

# Plantations and sustainable rural communities

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## Summary

Tree plantations are often hailed as providing a wide range of economic, social and environmental benefits to rural regions. Yet in many of the regions where plantations have been established, members of rural communities and environmental groups have expressed various concerns about the effects of large-scale tree plantings. If plantations are bringing so many benefits to these regions, why is there social concern and sometimes active dispute over their establishment? This paper examines the nature of these concerns and disputes by reviewing some of the literature on social implications of plantations, and by drawing on four case studies from the south-west of Western Australia. During the past decade this region has experienced a rapid increase in plantation forestry. While some see the industry as a positive development, there are also widespread concerns about the negative effects of this change in land use. The paper also investigates recent measures adopted by plantation companies, local governments and State and federal government agencies to address and resolve concerns. It reveals that a number of these strategies provide opportunities to channel social concerns over plantations into productive processes that allow differing views to be expressed and acted upon.

*Keywords:* forest plantations; forest management; rural development; land use; public opinion; Australia

## Introduction

Since the mid-1990s, there has been a rapid increase in the total area of agricultural land in Australia used for commercial timber plantations, with 137 493 ha of new plantations established in 2000 and 87 777 in 2001 (National Forest Inventory 2002). This compares with plantings of around 30 000 ha in 1995 (Wood and Allison 2000). There are a number of apparent reasons for the recent expansion of commercial plantations on agricultural land. First, difficult economic conditions in a number of key agricultural sectors have caused many farmers to consider leaving the industry or shifting into more profitable land uses (see Gray and Lawrence 2001). Second, severe land degradation in many parts of rural

Australia has resulted in trees being used as an important component of environmental rehabilitation strategies (see Conacher and Conacher 2000). Third, improving commercial opportunities for relatively short-rotation tree crops such as Tasmanian bluegums (*Eucalyptus globulus*), and the attraction to investors of the tax deductibility of initial investment in establishing and managing plantations, have led to the emergence of a number of companies willing to establish tree crops on behalf of individual and institutional investors (Schirmer 2002a). Finally, the Commonwealth and State governments have provided considerable support for the establishment of tree plantations, including research and development funding, extension and information services, and regulatory support for plantation development (Schirmer 2002a).

The expansion of commercial plantations has been particularly rapid in Western Australia, South Australia, Victoria and Tasmania. In the south-west of Western Australia, for example, 64 771 ha were established in the year 2000. While the area planted in 2001 fell to 23 441 ha, it is clear that major changes in land use are occurring (National Forest Inventory 2002). While trees have the potential to bring a range of benefits to rural regions, the establishment of large-scale plantations has been accompanied by growing discontent about the apparent negative social and economic implications of plantation forestry. For example, a recent study by Schirmer (2002a) indicated that rural media in some districts are reporting concerns about, among other things, the effects of plantations on local populations and economies, levels of social interaction, the provision and condition of local infrastructure, public health, and the environment. These local concerns have also been noted by a number of researchers who report growing community anxiety about the social, economic and environmental effects of plantations (e.g. Kelly and Lymon 2000; Petheram *et al.* 2000; Tonts *et al.* 2001; Schirmer 2002a,b).

This paper begins by providing a brief review of the literature on the effects of tree plantations in rural areas. It then considers various approaches to resolving conflict associated with plantations. Four case studies from the south-west of Western Australia follow, giving examples of community concern about the impacts of plantations and the strategies used to try to minimise adverse effects.

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## The social implications of plantations

The rapid expansion of plantations in Australia over the past decade has been accompanied by a growing body of literature on the social implications of the industry. Much of this literature has attempted to evaluate the validity or otherwise of particular concerns over plantations, particularly concerns over the effects of plantations on rural communities.

One of the most widely reported effects of plantations is on population structure. For example, in the Western Australian local government area of Boyup Brook more than 10% of agricultural land has been planted to trees, with around 23 farms (out of 130) shifting from mixed crop and livestock production to timber plantations (Tonts *et al.* 2001). These types of changes have also been recorded in other parts of Western Australia, Victoria and South Australia (Petheram *et al.* 2000; Ray 2000; Tonts *et al.* 2001). Much of the evidence suggests that farmers who lease or sell their properties to timber companies do not remain in their local communities, and tend to migrate to larger and/or coastal centres (Tonts *et al.* 2001).

