

Conditions for building social capital and community well-being through plantation forestry

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Summary

Falling commodity prices, dying towns, escalating suicide rates, decreasing access to services, and environmental degradation all form part of a well-known story of life in contemporary rural Australia. At face value, plantation forestry has much to offer in the search for happy endings. But it is also apparent that for many rural communities, experience of plantation forestry, to date, has not been promising. This paper is not so much concerned with evaluating successes and failures with plantation forestry so far, as it is with an analysis of the conditions under which the potential contribution of plantation forestry to social vitality may be realised. It is argued that there is a need for better understanding of the social context for the challenges facing rural Australia (in particular, the relationships between economic restructuring, community well-being and environmental sustainability). Then, opportunities can be identified for enhancing the benefits of plantation forestry and mitigating negative social outcomes including resource-use conflict. To realise these opportunities, strategies need to be developed that simultaneously regenerate social, natural and economic capital such as, for example, farm and catchment planning, localised value-adding and participatory decision-making.

Keywords: rural communities; social development; rural sociology; socioeconomics; forest plantations; Australia

Introduction

Falling commodity prices, droughts, dying towns, bank foreclosures, high suicide rates (particularly among indigenous Australians and young males), decreasing access to services, and environmental degradation all form part of life in contemporary rural Australia (Lockie and Bourke 2001). The litany of crises affecting the bush has become such a mainstay of the urban media as to appear commonplace. While politicians claim they never forgot the bush, the rise of the populist right-wing One Nation Party in the late 1990s certainly helped ensure that political concern for the plight of rural Australians is now proclaimed at

every opportunity. Rural people are looking for solutions, and there are plenty of people with solutions to offer. From deregulation of labour and commodity markets to the redefinition of private property rights and investment in natural resource management, there are many proffered strategies. Within this mix, plantation forestry appears, at face value, to have much to offer. But it is also apparent that, for many rural communities, experience of plantation forestry, to date, has not been promising. Complex problems demand complex answers which no single strategy can provide.

This paper is not so much concerned with evaluating successes and failures of plantation forestry so far, as it is with analysing the conditions under which the potential contribution of plantation forestry to social vitality can be realised. As other papers in this issue address in detail the direct environmental, social and economic impacts of plantation forestry, this paper will deal instead with the wider social context for change in rural Australia — the ‘big picture’. It is organised into four sections: ‘the obvious’, ‘the easy answers’, ‘the flies in the ointment’ and ‘the good news’.

The opening section summarises selected elements of the crises facing rural Australia, the potential contribution of plantation forestry to reversing these crises, and a number of social issues associated with plantation forestry itself. It argues that only a shift from industrial-style plantations to farm forestry programs based on more diverse and integrated regional strategies is likely to reverse the declining fortunes of rural communities. What makes this section obvious? While all the issues raised are complex and deserving of detailed and ongoing investigation, the analysis here is necessarily brief, and little, if anything, will be discussed with which readers will not already be familiar.

The second section identifies some now well recognised principles that necessarily underlie successful attempts at community revitalisation: that is, the enhancement of social capital, local and regional coordination of activity, and development of local leadership capacity. Are these necessarily easy answers to complex problems? No. But it must be recognised that, by themselves, these are not sufficient to achieve rural sustainability (environmental, economic or social). Too often they

are repeated *ad nauseam* as mystical mantras with no obvious link to on-ground change (Cernea 1993).

The third section argues for a far more sophisticated understanding of the social context (in particular, the relationships between economic restructuring, community well-being and environmental sustainability). Then, opportunities can be identified for enhancing the benefits of plantation forestry and mitigating negative social outcomes including resource-use conflict.

The final section suggests that there are a number of well developed social research tools — including social impact assessment, stakeholder analysis and social mapping — that may provide a robust platform for participation of and negotiation among all stakeholders. Plantation forestry proponents cannot be expected to solve all the problems of rural Australia, but up-front investment in strategies to understand target communities and improve negotiation have significant potential to reduce conflict and promote the realisation of benefits from forestry operations.

