Collaborative forest management in Victoria's Wombat State Forest — will it serve the interests of the wider community?

Mark Poynter[1,2]

[1]Consultant forester, Forest and Natural Resource Services, PO Box 2102, East Ivanhoe, Victoria, 3079
[2]m.poynter@fnrs.com.au

Revised manuscript received 6 June 2005

Summary

Collaborative forest management is being promoted as a solution to Australian forest use conflicts and a precursor to a wider devolution of government forest management responsibility in favour of greater community empowerment. Its mooted introduction, however, is based on an acceptance of the righteousness of continuing anti-logging sentiment despite the reality that wood production is already excluded from most public native forests.

Australia's first formal trial of collaborative forest management, in Victoria's Wombat State Forest, has so far demonstrated that conflict will be reduced only where wood production is substantially reduced. After two and a half years, the trial has led to a marginalisation of professional forestry expertise by permitting 'interested' community participants to assume responsibility in areas where they have for years been distrustful of government decision-making. This has been allowed to occur in an unrealistic vacuum free from the normal constraints of economic accountability, by a government willing to accept the substantial costs of supporting the trial. This includes artificially keeping alive a local timber industry seriously affected by the trial's failure to deliver anywhere near its licensed sawlog entitlement.

This experience suggests that wider introduction of collaborative forest management in accordance with the participatory model being used in the Wombat State Forest, would involve considerable costs arising from the gradual demise of local timber industries, and the need to procure wood from alternative sources or use substitute products. Although this may appease local conservation groups, it may not be in the best interests of the wider community.

Keywords: forest management; community forestry; community education; silvicultural systems; yield targets; timber harvesting; Victoria

Introduction

Collaborative forest management (CFM), community forest management, or community forestry as it is also referred to, is being promoted by some forestry and social science academics as the way forward in solving conflict over public forest management in Australia. In particular, the University of Melbourne, whose Institute of Land and Food Resources was engaged by the Victorian Government to facilitate the country's first CFM trial in the Wombat State Forest, is publicly supportive of it (IFA 2003), as is the Royal Melbourne Institute of Technology University which hosts a website that promotes it (RMIT 2004). The Victorian Government has signalled an intention to introduce community forest management more widely, subject to the results of the Wombat State Forest trial (Victorian Government 2002).

Collaborative forest management is essentially a partnership between the community and the government. This covers a continuum of options including the consultative model that has been used to manage most of Australia's public native forests over the past 15 y. However, as a means for resolving forest use conflict, the term describes a partnership that is essentially led by local community participants, with government forest management agencies having a supportive or advisory role.

Support for a new approach to forest use conflict is understandable given continuing community sentiment against activities such as sawlogging, woodchipping and, to a lesser degree, fuel reduction burning. In addition, greater community involvement in forest management is regarded as a means of countering the often emotional and distorted claims made in campaigns against these activities.

Community forestry has had variable success in developing countries such as India and Nepal where, in the absence of effective government control, local communities have taken responsibility for forest management in order to prevent widespread illegal exploitation by timber-getters. By 2000, there were reportedly 10 million people in 320 000 community groups worldwide involved in natural resources management, including forests (IFA 2003).

In the past 10–15 y, CFM has been introduced to a limited degree in countries such as Canada and the USA which, like Australia, have traditionally exercised strong control over public forest management and timber production, yet have endured decades of conflict between environmentalists and forest resource managers. Its implementation in these countries has, for some, legitimised the CFM concept as a worthwhile option for Australia.

Accordingly, the Victorian Government announced in early 2002 that, as part of wider forestry reforms, community (now referred to as collaborative) forest management would be trialled in the Wombat State Forest, about 75 km north-west of Melbourne, with a view to assessing its potential for wider implementation in other forested regions.

This is an Australian first that is seen by some as a precursor to a future of enhanced community empowerment and declining government intervention in the management of public forests (Nelson 2003; Petheram *et al.* 2004). However, the experience of the two and a half years since the trial started in January 2003 raises the question of whether, if it were to be more widely adopted, the narrow local focus of collaborative forest management would be in the best interests of the wider community.

The Wombat State Forest — the origins of conflict

The Wombat State Forest is relatively small with a number of small, demographically changing communities embedded around and within it. Its location close to Melbourne and its popularity amongst weekend tourists and as a 'sea change' lifestyle destination have, particularly in recent years, heightened the interest of city media in its forest-use conflicts. Moreover, the Government's now-admitted mismanagement of the Wombat's available sawlog resource, exposed with the assistance of pressure applied by local environmental groups, has been widely publicised through the media. This has helped to create a climate for change.

Early timber harvesting in the forest (prior to the 1970s) was based on single-tree and group selection methods which aimed to retain a range of size classes through the forest. These methods tended to produce low timber volumes in relation to harvesting effort and cost, and unnaturally favoured the regeneration of shade-tolerant but commercially undesirable peppermint eucalypts (*Eucalyptus dives* and *E. radiata*) over the more desirable but less tolerant messmate stringybark (*E. obliqua*).

In the early 1970s, the selection methods were replaced by a more intensive, two-stage shelterwood system which, in an initial stage, retained good quality trees at wide spacing to develop into high-quality sawlogs for later harvest. Regrowth, encouraged to develop under the trees retained in the first harvest, would be available to dominate the stand after the retained trees were harvested in the second stage. The shelterwood system sought to achieve a balance between wood production (at a time of high demand), financial outcomes and environmental conservation.