Members of rural communities have expressed concern about the potential of population decline to affect the provision of basic services and the vitality of local economies (Schirmer 2002b). There is, however, relatively little evidence to demonstrate a clear link between the expansion of plantations and the loss of key businesses and services. Indeed, the loss of public services, such as schools and health services, seems more likely to be the result of prevailing government policies than tree plantations (Madden *et al.* 2000). One of the problems facing the plantation industry is that rural people and the rural media are increasingly attributing blame for population loss and service withdrawal to plantations (Kelly and Lymon 2000; Tonts *et al.* 2001). Dealing with this perception is one of the key challenges facing the plantation industry.

In addition to concerns about the implications of plantations for provision of services, recent research indicates that there is also widespread fear about the effects of the industry on the viability of local social networks and institutions. In the Shire of Plantagenet in Western Australia, for example, Kelly and Lymon (2000) found considerable local anxiety about the impacts of plantation-induced population decline on local sporting clubs, volunteer organisations and, in particular, volunteer fire brigades. As Madden *et al.* (2000) point out, both departing and remaining residents are likely to feel that the local sense of community is being lost. This was also noted by Tonts *et al.* (2001), who found that some farmers who are now surrounded by plantations suffer from reduced social interaction and increased isolation.

While there is widespread unease about the effect of the plantation industry on local demographic, economic and social structures, it has also been pointed out that decline and social malaise are linked to long-term processes of restructuring in rural areas (Petheram *et al.* 2000). In many parts of Australia, falling populations, economic decline and contracting social networks have been part of the rural landscape for more than four decades (see for example Anderson 1972). The plantation industry may have accelerated this decline in some instances, making it more

difficult for rural people to adjust to the changes occurring in their community.

Although the plantation industry has been accused of generating a range of negative effects in rural areas, it is important to recognise that there is also a range of potential benefits associated with the industry. For those farmers who lease out their property for plantations, the outcome is usually a regular income stream during the term of the lease. This can increase both income and financial certainty for farmers in sectors experiencing economic difficulties. It also enables farm family members to seek work, where available, off the farm to further supplement income. For those farmers who sell their properties, the one-off payment provides the opportunity to relocate to new agricultural regions or to leave the industry altogether. The lifestyle benefits associated with selling or leasing a farm include the opportunity to live in a more desirable location; the opportunity to change career; increased leisure time; and greater involvement in community life (Selby and Petajisto 1995).

At a regional level, plantations have the potential to contribute to a more diversified economy, particularly if downstream processing ventures can be established. In addition to jobs in processing industries, plantations require people to establish, tend, harvest and transport timber. A recent study in Western Australia has estimated that, between 2001 and 2008, the bluegum plantation industry has the potential to generate as many as 2700 additional jobs (State Timber Regional Evaluation Strategy 2000). Most of these jobs, however, and the additional economic activity, appear likely to be concentrated in large regional centres, such as Bunbury and Albany, rather than in small rural communities.

There is also research from overseas suggesting that the economic and social effects of plantations can be spatially uneven. For example, research in Scotland by Mather and Murray (1987) found that, although plantations are more labour-intensive than crop–livestock farming on a per hectare basis, much of the additional labour was provided by outsiders from larger centres, rather than by local residents. Thus there can be considerable economic and employment benefits for the regional centres (Farnsworth 1983; Aldwell and Whyte 1984).

Not all rural communities are opposed to large-scale commercial plantations, although there is evidence that plantations are regarded less favourably than other land use changes in some rural areas. Tonts *et al.* (2001) found significant differences in attitudes toward plantations between communities, and argued that rural communities which had a more diversified commodity base with a wider range of industries were less likely to express concerns about plantations than those with a narrow economic base. Petheram *et al.* (2000) compared the responses of rural communities in south-western Victoria to different changes in land use. They found that changing land use from grazing to plantation growing was more likely to be viewed negatively than changing land use from grazing to dairying or cropping. Plantations were believed to have more negative implications for local communities than dairying or cropping.

It is also important to recognise that there are often vastly different social reactions depending on the type of tree planting involved.

Petheram *et al.* (2000) and Schirmer (2002a,b) found most criticism was directed towards large-scale industrial plantations. Many of the people questioned expressed a clear preference for more integrated farm forestry systems. The main reason given for this was that farm forestry involves a resident landowner and is integrated with traditional agricultural pursuits rather than replacing traditional agricultural production on a property.