The obvious

The top 20% of broadacre agricultural enterprises in Australia produce over half the output and earn favourable returns on investment, while the rest struggle with declining terms of trade and often negative incomes. Further, the number of very large and very small farms is increasing at the expense of medium-sized farms. Therefore, it comes as no surprise that governments and farm lobby groups alike seek to remove unviable small to medium-sized enterprises from the industry and sponsor research that promotes further intensification of farming practices (Higgins and Lockie 2001). On the basis of the statistics alone, restructuring, or adjusting, the farm sector appears to be a highly rational course of action.

This is bad news, however, for agriculture-dependent rural communities. It is not the regular price and profitability slumps of farming that threaten the viability of rural communities, but the long-term pressure to increase productivity generated by ever-declining terms of trade (the cost–price squeeze). This is just as evident in years when farming is profitable as in those when it is not. The constant drive for increased productivity in agriculture inevitably reduces farm labour requirements. This, in turn, fosters the depopulation of rural areas, reduces demand for goods and services in rural towns, reduces viability of other rural businesses and services, and so on. It is a self-reinforcing downward spiral dubbed the ‘dynamics of decline’ (Lawrence and Williams 1990). To ensure long-term viability, rural communities, in general, need to reduce their overwhelming reliance on agriculture. Economic diversification is also important to the growing numbers of small farmers who rely on off-farm income for their own viability.

The environmental news is grim as well. The widely quoted estimate that environmental degradation costs Australian agriculture \$2 billion annually (Madden *et al.* 2000) says nothing of the costs incurred by other sectors of the economy, or impacts on the amenity and health of the wider community.

Plantation and farm forestry has been promoted in this environment as a national strategy to facilitate more sustainable

agriculture by reducing land degradation and diversifying farm incomes. It is also expected to enhance regional development by contributing to industrial diversification and employment growth (Race and Curtis 1996).

But plantation forestry is not without its critics. Schirmer and Kanowski (2001) summarise the main concerns regarding plantation forestry at a number of levels: the farm, the community and the region (see also Wilkinson *et al.* 2001).

At the farm level, concerns are expressed about:

- shading of crops, pasture and houses on neighbouring properties and altering of views;
- increased feelings of isolation through the fragmentation of previously agricultural landscapes;
- whether or not plantation companies will contribute to establishment and maintenance costs of boundary fences;
- harbouring of feral and pest animals;
- land value rises or declines;
- off-site impacts of chemicals used to establish and manage plantations; and
- loss of productive agricultural land.

At the community level, concerns are expressed about the potential of plantation forestry to accelerate the ‘dynamics of decline’ through:

- loss of community members as plantation companies purchase land and resident landowners leave;
- loss of services following depopulation; and
- changes in the type, location and availability of employment towards regionally based, tenuous jobs.

And at the regional level, concerns are expressed about:

- loss of amenity and tourism through landscape change;
- environmental impacts such as declining biodiversity and water quality;
- logging traffic and its potential impact on road safety and condition; and
- long-term economic viability should future markets for plantation timber fail to materialise.

Schirmer and Kanowski (2001) note that few data are available on how widely these concerns are shared among affected communities, and that irrespective of the empirical validity of each concern, or how widely they are shared, positive responses are needed from the plantation forestry industry.

In shaping a positive response, Schirmer and Kanowski (2001) consider that increasing levels of consultation and participation in decision-making have potential to reduce conflict, particularly in relation to subjective impacts such as change in landscape amenity or beauty. They propose that the replacement of industrial-style plantations with an integration of plantations and other land uses may help realise the potential benefits of plantation forestry and address community concerns.

Implementation of strategies such as integrated farm forestry are, however, clearly much more complex than industrial plantation forestry. This is reflected in Race and Curtis’s (1996; see also Race 1999) review of the Australian Government’s National Farm

Forestry Program (FFP). The review found that while the Program had been successful in raising the profile of farm forestry as a legitimate farm enterprise in many regions, a viable farm forestry industry had not been established in any region. The FFP had focused much of its efforts on research and awareness raising, but had not tackled effectively the questions of skills development, labour requirements, property rights, farm succession planning, market access and flexibility, and so on.