Although forests regenerated after intensive harvesting will have reduced environmental values — most notably in the availability of habitat for arboreal animals and some birds that favour older forest — intensive harvesting is meant to be judged in the context of both time and space across the total forest estate. On a regional basis, harvestable areas are offset by undisturbed forest within parks, reserves and areas unsuitable for logging that provide the full range of habitat requirements. Moreover, the shelterwood method does not damage the forest as has often been portrayed by environmentalists. Instead, where properly managed, it permits vigorous regeneration to grow undisturbed for 80–100 y until ready for the next harvest. For at least half of this period, regrowth forests have high aesthetic appeal to most of the community.

Despite its positive attributes, disturbance associated with shelterwood harvesting was seen by many to be inappropriate for a public forest being managed to conserve diverse values. This, plus the faster-than-sustainable harvesting of the forest's designated wood production zones that became more apparent over a 15-y period, generated the increasingly intense social conflict that eventually led to the trial introduction of CFM.

The basis for introducing CFM — mismanagement of the sawlog resource

Although extreme anti-logging activists have portrayed the 'mismanagement' of the Wombat State Forest's sawlog resources as an example of an ecological catastrophe driven by timber industry greed and corruption, the reality is deserving of more critical examination.

It is important to appreciate that the Wombat State Forest is the 'zoned for wood production' portion of a greater forest area, nominally known as the Wombat Forest which contains substantial areas of parks and reserves zoned for biodiversity conservation and other values (Table 1). Accordingly, the faster-than-sustainable harvesting of the available State Forest areas was restricted to only a part of the greater forest area.

Table 1. Greater 'Wombat Forest' tenure and use (as at 2002 prior to the Government decision to trial community forest management in the Wombat State Forest)

Tenure and use	Area[a] (ha)	Proportion (%)
Conservation parks and reserves (no timber harvesting)	24 372	34.8
Other public land (eg. water supply catchments, etc.) (no harvesting)	2 755	3.9
Wombat State Forest		
Special Protection Zone (no harvesting)	11 807	16.8
Special Management Zone (some harvesting)[b]	16 280	23.3
General Management Zone (harvesting permitted)[b]	14 850	21.2
Total greater 'Wombat Forest' area	70 064	100.0

[a]Figures from DSE (2003)
[b]Logging is also excluded from a further 2433 ha of Code of Forest Practice reserves in the Special Management and General Management Zones. In addition other areas within these zones are unavailable due to unsuitability or inaccessibility.

Before the CFM trial began in January 2003, wood production was already restricted to about 30–40% of the greater Wombat Forest, after taking account of the designated unavailable reserves and unsuitable areas, and depending on how much of the Special Management Zone was to be made available. This balance between wood production and other uses can be viewed as a good advertisement for past land-use zoning by the Land Conservation Council in the late 1970s and early 1980s, and the then Department of Natural Resources and Environment (DNRE) in the mid-1990s.

Accordingly, the issue of harvesting at an unsustainable rate is relevant only to that part of the forest that was available for wood production, although admittedly some areas now contained in zones excluded from harvesting had already been partially logged in the 10–20 y prior to their reservation. The more recent 1996 exclusion of timber harvesting from Special Protection Zones and Codes of Practice reserves that comprise at least a third of the State Forest that was originally zoned for wood production, can be viewed as a generous concession to biodiversity conservation. It is important to appreciate that this accelerated rate of forest reservation within the State Forest, together with no corresponding reduction in sawlog commitments, contributed significantly to the unsustainable rates of harvesting in the remaining production forests.

The 'overcutting' of the available forests has also been a consequence of inadequate data about the sawlog resource and its growth. Whilst this may be difficult to excuse, it is a far cry from a deliberate industry-driven policy of exploitation. Indeed, along with environmentalists, some local foresters and industry figures had warned of overcutting for some years before action was taken to redress the situation. The Government's adherence to sawlog commitments even as wood production zones were progressively reduced was apparently rooted in a belief that earlier estimates of the sawlog resource were conservative. In addition, there was probably an understandable reluctance to avoid major economic upheaval until the need for it could be verified by updated resource information. The need for action became irrefutable in 2001 after the DNRE obtained updated resource estimates from its Statewide Forest Resource Inventory project.

Despite the environmental movement's view that the forest has been 'degraded' and 'devastated' after 'decades of industrial logging', the greater Wombat Forest is in fact a balance of reserved areas and wood production zones containing a mixture of mature forest, vigorous pole regrowth, and more recent regenerating age classes. Moreover, timber harvesting has been conducted in accordance with operational prescriptions that minimise impacts on soil, water and habitat values.

Whilst critics have long claimed that there is a lack of mature forest classes in the Wombat Forest, Department of Sustainability and Environment (DSE) data, based on growth stage mapping, show that when all land tenures and forest types are considered, about 50 200 ha (or 72% of its total area) can be classified as mature forest (DSE 2003).

Nevertheless, there is an acknowledged deficit of mature *productive* forest in the remaining wood production zones of the Wombat State Forest. There is, however, more than 7000 ha of forest >28 m tall with >70% crown coverage (assumed to be mature) in adjacent Special Protection Zones. When Codes of Forest Practice reserves and remaining available mature forest are included, at least a third of the State Forest area is still composed of at least potentially productive mature forest or advanced regrowth.

Despite the situation not being as dire (from an environmental perspective) as it has been portrayed, it is understandable that overcutting the sawlog resource has generated a perceived need for change. Nevertheless, other policy reforms implemented by the Government during 2002 had arguably resolved the major areas of conflict before the CFM trial began in January 2003.

In February 2002, the Government's *Our Forests Our Future* policy reduced the sustainable yield in the Midlands Forest Management Area (including the Wombat State Forest) by about 80%. In addition, immediately after the November 2002 state election, the Government stopped the sale of residual logs for woodchipping in response to concerted campaigns by local environmentalists over many years. Action on these issues that were central to community concern about the Wombat State Forest largely removed the need for introducing collaborative forest management — but it proceeded anyway.