### Responding to concerns: possibilities for resolution?

Before attempting to respond to concerns over plantations, it is important to consider which issues are being responded to, and the scale at which these issues occur. The different issues associated with plantations are not necessarily closely related and often need different responses. For example, mitigating concerns about the impact of plantations on population structure will require a very different response to dealing with the implications of plantations for local roads. The scale and location of issues can vary considerably, from the farming neighbour concerned about who is responsible for maintaining a fence on a boundary with a plantation, to small business owners questioning how increasing areas of plantation in their region will affect their business, to investors concerned about potential international markets for plantation timber. Clearly, there cannot be a 'one size fits all' response to concerns.

Some of the key methods that have been used by both plantation companies and governments to resolve concerns include information dissemination, development of better communication and consultation strategies at the farm property level, adjustments to statutory and strategic planning systems, and development of collaborative approaches between stakeholders. These have had varying degrees of success in different situations (Schirmer 2002a,b).

Information dissemination is a common response to concern over plantations, at all scales and for all types of issues. It may include discussing problems with individuals, usually with the aim of reassuring them that there is no need for concern; holding public meetings; and engaging in public relations exercises with local media. The notion that information dissemination can resolve problems is based on the premise that concerns are based on erroneous views or information that can be resolved by presenting the 'correct' information. Where the concerns held are not 'erroneous' but arise from a genuine need to change some aspect of plantation establishment and management, information dissemination is not likely to succeed. The success of information dissemination also relies on the existence of a level of trust between those holding concerns and those who are disseminating information.

At the farm level, improved consultation and communication can have an important role to play in reducing the level of anxiety over plantations. Concerns are commonly most acute amongst landholders neighbouring a plantation. Key issues often include responsibility for constructing and maintaining boundary fencing; the possibility of a plantation harbouring various native and feral animals that may cross to the neighbour's property to feed on

pastures or crops; run-off from chemical use; and the shading effects of trees on neighbouring pasture or property.

The primary response to landholder concerns in Australia has been by the companies and agencies establishing and managing plantations. These responses have included direct and regular communication to neighbouring farmers about planned activities; ensuring that neighbours know whom they can contact to discuss any problems or issues of concern; and changing practices to reduce the potential impact of plantations on a neighbour. Examples of this have included setting back a plantation from a particular boundary or agreeing not to spray chemicals within a set distance of a property boundary (Schirmer 2002b).

In Tasmania, the Good Neighbour Charter (GNC), a voluntary agreement signed by the major forestry companies in the State and in operation since July 2000, has formalised these types of responses. The GNC provides several guarantees by the forest industry about the practices it will undertake when establishing plantations on cleared agricultural land. For example, it guarantees that forest companies will maintain close contact with local governments when planning plantation establishment, to discuss issues such as roads, water intake and forward planning (Good Neighbour Charter 2000). Some initial concern was expressed that the GNC did not include a means for independent mediation of disputes over plantations (see Schirmer 2002a), although it is not known if this has affected the success or otherwise of the GNC. It is difficult to determine the success of measures to alleviate farm-level concerns, although anecdotal evidence, primarily from discussions with representatives of plantation companies, indicates that they are successful to some extent, particularly in relation to establishing and managing plantations (Schirmer 2002a,b).

Some local governments in Australia and internationally have argued that planning systems should be modified to address concerns over plantations. Suggestions that all proposals for establishing plantations should be subject to local government approval have met with mixed reactions. Those favouring this approach believe it would allow plantations to be established with due regard to local social, economic and environmental conditions. Concerns have been expressed, however, that going through this approval process for each plantation would add extra cost and delay to a system that already contains regulations (Codes of Practices for forests and plantations exist in most States) to ensure plantations are established in an environmentally appropriate manner. Secondly, some opponents argue that attempting to engineer land use outcomes to meet social goals, such as reducing population decline, constitutes an unfair imposition of control over land use and inhibits the operation of market forces. In addition, there are concerns that individual local governments might have different requirements for plantations, resulting in considerable impediments to establishing plantations at a regional level and an unclear set of rules for doing so (Schirmer 2002a,b).