The easy answers

If diverse, but integrated, approaches to the management of plantation forestry and other land uses are necessary in order to realise the potential contribution of plantation forestry to community well-being, then clearly some strategies are necessary to mobilise and coordinate a large and diverse range of actors.

One of the oldest research traditions in rural sociology — and one that could easily be applied to the question of why more farmers don't participate in farm forestry — is known as 'barriers to adoption' or 'technology transfer' research. Research within this tradition concentrates on identifying the social-psychological and socio-economic attributes of individuals that are associated with adoption behaviour. It is believed possible to accelerate technology transfer by identifying the specific attributes of those known as 'late adopters' or 'laggards', and then tailoring and targeting information packages accordingly. The problem is that the ability of adoption studies to stratify farmers into meaningful categories based on their adoption behaviour has declined dramatically since the Second World War. The decline results from the normalisation of rapid technological change (Buttel *et al.* 1990) and the complexity of contemporary changes in farming practice (Lockie *et al.* 1995).

The stereotype of conservative Australian farmers plodding along doing what their fathers and grandfathers did is as big a myth about rural Australia as any. For example, Race's (1999) review of barriers to involvement in farm forestry among Australian farmers demonstrates that most barriers have little to do with the attributes or characteristics of individual farmers. They have far more to do with poor market conditions, uncertain economic benefits and the dominance of the industry by large-scale growers and processors.

Nowadays, the key to economic prosperity in rural Australia is seen to depend only partly on viable and technologically proficient primary industries, or government assistance. It also depends on the ability of rural people to 'take the bull by the horns' and develop their own, regionally and locally-based strategies for diversification, coordination and revitalisation — or, in other words, to help themselves (Herbert-Cheshire 2000). Accordingly, the buzzwords of today are leadership, entrepreneurialism, bottom-up development, government-community partnerships, and so on. Most recently, the notion of 'social capital' has been popularised as a way of conceptualising the manner in which many of these other concepts hang together to either promote or stymie social and economic development.

Social capital refers to the networks, norms and trust that individuals, groups, organisations and communities draw on in

their attempts to enhance learning, social mobility, economic growth, political efficacy or community vitality (Falk and Harrison 1998). Diversity, flexibility and inclusivity, the acceptance of controversy and alternatives, and the ability to mobilise both public and private resources, have all been shown to enhance collective action for social and economic development (Flora *et al.* 1997). The concept of social capital helps to illustrate that investment in the quality of working relationships within communities is not an esoteric or luxury activity, but one that leads to ongoing economic benefits (Lockie 2001a). Importantly, for our consideration here, investment in social capital can also produce environmental benefits by creating mechanisms and incentives for people to cooperate with each other to reduce environmental externalities (Pretty 1998).

Social capital, like leadership and partnership, can also become meaningless jargon used by governments and industry to justify leaving rural communities an ever-increasing responsibility to solve their own problems (Herbert-Cheshire 2000), while deflecting attention away from the impacts of government and industry policy and activities on those communities.

The flies in the ointment

Despite potential for co-option of the terminology, high levels of social capital would certainly appear to be a necessary prerequisite for the sort of local and regional coordination needed to implement integrated regional plantation forestry strategies. Social capital would also appear critical to rural revitalisation more generally. So how do we move beyond meaningless jargon and towards useful concepts that will make a real difference to economic and natural resource management outcomes? In this section we argue that the first step involves an exploration of the political and economic environment within which rural communities are located, the social characteristics of those communities, and the extent and form of social change implicated by plantation forestry.

