this analysis possible actions are identified that will lead into the fourth MTG action cycle.

The evaluation data sources are detailed in Appendix One, but are briefly summarised below:

- The 'Before' survey - A brief questionnaire completed by all participants at the start of each MTG Program that has been administered in all programs since mid-1997.
- The 'After' survey - A brief questionnaire completed by all participants at the end of each MTG Program that has been administered in all programs since mid-1997.
- The 'Phone' survey of a random sample of participants from a selection of MTG Programs. This was conducted between six months and two years after the completion of each MTG Program.
- A phone survey of selected coordinators of various MTG Programs that ran in 1997 and 1998.
- The 1997 mid-term review and early evaluation findings from the Otways (Victoria) in December 1996 and Bridgetown (Western Australia) in August 1997 (Jenkins and Winchcombe 1997, unpublished) programs as well as the 2000 mid-term review held in Western Australia.
- The 1999 mid-term evaluation review (O'Meara and Wright 1999, unpublished)
- Semi-structured interviews with MTG participants from programs in the south west of Victoria. Interviews were completed in September 2001.
- Various secondary data from correspondence with participants, coordinators and various internal and unpublished reports.
- Observations and informal discussion with participants by the national coordinators of all programs that have run to-date.

Where possible, the relevant MTG Program and data sources have been identified.

Appendix Two provides timelines of some of the important MTG events as well as some of the important influences over the MTG Program.

The Selection of MTG Participants

Since its inception the MTG Program has been a targeted program aimed at supporting those farmers that have made a commitment to farm forestry and have the potential to positively influence farm forestry developments in their region.

> *The participants would be selected from those interested in participating on the basis of their potential to implement programs on their own land and/or share their knowledge within the community*.
>
> (Reid, 1996a p. 9).

This philosophy has changed little over the years.

> *The program aims to support those individuals, particularly farmers, who have shown that they are worthy of participation in a Master TreeGrower Program because of their demonstrated practical commitment to farm forestry, their desire to learn and their likely influence on others within their region… It is important that these growers succeed as they have an important*

influence on the perceptions and experience of their neighbours and friends. These growers are the key targets of the MTG Program.

The selection of participants is by nomination. Outstanding growers, industry members and experienced extension agents are asked to suggest individuals who they believe have the potential to play an important role in the development of farm forestry in their region.

(Reid and Stephen 2001, p. 152)

Within this selection process, diversity in participant's backgrounds is encouraged to ensure that the predominantly farmer base is complemented by industry and service sector individuals (i.e. nursery persons, contractors, forestry consultants and company staff), other extension agents and local government or regional catchment management staff.

In the development stage of the program, there was concern among some salaried professionals about the *elitism* of the program and standards of entry due to targeting the program at those landholders that had already made a significant contribution to farm forestry development on their property.

If the term 'Master Treegrower' is endorsed then a significant level of competency needs to be demonstrated for course admission. However by requiring a significant level of competency, many interested landholders and industry support people will not be eligible.

(Revegetation specialist, December 1996. Letter to MTG coordinator)

However the selection process has never been as rigid or as structured as implied in the above statement, with a self-selection process evolving for most MTG Programs. Generally the regional coordinator(s) has a relatively good understanding of those interested in farm forestry, those that may be interested in the program and those the program may benefit. Those identified are sent a letter, or are telephoned, inviting them onto the program with coordinators and potential participants effectively negotiating personal advantages for participation.

Finally getting this program organised. We now have 14 thanks to Marg's cunning and perseverance.

(WA State Coordinator, April 2001. Email message to national MTG coordinator)

From this regional mix of invitation, requests to attend after hearing *on-the-grapevine* and perhaps a little cajoling, the mix of participants inevitably contains some regional farm forestry *identities* and those less advanced in their farm forestry endeavours. This process has been very successful in bringing together a diversity of people (see Figure 5.1) with a common connection:

They (the participants) mix immediately, have an affinity, and there's lots of information swapping.

(Participant comment cited by O'Meara and Wright 1999, unpublished)

Have loved the program... and have really enjoyed the participants – shared many common goals and dreams.

(Ipswich Qld, November 1999. Data from 'After' survey)

This common connection is essential and as one participant noted:

Those that did the course are tree lovers and care about farms.

(Wellstead WA, August 1999. Participant 'Phone' interview in July 2000)

However, as the program has expanded the level of farm forestry experience of participants has been falling. As a result the language guiding regional coordinators on the selection of participants has also evolved. Initially the program was aimed at those that had *made a significant contribution* to farm forestry. Now the broader message guiding regional coordinators in selection criteria is those that *have*

made or are likely to make a significant contribution to farm forestry. This guide still places some responsibility on selected participants but acknowledges that the program has a definite role where landholder demand is not matched with the obvious farm forestry *identities* that may have participated in the earlier programs or may not be present in a region. Regardless, the self-selection of participants at the regional level does establish a sound base for the success of the MTG Program.

The 1999 independent review of the MTG Program (O'Meara and Wright 1999, unpublished) raises the issue of *elitism* and *alienation* as a possible detraction from the MTG Program, but concludes that this self-selection process was an *"important state in the preparation of a successful MTG group. Inappropriate choices could detract from the positive group dynamics and the mutual benefits enjoyed as participants share their expertise and experiences."* The authors used the term 'inappropriate choices' to describe potential participants that had no experience in farm forestry and therefore could not contribute to the sharing of expertise and experiences, thereby frustrating the majority of participants that had already developed a sound knowledge base that could be shared and debated.

The selection process is therefore more than the lumping of individuals together. It brings with it a willingness to associate, a perception of self-advantage and co-responsibility which moulds the groups behaviour and function ultimately leading to enduring intra-group structures. This has lead to the MTG Program becoming a very strong entity in its own right in some regional areas. As such, the 1999 review found that the participants interviewed consistently expressed strong identification with the MTG Program and their local MTG group. This is evident in participant's feedback indicating the formation of a socially relevant group with its own standards and norms:

> *This is traditionally an agricultural area and farm forestry is not culturally broadly accepted. Because of this the MTG group is quite close.*
>
> (Duranillin, WA, August 1998. Participant 'Phone' interview in June 1999)

> *Around here if you have done the MTG you're somebody. If you have done the MTG you must know something about trees.*
>
> (Hunter NSW, October 1998. Participant 'Phone' interview in June 2000)

Reflections on the selection of participants.

The self-selection process that precedes each program is flexible and allows the regional coordinators and leading farm foresters to set their own regional criteria for acceptance into the program. Observations, supported by the formal evaluation process, indicate that the self-selection is a very positive precursor in developing a common link between individuals thereby ensuring a greater and more powerful entity develops during the program. The self-selection process is, in effect, the start of the socialisation process that is the MTG Program and is clearly evident in all programs.

The MTG Participants

The MTG Program has always focussed on the individual and their aspirations. Several important terms used throughout the MTG literature are diversity, flexibility, needs, desires and aspirations of individuals.

> *It (the Australian Master TreeGrower Program) is a comprehensive package focussed on ensuring that the development of farm forestry is driven by the aspirations and opportunities of Australian farmers. The program encourages farmers to truly aspire to be 'master tree growers' in their own right, who can design and manage unique multipurpose forestry options that suit their own circumstances and interests.*
>
> (Reid and Stephen 2001, p. 147)

By the end of 2004, 1240 participants had completed one of 63 programs held in all states of Australia, except South Australia, of which 25 per cent of participants were female. These participants were drawn

from a range of landholdings, income source backgrounds (see Figure 5.1) and interests in tree related business (see Figure 5.2).

Between programs there was a wide range of landholding backgrounds, depending on where the programs were run. Generally those programs run in the more traditional broad-acre agricultural regions tended to have considerably more participants that gained an income from a farming business, whereas those programs run closer to capital cities and populated centres, where property sizes were smaller tended to have more participants that derive an income off-farm (see Table 5.1).

Within all programs a diversity of participants is encouraged in order to broaden the group's knowledge base. Therefore those that do not own or manage land, but are considered regionally prominent or involved in a tree related business, are invited to attend the program. In all MTG Programs there has been some representation of those involved in a tree related business (see Figure 5.2).

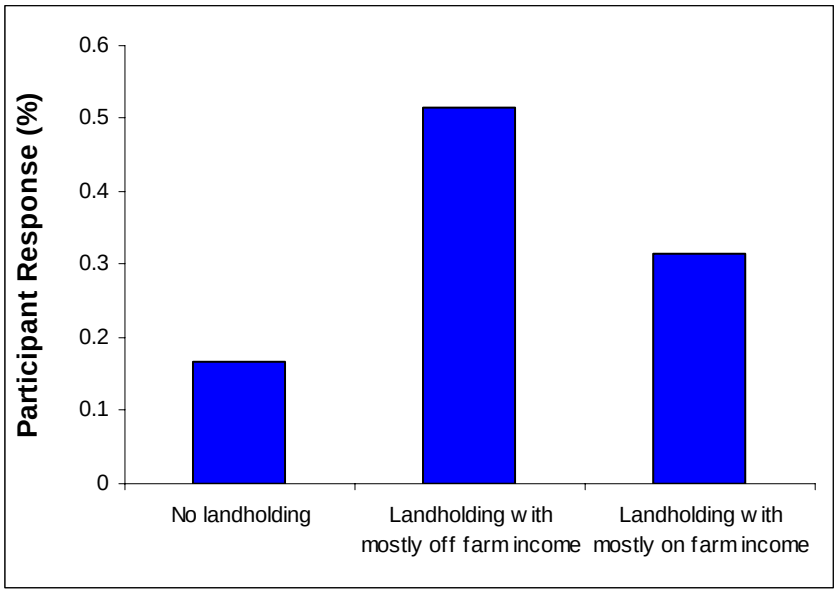


Figure 5.1: Participants landholding background and income source.
(Data derived from 'Before' Questionnaire where participants are asked: "Which of the following best described your situation?" ~ 761 with 1 non-response).

Table 5.1: A sample of programs illustrating differences with regard to landholding.

Program	Sample Size	No landholding	Mostly off-farm income	Mostly on-farm income
Kojonup, WA (1999)	6			100.0%
Wellstead, WA (1999)	23	21.7%	4.3%	73.9%
Midlands, Tas. (1999)	7	14.3%	14.3%	71.4%
Busselton, WA (2001)	16	6.3%	25%	68.8%
Ipswich, Qld (1999)	17	11.8%	82.4%	5.9%
Bridgetown, WA (2003)	19	42.1%	52.6%	5.3%
Bellingen, NSW (2004)	22	9.1%	86.4%	4.5%
Mackay, Qld (2002)	9	22.2%	77.8%	0%

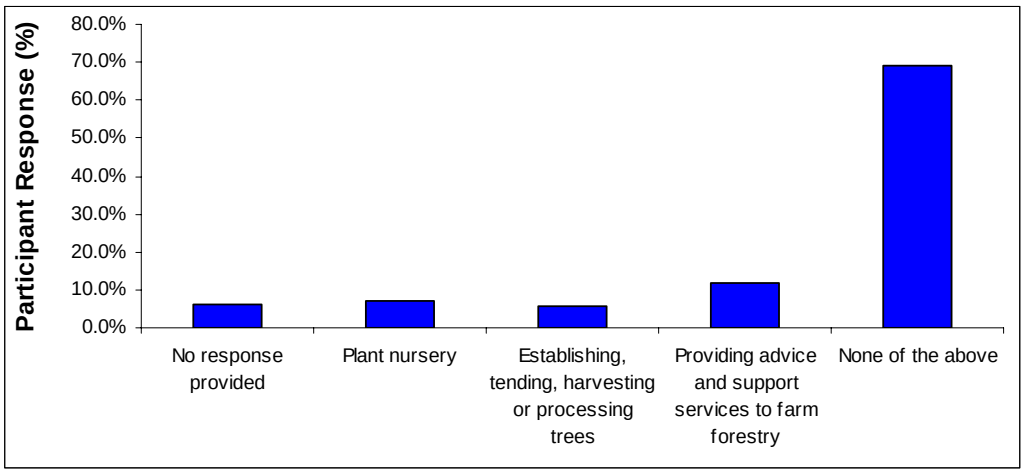


Figure 5.2: Participants' off-farm income sources from tree related businesses

(Data derived from 'Before' Questionnaire where participants are asked: "From which of the following do you derive off-farm income?" ~ 763 with 48 non responses).

Of the 31.4 per cent of participants (*n*= 240) that stated that most of their income was derived from their farm business, 5.8 per cent stated they received income from a nursery, 7.9 per cent from a contracting business and 5 per cent from a tree support service. Presumably the remaining 76.3 per cent gained an income solely from their farm business (5.8 per cent did not respond).

Of the 51.5 per cent of participants (*n* = 393) that stated their income was from mostly off-farm, 7.6 per cent derived an income from nursery production, 4.3 per cent from a contracting business and 7.9 per cent from a tree support service. Presumably the remaining 71.8 per cent derived an off-farm income from other non-tree related businesses (8.4 per cent did not respond).

Of the 16.7 per cent (*n* = 128) that did not own a property, 7 per cent derived an income from a nursery, 6.3 per cent from a tree contracting business, 37.5 per cent from providing a tree support service (i.e. extension officer) (1.6 per cent did not respond).

This diversity among participants is also expressed in:

- ownership and size of property;
- per cent of total income derived on-farm and off-farm;
- rainfall and soil characteristics of their properties;
- other on-farm activities (e.g. cropping, wool, lamb, beef, dairy, orchards);
- involvement in forestry joint ventures and the nature of those arrangements;
- available resources of land, cash and labour for planting and managing trees;
- knowledge and experience in planting and managing trees;
- professional employment in the forest industry; and
- aesthetic, personal, family and business goals.

(O'Meara and Wright 1999, unpublished)

The 1999 review concluded that this diversity of participants was an essential ingredient in the success of the program and in extending participants' and presenters' networks and their understanding of the different interests involved in farm forestry, thereby forging stronger alliances for the development of farm forestry (O'Meara and Wright 1999, unpublished). Where this diversity is not apparent in the regional programs, or where numbers of participants is limited (generally 12 is considered an absolute minimum number capable of generating the knowledge, enthusiasm and networks for an MTG Program to be successful) a narrowing of the educational value of the program has resulted. As one participant from the Kojonup WA program suggested that *"a more diverse range of attendants may be an improvement as we were all a bit too similar in outlook and in requirements"* (Kojonup WA participant, March 1999 from 'After' questionnaire). The 1999 review stated that the "*success of local*

programs is compromised somewhat when the mix and balance of participants diverges significantly from that described above" (O'Meara and Wright 1999, unpublished).

This diversity is also evident in the reasons stated by participants for planting trees (see Figure 5.3) and brings with it a diversity and breadth of knowledge not often appreciated outside the farming peer group (see Table 5.2).

Table 5.2: Combined forestry, farm forestry, and revegetation experience of participants in selected programs.