Planning procedures and regulations in Australia vary considerably from State to State. In some cases, plantation companies and agencies are required to submit proposals to local governments for approval, while in other States plantations can be established

without formal approval from local governments or State government planning agencies. Schirmer (2002b) compared the situation in a local government area in Victoria, where planning approval was required prior to plantation establishment, to that in local government areas in Tasmania where prior approval was not required, although plantation companies commonly applied for approval prior to establishment. The study found that the powers of local government to resolve concerns over plantations — by requiring modifications to proposed plantations, such as setting plantations back from boundaries, or by refusing to approve a proposal where they believed the plantation would have negative social and economic impacts — were restricted. This was largely because local governments were limited by State and national policies on plantations, which do not recognise social and economic concerns as sufficient justification for applying regulatory control on plantations.

Planning approaches that use a consultative, rather than regulatory, approach have been used in the United Kingdom, where the establishment of plantations has historically been a contentious issue (Tompkins 1989). Indicative Forestry Strategies (IFS) and, more recently, Local Forestry Frameworks (LFF) have been developed to provide guidance on future forestry and woodland planning and management according to local interpretation of agreed national and international guidance and commitments. This has been done through an intensive consultation process which has included forestry agencies, other government agencies, local government, local communities and other groups. The IFSs and LFFs identify preferred areas for new plantations, using a wide range of environmental, economic and social criteria. These guidelines are then used to assess whether proposed new plantings will receive planting grants, thus acting as an incentive rather than a regulatory system (Dumfries and Galloway Council 1999; Environmental Resources Management 2000a,b). This system appears to have been successful in resolving concerns over the placement and distribution of plantations on a regional basis. The success of this approach appears to rest on the strong emphasis on effective consultation processes that both record and act on the views and concerns of a wide range of stakeholders.

In Australia, plantation companies and local government have, in some cases, developed strong consultation and communication processes. For example, in Western Australia most plantation companies have traditionally applied to local government for planning approval, or at least submitted their plans to local government before establishing plantations. Representatives of plantation companies see this process as a useful way of avoiding concerns and disputes over the location of plantations and ensuring a good level of communication, and accompany it with a willingness to make modifications to some aspects of plantations. In some cases, this attitude appears to have mitigated concerns over plantations (Schirmer 2002a).

Planning approaches usually try to address a range of concerns through a single regulatory system. An alternative is to develop multi-stakeholder groups that attempt to address and resolve a particular issue. This alternative has been used in several cases in Australia, particularly in relation to issues of road infrastructure. The case studies on transport issues and aerial spraying below discuss these approaches; they appear to have had some success,

primarily by achieving agreement between different groups about particular issues, and taking action where needed to change practices. While the approaches have been relatively successful in addressing concerns about infrastructure or the environment, they have been less successful in dealing with community anxieties about rural population decline, service withdrawal and other social changes.

In general, the approaches described above may have differing levels of success depending on the types of concerns and the scale at which they are addressed. Schirmer (2002a) suggests that there has been, in Western Australia (WA) at least, reasonable success in addressing concerns relating to the way plantations are established and managed (e.g. concerns over site preparation techniques, aerial spraying, fire management and transport issues). By contrast, concerns about the social and economic changes associated with the establishment and management of large-scale plantations have not been resolved by the approaches tried so far. Schirmer (2002a) has linked this to the types of incentives that have led to the establishment of large-scale plantations by corporations and agencies, rather than to the establishment of farm forestry and integrated plantations that are preferred by many who express concerns over plantations.

## Case studies of plantation disputes: the south-west of Western Australia

### Case study 1: Transport conflict

In the south-west of WA, the expansion of the plantation estate has been accompanied by rising unease about the increase in road use by heavy log haulage vehicles. In some of the small local government areas, residents often argued that, without significant upgrading, lightly constructed local roads were unlikely to be able to handle concentrated use by log trucks once harvesting commenced. A typical log haulage truck carries around 45 t of timber per load, with a hectare of Tasmanian bluegums producing 150–200 t of wood (see Tonts *et al.* 2001). This compares to normal agricultural production in the region of around 2.5 t of produce  $\text{ha}^{-1} \text{y}^{-1}$ . The current design standard of many minor (often unsealed) roads is suited to the normal agricultural haulage, but is unsuited to the heavy concentrated traffic that will occur as plantations are harvested. There are also a number of safety issues associated with the transport of logs from the plantations to ports or processing operations, including the implications of trucks for pedestrians in towns, increasing truck-related accidents, and the damage caused to roads by heavy haulage vehicles. The concern about transport was highlighted in a recent analysis by Schirmer (2002a), who found that the number of articles in the *Albany Advertiser* newspaper on transport issues and the plantation industry increased from one in 1994 to fifteen in 1999.