Losing control: the restructuring of rural Australia

For most of Australia's post-colonial history, agricultural policy has largely subsumed rural policy (Sher and Sher 1994). As indicated above, Australian agricultural policy is strongly oriented to the removal of farmers from agriculture. With a fifth of Australian farmers doing well (producing half the total output and making commercial rates of return on investment) and the rest struggling for viability, the most economically rational policy appears to be adjustment of the sector to free up resources for those who can use them most productively (Higgins and Lockie 2001). But is agriculture just about making money, and what does this standard prognosis for Australian agriculture fail to acknowledge?

To start, there is an obvious failure to address the more widespread social and economic implications of adjustment for non-farming members of rural communities (the 'dynamics of decline'). There is also a failure to systematically consider on-farm alternatives to constant intensification. Farming has become a treadmill of technological innovation and resource-use intensification from which many Australian farmers must inevitably fall. A number of initiatives including the Farm Forestry Program provide an

alternative to this. Yet most agriculturally relevant policies and programs are arraigned against farmers — from the structural adjustment elements of Agriculture Advancing Australia to the overt productivity focus of agri-science institutions (Lockie 2000). Most of what we ‘know’ about agriculture in Australia is about how to make it more industrialised. Further, through the dismantling of tariff protection, statutory marketing boards and so on, farmers are increasingly exposed to international marketplaces dominated by transnational agribusinesses bent on speeding up the treadmill even further (McMichael and Lawrence 2001).

An obvious corollary of the intensification treadmill is that those farmers most likely to benefit in the long term from involvement in diversification strategies such as farm forestry, are those least likely in the short term to have the resources to do so. Meanwhile, those best positioned in the short term to invest in alternative enterprises are those with the least long-term incentive to do so.

It is not the responsibility of plantation forestry proponents either to solve all the problems of rural Australia or to begin lobbying on the direction of agricultural policy. However, it is necessary for those proponents to be aware of the economic imperatives faced by so many of their potential neighbours or partners. Without short-term cashflow and long-term security over harvest rights, it is very difficult to see farm forestry being an attractive option to large numbers of farmers. For many, as individuals, the option of selling their land to an industrial plantation operation may, in fact, be far more attractive despite any effect this may have on other community members.

In other words, while in a ‘big picture’ sense all community members may be seen to have an interest in integrated regional plantation forestry strategies and their inherent benefits, individual short-term interests may be very different. Social capital — the networks and relationships that transform individuals into collectives — may help to balance collective and individual interests, but questions must still be raised regarding the extent to which rural community members can be expected to subordinate their own economic interests in the name of the common good.

Divergent interests: social relations and social change in rural communities

The term ‘community’ can be misleading; implying a homogeneity, sense of identity and commonality of interests that may not actually be true of people just because they live or work in proximity to each other (see Bourke 2001). As sociologists are so fond of pointing out, small towns, agricultural settlements, etc., are usually divided along numerous axes such as class, gender and enterprise mix. Access to land, capital and status are typically significant resources of power among rural people that indelibly shape the actions of institutions such as local government and community groups. Again, although people may share a generalised ‘big picture’ interest in a clean environment and vibrant community, their more immediate economic interests, and sense of the basis for local identity and culture, may be extremely divergent.

There are numerous studies of community power in the sociological literature of Australia and other developed nations

(Bourke 2001), including studies of community power and natural resource management initiatives such as Landcare (Lockie 2001b). Therefore, it is perhaps surprising that the literature on community structure and power in relation to plantation forestry is overwhelmingly based in the Third World. This is probably a reflection of the very different emphases in developed and Third World countries in their approaches to plantation forestry. The former has, of course, focused largely on industrial plantations while the latter has focused — under the rubric of ‘social forestry’ — on widespread community participation and poverty alleviation. If it is accepted that more integrated and diverse regional plantation forestry strategies are necessary in Australia if plantation forestry is to contribute to rural revitalisation, then it is also worth examining the literature on social forestry to identify lessons for Australia.

