

Using a Typology of Tree-growers to Guide Forestry Extension

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ABSTRACT

This paper introduces the concept of a landholder typology as a means for targeting non-industrial forest policy and extension. An intuitive typology for farm forestry in sub-tropical Australia is developed, and used to illustrate how an extension strategy can be varied to reach the various groups in a cost-effective manner. Types of tree growers identified include lifestylers, those deriving supplementary income from forestry, and those who aim to generate their primary income from forestry. It is argued that the nature of extension effort should be targeted towards the information needs within each grower type.

Keywords: Forestry extension, subjective typology, harvesting strategy, lifestyle tree-grower

INTRODUCTION

What can be done to assist smallholder tree farmers to achieve greater returns for their efforts? In some cases, the best way to assist landholders is to provide extension advice. However, to be effective, forestry extension efforts need to take account of information needs of tree growers. Since landholders vary in their level of interest in growing trees, and their information needs, it is useful to identify those who are most likely to respond to extension advice.

Various researchers have derived landholder typologies with respect to farm forestry using statistical techniques of cluster analysis. In contrast, many researchers have applied cluster analysis to identify distinct groups of small-scale private forest owners, e.g. Emtage *et al.* (2001) for subtropical and tropical Australia, Emtage (2003; 2004) for Leyte in the Philippines, and Hogl *et al.* (2005) for Austria. While there has been considerable research into smallholder typologies in the last decade, in practice most extension advisers still rely on a mental model of farmer types. These subjective typologies are often based on a close understanding of the farmer clientele in the particular area, accompanied by an understanding of innovation diffusion theory as it

applies to farming and of current trends in land use in the area. An interesting example is that of Wheeler and Perleberg (2004), who identified various 'tribes of family forest owners' in the Pacific Northwest of the USA by subjective means.

In this paper, a subjective typology of landholders in the Lismore district of north-east New South Wales, Australia, is developed, and is used to examine the design of effective forestry extension in the district. The next section describes the Lismore district.

THE CASE STUDY AREA

Lismore is a rural centre on the northern rivers area of NSW, located in the humid (1500 mm rainfall) subtropics (29°S). The area was once heavily forested (known as the 'big scrub'), but almost all of the accessible forest has been removed during the past 100 years, largely for the dairy industry. Most of the landholders in the region today are smallholders, owning 5 to 500 ha of freehold land. Many of these landholders have become interested in reforesting all or part of their holdings. They plant a range of tree species, including several eucalypts (especially *Corymbia maculata*, *E. dunnii*, *E. grandis* and *E. pilularis*) and a wide range of rainforest species. A group (regional industry cluster with some government funding) known as the Subtropical Farm Forestry Association, plays an active role in promoting farm forestry. Little other forestry extension support is available. As in other areas in Australia, landholders have some concern over sovereign risk (new and adverse government regulations); the NSW government has in fact introduced harvest rights legislation, though there is some cynicism about how much protection this legislation provides tree-growers.

LANDHOLDER TYPES IN THE LISMORE AREA OF SUB-TROPICAL EASTERN AUSTRALIA

In discussing their motivation for, and approach to, growing trees, it is useful to classify landholders in the Lismore area into three broad groups. This grouping is a subjective one, not based on rigorous analysis, but does offer some useful insights into extension methods that may prove effective. The three groups include landholders for whom any tree-growing income is 'lifestyle', 'supplementary', and 'primary' to their existence.

Lifestyle tree-growers tend to derive most of their income from off-farm activities (job, business, investments), and their decision to live on the land is based on the desire for a rural lifestyle: the ability to have horses, to grow fruit and vegetables, to enjoy the open space, wildlife and expansive views. Some of these landholders have taken a circuitous route to tree-growing; they may have grown tired of spraying weeds, tending stock and slashing grass, and see trees as a low-maintenance form of land husbandry. Others have made a deliberate decision that they wish to live within a

forested landscape. However, they share a common characteristic that trees form part of a lifestyle decision, not an income strategy. They tend to plant a wide range of species, often including rainforest trees, and often planted as mixed stands.

Supplementary tree-growers tend (or plan) to derive most of their income from on-farm activities, but tree-growing provides only a small part of that on-farm income. These landholders may derive most of their income from cropping, and grow trees on *land less-suited to cultivation, or may derive income from livestock, and grow trees as windbreaks and shelterbelts. Tree-growing may be viewed as one way to provide income security in that for instance, timber may be harvested during droughts when crop or livestock returns are depressed.* These tree-growers also tend to plant a wide range of species, but often plant these as pure stands.

Primary tree-growers are those landholders who derive the bulk of their income from forestry activities. These activities need not be confined to timber production; and may also produce non-wood products such as essential oils. These tree-growers tend to plant a limited number of species, as pure stands in large blocks.

An overview of these groupings is provided in Table 1. These groupings are similar to those devised for private forest growers in Denmark (Boon et al., 2004). In common with an empirical analysis of farmers in Trinidad (Ganpat and Bekele, 2001), the typology relies more on objectives than on farm area. Although it is convenient to highlight these distinctions as three categories, in reality they form a continuum, with some individuals not easy to categorise.

A number of timber-harvesting strategies are also evident, but do not relate directly to the three categories. Many of the *lifestyle* tree-growers have no intention to harvest, as they planted trees as the first step to try to recreate a 'primeval' forest. Others will recognise that their plantings become crowded, or obscure a desirable view, and realise that a thinning can be desirable for lifestyle reasons as well as for economic returns. It is difficult to anticipate when a lifestyle tree-grower may decide to harvest; they may make this decision when a view is obscured, after a windstorm, or after a chance discussion with a neighbour. Thus any decision by this category of tree-grower to harvest may be termed *haphazard*.