Transport issues are also seen to be important by the timber industry. To maximise profits, timber companies need to ensure logs can be transported efficiently to ports or processing facilities, i.e. on roads in a condition suitable for log transport. In addition, the industry does not want to be painted as having little regard for public safety. During an interview (see Tonts *et al.* (2001), one timber company employee pointed out that:

as much as anybody we need the roads to be in good condition. Just like farmers, we have to get our product to the market as quickly and efficiently as possible. We also need a safe network, not just from the perspective of our employees, but for the community as a whole. The last thing we want is our company to be involved in accidents. (*Male interviewee, Bridgetown*)

While there tends to be agreement between local residents and timber companies about the need to deal with transport issues, there are often notable differences in opinion on the question of who should pay for road upgrades and maintenance. Maintaining and upgrading local roads is a responsibility of local governments, which already devote a significant proportion of their budgets to this activity. For example, the Shire of Boyup Brook currently spends around \$600 000  $y^{-1}$  on maintaining and upgrading its road network. According to some residents, plantation companies should bear the increased costs through an increase in local government rates for land used for plantations. However, the timber industry has argued that this is unreasonable as their road usage is minimal while the trees are growing and yet they still pay annual rates. There is also an argument that the Commonwealth and State governments should provide financial assistance, since expansion of the industry has been heavily promoted by some agencies and politicians within these tiers of government (see Tonts *et al.* 2001).

One of the key responses to transport issues in the plantation industry in south-western WA has been the formation of the Timber Industry Road Evaluation Strategy (TIRES) group in 1999. TIRES is an initiative that involves representatives from the timber industry, local government and State government agencies to plan for future transport needs associated with the plantations. A collaborative study by TIRES and the Western Australian Department of Transport (State Timber Regional Evaluation Strategy 2000) estimated the cost of required improvements to the road network to be \$195 million, with \$66 million of this needed for local roads, while the Western Australian Government committed \$99 million between 1999 and 2009, leaving a shortfall of \$96 million.

In addition to modelling transport needs and contributing to regional planning, the TIRES group appears to have played an important role in mediating at least some of the conflicts associated with transport, primarily by acting on behalf of its members to obtain funding to upgrade roads, and publicising these efforts so that local communities are aware that the issue is being taken seriously and acted on. For example, in April 2000, as a result of work by the TIRES group, the Western Australian Main Roads Department announced that it would prioritise roads servicing the tree farming industry. In 2002, TIRES announced that it had secured funding for the Plantagenet Shire council to upgrade roads for the woodchip industry (Schirmer 2002a).

Transport issues have also received considerable recent attention by the State Government's Department of Planning and Infrastructure (DPI). In late 2001, the DPI began to examine the feasibility of transporting timber to port or processing facilities by rail, rather than road. Indeed, the DPI has described the plantations as posing the biggest strategic transport decisions in

decades. The DPI has also begun to consult widely with communities, local government and the plantation industry about solving some of the transport issues facing the region. The apparent willingness to engage with stakeholders and develop plans and transport decisions as part of a consultative process appears to have reduced some negative sentiment towards the plantation industry on this particular issue. Similarly, much of the success of the TIRES group is linked to a consultative and collaborative approach to dealing with transport issues.

## Case study 2: Downstream processing

The negative effect that plantations can have on the population and economic structure of small rural communities has the potential to be offset by downstream processing operations. Virtually since the initial expansion of the plantation industry in south-western Western Australia in the late 1980s there have been proposals to establish downstream processing operations, such as woodchip and pulp mills. This is reflected in Schirmer's (2002a) analysis of newspaper articles from the *Albany Advertiser*. Her research indicated that the number of articles reporting on issues relating to the establishment of processing industries increased steadily during the 1990s, with most of these articles emphasising the positive aspects of processing, such as employment and increased local economic activity.

Perhaps not surprisingly, the plantation industry has also widely promoted the benefits of downstream processing. This, in part, helps to counter the image of the industry as a contributor to regional economic, demographic and social decline. This was emphasised in an interview with a representative from the timber industry:

When you look at the bigger picture, our industry (plantations) is likely to contribute to more jobs and people, not less. The population of most rural areas has been declining for years, so it is not fair to say that we are the cause of that. It's more likely that jobs in looking after plantations and, in a few years time, chipping and pulping will bring huge benefits... (*Male interviewee, Bunbury*)

The contribution to regional employment was also stressed by the Western Australian Forest Alliance (Wafa 2001):

Wafa believes that WA should have its own pulp and paper industry based on the bluegum resource and pine residues. Two such mills, designed to meet the highest environmental standards, could be built (in the south-west of WA) ... and employ over 800 people.