Social forestry has consistently been found to be neither class nor gender neutral (Nesmith 1991). It creates winners and losers and can thus be expected to encounter political opposition, irrespective of the noble intentions of project proponents (Cernea 1993). Opposition may be focused on any of a number of aspects: economic, environmental, social or cultural. If experience with social impact assessment in Australia is anything to go by, the social and cultural dimensions of conflict will be the most difficult to come to terms with, due to their often subjective basis (Lockie *et al.* 1999). But given that forestry activities can be expected to alter existing social structures, and that the same tree or forest can mean different things to different social groups (Cernea 1993), they are not irrational bases for conflict and must be dealt with seriously.

Plantation forestry is a form of social engineering that is best not undertaken with vague and/or misleading definitions of the social actors involved (Cernea 1993). The price of not coming to terms with the full diversity of values, interests and existing forms of social organisation in target communities is project or strategy failure (Cernea 1990). Many social forestry projects that have genuinely tried to secure widespread community participation have failed anyway because they have not adequately considered the operation of power and privilege and how this might affect project participation and outcomes. By themselves, community participation strategies may, in fact, offer little more than means for existing elites to strengthen their positions and accrue project benefits. It is not enough to simply adopt the terminology of ‘social forestry’ and ‘community participation’. The mythical ‘community’ must be picked apart to specify the specific groups, classes, strata, castes and so on which comprise it, their interests in relation to the proposed project, their differential behaviour in relation to trees, and their relationships with each other (Cernea 1993). Participation may then become something more than the contribution of labour to tree planting and maintenance. The question is, how to develop effective planning, negotiation and decision-making strategies that enhance the relationships between these groups (that is, that build social capital) in order to secure successful and efficient outcomes.

The good news

It has been recognised that social scientists are indispensable team members in the design and implementation of Third World social

forestry projects (as they are in the US Department of Agriculture Forest Service's research and development program). Social scientists must also become more heavily involved in the development of integrated regional plantation forestry strategies in Australia. Given the political and economic environment for agriculture and other rural enterprises, it must be acknowledged that rural people will always face significant constraints on their ability to participate in plantation forestry. While plantation forestry proponents cannot be expected to solve all the problems of rural Australia, up-front investment in social research designed to understand target communities and establish a platform for negotiation between relevant interest groups has significant potential to reduce conflict and promote the realisation of benefits from forestry operations. Fortunately, well established models exist for undertaking such research and these can readily be adapted to plantation forestry operations. Since 1996, considerable experience has been gained in the application of some of these to Australian native forests through the Regional Forest Agreements (RFAs) process, and valuable lessons have been learned (Coakes and Fenton 2001).

RFAs and, no doubt, some plantation forestry operations have already been subjected to some form of social impact assessment (SIA). It is important to note, though, that while a number of different SIA models are available, it is not uncommon for SIA to focus almost exclusively on the collection of demographic and other quantitative data. This focus may limit participation and opportunities for reasoned debate and mutual compromise among stakeholders (Lockie 2001c), although that is not always the intention at the beginning of the assessment process. Yet pressure to produce results both rapidly and suitable for integration with biophysical data often leads, in practice, to this outcome (Coakes and Fenton 2001).

Tools such as SIA, stakeholder analysis and social mapping are best applied as participatory social research tools. They document and feed back the values, interests, attitudes and aspirations of stakeholders to encourage mutual understanding and enhance negotiation and deliberation over genuine conflicts of interest. All people involved in or affected by a proposal should be regarded as stakeholders in that proposal.

Jennings and Lockie (2002a,b), for example, adapt the stakeholder analysis models of Dale and Lane (1994) and Stolp *et al.* (2002) to issues surrounding coastal management in Central Queensland. They apply these models through two recursive phases. The first involves the use of standard social research methods (face-to-face interviewing and document analysis) to explore with stakeholders their key values and aspirations regarding the coastal zone. These data are then used to construct a series of 'social maps' that attempt to show visually the relationships between stakeholders, with a particular focus on convergences and differences about key values and aspirations which are specific to coastal zone management issues or processes. These maps provide a starting point for discussion among stakeholders over areas of common and contested interest. The second stage uses these maps to begin identifying, with stakeholders, strategies to address areas of stakeholder conflict. Somewhat inevitably, this process leads to changing relationships between stakeholders, and to changing understandings for individual stakeholders of their

own interests and aspirations. Therefore, it is vital that social maps are always understood as draft representations of dynamic networks of social relationships. Progression of the research through these phases has enhanced mutual understanding among stakeholders and assisted in dispute resolution.