Program	Number of Participants	Combined Years of Experience	Average Years Experience per Participant
Gloucester, NSW	16	105 years	6.6 years
Wagga Wagga, NSW (2002)	20	161 years	8.1 years
Boonah, Qld	24	161 years	6.7 years
Esperance, WA (2002)	12	173 years	14.4 years
Mackay, Qld (2002)	19	180 years	9.5 years
Colac, Vic	21	188 years	9.0 years
Macleay, NSW (2004)	21	230 years	11.0 years
Mackay, Qld (2003)	15	242 years	16.1 years
Avon, WA (2003)	20	242 years	12.1 years
Wimmera, Vic (2003)	19	247 years	13.0 years
Midlands, Tas.	15	250 years	16.7 years
Darwin, NT (2000)	25	252 years	10.1 years
Rockhampton, Qld (2003)	16	316 years	19.8 years
Adelaide Hills, SA (2002)	29	342 years	11.8 years
Bellingen, NSW (2004)	22	400 years	18.2 years

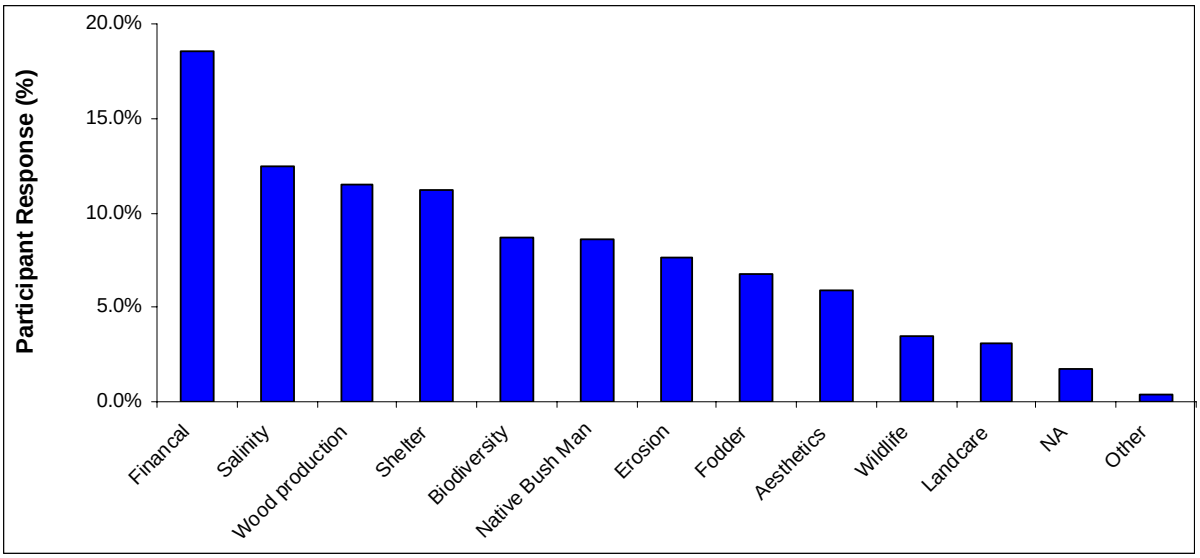


Figure 5.3: Reasons for planting trees as stated by participants in the response to the question 'What are your main reasons for planting trees?'

'Financial' – Participants may have responded by suggesting: superannuation, economic, income diversity etc.
'Biodiversity'- Participants may have responded by suggesting: biodiversity, conservation, revegetation etc
'Landcare'- participants may have responded by suggesting: Landcare, sustainable farm management, sustainability, to leave a better block of land than when I first acquired it, land management
'Other reasons' include issues of succession planning, on-farm trialing and research, the love of trees, a personal belief, privacy, ethical investment, carbon sinks, seed banks, bush foods, floristry, mine requirements, Jojoba for makeup, perfume, soil improvement, acid soils etc.
(Data derived from 'Before' Questionnaire where participants are asked: "What are you main reasons for planting trees?" ~ 772 participants responded, providing 1,514 'reasons').

Many participants did suggest that they were coming from a low level of knowledge on the subject. Below are a couple of responses to the question on the 'After' questionnaire 'What topics were the most useful?'

> *I enjoyed all topics covered as a novice.*
>
> (Kyneton Vic, June 2001)

> *Everything- I knew little about it.*
>
> (Darwin NT, October 2000)

> *Coming from a very low knowledge base I found all topics interesting and useful.*
>
> (Gippsland Vic, August 2001)

> *As I started from a zero base I found it all to be of benefit.*
>
> (Mackay Qld, February 2001. All data from the 'After' survey)

However, an interesting observation from the 1999 review was that:

> *Many participants were unaware of how much they had learned on their own through reading, talking to others, trial and error in their own project.*
>
> (O'Meara and Wright 1999)

It is difficult to categorise the knowledge level of participants before they entered the MTG Program. The experience and knowledge of most participants had not previously been acknowledged or recognised by other extension programs, natural resource professionals or even other landholders. This, for some participants, had led to a feeling of isolation prior to the MTG Program. In response to the question, 'What topics were the most useful' in the 'After questionnaire, one participant stated native forest management because:

> *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)

Other comments supporting the assertion that some participants felt isolated in their farm forestry activities prior to their participation in a MTG Program included:

> *The MTG Program provided a structure so I don't feel like an outpost.*
>
> (Bridgetown WA, August 1997. Comment noted in WA 2000 mid-term review)

> *Other people don't understand- In their eyes low priority* (the status of the MTG Program). *Me: high.*
>
> (Albany WA, October 1998. Participant response to the question: 'What status does the MTG Program have in your region?' - Question 9 of the 'Phone' interview conducted in July 1999)

When one participant was asked where they had hung their MTG gate sign, the participant admitted the sign was on their desk, explaining:

> *People think we're crazy already for planting all these trees. No need to attract more attention.*
>
> (O'Meara and Wright 1999, unpublished).

Reflections on the MTG participants

Participants of the MTG Programs come from a broad range of backgrounds and have a diverse knowledge base, a diverse set of experiences and an even wider set of aspirations. This diversity is expected, encouraged and is essential to the success of the regional MTG Programs. But it is also the

shared commitment of participants to enhancing their lives and rural endeavours through the establishment and management of trees that forms the common bond. For some participants the recognition by the MTG Program of their existing knowledge and the realisation that they share common goals with other landholders is a revelation: a revelation that brings enthusiasm and sparks off a creativity that can infuse the rest of the MTG group.

However, the success of the MTG Program and expansion of the program into new areas has also seen a decline in the prior farm forestry knowledge of participants. While this has seen a slight shift in the guidelines from the national coordinators with less emphasis on a *demonstrated practical commitment to farm forestry* and towards those with a *desire to learn and their likely influence on others within their region*, the emphasis is still firmly on ensuring diversity within the groups and that the *indigenous* knowledge participants is acknowledged and encouraged.

The MTG Framework – A Participatory Framework

The MTG Program has strived to establish a framework that maintains a level of uniformity in courses across Australia while allowing regional issues to be explored in a participatory fashion. The early establishment courses were based on a Diagnosis and Design (D & D) (Raintree 1987) framework centred on a problem-solving approach in which land management systems and the identification of real and perceived problems and opportunities was reviewed. From this, the role of trees within the system was explored with an emphasis on market opportunities and silvicultural manipulation.

This approach to education was a deliberate attempt to avoid the promotion of *favourite* or *pet* agroforestry technologies. This approach was seen as *bottom-up* in that it allowed landholders and community groups to identify how a farm forestry project could meet their immediate and long-term needs while providing some prospect of economic return. Importantly within this process was the "*symbolic 'handing-over' of the closely guarded domain of agroforestry and farm forestry extension to landowners themselves who could then take responsibility for the promotion and development of agroforestry and farm forestry in their region"* (Reid 1996a, p. 7).

The early MTG Program courses were therefore broken into two parts; part one concentrated on the principles and practices of timber production, and part two on the design and evaluation of agroforestry and farm forestry projects. The early programs involved 18 hours of seminars and workshops, and 18 hours of fieldwork and excursions.

Feedback from the early programs was overwhelmingly positive; however, a number of comments were noted:

> *Personally I learnt more productively during the 'hands-on' sessions… Generally the 'passive listening' sessions were not productive learning. However they could be if followed up with a 'hands-on', interactive session implementing the principles of the earlier sessions.*
>
> (Otway, Vic, December 1996. Participant response at the end of the program)

> *More time to learn from each other's experience would have been valuable.*
>
> ((Otway, Vic, December 1996. Participant response at the end of the program)

> *I found the interactive discussion, especially looking at different farmer problems very valuable, i.e. problem solving by discussion.*
>
> (Otway, Vic, December 1996. Participant response at the end of the program)

> *As coordinator I felt more time could be allocated to silviculture and tree and stand measurement with more hands on experience.*
>
> (Jenkins and Winchcombe 1997, unpublished)

These comments and participant responses to the 1997 survey resulted in the current eight session national framework for the MTG Program (as described in Chapter 3). This framework retains many of the ideals inherent in the original structure, but has evolved to allow participants space to "*recognise and critically evaluate commercial tree growing opportunities*" (MTG aim as stated on the MTG website – first posted in June 1999).

> *Unlike most education or training programs, the MTG Program purposely avoids the suggestion that there are 'best bets' or 'recipe' approaches to farm forestry. Where as conventional courses for farmers often involve a series of 'how to' steps, from how to plan, how to plant, how to manage… the MTG, right from the outset, encourages landowners to take responsibility for their own design and activities.*
> (Rowan Reid, personal communication, 1999, cited by O'Meara and Wright 1999, unpublished)

The MTG framework therefore ensures the MTG Program is principally a design program in which the important technical principles are investigated within the context of individual aspirations and a social learning process (see Chapter 4).

The current description of the MTG Program illustrates the evolution and direction of the MTG framework as well as some of its important components:

> *… delivering a unique and **innovative participatory outreach and extension program** for farmers active in revegetation, farm forestry and remnant forest management.*
> (nomination for The Allen Strom Eureka Prize, Feb. 2000)
> (Emphasis added for this report)

> *Based on **adult learning principles, participatory curriculum development** and acknowledging the importance of **farmer-to-farmer training.***
> (nomination for the Faculty of Land and Food Resources Outreach Award, Feb. 2001)
> (Emphasis added for this report)

The term 'participation' is a much used term that can be construed in many different ways (see Arnstein 1969 and the more recent work of Pretty 1997). Based on Pretty's (1997, p. 18) typology, 'Interactive Participation' or "*people participating in **joint analysis**, development of action plans and formation or strengthening of local groups or institutions. Learning methodologies used to seek multiple perspectives and groups determine how available resources are used"* is an appropriate description of the level at which the MTG Program aims.

The important term in the above definition is 'joint' as the MTG is not an 'open' exercise in which the term 'participation' is used to allow groups/organisations to restructure, reformat and importantly re-orientate the goals and philosophy of the MTG Program. The consequences would be fragmentation, loss of credibility and, importantly, the manipulation of the program under the guise of 'participation'. The MTG process is one of 'negotiated dialogue' (Oltheten 1995) in which the MTG framework allows a national approach that emphasises regional differences and encourages individual diversity. The development of the eight-session framework and adherence to this framework is crucial to this.

From the outset, regional groups/organisations only participate in the MTG Program if they feel it can benefit their regional endeavours. This builds regional ownership of the program and the national coordinators have, at all times, delegated this initiative to local coordinators and individual group participants as a matter of local control and self-direction within the MTG framework. The program has never been imposed on regional areas and, as such, has been an excellent mechanism in supporting regional farm forestry, agroforestry and Landcare projects by providing an education program that can be tailored to their requirements (MTG aim as stated by Reid and Stephen 2001).

The MTG framework sets out the main forestry principles to be discussed during the first four sessions (design, markets, mensuration and silviculture). This ensures the important technical issues, that the

majority of participants believe are essential for their farm forestry development, are introduced. The second half of the program is far more open and, during session one, participants are invited to structure the final four sessions around issues that are regionally relevant to their land management businesses. Again, this curriculum development process is not an 'open' exercise, but based on joint analysis of the group's issues and the program's objectives.

The 1999 review concluded that the MTG Program:

- emphasised direct participation and control of local courses by local farmers and other participants is a key factor in its success;
- is highly participatory in its approach and allowed participants to adapt the basic structure of the program to fit their local conditions, which in turn serves the participant's real needs, increases their confidence and makes them aware that they are making valuable contributions to the program; and
- is highly responsive to the needs of local farmers, employing a stakeholder participation model that allows the participants to share responsibility for designing and implementing their local courses, as well as designing and implementing their own farm forestry projects.

(O'Meara and Wright 1999, unpublished)

Data and observations since the 1999 review, and the overwhelmingly positive responses from participants, support the notion that interactive participation is providing an excellent learning framework and that the program is highly responsive to the needs of local land managers. This has allowed participants to share responsibility for the design and implementation of their own program as well as designing and implementing their own farm forestry projects within a nurturing, supportive and credible framework.

> *The way the course is structured by following the needs of the group was excellent.*
>
> (Gloucester NSW, June 2001. Data from 'After' survey)

When asked what was the most useful topic in their MTG Program a participant from the Hunter NSW June 2001 program stated:

> *Asking ourselves and others what they expect, need, would like out of farm forestry and how to implement that and manage that in respect to aspirations and limitations looking at the benefits.*
>
> (Data from 'After' survey)

> *It is already an excellent format and I would not try to change it too much.*
>
> (Gippsland Vic, August 2001. Data from 'After' survey)

The MTG Learning Environment

An important aspect of the learning process is the environment in which it evolves. Observations and data from the 1999 review clearly indicate the importance of a positive and dynamic group of individuals linked together by a common affinity and respect. As the 1999 review concluded:

> *People obviously enjoy participating in the programs and they commonly develop friendships with their fellow MTG group members… The evaluation revealed that enjoyment and friendship enhanced participant's enthusiasm and their commitment to the group, which in turn increases the likelihood that networking within the group will continue.*
>
> (O'Meara and Wright 1999, unpublished).

This friendly and safe environment has also been essential in facilitating the learning process. As one participant stated:

> *The whole program was very educational. Particularly sharing of experiences from each participant and field visits.* ***The group, although a diversity of people, very safe to express oneself****.*
>
> (Armidale NSW, October 1999. Data from 'After' survey)
>
> (Emphasis added for this report)

This environment must be cultivated and time must be set aside for understanding, reflection and learning to occur. The national coordinators stress the importance of morning and afternoon tea breaks, as well as social functions to facilitate the development of friendships, laughter and the learning environment:

> *The fact that it went on for the 8 weeks we had people getting really friendly with one another and those networks and they were looking forward to their catch up again and once that happened people were much more comfortable to discuss issues and things like that. So I think the learning environment was pretty good.*
>
> (Geelong MTG coordinator. Interviewed in September 2001)

As one participant suggested:

> *Perhaps an overnight/social venue where the wine can flow. I find a lot of positives and information sharing is enhanced by this sort of thing.*
>
> (Armidale NSW, October 1999. Data from 'After' survey)

The distances required to travel (particularly in WA) to many of the timber processing plants meant an over-night stay was required by many groups. Fortunately, the resulting socialisation and laughter has proven to be a real positive in developing a group ethic and entity, and an environment conducive for learning. As a result many of the Western Australian programs now involve a number of overnight trips and the idea has also been tried successfully in some of the latter east coast programs.

Ensuring that most of the sessions involve time on farm with practical examples at hand reinforces the quality of the learning environment. All sessions are designed to be as practical as possible and suitable for presentation in a problem-solving environment where the relevance of the information being discussed is immediately apparent. For example, marketing and log specifications are discussed at the mills, mensuration is discussed and demonstrated within a stand of trees and appropriate multipurpose farm forestry design is covered during the farm visits. Time in a traditional classroom environment, although appropriate for the presentation of some background technical information, is kept to a minimum and, if it does occur, is directly linked to field based experiences.

> *The hands on approach appeals to me greatly and aids my learning process.*
>
> (Armidale NSW, October 1999. Data from 'After' survey)

As part of encouraging a positive learning environment, one of the basic tenets of the MTG Program is that those farmers currently involved in farm forestry are already providing informal extension services to peers and correspondingly farmers are already learning from one another. Increasing the skills, knowledge, confidence, access to information and interpersonal networks of these farmers can therefore immediately enhance the potential of farm forestry by increasing the quality of information shared (O'Meara and Wright 1999, unpublished). During the first session the national coordinators stress that participants will probably learn as much from the other participants as the experts and that their own contributions to discussions are not only welcome but also highly valued.

Numerous comments from participants indicate they too acknowledge the importance of peer support and place a great deal of value on each other's contribution:

> *A worthwhile exercise. The networking is where we get the ideas. It's a new industry, many of us have been farmers all our lives but there is much to learn.*
>
> (Albany WA, October 1998. Participant interviewed July 2000)

> *Seeing and talking to growers and their plantations or plans for plantations is of immense value. More people=more ideas.*
>
> (Geelong Vic, June 1999)

> *The networking with other participants was very beneficial.*
>
> (Boonah Qld, March 2001)

> *Changed our thinking to consider the area of our land. But most all showing everyone else's knowledge and seeing what they were doing.*
>
> (Gloucester NSW, June 2001)

The learning and exchange of information between farmers has been formalised through the presentation of participant's projects and the farm visits. A selection of comments from participants illustrates the importance of these learning events:

> *The series of presentations by all members of the group. It gives you an understanding that farm forestry is a very individual endeavour – that there are many different approaches to 'skinning a cat'. Rather than feeling confused by that, it was a very liberating realisation..*
>
> (Goulburn NSW, July 2000)

> *The projects on people's practical implementation of what they did right, wrong and would do differently next time gave a great insight on how you could expand your thinking.*
>
> (Busselton WA, February 2000)

> *The site visits were a must as we could learn from other's mistakes as well as what would appear to be working well.*
>
> (Beaudesert Qld, August 1999)

> *Farm visits - The opportunity to analyse and critically question was invaluable.*
>
> (Mackay Qld, February 2000)

> *Farm visits - One always leans from the success and failures of ones peers.*
>
> (Wagga Wagga NSW, November 1998)

The MTG Partnership

The three important partners in all regional MTG Programs are the regional coordinator(s) (and their organisation), the presenters and the University of Melbourne. Participants' responses regarding the role and performance of the partners are briefly discussed below.