Some *supplementary* tree-growers also have a haphazard harvesting strategy, and any decision by them to harvest may be precipitated by low returns from other activities, by an unexpected need for cash, or the observation that a neighbour is harvesting. Other supplementary tree-growers have a definite plan to harvest at particular stages of stand development, and their plans tend to be based on advice drawn from forestry associations, from extension programs, or from professional forestry advisors. Clearly, these tree-growers vary greatly in the extent to which they follow advice, with some unquestioningly following the advice offered, and others doing substantial amounts of their own research, but all of these supplementary tree-growers tend to be influenced by extension materials.

Table 1. Typology of tree-growers and their harvesting strategies

Owner type	Tree planting behaviour	Tree management strategy	Extension approach likely to be most effective
Lifestyle	Many species, mixed stands	No harvest	Extension effort probably not warranted
		Haphazard	Provide basic information
Supplement income (income security)	Few species, Pure stands	Follow advice	Advise the advisors
Primary income	Few species, Pure stands		

Primary tree-growers also follow a range of strategies regarding harvesting. At one extreme, some rely on advice, in much the same way as the supplementary tree-growers. At the other extreme are tree-growers who have a carefully crafted and well thought-out strategy to maximise their return, usually through value-adding (e.g. by processing timber and marketing non-timber products). These four tree management strategies are similar to the farm strategies identified by Mbetib-Bessane and Gafsi (2002) for cotton growers in Central Africa.

Just as the classification of tree-growers should be seen as caricatures within a spectrum, these four typical forestry groups and harvest strategies are simply examples from a much larger spectrum. However, these four examples offer a sound basis for discussing the kind of advice and assistance that can be helpful to tree-growers.

PROVIDING FORESTRY EXTENSION INFORMATION TO TREE GROWERS

Lifestyle tree-growers with no intention to harvest are not considered any further, as many are quite determined in their resolve not to harvest.

Lifestyle and supplementary tree-growers with a haphazard strategy can be assisted by providing basic information on thinning, harvesting, typical prices, and on people to contact for assistance and advice. In the Lismore region, the Subtropical Farm Forestry Association (SFFA) has been effective in fulfilling this role in a cost-effective way. The SFFA is funded through member subscriptions, commissions and small government grants, and seems to be an effective way to offer extension advice. This approach to agricultural extension through self-help is gaining popularity in Australia (Roberts, 2000).

Many supplementary and primary tree-growers rely on advice to assist with their decisions on tree harvesting. They may draw advice from many sources, including accountants, extension officers, consultants and log buyers. The quality of advice received may vary greatly, and in-service training and short courses for extension agents (or training the trainers) are effective ways to improve the quality of advice offered to these tree-growers.

The fourth category, the primary tree-growers who undertake value adding, tend to be well motivated and well informed, but can be assisted through the provision of research results and market research. In the Lismore region, these tree-growers produce a diverse range of products and services including sawnwood (including speciality products such as Venetian blind slats), furniture, essential oils, garden mulch, biofuels and ecotourism. Information on supply, demand, prices and substitutes for their products can assist them to position themselves effectively. Such information need not be distributed directly, but should be available without unnecessary obstacles and cost.

ADVISING THE ADVISORS

This activity is important in the Lismore region, because the present government does not provide extension officers, so the only extension advice is provided by private consultants, who may have received their training many years earlier. While some the advice offered is sound, and based on years of experience, it may also be conservative regarding species selection, woodlot layout, spacing and thinning regimes, and the use of mixed species plantings. Typically, private consultants may recommend a small suite of species (usually restricted to *E. dunnii*, *E. grandis*, *E. pilularis*, *C. maculata*), and may focus on *volume* production rather than *niche* (the right tree in the right place at the right time for the right reason) and *quality* production (in competitive market, growers may need high quality logs to compete).

IMPLICATIONS FOR PROMOTING TREE FARMING

This overview and typology emphasises that tree-growers have different reasons for – and strategies in – growing trees, and that efforts to promote tree growing should take this into account. Helping farmers to help themselves (e.g. with advice provided

through the SFFA) seems to be effective. Other growers rely on information provided by extension officers and private consultants, and there is a need to 'advise the advisors' to ensure the best environmental and economic outcomes.

One way in which the major tree-growers can be assisted in new endeavours is for the government to provide guarantees to support or not undermine the investment, to stimulate confidence and promote investment. One good example of this approach is the decision by the Government of Western Australia to delineate 'cells' within which services (e.g. roads, railways and port facilities) necessary for particular species and products are guaranteed, e.g. blue gum for pulp in the south, pine for sawnwood in the west, mallee for biofuels in the wheat belt (Forest Products Commission, 2002). This guarantee has stimulated confidence and provided direction, and has fostered the formation of the 'critical mass' needed to stimulate the development of new industries. Such direction from government is effective and inexpensive.

CONCLUDING COMMENTS

Subjectively derived landholder typologies with respect to interest in and management of farm forestry can be a useful approach for targeting forestry extension. Deriving such typologies relies on a comprehensive and detailed knowledge of the farmer attitudes and practices in the area. The targeting of extension information, and creation of a supportive forestry environment, can play an important role in promoting reforestation and generating environmental benefits. Self-help groups of farmers, developed with only limited government support, can help to fill the gap brought about by withdrawal of government from rural extension activities.

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