Conclusion

Plantation forestry has the potential to contribute to the revitalisation and well-being of rural communities, rather than to the ongoing 'dynamics of decline'. The realisation of that potential depends on the development of strategies that simultaneously regenerate social, natural and economic capital. Such strategies may be based on regional plantation forestry strategies that integrate a number of elements including farm forestry and localised value-adding, and other natural resource planning initiatives such as farm and catchment planning. Achieving this kind of local and regional coordination itself depends on high levels of social capital. Much of the emphasis in rural policy is on supporting social capital development by concentrating on the skills of individuals (leadership training etc.). In contrast, this paper has suggested that plantation forestry proponents could act more directly to enhance relationships between themselves and other stakeholders, and among those stakeholders. Social capital exists, after all, only in relationships. In taking stakeholder participation and partnerships beyond the realm of jargon, plantation forestry proponents must adopt techniques to systematically define target groups and develop appropriate institutional arrangements for interaction with them. Appropriately resourced and qualified social researchers offer considerable potential to help foresters to achieve this task and provide the basis for participation and negotiation among all stakeholders.

References

- Bourke, L. (2001) Rural communities. In: Lockie, S. and Bourke, L. (eds) *Rurality Bites: The Social and Environmental Transformation of Rural Australia*. Pluto Press, Sydney, pp. 118–128.
- Buttel, F., Larson, O. and Gillespie, G. (1990) *The Sociology of Agriculture*. Greenwood, New York.
- Cernea, M.M. (1990) *Beyond Community Woodlots: Programs with Participation*. Network paper 11e, Overseas Development Institute, London.
- Cernea, M.M. (1993) Strategy options for participatory reforestation: focus on the social actors. *Regional Development Dialogue* **14**, 3–31.
- Coakes, S. and Fenton, M. (2001) Social assessment in the Australian forest sector. In: Dale, A., Taylor, N. and Lane, M. (eds) *Social Assessment in Natural Resource Management Institutions*. CSIRO Publishing, Melbourne, pp. 255–265.
- Dale, A.P. and Lane, M.B. (1994) Strategic perspectives analysis: a procedure for participatory and political social impact assessment. *Society and Natural Resources* **7**, 253–267.
- Falk, I. and Harrison, L. (1998) Community learning and social capital: just having a little chat. *Journal of Vocational Education and Training* **50**, 609–626.
- Flora, J., Sharp, J. and Flora, C. (1997) Entrepreneurial social infrastructure and locally initiated development in the non metropolitan United States. *The Sociological Quarterly* **38**, 623–645.