The regional coordinators

The regional coordinators are in charge of all day-to-day, session-to-session issues in the management of the regional MTG Programs and therefore have an important bearing on the face of the MTG Program, as well as the continued linkages (if any) that are generated. It is a time consuming and, often, stressful position. When asked, some of the coordinators of the WA MTG Programs described their role as shadowing or supporting. Comments by participants about their coordinator have always been very positive:

Have loved the program. Ken's very hard worked organising speakers, visits etc has been exceptional and have really enjoyed the participants – shared many common goals and dreams.
(Ipswich Qld, November 1999. Data from 'After' survey)

Excellent, especially our facilitator, Richard Finlay-Jones.
(Hastings NSW, June 1999. Data from 'After' survey)

Tim did an excellent job in facilitating the course.
(Seymour Vic, April 1999. Data from 'After' survey)

Presenters

The diversity of topics presented and the breadth of presenters have been quite staggering. Again, comments from participants have been overwhelmingly positive with many participants praising selected presenters for their outstanding presentations and relevance. Most comments from participants relating to sources of information generally included both presenters and participants.

Exposure to researchers is much valued – hard to get too much.
(Seymour Vic, April 1999. Data from 'After' survey)

Networking – expertise of speakers and other course participants are invaluable.
(Armidale NSW, October 1999)

Informal interaction with other course participants and presenters is valuable.
(Ipswich, Qld, November 1999)

Contact with experts in field. Access to latest info in research.
(Albany WA, October 1998)

Meeting and listening to experts in industry and participants of the course.
(Geelong Vic, June 1999. Data from 'After' survey)

I found Rowan Reid's lecture early on in the course was very inspirational - I wish I had a tape recorder so I could play it back at times when the going was a bit tough.
(Gloucester NSW, June 2001. Data from 'After' survey)

Many of the invited *experts* also recognised that the MTG Program provided an ideal opportunity to extend their information and viewed the program as an excellent extension tool. Some have commented on the value of the feedback they were able to get on how their knowledge was being interpreted by farmers. However, feedback from the WA 2000 mid-term review did indicate that some presenters were not entirely clear of their role when first introduced to the MTG Program and therefore their presentations were not as directed or targeted as perhaps they and the participants would have liked.

Without a doubt, the level of expertise introduced into the MTG Program by the invited presenters has been overwhelmingly positive and appreciated by the vast majority of participants. However, on reviewing the evaluation data, there were also a surprising number of comments critical of particular presenters, particularly forestry professionals. When participants were asked 'What were the least useful topics and why?' some negative comments included:

Forget sessions by DPI and others with bias. Concentrate on participant's plantations (species, hows & whys) and produce real data from plantations being grown now in areas close to home and forget the 100 years of non-green desert growing that DPI continue to produce. (That's the way we have always done it, that's the way you will do it).
(Boonah Qld, March 2001)

Most visits by forestry lecturers were negative and delivered with a chip on the shoulder or 'I had to be here anyway attitude'.

(Hunter NSW, June 2001)

The session with [forest researcher- name withheld]. *Big worry how forest researchers can be so hopeless at talking to farmers and useless at delivery lessons from her research... Big worry is that it is useless research.*

(Cairns Qld, June 2001)

Make more (researchers) do it as participants, so they rub shoulders with growers.

(Cairns Qld, June 2001)

Property management planning. Don't like to be talked to by someone who talks like a car salesman.

(Beaudesert Qld, August 1999)

The big end of town, company 'stooges'. Because they give a slanted and in many cases inaccurate view of the market and its potential to embrace other aspects of income production for the small to medium grower.

(Goulburn NSW, July 2000. All quotes taken from 'After' survey)

An aim of the MTG Program is to "*Encourage open, strong and sympathetic communication about farm forestry between farmers, advisors, researchers and industry"* (Reid and Stephen 2001, p. 149). Generally this aspect of the MTG Program has been very positive and the aim has been achieved. However, there would still seem to be a small minority of professionals that feel threatened by the MTG Program, the knowledge levels and enthusiasm of the participants and the status the program carries (see Chapter 6). As the 1999 review concluded: '*some readjustment on the part of farm forestry extension officers and industry people may be required to accommodate this kind of cultural change in farm forestry*' (O'Meara and Wright 1999, unpublished).

The role of the University

There is a clear perception that the involvement of the University does provide credibility to the program and helps reduce the information-isolation experienced by many in the bush:

The MTG [graduates have] *really blossomed since the Program. They are integrated property managers now. The MTG has credibility because of the University's association with it, and the course gave participants the skills and paper to prove it.*

(O'Meara and Wright 1999, unpublished).

The report concluded that: *Program participants benefit from the MTG's close association with the [former] School of Forestry at the University of Melbourne, which provides recognition and legitimisation to local tree growers, who often feel somewhat isolated and out of step with their neighbours because of their farm forestry activities.*

(O'Meara and Wright 1999, unpublished).

Thank you for your pioneering work and the University coming to the bush.

(Katanning WA, April 2001)

No, it's very exciting what is happening in WA. Nice to have Melbourne Uni's informed knowledge and experience.

(Wellstead WA, August 1999. Participant interviewed in July 2000)

Content of the MTG Programs

When asked what topics were most useful to participants, one participant summed up the objective of the MTG framework:

> *Basically being able to initiate a plantation or regrowth plan. Asking ourselves and others what they expect, need, would like out of farm forestry and how to implement that and manage that in respect to aspirations and limitations, looking at the benefits to whole farm.*
>
> (Hunter NSW, October 1998. Data from 'After' survey)

At the completion of their MTG Program, participants were asked to identify the 'most useful' topics. The results are presented in Figure 5.4.

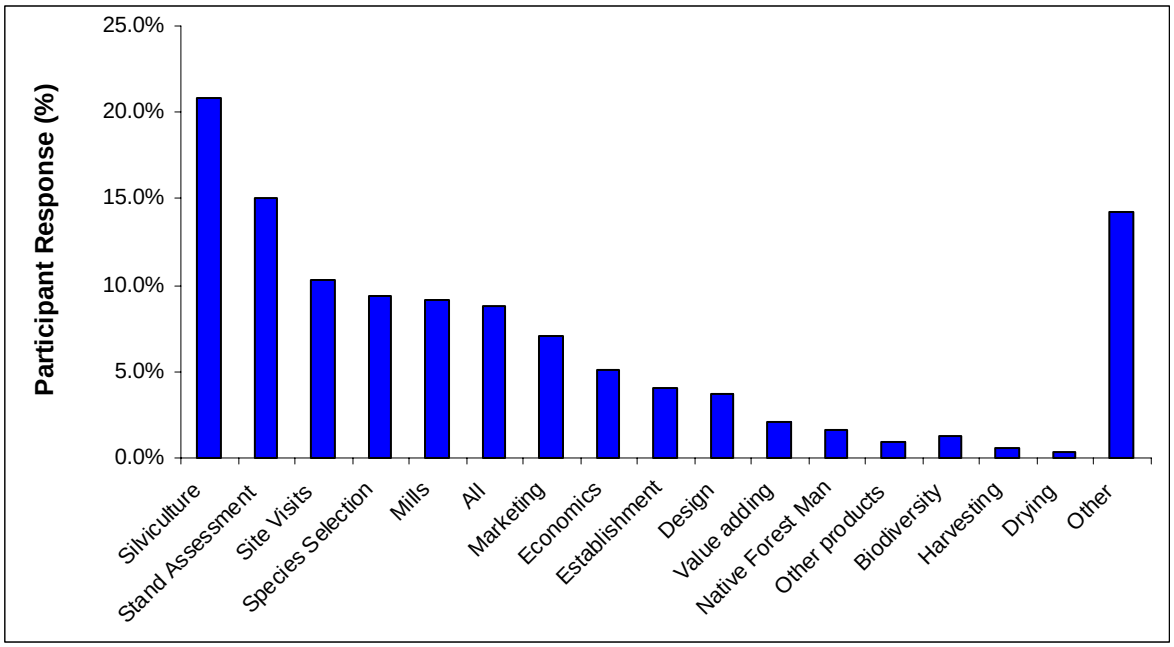


Figure 5.4: Topics listed as 'Most Useful' by participants.
(Data derived from 'After' Questionnaire where participants are asked: "Which topics covered in the Master TreeGrower Program were most useful, and why?" ~ 772 participants provided 1,280 'most useful topics').

Many of the participants, particularly in the more recent programs, have embarked on a farm forestry project in the last couple of years spurred on by the recent promotion of farm forestry. Once the trees are well established, many farmers find they lack the knowledge or confidence to begin silvicultural management. As stated by one regional coordinator when he approached the university to run a program:

> *I would be keen to promote/sponsor the course such as yours as there are many growers who would find the information you offer valuable now, after 4 years of growth.*
>
> (Mackay coordinator/participant – undated fax to national coordinators)

Hence many of the topics suggested as 'most useful' by participants are often those that match their particular needs at their particular time of development in farm forestry:

> *We are almost there and required guidance on how to deal with it.*
>
> (Ballarat Vic, June 1998)

This is the stage we are up to with our trees.

(Esperance WA, March 1999)

Some of the silviculture info because it qualified some grey areas and reinforced others.

(Busselton WA, February 1999)

As we need to monitor and evaluate the value of our leased plantations to see if it is worth while granting an extension of lease or having the lessee pull all stumps out and clean up for pasture as per lease agreement.

(Wellstead WA, August 1999)

Gives me an idea of what sort of forest I've got.

(Midlands Tas, August 1999)

Because our trees are only two years old I found that pruning was very useful.

(Mackay Qld, February 2000)

Silviculture techniques for 'fast' sawlog production. Reason: Showing what is possible at the right time, i.e. I have just planted.

(Colac Vic, October 2000)

Different density of plantings discussion, to confirm my own theories and helps establish a planting regime and model that I would follow/implement.

(Cairns Qld, June 2001)

The discussion on sawmillers and field trips was informative to relate to your own situation.

(Denmark WA, September 2001. All comments taken from the 'After' survey)

The practical way the sessions were presented was also noted:

Practical elements i.e. site selection, propagation, pruning, thinning etc.

(Boonah Qld, March 2001)

Silviculture – very appropriate and practical with inclusion of 'hands on' experience.

(Katanning WA, April 2001)

Practical aspects and site visits because can't get this from books.

(Kyneton Vic, June 2001)

Because they address practical aspects of forest design and management.

(Kyneton Vic, June 2001)

Gives me the practical skills to manage a forest.

(Hunter NSW, June 2001)

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)

Likewise those topics considered least useful by participants were noted as 'irrelevant', 'not practical', 'not regionally relevant' or 'poorly presented':

Tax – boring. Stuff on Pines. Not interested

(Ballarat Vic, June 1998)

Economics. Very hard topic to present and subject matter of debatable relevance.
(Hunter NSW, October 1998)

Farm trees for fodder. No commercial application.
(Kojonup WA, March 1999)

Site preparation and planting Already done that.
(Seymour Vic, April 1999)

Pine processing and harvesting Not an option in my environment.
(Seymour Vic, April 1999)

Peripheral industry & Carbon credits. Neither has increased our ability to evaluate and develop wood products.
(Geelong Vic, June 1999)

Blue gums and pines. Weren't really relevant to my situation at the present time.
(Wellstead WA, August 1999)

Things not related to my local region.
(Wellstead WA, August 1999)

Tax and forest futures etc. I had heard before, but also so distant and changeable (except for GST and ABN).
(Ipswich Qld, November 1999)

Carbon credits, legislation, other 'indoor' sessions. I have heard all this before.
(Young NSW, February 2000)

Government technical info that didn't relate to hands on forestry.
(Young NSW, February 2000)

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)

Future profit & succession planning. I haven't started planning or planting yet.
(Boonah Qld, March 2001)

Fire management because I already know most of it. Tax for same reason.
(Hunter NSW, June 2001)

Pine production. Only because I'm not very interested in growing pine.
(Denmark WA, September 2001)

The emphasis on providing relevant, timely and unbiased information has been acknowledged by participants:

My main comment is that 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)

Learning not to believe stories about the amount of money that can be made in lower rainfall areas.

(Duranillin WA, August 1998. Data from 'After' survey)

It showed how optimistic we are to think we can sell, at a profit the timber we grow.

(Duranillin WA, August 1998. Data from 'After' survey)

What it probably highlights, I think I was led up the garden path as to some of the returns. It highlighted that it wasn't as rosy as what I was lead to believe. Which was fine. I am a bit of a realist and I have been in agriculture long enough not to rely in commodity prices. But I didn't know what was a high or low price at the time or expected yield, so it was good to go down that path.

(Geelong Vic, June 1999. Participant interviewed in September 2001)

I feel that the returns are so low and take so long to eventuate that wood plantations aren't really a viable option for income generation.

(Hastings NSW, June 1999. Data from 'After' survey)

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)

Reflections on the MTG Framework, Learning Environment, Partnership and Content

The MTG framework of eight sessions has withstood the test of time and there has been little negative comment about the framework from participants (other than some participants suggesting it is either too long or too short). What is interesting is the change in participants' views on what information and support they require. Farmers commonly enter the program seeking information and advice on the technical aspects of farm forestry, however by the end of the program most participants appreciate the value of the contacts and networks that they have formed:

Wasn't clear on real purpose (originally thought it was purely education/extension program) until Rowan gave 1st, even 2nd talk - didn't grasp the underlying concept- once I got it, I realised how successfully the program was being run- seemed possibly too unstructured - to short on hands-on info till then.

(Cairns Qld, June 2001. Data from 'After' survey)

MTG Technical Skills Development

There is a strong element of skills development within the MTG Program, although this is within the context of an education and support program rather than a skills-based accreditation program. The coordinators talk of 'handing-over' some of the forestry management tools and associated theory to the farmers in the expectations that they are not only capable of understanding the concepts, but will utilise the techniques in the day-to-day management of their own forests.

The extent to which the program may have influenced farm forestry planting and management was assessed by comparing data gathered at the start of a MTG Program (the 'Before' questionnaire) and from data collected via a telephone interview with selected participants between six months and two years after the completion of each MTG Program. Results are presented in Figures 5.5 and 5.6. Table 5.3 shows the level of commitment to revegetation shown by participants before the program and the results for the period immediately afterwards for selected programs conducted between 1997 and 1999.

Farmers in Western Australia commonly plant larger plantations than those in the tropics where the interest is commonly on mixed species cabinet plantations.

Although the results might suggests a substantial rise in the average number of trees planted per participant six months to two years after the completion of the MTG Program caution must be used when interpreting these figures. The time frame in which the 'Phone' interviews were conducted and the sample methods used mean that a comparison of 'before' and 'after' is not strictly valid. Neither should any change in planting rate be attributed to the MTG Program alone. There are other regional extension programs and influences that would impact on an individual's tree planting activity. Notwithstanding these influences, the results do indicate the sheer number of trees planted by MTG participants and suggest that this commitment may be ongoing.

Table 5.3: Participants tree planting activities in the 12 months prior to the MTG Program ('Before' results) and in the 12 months after the MTG Program ('Phone' results).

State	**'Before' MTG Program**		**'Phone' Results**	
	Response No.	Average/ Participant	Response No.	Average/ Participant
NSW	230	2,979	26	5,675
Victoria	147	8,896	27	11,646
Western Australia	169	9,545	44	34,128
Queensland	143	1,431	1	(1000) Insufficient data
North. Territory	18	278		No data
Tasmania	7	3,578		No data
South Australia	22	2,220		No data
AVERAGES	**736**	**5,284**	**98**	**19,997**
Participants that did not plant	21%		24%	

Of more interest is the stated reason for planting (Figure 5.5). The MTG Program clearly attracts those farmers interested in a commercial return from forestry although the results suggest that this does not lessen their interest in other non-commercial values such as shelter and land protection. The dramatic increase in farmer interest in wood production after the program may reflect the opportunities they now see for greater integration of commercial forestry with other values in multipurpose farm forestry plantings.