The interest in downstream processing also extends to local governments, with a number of shires agitating for future processing facilities to be located within their jurisdictions. For example, in late 2000 the small town of Donnybrook was announced as a site for a new paper pulp mill. According to the local council, this development would offset the negative social impacts caused by the loss of farms to plantations. However, the Donnybrook community has remained sharply divided over the processing plant. Some regard the plant as contributing significantly to jobs and population, while others are concerned about the possible environmental and aesthetic effects.

In response to the public concern, the local government organised a community meeting in August 2001 to discuss the proposal. At the meeting, residents voted 94 votes to 63 that the local shire should grant approval for a mill. The ongoing division within the community has led to a greater involvement of the Department of Planning and Infrastructure, which is in the process of consulting with the community about the issue and developing a plan that may mitigate some of the problems. Identifying a successful location and establishing the mill is likely to require considerable public consultation and careful planning to ensure that the environmental, economic and social needs of the region are met. The case of Donnybrook suggests that the lure of more employment associated with downstream processing in the plantation industry is not enough to stem concern and conflict.

### Case study 3: Conflict over aerial spraying

In 2000, unease over the impacts of aerial spraying began to be reported on a regular basis in regional media in the Great Southern region of Western Australia. A community group called the Great Southern Group for Smart Tree Farming (GSGSTF) made aerial spraying concerns one of their priorities. Those expressing concerns believed that aerial spraying could result in spray drift and that the chemicals used, particularly dimethoates, could cause health problems through skin contact or ingestion, particularly as many residents in the Great Southern relied on rooftop tanks for drinking water (for details of this case study, see Schirmer 2002a).

Initially, the main responses and interactions over the issue consisted of members of the plantation industry outlining to the media, and to those expressing concerns, the methods they used to try to ensure best practice when aerial spraying. Those expressing concerns called public meetings about the issue and presented petitions to the State Parliament, calling for a ban on aerial spraying (WA Legislative Council 2000). On 23 May 2000, the State Government Health Department temporarily banned aerial spraying of dimethoate for three months, and for a further six months from August 2000, due to confusion about whether the chemical's registration allowed aerial spraying. The National Registration Authority clarified after the initial ban that it had not intended aerial spraying of eucalypts to be an approved application for pesticides containing dimethoates (Department of Health 2000a,b).

Despite the ban on spraying of dimethoates, aerial spraying with other chemicals continued to cause concern. In December 2000, a community forum was organised by the GSGSTF to discuss aerial spraying, and was attended by around 150 people. At this forum calls were made for a committee to be formed with representatives from various groups to discuss the issues raised at the forum. Later that month, the Blue Gum Aerial Spraying Community Consultative Group (CCG) was formed. It included stakeholders from a range of rural industries including tourism, beef, plantations and viticulture, and representatives from various relevant State Government departments (Kelly 2001). It aimed to discuss the concerns that had been raised over aerial spraying, and develop recommendations to be submitted to the Agriculture Minister of the State Government. The Consultative Committee tabled a set of recommendations to the Agriculture Minister early

in 2001. The Minister subsequently endorsed most of the recommendations and gave qualified support to the rest, but action by the Government on the recommendations has yet to be taken at the time of writing this paper. The recommendations included conducting a review of State legislation relevant to aerial spraying; adopting a code of practice; making it mandatory for aerial sprayers to have Health Department licences; and conducting further research on aerial spraying (Kelly 2001).

Individuals both from plantation companies and from groups who have expressed concern over aerial spraying have reported that since 2000:

- the area aerially sprayed each year has been substantially reduced; and
- some plantation companies have worked to develop more effective consultation with neighbouring landholders before spraying. This consultation has in some cases resulted in changes to the planned spraying, as well as in spraying plans being reviewed and agreed to by both the plantation companies and the neighbours. Where this has occurred, it appears to have led to reduced concern by landholders when spraying occurs on adjoining plantations.