Before the trial introduction of CFM, opportunities for public participation in the management of the Wombat State Forest included making formal submissions to drafts of the Midlands Forest Management Plan, the annual Wood Utilisation Plans and Fire Protection Plans, and opportunities to view Forest Coupe Plans. In addition, the former DNRE, in the mid to late 1990s, twice set up local Reference/Advisory Committees with wide community representation, as a means of collaborating over contentious issues. The first was moderately successful over a 2–3-y period, but the second attempt failed within months, apparently largely due to adverse lobbying by local environmentalists (D. Endacott, Daylesford resident, *pers. comm.* 2004).

Perhaps understandably, the fact that the designated State Forest wood production zones continued to be harvested at an unsustainable rate created a view amongst the local community that these methods of public participation had failed. This paved the way for trialling a new system of community participation.

That the wider Wombat Forest is in much better shape than its critics will admit suggests that CFM is likely to be introduced into Australian forests under circumstances very different to those in developing countries, where severe damage to soil and water values is resulting from uncontrolled forest exploitation. Arguably, communities in these countries are aiming to achieve the levels of environmental regulation and control that Australian anti-logging activists are rejecting as unsatisfactory.

Evolution of the Wombat CFM trial

The Government moved cautiously to ensure that the introduction of CFM was preceded by comprehensive consultation. During 2002, Melbourne University-based consultants, some with experience in developing countries, were appointed to undertake a review of overseas models of community participation in forestry, with a view to determining a suitable approach for the

Wombat. The release of their report was followed by extensive community consultation to gauge support for the concept, and to establish an appropriate level of community participation and control.

A measure of the Government's (as distinct from the Department's) determination to introduce CFM is to be found in documents obtained under Freedom of Information legislation. A Briefing Note (Ref. No. BW 00104), dated 31 December 2002, from the Department's Forest Service to the relevant Minister reports the findings of Dr Christine Forster, who had convened the exhaustive rounds of community consultation. She reported only 'cautious support' for the introduction of collaborative forest management with 'some participants expressing a preference for a moratorium on timber harvesting as a pre-condition to their participation'.

Most importantly amongst Dr Forster's conclusions, Recommendation 3 suggested that 'it would be wise to have a staged process of implementation (of CFM) focussing on a sub-catchment of the Wombat State Forest.' Despite this, the Government immediately signalled its intention to apply it to the whole State Forest (DNRE 2002).

This highlights the reality that since the mid-1980s important policy directions for native forest management have increasingly been made by the political arm of government independent of, or with scant regard to the advice of, the responsible department. The most striking example is the 2002 decision to phase-out native forest harvesting in the Otway Ranges, ostensibly to transfer the local industry to plantation-grown sawlogs despite departmental advice that almost all local hardwood plantations were being grown only for export woodchips (Bracks 2002). With respect to the introduction of CFM in the Wombat State Forest, few if any local DSE staff are understood to have supported it. Together with the local timber industry, they believed that other policy changes had already adequately addressed the issues most central to the region's forest conflict.

Despite a perception of strong public support for anti-logging campaigns, many local residents appear to have taken little interest in the conflict over use of the Wombat State Forest. A telephone survey of 1700 randomly-chosen local people over 16 y of age, commissioned by the DSE in early 2004, revealed that just 40% had been dissatisfied with the Government's management of the forest. In addition, only 29% of respondents were aware of the change to CFM a year after it had been implemented, whilst only 15% had participated in any of the developmental activities associated with its introduction. On the question of willingness to participate, 26% stated a capacity for involvement to a fair extent, with only 6.5% willing to extensively participate in the forest's management (Strahan Research 2004).

These statistics tend to support a perception that collaborative forest management models are likely to be overly influenced by the input of a minor proportion of the population with strong feelings about the inadequacy of current management, and who are likely to be strongly opposed to wood production. This casts some doubt on the ability of CFM to be truly representative of community sentiment. With respect to the Wombat State Forest, this doubt has been perpetuated by the Government's appointment of the former president of the most prominent local environmental group, the Wombat Forest Society, to a Departmental position responsible for guiding the implementation of CFM. By allowing itself to be represented in CFM development by a former adversary and passionate lobbyist and advocate for it, the Government may have compromised the ability of locally-based departmental forest managers to play any strong role in a meaningful community partnership. This move appears to have effectively transferred the control of the forest to those in the community who had for years campaigned against its management by the Department.

After a lengthy and from all accounts turbulent development phase, collaborative forest management in the Wombat State Forest has evolved into a management framework of 11 community Working Groups answering to a Council of Stewards composed of one representative from each Working Group, three indigenous representatives, two local area representatives, and two non-voting representatives from the DSE. The Council coordinates and facilitates community involvement, whilst the Working Groups individually address issues such as biodiversity, wood products, hydrology, pest plants and animals, recreation, tourism, education, roads and tracks, water and fire, amongst others. Indeed, the Wombat CFM management framework has evolved into a complex bureaucracy with its own website, manifesto and regular forest assemblies where large gatherings of interested community participants are encouraged to thrash out relevant issues.

A substantial sum ($733 000) was spent by the DSE on supporting the development of CFM in the Wombat State Forest during the period from the start of the trial on 1 January 2003 until the end of October 2004 (FOI 2005). Subsequently, the Department provided the Council of Stewards with an operating budget of $93 000 for the 2004/05 financial year to 'enable the Council to operate in directions that CFM sets itself' (Anderson 2005). This figure does not include the salaries of DSE staff involved in supporting CFM on either a partial or a full-time basis.