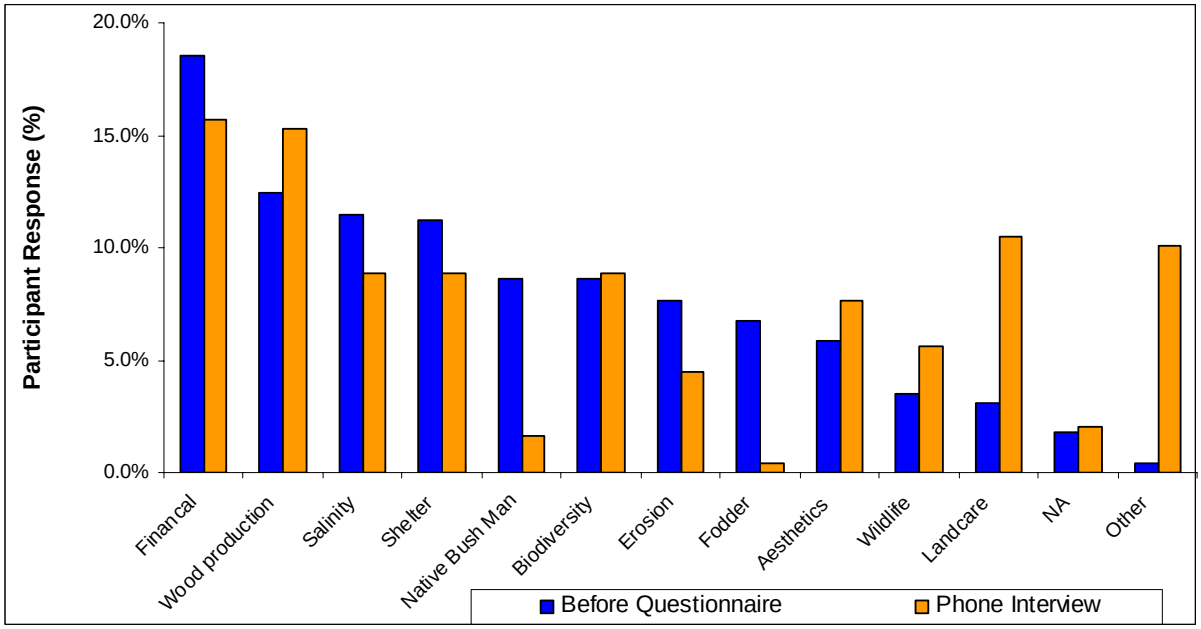


Figure 5.5: Participants' reasons for planting trees before (n= 772) and after (n= 98) the MTG Program.

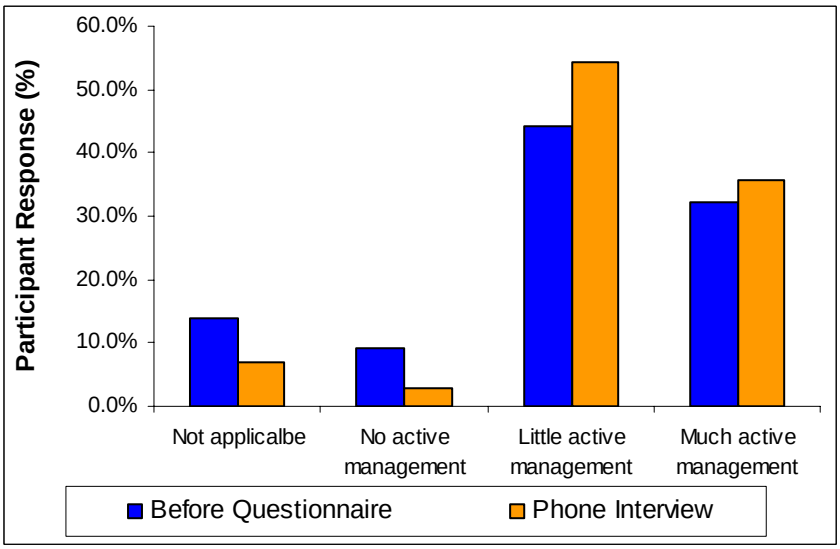


Figure 5.6: Participants' understanding of their level of forest management before (n=763) and after (n=98) the MTG Program.

Figure 5.6 provides no indication of an increase in the level of forest management after the completion of the program but does suggest that the vast majority of participants in the MTG Program felt that they are actively managing their trees. Because of the different types of tree growing around the country no attempt has been made to get participants to define what they considered to be active management; however, the evaluators did prompt a few participants during the Phone survey to suggest the types of management activities they were undertaking. The following quotes tend to indicate that fencing, site establishment and joint ventures constituted 'little active management', while pruning constituted 'much active management'.

No active management:

> *Current no management, but CSIRO will put in 1000 trees with active management*
> (Wagga Wagga NSW)

Little active management:

Pruning of oil mallee – ripping, spraying prior to planting	(Albany WA)
We've had to fence off a few areas	(Duranillin WA)
Basic weed control	(Gippsland Vic)
Form pruning	(Gippsland Vic)
Fence off, rip, plant, prepare well. No effort after that	(Wagga Wagga NSW)
Day to day planning is done by CALM	(Albany WA)

Much active management:

Pruning. Since we did the course we started to think of pruning	(Duranillin WA)
Pruning. We look at everything. Crooked trees might have character in the grain. We leave everything	(Albany WA)
Pruning and spraying	(Wagga Wagga NSW)
Planting, ripping and spraying	(Albany WA)

The 1999 review was enthusiastic about the impact of the MTG Program on participants' tree planting and management:

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

The quantitative results suggest that we should be more cautious than this quote might suggest although there is considerable qualitative data that do support the view that participants are more enthusiastic about tree management and better skilled to produce a markedly improved product as a result of the program:

> *I used to hate chopping down trees. I still do, but I now see it as essential for getting good diameter out of trees. And we use the thinnings as firewood. Rowan turned me around on that, showed that thinning really pays off. And you might ask, well why plant all those trees in the first place, and the answer is they do better all together at first before they start to compete, then the whole lot is no good to you unless you start to thin.*
> (Participant interview cited in O'Meara and Wright 1999, unpublished).

> *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 unpublished).

> *Gives me the practical skills to manage a forest.*
> (Hunter NSW, October 1998. Data from 'After' survey)

Linked to the development of technical skills and knowledge is the confidence to use, interpret and debate farm forestry information. At the end of the MTG Program virtually all participants responded positively to the seven closed-ended evaluation questions presented in the 'After' survey covering different aspects of the program. Given the option of responding either 'no better', 'a little better' or 'much better' to each closed-ended question, the majority of 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).

The responses are presented graphically in Figure 5.7.

Participants of the MTG Program were often extremely enthusiastic about their involvement in the program:

> *It really was a very interesting course. Taught us a lot but showed us how little we know. It gives you contacts with people. Excellent course.*
> (Wellstead WA, August 1999. Participant interviewed July 2000)

> *I thought it was an excellent course. We are not going to be big forestry growing people, but learning how to integrate farm forestry with our agriculture was very useful.*
> (Wellstead WA, August 1999. Participant interviewed July 2000)

> *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)

> *One of the best courses I've ever been involved with. An excellent course. The course was tightly organised and sent off really well. The best course I've ever done.*
> (Busselton WA, February 2000. Data from 'Phone' interview in July 2000)

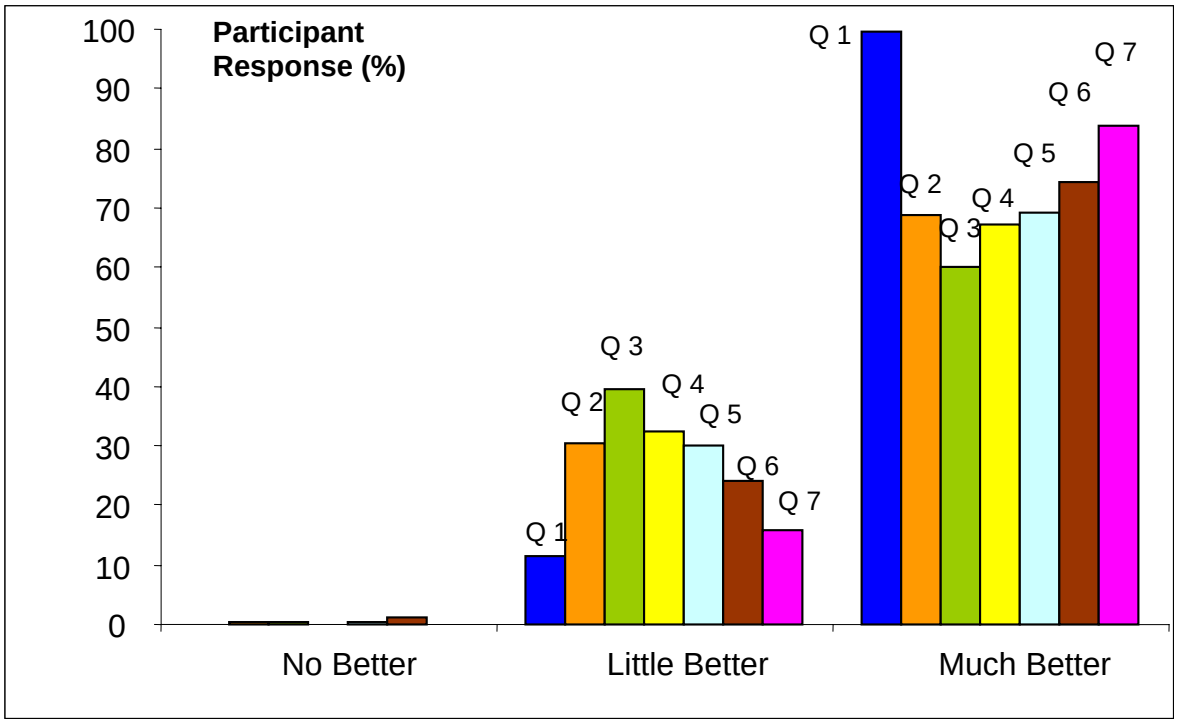


Figure 5.7: Evaluation of participant's responses to the MTG Program at the last session of the Program. (n ~745. Data taken from Questions 1 to 7 of the 'After' Survey).

Reflections on Participants' technical developments

The MTG Program may not have dramatically changed farmer management practices in the short-term but it does appear to have been generally successful in building the confidence of participants to further

investigate farm forestry opportunities, their ability to evaluate options against their own performance criteria and their enthusiasm to publicly debate and discuss farm forestry issues:

> *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)

The MTG Program has clearly been successful in up-skilling participants in the technical aspects of forestry and the use of trees in landscape management. Although there may not be a demonstrated change in their farm forestry management what may be more important to the overall development of a sustainable farm forestry community is the development of confidence and enthusiasm among the leading farmers who are active in farm forestry. The MTG Program has certainly contributed to this.

Social Learning and Network Development in the MTG

One of the long held aims of the program has been to support the development of *"regional and national peer groups of 'Master TreeGrowers' that provide support for farmers involved in farm forestry and contributes to regional extension and development programs"* (Reid and Stephen 2001, p. 149). The MTG Program therefore places an emphasis on individual commitment while seeking to aggregate common interests among participants and thereby build a powerful regional peer support network. Rather than simply anointing individual farmers as *gurus* or farm forestry *champions* the program encourages the group to assume a collective role in providing leadership and examples.

This avoids the problem of other farmers following the lead of a particular individual only to find that the options involved are not appropriate to their own circumstances and encourages those within the community to recognise that farm forestry can be done in many different ways. Underlying this principle is a social learning process that complements and advances the technical learning process beyond just the participants and what they do during the program out into the wider community and into the future.

Feedback from participants highlights their recognition of the importance and potential of building a local farm forestry community and the associated information and support networks:

> *The opportunity to exchange ideas, info and expertise with others was, in my view, the most useful aspect.*
>
> (Hastings NSW, June 1999)

> *Networking – expertise of speakers and other course participants are invaluable.*
>
> (Armidale NSW, October 1999)

> *Informal interaction with other course participants and presenters is valuable.*
>
> (Ipswich Qld, November 1999)

> *It has been very good to learn something from everyone else's experiences.*
>
> (Kyneton Vic, June 2001)

(Also see supportive comments relating to network development presented on page 47)

One of the major factors in building this network or social development has been the emphasis on farm visits and the presentations by the participants of their own vision for their farm:

> *Going to different properties of people in the group and looking at their problems and achievement.*
>
> (Beaudesert Qld, August 1999. Data taken from 'After' survey)

(Also see supportive comments relating to the farm visits presented on page 47)

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

> *In terms of the technical support on measurement and that sort of thing, it played a pretty good educational part there. 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. Because 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. So I saw this interaction with other Master TreeGrowers as the key.*
>
> (Otways Vic. Participant interviewed in September 2001)

The vast majority of participants appear to have enjoyed their experience during the MTG Program and have commonly developed friendships as a result. The 1999 review revealed that enjoyment and friendship enhanced participant enthusiasm and commitment to the group, which in turn increased the likelihood that the networking would continue.

Network Development

When participants were asked how many other participants they have talked to about farm forestry in the 12 months prior to the MTG Program and the 12 months after the MTG Program, the average number had clearly increased (see Table 5.4). This was reported in the 1999 review with the suggestion that:

> *MTG regional programs have resulted in the formation of core groups of farm foresters who network with one another to their mutual advantage… One of the most important indications of the success of a MTG Program is how the participants are functioning as a social group six months to a year after the formal program has finished… A high level of networking on farm forestry matters has been achieved across the MTG Program. Some groups show a high level of cohesion and intra-group association.*
>
> (O'Meara and Wright 1999, unpublished)

Table 5.4: Participants farm forestry networks before and after the MTG Program.

State	**'Before' MTG Program**		**'After' MTG Program**	
	Response No.	Average/ Participant	Response No.	Average/ Participant
NSW	237	3.6	26	6.9
Victoria	152	3.6	27	7.1
Western Australia	181	2.4	44	7.7
Queensland	145	1.8	1	6 (Insufficient data)
Northern Territory	18	8.4		(No data)
Tasmania	7	2.3		(No data)
South Australia	22	0		(No data)
AVERAGES	**762**	**2.9**	**98**	**7.3**

Notes: 1) The 'After' data was collected during the phone survey, 8 to 20 months after the completion of the MTG Program. Therefore some programs, such as the Tasmanian and NT programs had not been surveyed at the time or writing.
2) 'Average/participant' is the average number of participants that a participant had talked to about farm forestry in the 12 months 'before' the MTG Program commenced or the 12 months 'after' the program had been completed.
3) Question was not asked in South Australia

Since the 1999 review there have been some formalised networks developed as a direct result of regional MTG Programs. Such networks include the:

- Ballarat Branch of Australian Forest Growers (Victoria);
- Mackay-Whitsunday Branch of AFG (Queensland);
- Scenic Rim Farm Forestry Network (SE Queensland); and
- Farm Forestry Development Network WA.

Other developments have included:

- The formation of special interest groups focusing on native forest management in Eden NSW;
- The nucleus of a property management planning course from the Nambour MTG group;
- The use of MTG graduates for site visits and the preparation and presentation of professional report from farmers that join the Otways Agroforestry Network; and
- The establishment of MTG Mark II programs in SE Queensland (an advanced program for those that have completed one of the four programs completed in the south east of Queensland).

Other than sending out an occasional newsletter to participants, the national program coordinators have purposely not taken an active role in the development of regional networks or groups after the completion of the program other than when asked. It is felt that the initiative must come from the participants themselves. This may be at the risk of individuals feeling they have been let down:

> *One of the things, which is not a major criticism is I haven't had a lot of contact from MTG people since doing the program. The main contact I've had is with other groups.*
>
> (Gippsland Vic, December 1998. Participant interviewed June 2000)

Reflections on the Social Learning and Development

The issue of network development is a complex one. Highly positive group dynamics generated during the program do not necessarily result in the establishment of networks that meet the expectations of all individuals. The continued enthusiasm and support of the regional coordinator or a leading farm forester from the group would seem essential. Although it was never the intention that the MTG Program play an active role in establishing formal regional, state or national groups or associations, there may be a need for this to be more carefully considered in the selection of regional coordinators and participants and in the content of the program.

The MTG Program is a social process in which groups develop an enthusiastic, positive and dynamic cohesion during the program. This contributes greatly to the social learning processes that continue well after the program is complete. However, one of the limitations of the present evaluation process is that the actual specifics of the socialisation process, factors which impact on it and any developments resulting from this process are poorly understood. The national coordinators and participants are aware that a process is occurring but not entirely sure how this process can be improved to ensure an even greater learning and social development process occurs.