It is difficult to assess whether the strategies used to resolve concerns over aerial spraying have been successful, given the short time since the CCG was formed and made its recommendations. The number of calls received by Timber 2002, the Regional Plantation Committee, reporting concerns over spraying has dropped considerably since 2000 (Julia Levinson, Timber 2002, Albany WA, *pers. comm.*) The number of items (articles and letters) in the *Albany Advertiser* reporting concerns over aerial spraying has also fallen, from thirty-four items in 2000 to four in 2001. This change in media reporting is partly due to the decision by the GSGSTF to focus on discussing concerns directly with plantation companies and relevant government agencies, a change that may have in part resulted from the work of the CCG in facilitating communication between different groups.

The CCG perhaps had its greatest impact through working to improve communication between the plantation industry and other groups, a process which may have contributed to improved consultation between some plantations companies and neighbouring landholders. Kelly (2001), reporting on the work of the CCG, stated that 'one of the greatest benefits to emerge from the CCG process was the establishment of better communication links between the plantation industry and the community.' Thus, despite involving entrenched and opposed perceptions of the possible impacts of aerial spraying, when productive communication between groups was established, the dispute — at least in the short term — appears to have been channelled into a productive process in which some positive change has been achieved.

### Case study 4: Local government planning policy

In Western Australia, plantation companies have traditionally applied to local councils for permission before establishing a

plantation, and several local governments have developed planning policies that address plantation-related issues. Plantation companies can appeal against local government decisions to either the Town Planning Appeal Tribunal or the Minister for Planning.

The Plantagenet Shire Council (PSC), in the Great Southern region of WA, has had several of its decisions appealed against by plantation companies (for details of this case study see Schirmer 2002a). For example, in June 2000, a plantation company lodged an appeal against PSC's decision to refuse planning consent for a plantation that PSC believed might negatively affect a nearby bed-and-breakfast and hydroponics farm. In July 2000 PSC was reported to be facing around 15 appeals by various plantation companies about limitations placed on proposed plantations.

At the same time, PSC was facing conflict over a plantation it had approved. In June 2000, a petition was lodged requesting PSC to revoke planning approval given for a plantation falling within a 1 km radius of the townsite of Rocky Gully. A public meeting was held in Rocky Gully in late July 2000 to allow residents to discuss their concerns with the plantation company involved. Despite the anxieties of some residents, planting subsequently started on the property.

As well as facing concern from the plantation industry and rural residents, there was disagreement within the council about whether to allow some plantations. In July 2000, a proposal for a plantation, part of which would have fallen within 1 km of the townsite of Narrikup, was not approved after members of the council became deadlocked over whether to grant planning permission. In early 2001, the Planning Minister of the State Government overrode PSC's decision to refuse planning permission for the plantation that would be established near the abovementioned hydroponics farm and bed-and-breakfast. Despite this decision, the plantation company stated that it might not go ahead with the plantation, due to community concerns. The company also confirmed it would continue to apply to PSC for approval before establishing plantations, but would like more certainty about where plantations may and may not be established. This decision was approved of by some local residents who had previously held concerns about the potential effects of the plantations.

This example highlights the limits of the planning system in addressing social and economic concerns over plantations, and the role of consultation between local government and plantation companies. When planning appeals have been made, it appears the State Government has felt that considerations such as social impacts of large-scale plantations are not valid reasons to uphold a decision by a local government to refuse a proposed plantation. This is consistent with national policy, particularly the *Plantations 2020 Vision* which was signed by both Federal and State governments (Tonts *et al.* 2001; Schirmer 2002a). However, consultation at the local level about the siting of plantations can minimise concerns over social impacts by allowing decisions to be made with some regard for the concerns of local residents.

## Conclusion

It is clear that there is a wide range of positive and negative views about the effects of expanding Australia's plantation estate. Concerns expressed about plantations do not form a single dispute or conflict, but rather are made up of a number of relatively discrete issues which are not necessarily related to each other, and which can occur at various scales. The diversity of issues related to plantations means that any attempts to resolve conflict must be designed carefully to ensure they are an appropriate response to the particular concern(s) being examined. The case studies presented demonstrate that conflict resolution can work, particularly where processes are developed in which different stakeholder groups can work together towards a shared resolution of a particular issue. The TIRES groups and the Community Consultative Group on aerial spraying are examples of this approach. However, this approach may primarily be successful where the issue is one that relates to aspects of the practices used during establishment, management and harvesting of plantations. Other issues, for example concerns over the social impacts of plantations on local communities, are more difficult to resolve.

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