Using these funds to support the considerable unpaid efforts of the community participants, the CFM Working Groups have initiated a wide range of projects aimed at increasing their knowledge and improving the forest. For example, the Wombat community forest newsletter has reported that the groups are investigating biodiversity issues, embarking on a funded trip to Canada to investigate the role of local government in the Model Forest program (Canadian CFM equivalent), mapping weed infestations, establishing a Waterwatch program, mapping road and track locations, and undertaking a revegetation / regeneration trial (*Wombat News and Views* 2004, 2005). In addition, two prominent CFM community participants are apparently being trained in forestry at the University of Melbourne's School of Forest and Ecosystem Science at Creswick. Whilst these are no doubt useful activities with a strong educational focus for the participants, most are not directly related to the issue of wood production, which is the primary reason that CFM was introduced.

The relationship between CFM and the Department in terms of decision-making and management responsibility remains unclear. Despite the time, effort, and substantial government funding to

develop the CFM structure and its operation, it has been reported that 'the (CFM) stakeholders involved have decided that they only wish to remain in an advisory role with DSE' (Anderson 2004b). However, since the agenda for future wood production has been set by CFM community participants, and the Department has accepted this despite its obvious shortcomings, it appears that, at least with respect to this issue, it is DSE that has a subservient advisory role.

The Wombat CFM trial and timber production

Prior to the introduction of CFM, the Wombat Forest Society portrayed itself as having a moderate attitude to timber production in contrast to the 'no-compromise' hardline approach of the mainstream 'green' groups (Nelson 2003). Nevertheless its preference for an on-going local timber industry is predicated on a significantly attenuated sawlog and firewood production model, very different to the integrated sawlog and pulpwood model that operated in the Wombat State Forest from the early 1990s until 2002 (Anderson 2003).

The Government required that the Wombat CFM trial maintain existing licensed supply entitlements for local sawmillers until 2008, at which time a decision about future wood production from the State Forest would be made. Indeed, the Government has stated that the implementation of a 'harvesting plan that meets industry, community, and environmental needs' will be an 'indicator of the success of CFM' (Thwaites 2004). However, as the CFM trial has evolved, strong 'community' opposition to continuing wood production has resulted in a failure to deliver anywhere near the volumes committed to industry. The production of a very small sawlog volume fits with the Wombat Forest Society's vision of a 'cottage' industry utilising the available sawlog resource at a scale far below the forest's sustainable productive capacity.

This has largely resulted from a CFM-driven shift away from an industrially-efficient, safe and silviculturally-effective harvesting system to a very low yield, low impact, so-called 'restoration forestry' technique developed by the community participants. The drivers for this change appear to be:

- dislike for the on-site visual appearance of 'industrial' harvesting methods designed to meet the dual aims of safe and economically viable wood production and effective post-harvest regeneration
- a lack of appreciation of the appropriateness of highly mechanised harvesting systems that have been designed in part to deliver the higher volume output required to meet the wider community's demand for wood and paper
- a belief that past harvesting methods have degraded the forest and that its ecological balance needs to be restored
- an ideal that every forest value can be preserved on every hectare including those within the bounds of harvesting coupes
- a lack of appreciation of the extent to which environmental conservation was achieved in the past through land-use zoning and operational planning, and
- an apparent view that the forest is now only for local community use, and that there is no responsibility to manage it to help meet the requirements of the wider Victorian community.

Restoration forestry is essentially a very light thinning. It has been described by the CFM Wood Products Working Group as operating as follows:

> the choice of which trees are harvested should focus on what is retained rather than what is removed. Only as the forest returns towards a fully stocked and balanced state will a larger volume of higher quality timber be available to industry on a sustainable basis. In this light, trees to be removed would generally exhibit one or more of the following characteristics (McIntosh 2003):
>
> - poor crown type and/or dying or diseased segments (other than trees required for habitat)
> - undesirable species (not just for timber values but to maintain biodiversity)
> - spacing too close.

On the surface, these principles are not unlike conventional thinning, but when combined with further prescriptions that strictly limit the number of trees that may be removed from each small defined segment of forest, they severely restrict the potential to recover economically viable volumes of usable wood. By concentrating on removing only the poorest trees, restoration forestry produces a substantially lower volume of sawlog-grade material per hectare compared to conventional partial harvesting practices. In addition, the removal of the market for low-grade wood by banning the sale of residual logs to the woodchip industry has further reduced the chance of 'restoration forestry' being economically viable.

Restoration forestry harvesting effectively seeks to preserve all forest values within the harvested coupe and enshrines wood production as a secondary aim. This denies the effectiveness of past forest-use zoning that was designed to conserve all environmental values within a broad mosaic of harvested and undisturbed forest. In particular it seems to be primarily focused on creating conditions that will more speedily restore all forest to a mature state.

Most significantly, 'restoration forestry' has been devised with little consideration given to the normal constraints of economic accountability. This contrasts sharply with conventional harvesting systems that have always been required to balance the need for positive financial outcomes against the environmental requirements of successful forest regeneration and biodiversity conservation.

Harvesting conducted using 'restoration forestry'

The first area sanctioned by the CFM Interim Council of Stewards for harvesting using 'restoration forestry' — at the Mudlark coupe near Glenlyon during late 2003 — produced only 400 m^3 of sawlogs from a 50 ha gross harvesting area at an average yield of just 8 m^3 ha^{-1} (Loos and Osbourne 2004). This coupe was perhaps better suited to this method than most of the forest, having been partially harvested by a first shelterwood cut in 1976. It had since developed into a mix of widely-spaced mature trees interspersed with dense groups of generally good quality 27-y-old regrowth overdue for release from competition. Although never likely to

be a high-yielding coupe, a conventional second shelterwood harvest that removed most of the mature trees (apart from those required for habitat retention), would probably have yielded four times the sawlog volume produced by using 'restoration forestry'.