MTG Participants' Involvement in Farm Forestry Extension

The involvement of participants in the communication and development of farm forestry within their own communities after the program is difficult to measure directly. How they present themselves publicly after the program and the breadth of their own farm forestry networks may provide some indication.

The MTG gate sign

During the 'Phone' interview participants were asked where they had placed their MTG gate sign awarded to them at the end of the program. Table 5.5 presents the result.

Table 5.5: Where participants have placed their MTG gate sign at the completion of their MTG Program

MTG Gate Sign Position	Participants' Response (%)
Front gate	28.7%
House	27.7%
Office	22.8%
Shed	10.9%
Workshop	4.0%
Other	3.0%
Stored	2.0%
Undisclosed	1.0%

(n~ 101. Data from 'Phone' interview)

Approximately 40 per cent of MTG participants have placed their MTG gate sign in a prominent position outside: either on their front gate, a prominent wall or an internal fence. Many of the other 60 per cent appear reluctant to display the gate sign:

> *I don't know (in the cupboard). I am not in favour of sticking on the gate. I'm not that demonstrative.*
>
> (Bridgetown WA, August 1997)

> *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)

> *Have not planted enough trees – embarrassed. Perhaps a sign that doesn't profess to know so much about trees – perhaps just the symbol but not 'Master TreeGrower'.*
>
> (Wagga Wagga NSW November 1998)

The idea of removing of the words 'Master TreeGrower' from the sign was taken seriously and suggested by the national coordinators at a number of meetings with participants in 2000 and 2001. The response was unanimous: *the words should remain on the sign*. A possible reason for a change of heart may be the fact that because the program has now become so widely known within the farm forestry community, farmers are increasingly more comfortable about displaying their signs. 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 program began to display their signs despite a lapse of almost two years.

Provision of advice to other farmers

Confidence is an important element in providing advice to others on farm forestry issues. At the start of the MTG Program and during 'Phone' interview participants were asked to how many people they had provided advice to about farm forestry in the last 12 months prior. Participants' responses are listed in Table 5.6.

Table 5.6: The provision of advice by MTG participants.

	'Before' Questionnaire	**'Phone' Survey**
Number	724	101
Average Number people/participant	18.4	18
Total	**13,325**	**1,821**
0 scores	46.7%	23%

The following was drawn from the 'Before' surveys:

- Those that derived an income from a nursery provided advice to 80 other people on average;
- Those that derived an income from providing advice and services provided advice to 74 other people on average;
- Those that derived an income from establishing, tending, harvesting or processing trees, provided advice to 22 people on average;
- Those that derived an off-farm income provided advice to 10 other people on average.

Although the relationship between vocational involvement in farm forestry and advice giving is not unexpected, the sheer numbers of people for whom MTG participants have provided advice concerning farm forestry is significant. The real figure could be much higher considering that many participants shied away from the term 'advice', stating that they do not give advice, but still talk to people about farm forestry and shared their ideas:

> *I talk to people but do not give advice.*
> (Duranillin WA, August 1998. Data from 'Before' questionnaire)

> *We talk to people. I don't know if you would call it advice.*
> (Albany WA, October 1998. Data from 'Phone' interview in July 2000)

> *Can't say I have provided advice. Had encouraging words.*
> (Wellstead WA, August 1999. Data from 'Phone' interview in July 2000)

> *I wouldn't see myself as an advisor. I have discussed it with around 12 people. Shy away from litigation.*
> (Wellstead WA, August 1999. Data from 'Phone' interview in July 2000)

> *Advice is a strong word. Have talked to 3-4 people.*
> (Geelong Vic, June 1999. Data from 'Phone' interview in June 2000)

The term 'advice' might be better replaced with a softer term such as 'assisted' or 'shared ideas' in future surveys.

Involvement in extension programs

By the end of the program most participants had a reasonably sophisticated farm forestry 'network' – some formal and some informal – and some participants were (very) active in providing advice or at least talking to other farmers about farm forestry. Is this extension? It is a moot point as to whether

farmers are involved in extension when the flow of information is occurring regardless of whether it is recognised or not.

The 1999 review identified three major areas of landholder participation in extension:

- Sharing farm forestry knowledge and technical skills with each other and with their neighbours;
- Sharing of knowledge of markets with each other and with their neighbours; and
- Expanded networking activities following the MTG Program.

The report concluded that:

> *Participants now feel more confident that they can approach the appropriate people for help with a particular marketing or technical problem related to farm forestry.*
>
> (O'Meara and Wright 1999, unpublished)

The evaluation of the MTG Program to-date has not provided a good handle on farmer-to-farmer extension, other than demonstrating that it is happening and that participants believe they have greater knowledge to pass onto other farmers than they had before their participation in a MTG Program. Exactly how this transfer of information occurs, to whom and the perceived credibility or value of the information is more difficult to judge. The potential however for MTG participants to act as change agents has certainly being 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)

Reflections on participant involvement in extension

The MTG Program appears to have been successful in providing participants with relevant, timely and practical information and skills to confidently pursue their own farm forestry ambitions and in doing so has enhanced the potential for them to influence the actions of others. A common response has been that "*this course gives the basics for participants to source relevant or more intensive info"* (Wagga Wagga participant). By explaining the professional forestry language and handing over simple forestry tools, techniques and concepts, the program has generated a level of understanding that allows farmers to move more confidently in forestry circles in their search for information or in the sharing of their own ideas about farm forestry. For some this represented an *opening of the door* to their participation in formal and informal regional extension programs and networks.

The significance of this invisible barrier to farmer participation in extension is evident in the response from participants:

> *The level of information, just getting the terminology, you know, learning the language. Being able to speak on the same, with the same dialogue.*
>
> (Otways Vic, December 1996. Participant interviewed in September 2001)

> *I think the MTG Program is terrific. That level of confidence and the level of information that people get out of the MTG makes it a lot easy to get to (people) in a position of farm forestry extension… and going to those farm forestry extension conferences is, you know, is pretty daunting first off because as you have all those people entrenched in NRE, but having done 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)

I didn't have a tremendous background in forestry and I was aware there was a lot I didn't know much about and it filled a lot of gaps from that point of view. I still have lots that I need to get more expert at but I feel fairly confident now that I have enough to help most.

(Colac Vic, October 2000. 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.

As another participant points out this is an essential requirement for the sustainable development of farm forestry:

That is what the MTG is perhaps creating - enough people, giving the grass roots people voice and enough confidence to put their hands up so hopefully it will evolve well. But if the grass roots people don't have a strong enough voice then it will probably just evolve like normal, as in departments and governments head off in a direction and the grass roots people 'go hang on'!.

(Otways Vic December 1996. Participant interviewed in September 2001)

This confidence is also apparent at the group level with participants having the confidence or belief in *their* MTG Program and striving to create ownership and an MTG *entity*. This was reported in the 1999 review where it was stated that:

Farmers consistently express strong identification with the MTG Program and their local MTG group.

(O'Meara and Wright 1999, unpublished)

This has seen participants suggesting that there be standards of entry into the program to maintain the status. As one participant stated:

Excellent course – I don't think they should hand out the signs willy-nilly – control over who they call Master TreeGrower.

(Geelong Vic, June 1999. Data from 'Phone' interview conducted in December 1999)

This sense of local ownership was also evident when a participant in the Beaudesert, Queensland program felt the group had been violated by Melbourne University when a postgraduate student interviewed the group:

Having our last session hijacked by students was annoying and irritating and unnecessary. We were not asked and the session was irrelevant. If Melbourne University want to conduct sessions they could at least make arrangement in advance.

(Beaudesert Qld, August 1999. Data from 'After' survey)

Farmer ownership of the program is particularly evident in Western Australia where farmers are commonly engaged as the regional coordinators:

Agencies must stand back and allow community control. Let [local] *people decide how the program will evolve.*

(Duranillin coordinator. Comment noted from WA 2000 mid-term review)

The success of the early WA MTG Programs, and the almost radical notion of providing a non-government framework for empowering landholders, was quickly recognised by some strong, community-minded individuals. The MTG Program was viewed by some as a means of drawing like-

minded people together in the more traditional, low-rainfall farming regions to develop a new future from which income from perennial vegetation would be central. The notion that outside agencies could interfere or dominate how farmers wanted to conduct *their* programs was frowned upon. Even the national coordinators were accused at one stage of going against the spirit of the MTG Program when they suggested one group conform to the national framework.

Conclusion

> *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 evaluation has clearly demonstrated that the MTG Program represents a new approach to farm forestry extension 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 also shown that the MTG Program's success is partly due to a social learning and social development process that involves the farmers themselves along with regional interest groups and professionals. What the evaluation process has not been able to show is the extent to which these impacts will result in greater revegetation of cleared farmland, better management of farm plantations and native forests or increased production of timber and other forest products and services.

As the program moves into its third cycle with a focus on *social learning* there will need to be a review of the monitoring and evaluation methods with a greater emphasis on the degree to which the program is contributing to individual and group learning and the impact of this on the way participants interact with stakeholders and other farmers and on the overall impact of farm forestry.

With some minor changes to wording, the simple 'Before' and 'After' surveys will continue to provide immediate feedback to regional and national coordinators. It is also proposed that the final session of each program will involve more participatory mechanisms aimed at determining what factors influenced the learning processes during the program (currently under trial). The national coordinators will also continue to monitor developments arising from the courses and continue to seek suggestions as to how the evaluation can be improved. The emphasis of the ongoing evaluation will provide information and ideas for the improvement of the program (formative evaluation) while ensuring that there is sufficient information on the impact of the program to-date (summative evaluation).



Otway, Vic., Master TreeGrowers measuring basal area during a refresher course

6. What the Papers Say

Introduction

> *The MTG Program is regarded by many, including many of those involved in this study, as the premier course in Australia that is available to people who have an interest in farm forestry, private native forest and revegetation as a land management tool.*
>
> (AgInsight and Agknowledge 2002, p. 3)

Since its introduction in 1996, the MTG Program has generated a great deal of public comment and has had a significant impact on how some other farm forestry extension programs are conducted. The program has also been put forward as a model for education and training programs in other fields, including enhanced environmental management of dairy farms and farmer participation in waterway management. This chapter reviews publicly aired opinion and observations (other then those presented in Chapter 5) related to the MTG Program and its contribution to farm forestry extension and development in Australia.

Extension theory and approaches

In their analysis of reforms needed to enable farm forestry to flourish, Alexandra and Hall (1998) identified the lack of a farm forestry culture among farmers as a major impediment to the development of farm forestry in Australia. In response, they suggested: "*adopting innovative training and extension methods which help in establishing links between professional, practitioners and those considering adoption such as the Master TreeGrower Program*." (Alexandra and Hall 1998, p. 42).

In a later review of extension and advisory strategies for agroforestry undertaken for the Joint Venture Agroforestry Program, Black et al. (2000, p. 95) reports: "a*lthough the* (MTG) *Program has no formal accreditation as an academic or skills training course it has generally been well received by participants wherever it has been conducted*." And that:

> *Landholders attending the courses during 1997 attributed the success to the:*
> - *informed discussion generated throughout the program;*
> - *interaction between experts and participants;*
> - *diversity of topics and presentations;*
> - *site visits, particularly the visit to the local saw mills and processing plants;*
> - *hands on approach taken during the programs;*
> - *chance to visit other farm forestry properties and projects during the program; and*
> - *bringing together a wide range of people with different backgrounds, experiences and knowledge*
>
> (Black et al. 2000, p. 40)

Black et al. (2000, p. 97) also point out that: "*The MTG has both built upon and contributed to a strengthening of regional agroforestry networks."*

Both Alexandra and Hall (1998) and Black et al. (2000) point to the diagnosis and design approach to farm forestry project promoted by the Master TreeGrower Program as an important aspect to the development of farm forestry in Australia. Alexandra and Hall (1998, p. 6) argue that: "l*ifting the design skills of farmers (or their advisers) so that options can be incorporated into whole farm planning and catchment planning will be a critical component of any national efforts to accelerate farm forestry adoption*." Black et al. (2000, p. 89) say 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."

In their review of the MTG, AgInsight and Agknowledge (2002, p. 22) concluded:

> *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 in terms of species selection and suitability and site preparation and management, the course has 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 that should not be compromised.*

Many authors who have been involved in other farm forestry reviews and consultancies in Australia since 1996 have also mentioned the MTG Program in their reports:

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

> *The Master TreeGrower course operated by the Melbourne University 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 had undertaken the Master TreeGrower course delivered by the University of Melbourne in conjunction with Greening Australia. They 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 of farm forestry and Whole Farm Planning assisted prospective farm foresters to 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 Growers program offers an option in a very practical format for people.(p. 145)*

Social and Farm Forestry in Madhya Pradesh, India (Kellas and Shepherd 2001):

> *The Master TreeGrower Program gave a valuable insight to the facilitation and interaction approach and was included as an option in the Extension Training Manual for potential future development by the R&E Centres. Thus, the R&E Centre staff had expanded their vision of extension from 'How do I motivate the farmers to plant trees?' which assumed all farmers were to adopt farm forestry to the position where they were asking 'How can I help you?' which assumes that the primary target will be those farmers who may already motivated toward farm forestry. (p. 278)*

Revegetation Information and Training Needs of Western Australian 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)*

MTG contribution to other programs

The MTG Program has received funding support from the National Farm Forestry Program and the Joint Venture Agroforestry Program. MTG Program courses are then conducted regionally in partnership with state and regional programs, including those conducted by government agencies, regional forestry groups and non-government organisations. As a result, a number of authors have reported on the contribution of the MTG Program to their own goals:

The sponsors' own programs

The national sponsors fund many projects related to rural research and development. Their support reflects their own interests:

- The National Farm Forestry Program managed by the **Department of Agriculture, Fisheries and Forestry Australia** has tried to link regional projects by funding a range of strategic national support projects designed to enhance research and development, communication, information dissemination and networking (Donaldson 2001). The Master TreeGrower Program is one such program.
- **The Joint Venture Agroforestry Program** lists the development of 'effective communications' as a key program strategy in their R&D Plan for 1999-2004 (JVAP 1999) and supports the MTG Program as part of this strategy. (addendum: This is continued in the JVAP R&D Plan for 2004-2009.)
- **The University of Melbourne** Strategic Plan includes a goal to "*serve the Victorian and Australian communities and promote the 'Melbourne Agenda' by enriching cultural and community life, elevating public awareness of educational, scientific and artistic developments, and promoting informed intellectual discourse and political debate in the wider society*." The 2001 plan cited the MTG Program (with a double page photograph of an MTG group) as "*one of many which highlights University interaction with the wider community*" (University of Melbourne 2001, pp. 46-47).

Contribution to the programs of partner organisations and supporters

Western Australia Department of Conservation and Land Management
Amongst the state agencies the Western Australia the Department of Conservation and Land Management has been the most proactive in incorporating the MTG Program into a comprehensive farm forestry extension and training program, as explained by Moore et al. (2001):

> *A key strategy has been to build the confidence and understanding of farmers in farm forestry. The Master TreeGrower Program has been a central plank of this strategy. The philosophy that underpins the Program is one of empowerment – providing farmers who are already committed to farm forestry with the information and contacts to enable them to become more self-reliant, successful and influential farm foresters.*
>
> *Within the framework provided by Melbourne University there is flexibility to include topics of particular local interest. For example, if participants express interest in oil mallee, an appropriate presenter and field visit is organised.*
>
> *A frequent comment from participants is that the chance to visit participant's properties is the best way to evaluate farm forestry options.*
>
> *Programs invariably have participants with a range of levels of understanding, from 'novice' to 'advanced'. This is a positive aspect, as the 'advanced' participants are models and a source of practical experience and inspiration for others newer to farm forestry.*
>
> *A crucial feature of the Program is the opportunity for participants to make contact with a range of people involved in farm forestry, including like-minded farmers, agency specialists*

and business people (eg. nurserymen, tree planting contractors, millers and wood buyers). Participants frequently comment that they find immense value in being able to chat informally with presenters.