- Herbert-Cheshire, L. (2000) Contemporary strategies for rural community development in Australia: a governmentality perspective. *Journal of Rural Studies* **16**, 203–215.
- Higgins, V. and Lockie, S. (2001) Getting big and getting out: government policy, self-reliance and farm adjustment. In: Lockie, S. and Bourke, L. (eds) *Rural Bites: The Social and Environmental Transformation of Rural Australia*. Pluto Press, Sydney, pp. 178–190.
- Jennings, S. and Lockie, S. (2002a) Democratisation and capacity building in coastal zone decision-making in Australia: the application of stakeholder analysis and social mapping. Presented to *Coastal Zone Asia Pacific*, 12–16 May 2002, Bangkok.
- Jennings, S. and Lockie, S. (2002b) Application of stakeholder analysis and social mapping for coastal zone management in Australia. Presented to *Littoral 2002*, 22–26 September 2002, Porto, Portugal.
- Lawrence, G. and Williams, C. (1990) The dynamics of decline: implications for social welfare delivery in rural Australia. In: Cullen, T., Dunn, P. and Lawrence, G. (eds) *Rural Health and Welfare in Australia*. Centre for Rural Welfare Research, Charles Sturt University, Wagga Wagga, pp. 38–59.
- Lockie, S. (2000) Crisis and conflict: shifting discourses of rural and regional Australia. In: Pritchard, B. and McManus, P. (eds) *Land of Discontent: The Dynamics of Change in Rural and Regional Australia*. University of New South Wales Press, Sydney.
- Lockie, S. (2001a) Positive futures for rural Australia. In: Lockie, S. and Bourke, L. (eds) *Rural Bites: The Social and Environmental Transformation of Rural Australia*. Pluto Press, Sydney, pp. 287–299.
- Lockie, S. (2001b) Community environmental management? Landcare in Australia. In: Lockie, S. and Bourke, L. (eds) *Rural Bites: The Social and Environmental Transformation of Rural Australia*. Pluto Press, Sydney, pp. 243–256.
- Lockie, S. (2001c) Social impact assessment in review: setting the agenda for impact assessment in the twenty-first century. *Impact Assessment and Project Appraisal* **19**, 277–287.
- Lockie, S. and Bourke, L. (eds) (2001) *Rural Bites: The Social and Environmental Transformation of Rural Australia*. Pluto Press, Sydney.
- Lockie, S., Mead, A., Vanclay, F. and Butler, B. (1995) Factors encouraging the adoption of more sustainable cropping systems in south-east Australia: profit, sustainability, risk and stability. *Journal of Sustainable Agriculture* **6**, 61–79.
- Lockie, S., Momtaz, S. and Taylor, B. (1999) Meaning and the construction of social impacts: water infrastructure development in Australia's Gladstone/Calliope region. *Rural Society* **9**, 529–542.
- Madden, B., Hayes, G. and Duggan, K. (2000) *National Investment in Rural Landscapes: An Investment Scenario for National Farmers' Federation and Australian Conservation Foundation with the Assistance of Land and Water Resources Research and Development Corporation*. Australian Conservation Foundation and National Farmers' Federation, Melbourne.
- McMichael, P. and Lawrence, G. (2001) Globalising agriculture: structures of constraint for Australian farming. In: Lockie, S. and Bourke, L. (eds) *Rural Bites: The Social and Environmental Transformation of Rural Australia*. Pluto Press, Sydney, pp. 153–164.
- Nesmith, C. (1991) Gender, trees, and fuel: social forestry in West Bengal, India. *Human Organization* **50**, 337–348.
- Pretty, J. (1998) *The Living Land: Agriculture, Food and Community Regeneration in Rural Europe*. Earthscan, London.
- Race, D. (1999) A brief analysis of farm forestry policy in Australia. *Journal of Environment and Development* **8**, 328–340.
- Race, D. and Curtis, A. (1996) Farm forestry in Australia: review of a national program. *Agroforestry Systems* **34**, 179–192.
- Schirmer, J. and Kanowski, P. (2001) Avoiding snatching defeat from the jaws of victory: plantation forestry expansion in Australia. In: *Proceedings 16th Commonwealth Forestry Conference and 19th IFA Biennial Conference*, 18–25 April 2001, Fremantle. Promaco Conventions, Canning Bridge, WA, pp. 99–108.
- Sher, J. and Sher, K. (1994) Beyond conventional wisdom: rural development as if Australia's rural people really mattered. In: McSwan, D. and McShane, M. (eds) *Proceedings, Issues Affecting Rural Communities*. Rural Education Research and Development Centre, James Cook University, Townsville.
- Stolp, A., Groen, W., van Vliet, J. and Vanclay, F. (2002) Citizen values assessment: incorporating citizens' value judgements in environmental impact assessment. *Impact Assessment and Project Appraisal* **20**, 11–23.
- Wilkinson, R., Roche, M., Krausse, M. and Smith, W. (2001) Food or forest? Contested land use in Wairoa district, New Zealand. In: Lockie, S. and Pritchard, B. (eds) *Consuming Foods, Sustaining Environments*. Australian Academic Press, Brisbane, pp. 110–124.