The effort put into planning and harvesting the Mudlark demonstration coupe was enormous, with CFM community participants conducting pre-harvest investigations on a wide range of issues including hydrology, flora and fauna, and cultural and indigenous heritage. This resulted in the eventual production of a 65-page management plan — a very high level of detail for a straightforward coupe on mostly gently undulating terrain with no frontage to permanent watercourses. In addition, the detailed silvicultural prescriptions of restoration forestry entailed a level of tree marking far greater than that required for conventional harvesting.

Local DSE staff have acknowledged that the overall effort put into planning, community liaison and tree marking was at least three times greater than that which would normally be required. In addition, the harvesting contractor reported that the effort required to comply with the restoration forestry prescriptions and the low volume produced, made the operation uneconomic — a stance also echoed by the sawmiller, largely on the basis of the low quality of timber yielded by the harvest of mostly poor quality trees (Loos and Osbourne 2004).

Due to the failure of CFM participants to reach consensus on potentially harvestable areas and methods, only the Mudlark coupe was harvested during the 2002–2003 season. This indecision continued in the 2003–2004 season, when no harvesting was permitted by the CFM Interim Council of Stewards despite the Department threatening to restart logging under its own terms to relieve the chronic supply problems created for the two local sawmills. These sawmills, who have DSE sawlog licence entitlements to a combined annual volume of about 5500 m^3, were essentially kept operational during these first two seasons by supplies of logs from distant forests. These included fire salvage logs hauled at considerable taxpayer expense from far north-eastern Victoria, over 300 km away. Information subsequently obtained shows that $152 800 of government money was spent importing 4737 m^3 of sawlogs from other regions to keep these sawmills operating during the first two years of the CFM trial (FOI 2005).

In November 2004, the Victorian Minister for the Environment reminded the community managers that the supply of fire salvage logs from north-eastern Victoria was 'not a continuing solution', and urged them to develop a harvesting plan that would enable the two remaining sawmills to be supplied from the Wombat State Forest (Thwaites 2004). Accordingly, prior to the start of the third harvesting season under the CFM regime, the Wood Products Working Group, with Departmental advice, produced a draft *Wombat State Forest Sawlog Supply Plan 2004–05.* It proposed the harvest of 15 coupes covering 330 ha that were expected to yield 5775 m^3 of sawlogs — enough to meet local supply commitments — plus firewood (DSE 2004).

This proposal generated considerable debate. Over 30 submissions were received from community members that were described by the CFM Submissions Reference Group as enunciating 'a level of community discomfort around the proposed treatments in mature forests.' This was largely a reaction to the proposal to undertake 'restorative thinning' in about 250 ha of mature forest. This was expected to yield just over 5000 m^3 of sawlog (an average of about 20 m^3 ha^{-1}). Due to the disquiet, the Plan was only partially approved by the DSE — only firewood and limited sawlog harvesting was approved whilst further consideration was given to the proposed mature forest treatments (Phelan and Chatto 2005). By early April 2005, however, approaching the end of another harvesting season, just 500–600 m^3 of sawlog had been produced — about 10% of the planned seasonal harvest.

The proposed restorative thinning treatment of mature forest that has proven to be so unacceptable to the local community was developed by the CFM Wood Products Working Group. In the *Treatment Guide* accompanying the *Wombat State Forest Sawlog Supply Plan*, it is described as being restricted to 'overstocked' mature forests with a basal area 'greater than 40 m^2 ha^{-1}', and involving 'the removal of 25–30% of the basal area' whilst retaining 'highly valued large trees (greater than 70 cm diameter) to near the EVC benchmark level (generally 18 trees per hectare)' (DSE 2004). In essence, this is an overly-cautious harvesting system that will deliver very low yields despite high costs of tree marking and supervision, as well as high per-unit harvesting costs. Although it would be expected to have relatively low environmental and aesthetic impact, the failure to obtain community approval for it again highlights the shortcomings of CFM with respect to wood production.

Overall, the indecision by the community participants has restricted sawlog production from the Wombat State Forest under CFM to about 1000 m^3 in almost three completed harvesting seasons. This represents just 6% of the 16 500 m^3 combined sawlog licence entitlement of the two remaining local sawmills during this period. The resultant costs of using an uneconomic harvesting method and drawing on alternative sawlog supplies have thus far been borne by government.

The CFM participatory model applied to the Wombat State Forest has been allowed to operate independently of the financial constraints under which this forest was managed in the past when decisions about harvesting methods and areas reflected the government's financial, environmental and moral responsibilities to both the local and wider Victorian communities. Thus far under CFM, the Department retains these responsibilities but appears to have only a limited ability to influence the decisions that determine whether they can be met.

Likely impacts on the forest

The impact of collaborative forest management will become more apparent as time passes, but from the direction taken thus far it is possible to predict its effect on the forest.

Government policies announced prior to the introduction of CFM (reducing sawlog production and banning woodchip sales) substantially reduced the income generated from wood production. This significantly affected Departmental revenue available for critical fire management activities such as road and track maintenance

and fuel reduction burning. A reduction in the rate of harvesting was unavoidable as the 2001 independent review of available timber resources indicated that a dramatic reduction in sawlog production was necessary to correct for the years of higher-than-sustainable harvesting (Vanclay and Turner 2001).