Richard Moore and his colleagues (Moore et al. 2001) have also developed introductory and follow-up farmer education components to complement the MTG. The follow-up program has been instrumental in building on the knowledge, networks and experience provided by the MTG:

> *A 'follow-up' component to the MTG Program has been developed. It aims to provide past participants with opportunities to consolidate their skills and knowledge on topics of their choice and to renew contact with farmers of a similar mind. Past participants are consulted to find out what topics they want to learn about. Responses to questionnaires show that silvicultural techniques, assessment of soil types, management of remnant-bush and species selection are topics of most interest.*
>
> *Some of those who have participated in 'follow-up' activities have commented that, after a break from doing the MTG Program, it was helpful to come together again and to be able to talk through ideas they had been mulling over since doing their original Program.*

In addition to the participant surveys undertaken by the program coordinators at the end of each program (amounting to about 150 farmers in WA) CALM staff also undertook their own survey of farmers and advisers in the Albany region. Moore et al. (2001) report:

> *The feedback from the 150 participants is overwhelmingly positive, as indicated by responses documented in Program evaluations by Stephen and Reid. The Albany survey also confirms farmer's high opinion of the Program. When asked to list farm forestry activities that stood out in their mind, the most common and the most positive response was their involvement in the Master TreeGrower Program. The University of Melbourne deserves to be recognised for instigating such a highly successful extension initiative.*

Greening Australia

Greening Australia has performed the role of primary regional partner and provider of the regional coordinator in more than ten programs including most of those conducted in New South Wales and Queensland and the sole programs in Tasmania and the Northern Territory:

> *This course helped to equip landholders with the practical skills needed to incorporate farm forestry into existing operations. It covered whole farm planning, species selection, establishment techniques and harvesting and investigated possible markets for future wood products.* (Greening Australia NSW 2001, website)

Vanessa Elwell-Gavins (pers. comm. 2001), project manager for Greening Australia's farm forestry contract, highlighted the importance of the MTG for staff development:

> *I can say GA has really appreciated its participation in the MTG courses and has found them hugely useful for staff development and hugely influential. We find the style of farm forestry decision-making MTG promotes very compatible with GA's philosophies and also with our farm forestry policy. Where we had the resources to coordinate them they have been very successful and well received.*

GA regional officers have used the program to initiate regional farm forestry networks (such as the Hunter Farm Forestry Network, NSW and the Scenic Rim Farm Forestry Network, SE Qld). Where Greening Australia has been working with a group prior to the program the MTG has provided needed stimulus as highlighted by Clark (2001):

> *The other important thing that came out of the program is that everyone now knows what each other's involvement is with farm forestry developments in the Top End, which is vital if the industry is to develop with clear objectives in mind. One thing for sure is that the Northern Territory Forestry and Timber Products Network will be strengthened. (p. 19)*

The Australian Forest Growers

The Australian Forest Growers is the largest and most influential organisation representing the interests of private forest owners. As a supporter of the MTG Program, AFG staff and representatives have provided course sessions on farm forestry policy, taxation, insurance, cooperatives and carbon trading. A number of the regional programs have been conducted in association with AFG branches and at least two new branches (Ballarat and Mackay-Whitsunday) have been formed as a direct result of a MTG Program being run in the area.

Regional agroforestry and farm forestry networks

Agroforestry and farm forestry networks are largely incorporated community groups or branches of Australian Forest Growers. These groups are associated through their subscription to *Agroforestry News,* which is owned and managed by a non-profit community group incorporated through the Victorian Farmers Federation. Regional MTG Programs are commonly run in association with the networks, including the first in 1996 with the Otway Agroforestry Network, and events such as Agroforestry Expo '99 have been widely publicised through *Agroforestry News*.

The Otway Agroforestry Network is a farmer group in South-western Victoria that is incorporated through the Victorian Farmers Federation. The group has almost 200 members and has received funding support for projects from the National Farm Forestry Program and other sources since 1993. The network has been instrumental in the development of its own farmer-farmer extension program:

> *We were the participants of the 1st Master TreeGrower course run in Australia. In fact we assisted the Melbourne University in the development of the course. This has led to our unique Site Visit Program. We have developed a team of farm forestry advisers (from people within our network) so we can actively provide farmers an opportunity to assess their situation, highlight what they want from the trees that they plant and identify their concerns, All our farm forestry advisers have successfully completed the Australian Master TreeGrower course.*
>
> (Otway Agroforestry Network , n.d.)

Stanton (1998) observed the Dorrigo MTG (NSW) and highlighted the important role the program played in supporting farmer groups and their role in extension:

> *The MTG course aims at improving this farm forestry knowledge base not only by providing high class education in farm forestry design for personal, financial and environmental gain, but also by creating groups of landholders within communities who can act as a resource for other landholders keen to take up farm forestry. This can also help address the scepticism directed toward this new industry by shifting the focus of education from government departments and representatives back to the community. It is illustrated again and again that the place most landholders seek their information is from neighbouring landowners.*

It can't all be good

Not all observers are 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. Cooper (1997) made the strongest criticism:

> *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, eg Master Silversmith, Master Craftsman etc 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!
The aim of the 'Master TreeGrower' is to act as a link between farmers and the farm forestry coordinators. The problem is that this 'Master' is not directly in the industry and is not up to date with any recent changes in technology and markets. Their ideas are often based on personal biases and the wrong information could easily become impregnated in a particular region. Some of these 'Masters' will also have a vested interest in that if they have been planting for some time they may have set up nurseries/seed collections and will tend to persuade others to use their stock. I have already seen this happen!

In summary my underlying concerns is that forestry is being taken away from those with the training. By training I am referring to 4 or 5 years of solid grounding in all aspects of forestry not 'in vogue' short courses……. Unless we as an institute can somehow address this issue we will see ourselves being left behind with the farmers and agriculturalists guiding the new era of forestry in Australia – farm forestry.

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 with Neil that 'Master TreeGrower' is an erroneous title*." Poynter (1998), in a later edition of the Institute's newsletter suggested that the experience of professional industrial foresters was being bypassed or ignored by the program.

Over time there have been many other professionals who have raised their concerns with us privately about the term 'Master' including some who suggest it is not a gender-neutral term and that its use inferred a significant level of competency of incoming participants and that this may mean that some people could not be considered eligible.

However, professional criticism of the MTG Program has abated as the success of the program has become evident. As well, many professionals that have been involved with the MTG Program can also clearly see the benefits from increasing the forestry knowledge base amongst a committed group of land managers with important implications for the wider community. Many professionals have also stated they have appreciated the opportunities the MTG Program provides them in better understanding how their knowledge base is used, adopted and adapted by the land managers that they may consider as their clients.



The Master TreeGrower Program is getting farm forestry into the farming culture

7. Why the MTG Program Works

Introduction

Notwithstanding the potential to improve program management, delivery, monitoring and evaluation we believe that the MTG Program has been successful in a number of significant ways. We are particularly pleased that the program has:

- introduced and promoted a new approach to farm forestry extension and education;
- enhanced the ability and commitment of hundreds of farmers to design, establish and management their own farm forestry projects; and
- contributed to a spectacular increase in the participation of farmers in the design and management of regional, state and, although to a lesser extent, national farm forestry extension and research programs, strategies and developments.

Although we certainly acknowledge that the success is largely the result of the skill and commitment of the many coordinators, presenters and participants, there are clearly elements of the MTG Program approach and delivery that attracts this commitment and underpins its success. In this chapter we draw from our own experience as national program coordinators, the literature pertaining to adult education and observations of similar programs in other disciplines or overseas in an attempt to identify the underlying reasons for the programs apparent popularity and success.

Elements of the MTG Program

In essence 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;
- demonstrates a commitment to adult learning principles;
- promotes a uniform structure that reinforces the philosophy and learning principles; and
- acknowledges the potential contribution of farmers to farm forestry extension, research and development.

As such the MTG Program is an example of an extension program that aims to facilitate participation and learning (Chapter 2) with the expectation that this will indeed lead to farmers deciding to commit greater resources to the establishment and management of forests for the provision of products and services that they believe they can capture themselves or sell to others.

A philosophy that respects landholder motivations

It is neither possible nor desirable to try and predict the range or importance of the motivations that drive landholder involvement in farm forestry. Although it has been demonstrated (Wilson et al. 1995, Alexander et al. 2000) that farmers grow and manage forests for a variety of practical reasons, such as the provision of shelter or controlling land degradation, they are also strongly motivated by personal aspirations. These may include issues such as passing the farm on in a better state or creating a more aesthetically pleasing environment (Vanclay 1992). As extension agents, we may be able to influence landholder's decisions but we cannot control them. The temptation to only present farmers with those options we consider as valid (based on our motivations and/or performance criteria) must be avoided to ensure they are able determine the most appropriate designs for their own circumstances. The MTG Program therefore acknowledges the role of the farmer as the principle decision maker and the one who is ultimately responsible. Farm forestry is defined as the result of a *decision by a landholder to commit*

resources (land, capital, labour etc), either alone or in partnership, into the establishment and or management of forests on their land. Focusing on landholder's motivations as the basis for all MTG Programs stresses its relevance to those we are trying to support (see the Conceptual Framework for Farm Forestry presented in Chapter 2).

The ultimate outcome of the MTG approach should be forestry development that is defined by, and is a reflection of, the culture within the farming community and the interests of stakeholders. Although in time the program may also accelerate or even redirect the inevitable cultural change occurring within dynamic communities, it is not the intention of the program to induce dramatic cultural shifts or to change farmers' attitudes. Attempts to do so are so often strongly rejected by the communities or tremendously damaging and disruptive (Barr and Cary 1992).

Pearson et al. (2000, p. 20) suggests that an important element of the way forward for farm forestry is to "*approach change to farm forestry as the people will: it only occurs when there is enthusiasm for change*." In rural communities that are already committed to the continuation of many of the social, economic and environmental elements of their land use, this enthusiasm is more likely to be secured if we adopt the "*paradigm of co-operative landscape design*" (Pearson et al. 2000, p. 20). This is where we seek to ensure that forestry fits into the rural landscape without threatening the values and rewards currently provided from the existing land uses. With appropriate design and management, forestry has an enormous potential to help fulfil the existing aspirations of farming communities before there is a need to change them or create an air of competition for resources between forestry and other land uses.

As Vanclay (1992, p. 118) points out: "*the protection of Australia's farmland does not require promotion of changes in farmer attitudes, but it does require an increase in farmers' knowledge of the land degradation processes and symptoms*." Hence, the MTG Program aims to provide education while not challenging the legitimacy of the farmers' own aspirations and priorities. This approach certainly contrasts with much of the forestry promotion and education in Australia that remains focused on trying to change farmers so that their values better match those of the profession or industry (see Commonwealth of Australia 1997 as an example, and Chapter 2 for a critique of this approach). From the first day of each program the MTG stresses that tree growing and the management of forests can be done in many ways and that the most appropriate option for each landowner will depend on their unique set of motivations, aspirations, concerns and resources.

The lack of empathy shown by some members of the forestry profession to farmers is evident in the way they respond to the concerns and interests of the farming communities in areas where industrial plantation development is seen as a threat: "*emotional*" or based on "*perceptions, not reality*" (Schirmer 2000, p. 36). Unless those involved in working with, or in, farming communities acknowledge the legitimacy of the landowners concerns and aspirations there is little prospect of building trust, shared learning and the development of constructive partnerships. This does not imply that we cannot challenge any misconceptions held by farmers but that we must do so in a constructive way while appreciating that their performance criteria may be different to those generally used by the forestry profession. For example, a plantation option considered highly productive from the perspective of timber production may be rejected by farmers because of its impact on adjacent pasture production, its low biodiversity values or impact on landscape aesthetics.

The MTG Program does invite the participation of industry, government and community groups keen to promote particular outcomes or products. However, in doing so they are encouraged to recognise that their motives may be quite different to those they hope to influence and that they must be prepared to negotiate for mutually beneficial outcomes as well as declaring their interests (Barr and Cary 1992). In practice, the stakeholders are asked to specify their own performance criteria and outline how they might reward (or penalise) farmers who do, or do not, meet these criteria. A simple illustration of this is the mill visits during which the mill managers are asked to provide specifications on the *target log* and outline how log prices may vary with quality, volume, timing, preparation, etc. Encouraging mill tours to start at the final product and work back through the production process to the log yard is just one example of how the program emphasises this.

The MTG Program is assisting farmers identify and design their own farm forestry options and evaluate them against their own personal performance criteria. Whether this ultimately results in an increased commitment to forestry (such as more trees planted) will depend on the individual circumstances and is not in itself an effective measure of the success of such a program (King 2000). It is valuable to simply work with farmers and rural communities through the process. Research and development needs and opportunities are highlighted by exposing the points of failure or drop-out in the process of design and implementation of farmer-focused forestry systems (see Figure 2.3).

This non-critical, farmer-centred approach – so clearly emphasised in the presentation and delivery of the MTG Program – has been fundamental in generating farmer support, enthusiasm and commitment for the program. We acknowledge that some stakeholders may be sceptical of the potential for this approach to generate the degree of behavioural change they would like to see. However, the fact that the program is careful not to align itself with any particular interest group has, we believe, led to the genuine willingness among industry, government agencies and others to participate and contribute to the program delivery.

The MTG Program is therefore less about the transfer of knowledge and more about initiating an environment of continual learning and participation. This is possibly more important in farm forestry than any other agricultural enterprise because of the long-term nature of the investment and the inherent uncertainty. Pearson et al. (2000, p. 14), points to "*considerable research in the risk communication area that addresses how best to communicate information on risk issues*" and argues that "*risk communication must consist of dialogue between government/industry and community rather than just monologues by industry or government alone*." Knowledge, they suggest, does not necessarily change beliefs and that what is needed in farm forestry extension is a "*process by which the salient issues can be identified, evaluated and mitigated through industry-government-community partnerships*" (Pearson et al. 2000, p. 14)

As highlighted by the surveys of participants, the MTG Program clearly and unambiguously acknowledges the risks and uncertainties inherent in farm forestry and encourages farmers to design multipurpose systems that minimise their exposure to unacceptable (by their own determination) levels of risk. This has, we believe, increased participants' views of the credibility of the program and allowed them to fully commit to their own participation without having to endorse aspects of the forest industry that they themselves are uncomfortable with.

Demonstrated commitment to adult learning principles

It is not uncommon at the first session of a MTG Program course to have a group of 20 participating farmers and service providers with a combined forestry, farm forestry or revegetation *experience bank* of over 250 years. This experience is drawn from tertiary education in natural resource management disciplines, technical training, and many years of practical experience on their own properties or as service providers. This is complemented by their professional, technical and practical experience in other fields including business, community governance, community groups and, of course, farming.

Such experience generates a healthy degree of critical conservatism and wariness; a great deal of insight into the real potential and possible impact forestry may have within their communities; a confidence in their own ability to understand and participate in farm forestry design and management; and a preparedness to make a substantial personal commitment to what they believe will work.

Providing effective education to such a group in a way that ensures they will freely participate requires an understanding of adult learning principles and practice. Application of the principles outlined below (adapted from Knowles 1990, Vella 1994 and Fells 1999) seeks to ensure a positive learning experience for all participants, including coordinators and presenters, during each MTG Program.

Principle One: Build on local experiences and draw on individual and group knowledge

All participants in an MTG Program will bring a wealth and diversity of experiences to the program. It is essential that this *indigenous knowledge* is recognised, respected and built upon throughout the program (Frank and Chamala 1992). Farm walks and business tours led by the participants are therefore an important element of the program as they not only demonstrate the importance of adapting forestry designs to suit individual circumstances but also allow for the sharing of knowledge and experiences. Here participants (learners) also become teachers by telling their own stories and sharing their experiences and interests. This builds empathy, trust and confidence among the participants and increases the likelihood that the interpersonal relationships established are maintained.

Principle Two: Make the learning environment comfortable, safe and encouraging

Many of the participants come to the program with little formal education and may be anxious about exposing their perceived deficiencies to their peers. A safe and encouraging environment, both socially and mentally, is essential to ensure a positive learning experience. In beginning with a series of shared learning experiences (mill visits, measurement exercise and introduction to silviculture principles) and emphasising the legitimacy of different interests, the MTG Program seeks to ensure that all participants value the diversity within the group and therefore are more likely to support and respect each others participation.

In a practical sense the MTG Program also seeks to provide a comfortable learning environment by avoiding formal assessments tasks, ensuring as many sessions as possible are delivered in familiar or practical surroundings (such as farm paddocks and sawmills) and by adopting a uniform program that they can see has been successfully completed by many other farmers across the country. In effect, the authority and formality commonly associated with universities is kept at arms length from the program while still allowing the credibility and independence of academia to be carried through each session.