CFM seems set to exacerbate the loss of government revenue through the adoption of a wood production philosophy that is likely to further reduce the annual sawlog harvest to just a fraction of the revised sustainable capacity of the forest's wood production zones. Even if the CFM community participants were committed to producing the sustainable yield of 7000 $m^3 y^{-1}$, their insistence on implementing restoration forestry would necessitate an annual harvest of 700–800 ha. Apart from this area being larger than that harvested prior to the introduction of CFM, the logistics associated with the new requirements for pre-harvest study and operational planning and monitoring will make such an operation virtually impossible for a largely volunteer workforce.

Assuming an average sawlog royalty of \$50 m^{-3}, government revenue from harvesting conducted under the CFM trial may be as much as \$400 000 y^{-1} less than would be obtained from producing the sustainable 7000 $m^3 y^{-1}$ of sawlog, and associated woodchips. Whilst replacement government funding may be forthcoming during a CFM trial, the longer-term loss of revenue of this magnitude will force forest managers to compete for limited government funds against higher priority areas such as health, education, and law and order.

The prohibition of sales to the woodchip industry is also significant in view of the reality that restoration forestry, based on light thinnings from below, will generate mainly low-grade material for which markets are limited.

In lieu of woodchips, the CFM community participants are anxious to use this low-grade material to produce firewood for local use (Anderson 2004a). However, it is unlikely that this will be commercially viable due to the relatively low local retail value of firewood and the relatively high cost of production. Traditionally firewood has been commercially produced from flat, open, easily accessible areas where trucks can be driven virtually to the stump, for example, northern box/ironbark forests, or paddock trees on private land. Operating in densely forested areas on undulating topography is likely to be more difficult and costly.

The CFM community participants have also targeted the thinning of densely stocked 20–25-y-old regrowth stands as a means of both producing firewood and promoting the development of mature forest (Anderson 2004a). The banishment of the woodchip industry, however, has removed the primary tool available to achieve this in an efficient and commercially-viable manner through the use of highly mechanised plantation harvesting equipment. Without access to this equipment, regrowth thinning could be done either non-commercially by crews using herbicide poisoning (at a cost of about \$500 ha^{-1}) or, in more advanced regrowth, manually for firewood production. Either method will incur substantial costs.

There is a potential niche for a specialised firewood production contractor using modified plantation harvesting equipment, but this would require major capital investment based on assured on-going access to a moderate or large volume of wood, and possibly a higher local firewood wholesale price. A commitment to wood production of this scale is unlikely to be acceptable to CFM participants who have a demonstrated preference for small, piecemeal 'cottage' industries with high labour intensity in lieu of industrially-efficient production.

There is also uncertainty about the impact of greater devolution of government management responsibility on professional staffing and equipment levels. Any tendency for government to view increased community empowerment as a vehicle for reducing its own commitment could be potentially disastrous for both the forest and its embedded network of small communities, located as they are in one of the world's most fire-prone regions.

Discussion

It has been stated that the major benefit of collaborative forest management will be better educated and informed local stakeholders resulting in more enduring forest policy decisions (Petheram *et al.* 2004). However, despite being introduced primarily to address the conflict over on-going wood production, the Wombat CFM trial has so far placed little emphasis on educating community participants about conventional, so-called 'industrial' forestry systems and their place in the context of wood production and consumption. Instead, the Wood Products Working Group — the only CFM group directly addressing wood production issues — is pursuing a narrow agenda of alternative low-impact harvesting techniques producing only small volumes of sawlog and firewood for local use, thereby ignoring the requirements of the wider Victorian community who have no access to a local forest.

The dismissal of conventional timber production as a practical and cost-effective means of addressing broader community demands is particularly evident amongst advocates of alternative forestry philosophies such as 'ecoforestry', 'pro-silva', and 'restoration forestry' who appear to view CFM as a vehicle to put their ideas into practice.

Whilst proponents of these philosophies are 'moderates' compared to the more prominent and uncompromising mainstream 'green' groups, their rejection of conventional forestry practices in favour of very low-volume, piecemeal wood production is incompatible with the huge demand for solid hardwood and paper products in developed Western communities. The global consumption of these products is expected to increase exponentially as the large populations of developing countries such as China and India increasingly adopt westernised lifestyles (Yencken and Wilkinson 2000).

As most of Australia's public native forests are unavailable for wood production, the current yield of hardwood is already far below their potential productive capacity (State of the Forests Report 2003). The wide adoption of alternative harvesting systems such as 'restoration forestry' in the remaining wood production zones would further reduce hardwood yields to a minuscule fraction of the sustainable capacity of our forests.

The balance between environmental protection and wood production has for decades been based on forest-use zoning that limits and scatters harvesting impacts across the overall forest

estate. If more environmentally-sensitive alternatives such as restoration forestry are widely adopted, current wood production objectives could be met only by extending harvesting into substantially greater areas of forest within National Parks and other reserves. However, as this is unlikely, restoration forestry should be regarded as an out-dated concept more appropriate to a time when all public forests were available to produce the full range of products and values.

The introduction of collaborative forest management in the Wombat State Forest has reportedly been a laborious, difficult and unwieldy process. This echoes experience in North America, where years of difficult interactions between polarised community groups have commonly resulted in no discernible common ground, and failure to determine who the community is and what views are genuinely representative of it (Kusel and Adler 2003).

As the North American experience of CFM has largely been the inspiration for those advocating its adoption in Australia, it is instructive to objectively consider case studies from Canada and the USA. These suggest that CFM has often evolved in situations where communities are surrounded by large expanses of corporately-owned forests and plantations managed specifically for wood, and in Indian reservations where tribes already have stewardship of land but need to be better able to manage it (Kusel and Adler 2003). Although CFM may have much to offer under these circumstances, they differ markedly from those of Australian communities surrounded by publicly-owned forest that is already being managed to conserve a wide range of values in accordance with government plans and policies.

It is difficult to make an objective analysis of CFM from North American case studies written by prominent participants who, whilst often frank in explaining its difficulties and pitfalls, rarely convincingly explain why it has been introduced. Instead, its need is frequently validated via unsubstantiated comments such as 'degrading industrial practices, … historic abuse of habitat, ... threatening to emerging tourism industries, …' (Kusel and Adler 2003). As such comments echo those often used to misrepresent the impact of Australian wood production, they offer no enlightenment as to the actual situation prior to the adoption of CFM, such as any previous provision for public participation in forest management or whether anti-logging sentiment was the predominant community attitude. These issues are critical to any understanding of whether CFM has been introduced to address valid environmental issues or is merely a means of appeasing local ideologues unwilling to accept any wood production.

Jonathan Kusel, founder of a Californian-based non-profit research and educational organisation Forest Community Research, believes communities in the USA and Canada have sought greater involvement in local forest management because:

- 'their access to land or land management decision-making processes was constrained or because the terms of engagement were unacceptable.'
- 'local knowledge and perspective had for too long been ignored, and this was not simply due to faulty public involvement processes.' (Kusel and Adler 2003)

However, as in North America, the quest for greater involvement in local forest management by Australian rural communities, particularly those close to major urban centres, is driven by residents ideologically-opposed to wood production — including many recently migrated from urban locales and with only a tenuous claim to local knowledge. As has been observed, these people feel let down and ignored by government and many are likely to feel this way for as long as logging is permitted, regardless of government efforts to inform them or involve them in policy development. Accordingly, the fact that strong opposition to wood production remains, despite decades of government concessions to improved biodiversity conservation, makes it essential that the validity of anti-logging concerns be firmly established (rather than merely asserted), before being used to justify management change.

The North American case studies show that collaborative forest management is likely to succeed only when it evolves naturally from an agreement by all parties that there is no other option for moving forward. Its forced introduction by Australian state governments in response to political lobbying by environmental groups is unlikely to foster the unity of purpose needed to successfully challenge polarised local attitudes to wood production. Indeed, Vulcz (2003) warns that mandatory implementation of CFM to deal with only two recognised conflicting factions — for example, timber interests and 'greens' — is likely to result in a simple transfer of control of the forest from one dominant player to another, with little consequent impact in terms of empowering rural communities.

This appears to have occurred in Victoria's Wombat State Forest where, since its introduction in January 2003, CFM's community participants have effectively dictated wood production objectives and outcomes with minimal input from government foresters who still carry responsibility for forest management. The resultant drastic reduction of wood production has undoubtedly satisfied moderate elements of the local community, but at the expense of the wider community, who will inevitably pay through:

- government subsidisation of inefficient wood production
- negative environmental outcomes associated with the reduced local availability of the wood products that the community needs, through:
    - increased use of fossil fuels to import alternative supplies of hardwood
    - environmental impacts associated with the increased use of wood sourced from developing countries lacking the ability to control illegal logging and/or enforce high standards of environmental protection
    - increased use of energy required to manufacture substitute materials such as concrete, steel, plastic and aluminium. For example, production of a unit of aluminium uses about 1450 times the amount of the fossil fuel energy used to produce a corresponding unit of sawn wood (STIC 2004).
- government funding of the time and effort devoted by salaried government personnel to facilitate, cajole and educate interested local community members through the collaborative process. The time and effort contributed to the process by community volunteers is also substantial although uncosted.

- the cost to the government associated with the loss of regional industry and employment. Proponents of CFM may point to anticipated benefits for other industries — in particular, tourism — accompanying the total or partial removal of the local timber industry. However, in view of experience in the nearby Otway Ranges, the net value of such anticipated offsets is questionable. There, the impending removal of the small local timber industry in order to expand the National Park network was estimated to result in a loss to the local economy of 125 jobs and $20.4 million in annual income (URS 2003). The estimated maximum value of the associated boost to regional tourism is 65 jobs and $7.2 million in annual income (VEAC 2004), representing a tangible net loss to the region of 60 jobs and $13 million in annual income.
- government funding of grants to allow community participants to study aspects of forest management that have already been extensively researched and documented by forest scientists over the past 50 y.
- the potentially huge cost to the community that could result from wildfire as a result of the government progressively absolving itself of responsibility for forest management in lieu of increasing community empowerment.

Proponents of CFM in the Wombat State Forest have a vision of a very different local timber industry in the future — one based on the production of low volume/high value furniture and craftwood (Anderson 2004a). If realised, this could compensate for some of the economic costs outlined above, although such products will do little to satisfy the substantial demand of the wider community for durable, strong sawn hardwood for exterior and interior house fit-out and for products such as paper and packaging.

Conclusions

In Victoria, environmental groups continue to campaign against timber harvesting in public native forests despite the reality that wood production is already excluded from the 90% of these forests that are contained in National Parks, other conservation reserves, informal operational and management reserves, or that are operationally unsuitable or inaccessible.

Self-styled 'moderates' amongst opponents of conventional forestry view collaborative forest management as an alternative means of continuing wood production while reducing community conflict. However, in focusing only on designated wood production zones, supporters of this initiative largely ignore the fact that biodiversity and other values are well conserved in the majority of forests that lie outside these zones.

The introduction of CFM appears likely to add additional layers of land use zoning that will further marginalise wood production as a significant forest use. In a world of increasing population and consumption, unwarranted reductions of the already low levels of wood production in developed countries arguably flies in the face of responsible natural resource management. This is particularly so in Australia, where systems of land use zoning and operational regulation already balance native forest wood production against other values to an enviable degree when compared to the situation in developing countries where collaborative forest management originated.