Principle Three: Ensure that the learning activity meets the needs and relates to the issues of the group

Participation in a MTG Program course is appropriate for some, but not all, farmers and service providers. Because it is focused on those that have already made a significant commitment to farm forestry and emphasises their potential to contribute to the future development of the industry, the program must be carefully targeted. Regional coordinators are encouraged to meet with experienced farm foresters, agency staff and industry members during the course's development to ensure there is sufficient demand for such a course, that there is an understanding of the philosophy and intention, and to ensure that the content will reflect regionally important issues.

The national coordinators emphasise the importance of undertaking a workshop during the first session during which participants are encouraged to raise issues that they would like to see covered in the second half of the course. If a course fails to acknowledge the needs and perspectives of participants we might expect a high dropout rate and expressions of concern in the follow-up questionnaire. The one course from which a number of participants withdrew was in an area of Western Australia where some of the farmers thought that the pulpwood plantation industry might offer the potential to prop up their ailing wool businesses. As the program began to highlight the uncertainty and risks associated with blue-gum plantations and commercial lease arrangements in such a marginal area some participants chose to withdraw, while those that remained sought to investigate alternative forestry options that might better suit their circumstances.

Principle Four: Ensure action and reflection such that participants are involved in their own learning

The MTG Program seeks to employ an Action Learning style (Clark and Timms 1999). Action Learning advocates adherence to a cycle of planning, acting, observing and reflecting. By allowing time

for reflection and the opportunity for participants to contribute to the planning and delivery of the latter sessions, this seeks to ensure that the learning is participatory and meaningful to the participants' immediate requirements.

There seems to be little doubt that although adults learn better by doing, doing alone is not sufficient to build knowledge. There must also be time for reflection. Visits to mills, farms and forests and the activity associated with the measurement and planning exercises provide participants with valuable experiences. Although these activities and the formal presentations could be delivered as an intensive block over one or two weeks, we believe it is essential to allow the opportunity for participants to return to their own business environment during the program. Participants require time (and space) to reflect on what they have seen and heard and to consider how the information might be incorporated into their immediate work environment. Participants also benefit from watching others reflect on the same experiences. This is often seen in the chatting at morning and afternoon tea, bus rides and discussion after each day's events.

The MTG Program framework advocates delivery over an eight-week period. In Western Australia, where participants often need to travel longer distances, we have been supporting the delivery of the program in 2-day blocks over 4 weeks. At this stage we are not prepared to look at anything more intensive. We also encourage coordinators to refrain from trying to cover every possible topic using expert presenters within the time provided. In practice most programs engage just one or two expert presenters per day and encourage them to participate in the full day's activities, not just their own presentation. This allows participants to interact with presenters in different forums (formal presentation, discussions during breaks and field walks) and to watch how the presenter deals with questions and issues raised by other participants and presenters.

Principle Five: Acknowledge different learning styles amongst the group

It is widely acknowledged that within any group of adults, particularly where there are individuals who are not accustomed to conventional formal education, there will be a number of preferred styles of learning (Honey and Mumford 1986). By adopting a range of techniques - including formal presentations, group discussions, practical exercises, presentation of written material, observation and encouragement to contribute through participant presentations - the MTG Program seeks to ensure that all participants have the opportunity to learn in their own way and at their own pace.

The emphasis is on the process of adaptation and learning as opposed to content and outcomes. Giving participants the opportunity to watch and participate in discussions and debates during presentations, breaks, bus trips and field excursions provides ample opportunity for each participant to conceptualise what they are seeing and hearing so as to put it into a context that is relevant to them. This is particularly important where information is presented from research trials or farmer experience undertaken in social, physical and economic environments very different to their own.

Principle Six: Have activities that involve and that are simulating, participatory and immediately applicable

Too often farmer education and training programs are based around a linear notion of farm forestry development that starts from how to plant a tree, how to manage a forest, and how to harvest and market, based on the assumption that there is a best option available that is appropriate for all recipients. The MTG framework emphasises the market specifications for a range of forest products and services as set down by stakeholders, and encourages farmers to participate in the development of appropriate and *elegant solutions* that reflect their own performance measures, resources and opportunities.

The simplest way to ensure this is to focus on problem-centred learning based on real life situations rather than enforce a conventional subject-centred presentation approach common to formal secondary and tertiary education. As demonstrated by the emphasis on farm forestry diagnosis, design and

evaluation, the MTG approach is clearly problem-centred and acknowledges that participants are actively involved in making real decisions about farm forestry investments.

Principle Seven: Build group and individual confidence by encouraging and rewarding

The use of the title 'Master' is recognition of the participant's knowledge, experience and personal commitment, and is used to link, encourage and reward. The small ceremony at the end of all MTG Programs, with the awarding of the MTG certificate of appreciation and MTG gate sign, is an official acknowledgment of the participants potential and rewards them for their contribution of knowledge, enthusiasm and participation. Social research suggests this is extremely important for those participants that have little formal education.

The title, hat and sign are also important in building a group identity that participants own and can be proud of. Once this is established participants have a sense of belonging and commitment, and accept some responsibility to maintain the group or even expand it. As a result we have seen a number of MTG Programs develop into new farm forestry community groups (such as Ballarat AFG Branch and Scenic Rim Farm Forestry group) or contribute to an expansion or rejuvenation of an existing network (Otway Agroforestry Network, Northern Territory Forestry and Timber Products Network).

Principle Eight: Show respect for the learners

Respect is an essential over-arching principle of the MTG Program. Landholders desire to be decision-makers and resist being treated as *puppets* expected to perform for the authorities or industry. The dialogue of learning is between adults whose knowledge and experiences are equally respected. Trying to aggressively change a farmer's culture is often interpreted as a lack of respect for their existing culture and is, as such, personally threatening.

Promotion of a uniform structure across the country

Uniformity across the MTG Program ensures that courses undertaken in different areas are comparable and carry the same value both in terms of the educational value and social status. Because of the diversity of interests, landscapes and opportunities facing farmers across Australia, the similarities and consistency must be based on the structure and philosophy rather than the subject content. The MTG approach to the diagnosis, design and evaluation (DD&E) of farm forestry opportunities provides the structure. DD&E is based on three simple steps:

1. Identification of farmer motivations, aspirations and performance measures for success (Session one), the review of the role of trees and forestry in meeting these, and the development of project design criteria (Sessions five to eight);
2. Description of consumer product/service specifications, associated rewards or penalties, possible trading mechanisms and the potential to manipulate tree and forest growth in order to achieve these specifications (Sessions two to four); and
3. The evaluation of possible design options against 1 and 2, including an assessment of risk, uncertainty and opportunities for negotiation (Sessions five to eight).

The DD&E approach has been well accepted by partner organisations and participants (see Chapters 4 and 5) and reflects the ideas expressed in the Conceptual Framework (Chapter 2). Because the program advocates a design process, rather than a particular outcome, participants quickly recognise that they must take responsibility if they are to define appropriate farm forestry opportunities and effectively negotiate with consumers. The MTG session plan encourages this by mimicking the diagnosis, design and evaluation process in the way sessions are structured. The approach also clearly defines the role of the presenters, be they consumers of farm forestry products and services or experts, who are able to explain the principles of design and the potential to manipulate forest growth. (A more detailed description of the MTG Program framework can be found in Reid and Stephen (2001) or at the MTG web site - www.mtg.unimelb.edu.au)

From our own experience, and that of others involved in presenting similar programs in the USA, we have identified a number of recommendations for the development of a successful participatory farm forestry education programs for farmers:

Encourage regional ownership

All MTG Programs rely on the assistance and support of regional extension officers or other appropriate coordinators. Regional coordinators are responsible for encouraging key landowners to participate, organising the venues and field sites, gaining the support of local industry and maintaining contact with the participants following the course. In most cases an informal regional organising committee made up of people such as leading farmers, agency staff, researchers, local government representatives and members of the Regional Plantation Committees provide advice and support to the regional coordinator.

Once engaged in the program, participants are invited to suggest possible topics, presenters and activities to fill the latter part of the program, as well as consider when and how they might like to make their own presentations. Giving participants the responsibility of hosting visits to their own properties and businesses seems to enhance this sense of ownership.

Let participants judge the market for themselves

Rather than expect farmers to share our confidence in future markets for forest products, the program encourages farmers to make their own judgements and interpret the risks associated with their participation in forestry markets (Session two). Direct interaction between the farmers and consumers, followed up by a group discussion of their impressions of the opportunities and uncertainties, is invaluable.

Hand over the tools of forestry

Being able to measure and monitor tree and forest growth is an important key to being able to understand the forest dynamics and make effective forest management decisions. The MTG Program includes the provision of the MTG Tape and training in the measurement of tree and forest growth so that farmers can begin making their own assessments of productivity in order to judge the likelihood of achieving production targets (Session three). They also learn the language of forestry so they are able to understand and interpret forestry information and enter into effective dialogue with those in the profession.

Share the principles of management

The production of any forest product or service can be achieved in any number of ways. The design, management and methods used should be developed in a way that is appropriate for the individual's own circumstances. Conventional forestry systems adopted by governments and industries are generally based on well-founded silvicultural principles. By sharing these principles with farmers, rather than simply advocating unique options, the program encourages participants to devise alternative designs that better meet their own requirements. In many cases, these will look very different from those adopted by other producers of forest products (Session four).

Allow for multipurpose design

Many land managers cannot afford to, or do not wish to, focus their forest management on a single issue or product. They generally prefer to manage their forests for a range of benefits that may include social, environmental and economic outcomes. This requires an appreciation of the conflicts and compromises that may arise when seeking multiple benefits and the insight into how to identify and take advantage of any complementary production opportunities. Multipurpose farm forestry, appropriately designed by land managers, is encouraged and legitimised throughout the MTG Program

even though these designs may compromise the preferred outcomes sought by land management or forestry agencies (Sessions one and Sessions five to eight).

Don't shy away from risks

Because of the long timeframes, the limitations in our understanding of natural systems and the inherent uncertainties associated with markets, climate and other threats, it is essential that farmers appreciate and accept the inherent risks associated with farm forestry. Trees die, markets fail, and farmers' aspirations and resources often change over the life of the forest. Ignoring or hiding the risks under the shroud of authority or professional expertise may entice unsuspecting farmers to make large commitments to forestry, but risk a substantial backlash should their high expectations not be achieved. Under these circumstances, perceived failures tend to be blamed on the extension advisers, industry advocates or the professions. Landholders themselves are unlikely to accept fault unless they acknowledge their responsibility during the design process and are confident that the advice they receive from advisers included a review of the risks involved.

The MTG Program stresses that farmers must be accountable for their decisions and critical of the advice they receive from experts and peers. It is their responsibility to assess the risks, identify possible uncertainty and to acknowledge this when making their commitment. In light of the uncertainty, most participants choose to design multipurpose options in which the prospects of commercial production, however promising, are seen as a bonus on top of the environmental, social or agricultural benefits of the trees.

Anticipate that the forestry profession may be a barrier

Many authors (Fletcher et al. 1995 and Kessler et al. undated) note that a major barrier to the development and acceptance of similar programs in the USA was the attitude of professional foresters. There seemed to be a perception that providing training to landowners would make *foresters* out of *tree farmers* and thereby reduce the value of their hard-earned college degrees. A similar response was experienced in Australia when the MTG was first introduced (see Chapter Five).

In response, Kessler et al. (undated) suggest that participants actually gain a greater respect for the profession and better understand the reasons for forest management decisions. The independent evaluators of the MTG pointed to this in their report, suggesting that not only did participants develop a greater respect for the knowledge of those within the profession, but some also indicated that they may be more likely to seek professional advice and support themselves (O'Meara and Wright 1999, unpublished).

Fletcher et al. (1995) also cites the commonly raised concern among foresters about the quality of advice provided by the volunteers to landowners. We would agree with others who suggest that, as extension agents, the participants not only improve their understanding of forestry but also better recognise their limitations and are more likely to refrain from giving technical advice themselves and seek professional help (Kessler et al. undated, O'Meara and Wright 1999, unpublished). Goff (1993) argues that the two biggest advantages of using trained volunteers to promote woodland management are the enhanced communication and the absence of perceived bias, which are two common barriers facing government or industry extension officers.

Avoid the focus on timber

Snyder and Broderick (1992), in support of the Coverts Project in Connecticut (see Chapter 3), point out that landowners with different priorities easily dismiss traditional forest management because of its emphasis on timber production and long-term income. The view of timber-producing non-industrial private forest owners as one-dimensional profit maximisers has been challenged by a number of researchers (Bliss and Martin 1989, Egan and Jones 1993). Australian research (Colmar Brunton Social Research 2001) suggests that the non-commercial benefits of tree growing (shelter, land degradation

control, and nature conservation) are more important reasons for growing trees than the production of timber or other commercial products, even among those farmers who, by their own judgement, are 'engaged in commercial farm forestry'.

Egan and Jones (1993), with regard to landowners in the USA, argue that timber harvesting should be presented as a 'stewardship tool' and that any information on harvesting must focus on broader objectives, such as wildlife management and recreation enhancement. Although the MTG Program does involve a detailed analysis of the local forest product markets, silvicultural management is presented as a tool that allows farmers to manipulate forest growth in order to achieve any number, or balance, of commercial and non-commercial benefits.

Ask specialists to discuss not lecture

Expertise in areas such as land degradation, farm management, shelter, fire, silviculture and other topics covered during MTG Programs is provided by invited specialists. Rather than simply making formal presentations, the specialists are encouraged to participate in discussion and highlight design principles in a way that is relevant to the farmers. It is critical that presenters acknowledge the problems and constraints faced by farmers and recognise that there may be factors outside their own discipline that will influence farmer decisions and project design. A common trap of specialists is to assume that the audience share their priorities.

Engaging specialists in on-farm problem-solving sessions with farmers has proven to be the most successful means of enhancing communication and learning. By exposing the specialists to the uncertainties facing farmers who are considering making a large personal and financial investment in forestry certainly highlights the importance of ensuring that advice is measured and the relationships between their expertise and other issues are carefully identified.

Support formal and informal landholder networks

Participation in programs like the MTG is a socialisation process during which information is gained by personal contact with natural resource management professionals and other landholders (Mills et al. 1996). Socialising with others who have similar interests also reinforces the social and personal acceptability of becoming involved in farm forestry. Effective networks, either formal or informal, ensure that individuals always have access to support as they work through the issues at their own pace – or as their trees grow.

Building effective and lasting personal networks takes time, which is why the MTG Program is not delivered in a continuous block but rather spread over a four to eight week period. Through shared new experiences and personal contact, the group attains an identity that many of the participants value and therefore seek to maintain after the program. In this way the program has helped initiate, revitalise and extend some of the farm forestry networks across Australia.

Provide follow-up support

As national coordinators of the program we prefer to make ourselves available to respond to requests from participants and their regional networks rather than aggressively pursue participants. Many participants do contact the University seeking information, and these are dealt with individually. Groups have also requested that university staff participate in refresher days on topics such as silviculture or tree measurement.

The national coordinators provide an occasional newsletter that is sent to all graduates of the program. This provides information on events and keeps past participants informed about developments in the program. It also serves to inform MTG participants of opportunities that we are able to provide, such as sponsored participation in the IUFRO Forestry Extension Conference, 2001.

The Master TreeGrower website (www.mtg.unimelb.edu.au) provides participants, coordinators and others interested in the program with an opportunity to access specially prepared information, including articles, spread sheets and photographs. It also provides a guided entry point into farm forestry-related information on other Australian and international websites. Records of use provided by the University of Melbourne show that there was an average of 560 unique hosts per week over a 24-week period up to December 1st 2001 and that this represents around 5000 requests per week (Source: http://www.unimelb.edu.au/stats/mtg/g-index.html) (Figure 6.1).