The trial of CFM in the Wombat State Forest has thus far shown that, as an initiative for resolving anti-logging conflict, it is likely to be a vehicle for great reductions in on-going wood production consistent with a likely over-representation by community participants drawn to it by ideological objections to conventional forest management. This is particularly likely where the community participants are allowed to assume responsibility for decision-making rather than acting in a supportive and advisory role to the government forest managers. If limited to this role, CFM has potential to improve forest management by mobilising volunteers to assist in areas that are traditionally underfunded, such as weed and feral animal control.

There is reportedly much curiosity over the outcome of the Wombat CFM trial, with over 2500 individuals and groups representing over 30 000 people apparently having registered their interest by December 2004 — almost two years after it started (Anderson 2004b). It is imperative that potential CFM supporters be given an honest and accurate portrayal of both its positive and negative impacts, particularly with respect to wood production.

References

Anderson, T. (2003) Wombat community forest management. In: *Community Forestry Forum*, proceedings, Creswick, 25–26 October 2003, pp. 9–24, http://ariel.ucs.unimelb.edu.au/~johneth/index2.htm.

Anderson, T. (2004a) Will community forest management help the plantation sector's environmental and social credibility? In: Race, D. (ed.) *Integrating Forestry into Farms, Communities, and Catchments*, proceedings, Australian Forest Growers Biennial Conference, Ballarat, May 2004, pp. 111–117.

Anderson, T. (2004b) Community forest management: an introduction. *Wombat News and Views* **6,** 2, http://www.wombatforest.org/newsletters.php.

Anderson, T. (2005) Community Forest Development Officer Report. *Wombat News and Views* **7,** http://www.wombatforest.org/newsletters.php.

Bracks, S. (2002) Radio interview. Jon Faine Morning Show, ABC Radio 774, Melbourne, 3 December 2002.

DNRE (2002) Department of Natural Resources and Environment Briefing Note, Ref. No. BW 00104.

DSE (2003) *The Wombat State Forest.* Forest Explorer CD-Rom Series. Department of Sustainability and Environment, Victoria.

DSE (2004) *Wombat State Forest Proposed Sawlog Supply Plan, 2004–05*. Department of Sustainability and Environment, Victoria, 15 November 2004.

FOI (2005) Information obtained under Freedom of Information Act by the Hon. G. Stoney, Victorian Shadow Environment Minister, April 2005.

IFA (2003) Australia's first community forest: the battle begins. *The Forester*, Institute of Foresters of Australia, **44**(1)**,** 8.

Kusel, J. and Adler, E. (2003) *Forest Communities, Community Forests*. Rowman and Littlefield, USA.

Loos, T. and Osbourne, R. (2004) Glenlyon restorative forestry trial at Mudlark: evaluation night and some comments from the community. *Wombat News and Views* **2,** 15–16, http://www.wombatforest.org/newsletters.php.

McIntosh, G.C. (2003) The way forward — the Wombat Forest. Draft discussion paper (unpublished). Gary McIntosh, Secretary of the CFM Wood Products Working Group.

Nelson, A. (2003) Community forest management and action research: emerging models, emerging paradigms. In: *Community Forestry Forum*, proceedings, Creswick, 25–26 October 2003, pp. 82–87, http://ariel.ucs.unimelb.edu.au/~johneth/index2.htm.

Petheram, J., Stephen, P. and Gilmour, D. (2004) Collaborative forest management: a review. *Australian Forestry* **67,** 137–146.

Phelan, T. and Chatto, K. (2005) Update on Wombat Sawlog Supply Plan. *Wombat News and Views* **7,** http://www.wombatforest.org/newsletters.php.

RMIT (2004) The Ecoforestry web site at Royal Melbourne Institute of Technology University, accessible during July 2004 at http://www.ecoforestry.info/feedback.html.

State of the Forests Report (2003) *Australia's State of the Forests Report 2003*. CSIRO Publishing, Melbourne, Chapter 1, 23–110.

STIC (2004) Sustainable Timber Industry Coalition website, http://www.stic.org.au .

Strahan Research (2004) Community forest management in the Wombat State Forest. A report prepared for the Department of Sustainability and Environment, Victoria.

Thwaites, J. (2004) Letter from the Minister for Environment, the Hon. John Thwaites to L. Bailey, CFM Council of Stewards, November 2004.

URS (2003) Socio-economic study of the timber industry in central Victoria. Consultancy project report prepared for Central Victorian Farm Plantations by URS, Richmond, Victoria.

Vanclay, J. and Turner, B. (2001) Evaluation of data and methods for estimating the sustainable yield of sawlogs in Victoria. Report of the Expert Data Reference Group. Prepared for the Department of Natural Resources and Environment, Victoria.

VEAC (2004) Otway-Angahook investigative study — draft proposals paper. Appendix 2. Prepared for the Victorian State Government by the Victorian Environmental Assessment Commission.

Victorian Government (2002) Victorian Government media release. Minister for Environment and Conservation, 17 April 2002.

Vulcz, R. (2003) Is empowerment of rural communities only rhetoric? The Lavers Hill experience 2000–2003. In: *Community Forestry Forum*, proceedings, Creswick, 25–26 October 2003, pp. 25–31, http://ariel.ucs.unimelb.edu.au/~johneth/index2.htm.

Wombat News and Views (2004 and 2005) Newsletter for community management of the Wombat Forest **6** (December 2004) and **7** (May 2005), http://www.wombatforest.org/newsletters.php.

Yencken, D. and Wilkinson, D. (2000) *Resetting the Compass — Australia's Journey towards Sustainability*. CSIRO Publishing, Melbourne.