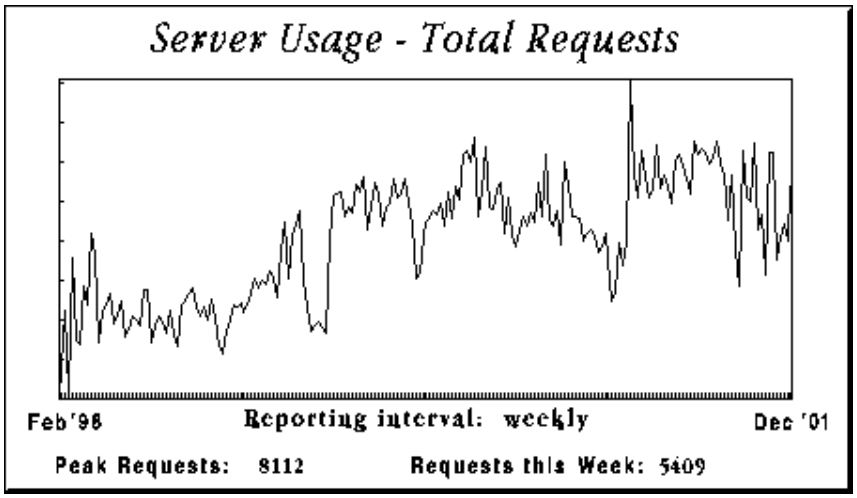


Figure 6.1: Total number of requests made of the MTG Program's website (1998-2002). (Source: http://www.unimelb.edu.au/stats/mtg/g-index.html).

Acknowledgement of the contribution of farmers to extension

The importance of peer support

Although the value of using peers as a means of encouraging other 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 had on the major decisions taken by dairy farmers in New Zealand:

Phillips identified four phases of the process undertaken by an adult learner:

1. Attaining the ideas;
2. Collecting, sorting and analysing the information;
3. Guarded validation with trusted acquaintances; and
4. Support from intimates for decision.

Conversation, Phillips suggests, is the most important mechanism by which adult learners work through this process and therefore other people are an essential resource. While the research confirms that paid experts are necessary for contributing ideas and information (the fuel), they actually play a very minor role in terms of validation and support.

The best the paid extension agent can expect to do is to provide good information, which is timely, holistic in nature and empathetic to the learners' objectives (Phillips 1985). While technical expertise may *get them in the gate*, the research highlighted 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.

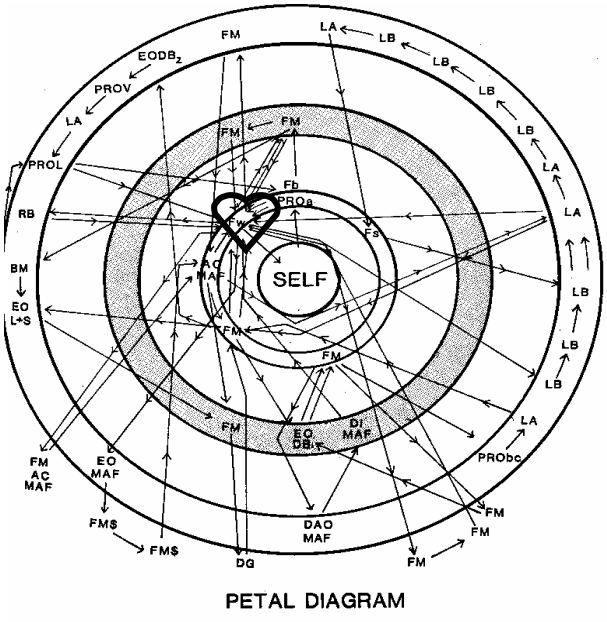


Figure 6.2: Petal diagram classifying communication between a dairy farmer (self) and intimates (inner ring), acquaintances (middle ring) and paid experts (outer ring) regarding the decision about making a commitment to capital improvements. The heart marks the farmer's spouse. (Phillips 1985).

Phillips found that family members, especially the farmer's wife or some other particular intimate, play a major role in the decision-making of dairy farmers, and that other farmers are numerically the largest group used by the farmer for validation and support (Figure 6.2). Other farmers include neighbours, fellow discussion group members, relations and friends. In a rural community, other farmers and their families are the major social contract and likely to be business associates as well. Phillips suggests that extension agents and educators have probably underestimated the relative importance of these people to the decisions that farmers make about major investments or changes in farming practices.

People vary in their social distance from the learner (indicated by their location on the petal diagram, Figure 6.2). 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 Programs purposely bring a group of farmers with a common interest in trees and forestry 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. Even where the participants are unlikely to form friendships, they do develop an understanding of each other's credibility. The regional program coordinators (paid experts) appear to benefit the most from the development of these relationships, as they win respect from participants for their commitment to the program and their professional experience.

The participants, coordinator and even the experts invited to join in the group's activities, are building intimacy with each other in a way that may provide validation and support not only during the program, but possibly well into the future: especially if the relationships can be maintained through farmer networks and continuity of active employment of extension staff (Pearson et al. 2000). This, along with the contribution of technical information by experts and other participants, must increase the quality and quantity of the communication regarding farm forestry that is occurring near the centre of each farmer's *petal* (Figure 6.2).

Engaging farmers as extension agents

It has been suggested that communities in which paid extension agents are more active are more likely to implement or adopt sustainable land management practices when compared to those communities with less active agents (Pearson et al. 2000). While this is commonly used as an argument for greater employment of extension agents, it should also reinforce the importance of the contribution that experienced and well-supported farmers who live and work within a local community could make in encouraging and supporting their peers. As noted by Muok (2001), formalising and facilitating farmer-to-farmer extension may also be an effective means of extending the influence of resource-strapped government programs.

Formal involvement of farmers in extension delivery is well established in the USA, where landowner education programs in forestry commonly include a request that the participants act as *extension volunteers* after completion of the program. Participants commonly conduct field days, prepare reports for newspapers and radio or organise meetings and seminars. Where this is the expectation, there is a need to offer farmers the technical knowledge and training in both forestry and communication (or at least access to appropriate information) that is outside the domain of their own indigenous knowledge (Farrington 1998).

Following the first MTG Program in their region, the Otway Agroforestry Network was successful in attracting government funding to conduct a formal farmer-to-farmer site visit program. Under the program, graduates of the MTG are paid to visit the properties of other members and provide guidance on how they might pursue their interest in farm forestry. A simple proforma is completed by the adviser and checked by an experienced professional before being returned to the farmer, along with a book about agroforestry prepared specially for the region (Reid and Stewart 1994), information about the group, and technical information.

The MTG Program has also contributed to the promotion of a number of farmers to more significant paid positions in farm forestry extension. The most notable is David Jenkins in Western Australia who, after assisting with the first MTG Program in the state, took on a locally-funded job coordinating eight other MTG Programs in Western Australia. By highlighting the role that farmers can play in extension programs and supporting the involvement of promising farmers in regional extension programs, the MTG is contributing to a shift in the way extension professionals and researchers relate to the farming community.

8. The MTG Ongoing Role - Facilitating Participation and Learning

The MTG Program has provided a tangible example of an extension program that is focused on facilitating participation and learning rather than the promotion of perspective-dependent solutions. The 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 the potential of adopting participatory and learning type approaches in their own work.

The MTG Program is continually evolving. The established foundations of the program - the emphasis on farmer responsibility, adherence to a credible conceptual framework for farm forestry and acceptance of adult learning principles - are proving sound. As the program enters into its fourth learning cycle, we are confident that it will be able to adapt to changing needs and opportunities facing farmers and stakeholders committed to revegetation and forest management.

The contribution of the program to farm forestry is likely to extend further than simply the education of and support for individual farmers. Professional development of extension agents and the promotion of farmer participation in research and development programs are just two possibilities.

Training and support for Extension Agents

Clearly, the principles that underpin the MTG Program can be applied to other types of landholder education and extension, including field days, training courses, seminars and the preparation of written extension materials and videos. Race and Fulton (2000) highlight the need for training of field staff and project officers in communication approaches as an important strategy for improving how industry and government can work with landowners to develop farm forestry. However, they acknowledge that once in the job, few extension agents have the opportunity or inclination for professional development training. We believe the MTG provides a means of providing professional guidance and support to the often young and enthusiastic extension agents working in farm forestry, especially if they are able to act as regional coordinators. In fact, the program clearly provides experience and guidance for the regional program coordinators on all of the points that Race and Fulton (2000) identify as critical:

- an understanding of the socio-economic content of the target audience and how farm forestry is likely to be developed;
- an ability to prepare and present of information the is easily understood and supported by credible members of the target audience;
- the opportunity to gather information on local case studies or examples that clearly illustrate the nature of the proposed farm forestry operations;
- the opportunity to provide a forum for the target audience to discuss the proposed farm forestry operations with others with similar experiences;
- the development of a long-term relationship that is trusted by both partners; and
- a means of involving local farm forestry champions or role models in their work.

Farmer and stakeholder participation in research and development

The welcome shift in farm forestry research from the testing of *perspective-dependent solutions* to the identification and extension of design principles and the development of decision support tools (Prinsley 2001) can be extended further by increasing the participation of farmers and other stakeholders in defining research needs and performance criteria. However, there is still not full acceptance among researchers of the importance of adopting farming systems research methods that acknowledge the environmental, economic and social context in which farm forests are designed and managed (Petheram and Clarke 1998). The MTG Program provides a constructive and non-threatening forum in which researchers and policy-makers have the opportunity to interact with farmers.

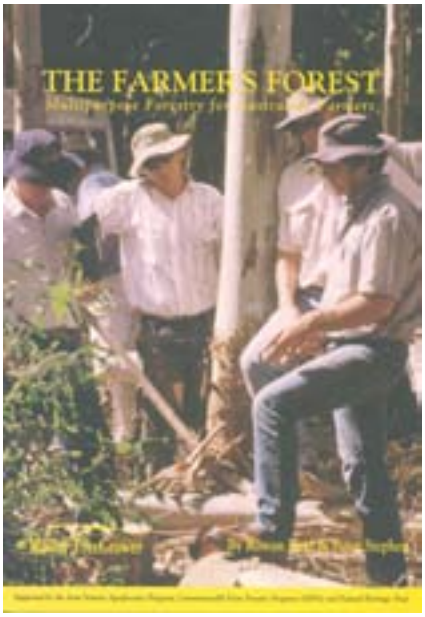
The future: outside the square

King's (2000) ideal of the merging of social justice, ecological sustainability and economic development perspectives and the facilitation of an environment of *social learning* may take years to develop in farm forestry extension in Australia. It will require recognition by those advocating particular outcomes that they will achieve more by working through a dynamic and pluralistic approach to forestry development rather than simply by using their power and influence to dominate. Although it is difficult to predict where such an approach will lead, it should be evident that whatever the future for farm forestry the outcome should better reflect the rights and responsibilities of all those involved.

Farmers are just one stakeholder in the future of farm forestry, arguably one of the most important. Until recently, few farmers had the confidence, knowledge and credibility to adequately represent their sector's interest or influence government policy on farm forestry initiatives and research priorities. The Master TreeGrower Program has been instrumental in providing leverage, guidance and encouragement to hundreds of farm foresters across Australia 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, funded by industry, governments and community groups. Because of the very number of individual landholders involved, 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.



The Australian Master TreeGrower has changed the way farm forestry is promoted in Australia. Cover of The Farmers Forest (2001)

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Appendix 1. MTG evaluation methods

"Before" Questionnaire

At the first session of each MTG Program, participants were asked to complete a brief questionnaire that was designed to:

- Distinguish participants who operate farms from those who do not;
- Gather data about the number of trees participants have planted or had planted on their property in the last 12 months and their reasons for planting them;
- Record participants' estimations of their own current farm forestry skills and management efforts; and
- Establish the extent of participants' personal farm forestry network in their region by asking them to identify which participants and presenters in their local program they have spoken with about farm forestry in the last 12 months.

"After" Questionnaire

At the final session of each MTG Program, participants completed a slightly longer questionnaire, asking them to:

- Evaluate any changes in their ability to assess opportunities for growing trees in their region;
- Evaluate any changes in their ability to design a tree management plan for their property or for other properties in their region;
- Evaluate any changes in their understanding of the interests and contributions to tree growing of other people in their region;
- Evaluate any changes in the benefits from networking with other people interested in tree growing in their regions; and
- Comment on the MTG Program by responding to a series of brief, open-ended questions

Telephone interview with coordinators: 3-6 months follow up

From three to six months after the completion of each local MTG Program, telephone interviews were conducted with the coordinators of the programs. Eight local coordinators of seven programs were interviewed for the 1999 evaluation report. In these interviews, the coordinators were engaged in open-ended discussions about their local programs and participants, and they were asked eight closed-ended questions designed to:

- Report on the networking of the participants since the program finished;
- Identify whether there are others in the region who are interested in doing the MTG Program; and
- Give suggestions as to professionals in the region the evaluators could speak with in order to gain some inside, objective impressions of the program.

Telephone interviews with participants: 6-10 month follow up

A random, 25 per cent sample of participants from each program were interviewed by telephone six to ten months after the program had finished. In these interviews, the participants were engaged in open-ended discussion about their program and about their activities since completing the program, and they were asked 12 closed-ended questions about:

- Their current tree planting, networking and extension activities; and
- Their attitude towards the MTG Program and their self-image as a 'graduate' Master TreeGrower.

Review Workshops

Associated with the formal evaluation process are annual evaluation workshops that have been run in:

- Melbourne (January 1997). The aims of this workshop were to:

  invite comments on the structure and development of the course… (and the group) will discuss how the program might best be implemented to meet the needs and potential of landowners and regional extension agents across Australia.

  (Letter to Otway MTG participants and interested persons dated 24 Jan 1997)

- Melbourne (December 1997). The aims of this workshop were to:

  review where the program has come from and more importantly its future. For this we need your experiences and views on ways to improve. It also provides an opportunity to learn a little more about the program.

  (Letter to key MTG participants, all MTG coordinators to-date and other interested persons dated 8 Dec 1997)

- Newcastle (1999)

- Bridgetown (August 2000). The aim of this workshop was to:

  invite all WA participants, coordinators and supporters to participate in an open discussion about the Program in WA, including to:

  - *revisit the MTG ideals and educational aims and to ensure that the program is still interesting, refreshing for WA landholders*
  - *review past WA programs to see what participants and coordinators thought were the programs strengths, weaknesses and outcomes;*
  - *clarify the role of the 'outsider', be that Melbourne Uni, agency staff or non-local growers;*
  - *discuss the future of MTG in WA with and without funding;*
  - *examine links between the MTG Program and the WA Farm Forestry Network Development Project;*
  - *follow-up support and networking; and*
  - *assess the future role of the MTG Program in WA.*

  (Special WA Edition MTG Newsletter, August 2000, inviting them to attend to evaluation workshop in Bridgetown)

Appendix 2. Publications and publicity

Awards

2000 The Allen Strom Eureka Prize for Environmental Education Program ($10 000)
2001 The Faculty of Land and Food Resources Award for Excellence in Outreach

Books

Reid, R. and P. Stephen (1999) *The Farmer's Log - Australian Master TreeGrower Manual 1999*. 128 pp. 2000 copies printed and distributed

Reid, R. and P. Stephen (2001) *The Farmer's Forest: Multipurpose forestry for Australian Farmers*. 168 pp. Australian Master TreeGrowers Inc. Colac. 2000 copies

Chapters in Books

Reid R. and P. Stephen (2004) Integrating forestry into farms. In Elevitch, C.R.(ed) 2004. *The Overstorey Book: Cultivating Connections with Trees*, 2nd Edition. Permanent Agriculture Resources, Holualoa, Hawaii, USA. Pages 231-235.

Reid R. (2004) Farm forestry extension. In Elevitch, C.R.(ed) 2004. *The Overstorey Book: Cultivating Connections with Trees*, 2nd Edition. Permanent Agriculture Resources, Holualoa, Hawaii, USA. Pages 249-252.

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Reid, R. and Stephen, P. (2000) The Australian Master TreeGrower Program – Encouraging Leadership amongst farm foresters. In: Ed: J.L. Herbohn, S.R. Harrison, K.F. Herbohn and D. B. Smorfitt *Developing policies to encourage small-scale forestry*. IUFRO Research Group 3.08 Small Scale Forestry. Proceedings from and International Symposium held in Kuranda, Australian 9-13 January 2000. pp 255 – 261.

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Exploring beyond the boundaries of extension and paving the way for a positive future for regional communities. University of Southern Queensland, Toowoomba, Australia, 3-5 October 2001
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Conferences

Reid. R (1997) *Agroforestry by design. Diagnosis and Design for farm forestry projects*, education, extension and regional strategies. Paper presented at the National Forum on Property Management Planning workshop: *Incorporating farm forestry into property management planning*, Coffs Harbour March 5th 1997

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Reid, R. (2001) Knowledge and learning in the new economy – Lessons from the Australian Master TreeGrower Program. Presentation at the ANU Forestry 4th Departmental Research Colloquium: *Forestry and the New Economy*. ANU Campus 26 Feb. 2001

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