

Certification for short rotation fast-wood forestry – lessons from the New Zealand experience

Chris Goulding and Errol Hay

Forest Research, Private Bag 3020, Rotorua, New Zealand

1. ABSTRACT

An increasing number of forest companies in New Zealand have had their management practices certified according to the Forest Stewardship Council's (FSC's) Forest Certification scheme. The practices are assessed against a set of standards based on the FSC's Principles and Criteria. Environmental issues are targeted by two FSC principles – principle #6 'Environmental impact plan' is aimed at maintaining the ecological functions and the integrity of a forest, and #9 is aimed at the maintenance of high conservation value forests. In addition, components of #8 'Monitoring and Assessment' and #10 'Plantations' also address environmental issues.

As a result of a certification audit, preconditions and Corrective Action Requests (CARs) are issued to the company to ensure that specific areas where performance was identified as being below the required standard, are brought up to the appropriate level required of "well-managed" forests. Environmental issues were amongst the most frequently raised preconditions and CARs for the New Zealand companies, particularly for principle #6.

This paper analyses the environmental issues raised by certification in New Zealand and discusses some of the implications for New Zealand forest management and certification of fast-wood forestry.

2. CERTIFICATION IN NEW ZEALAND

A large number of certification schemes have been established around the world to not only provide a measure of approved practice but also to allow access to markets which are becoming more demanding for "green" and "sustainable" products. Such certification schemes include the internationally recognised Forest Stewardship Council (FSC) and The Programme for the Endorsement of Forest Certification Schemes (PEFC) and the American based Sustainable Forestry Initiative (SFI).

Global climate change and persistent environmental concerns, including concerns about the effects of indiscriminate logging, are translating into market signals requiring New Zealand to provide evidence it is addressing these issues. Good forest management, meeting a required set of standards as set out by a certification programme, can be demonstrated through processes such as the FSC certification scheme (FSC, 2000). Additionally, to ensure that the "certified" label can be passed along the processing chain to the customer each organisation must have a Chain of Custody certificate.

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Currently in New Zealand, 14 plantation forests¹ have been certified as ‘well managed’ under the FSC principles and criteria. The certified area of 675,257 hectares, is only 37.2% of the total New Zealand plantation estate, 1,814,000 (NZFOA, 2003). The area of forests in New Zealand that are being certified is slowly increasing (Höck and Hay, 2002) with the principal reason companies require certification being access to markets in the United States and not necessarily a price premium. This view is endorsed by Fletcher Challenge Forests (Fletcher Challenge Forests Annual Report, 2002, p. 79):

“...major United States retailers are demanding environmentally certified wood products from their suppliers and ... access to an environmental certified (Forest Stewardship Council) resource ...confers a significant competitive advantage.”

Additionally a number of Asian companies source wood from New Zealand’s certified resource, process it and then export the certified product into the United States. Australia, which is New Zealand’s largest market for forest product does not require certified product, nor does the local domestic market.

As a result of a successful FSC certification process, auditors assess forest management practices against a set of standards and verifiers based on the 10 FSC Principles and Criteria (FSC P&C) shown in Table 1. A detailed report is published on the certifier’s web site. This report provides a summary of the company’s performance with a comparison against the FSC P&C. This summary includes listing the areas where performance is below the required standard and indicating the requirements necessary to improve operation procedures in that area. These are categorised into two levels: pre-conditions and corrective action requests (CARs), also known as major and minor CARs. The former need to be addressed before a certificate can be awarded, while the latter require management performance to be lifted within a certain time frame but are not considered a limiting factor for certification.

Table 1. The 10 FSC Principles and Criteria

Principle #	Principle	Number of criteria
1	Compliance with laws and FSC principles	6
2	Tenure and use rights and responsibilities	3
3	Indigenous peoples’ rights	4
4	Community relations and worker’s rights	5
5	Benefits from the forest	6
6	Environmental impact	10
7	Management plan	4
8	Monitoring and assessment	5
9	Maintenance of high conservation value forests	4
10	Plantations	9

Plantations have specific characteristics that are dealt with under Principle 10 in addition to those pertaining to natural forests. In general, to obtain FSC certification, plantation forest management must not pursue solely the objective of maximising profit or timber production, but must modify procedures to meet non-timber social and environmental requirements. Fast grown, short-rotation plantations present especial challenges for certification. They are often of a single, exotic species, with intensive silviculture utilising chemicals, limited biodiversity

¹ www.fscoax.org 19/11/2003

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and few environmental or recreational values. When established as a large-scale investment by a non local company, management can be disruptive to the social values of the community due to the cyclic nature of the forest market or to the displacement of other diverse land uses and employment.

The evaluation of social, economic and environmental issues form an integral part of the FSC evaluation. Factors to be considered are quite diverse and include the direct impact of forest management operations on soil, water, and air quality and biodiversity, pesticide use, conversion of natural indigenous forests to plantations, and maintenance or management of high conservation value forests within an estate. Consultation with stakeholders about a company's management performance is also an important part of the transparent FSC certification process.

The following management practises will automatically prevent FSC certification;

- the use of genetically modified organisms;
- planting of areas converted from clearfelled natural forest after November 1994;
- wood that has been illegally harvested;
- wood procured from areas where there is a clear demonstration of violation of traditional, customary or civil rights, or of serious extant disputes with indigenous peoples or other social stakeholders.

This paper discusses the most frequently raised environmental issues as result of FSC certification in New Zealand and the implications for forest management. The paper concludes with a discussion of future issues and the possibilities for certifying fast-wood forest crops.

3. ENVIRONMENTAL CERTIFICATION ISSUES IN NEW ZEALAND

Höck and Hay (2003) compared the pre-conditions and CARs of the 11 certified organisations in New Zealand. It was found that while there is a strong commitment to the FSC and attributes of good corporate citizenship were frequently found, certification did require changes to be made to the management of New Zealand forests and that these were not negligible. The common environmental issues were:

- The need for or improvement of environmental impact assessments, particularly at the landscape level.
- The requirement for improved flora and fauna monitoring.
- The need for improved safeguarding of rare, threatened and endangered species, including the need for more information on these. For representative ecosystems as well as the rare, threatened or endangered species: there is inadequate protection, inadequate restoration, insufficient information to assess needs, and the need for improved strategies.
- The need to manage wilding spread or unwanted regeneration, both inside and outside the forest estate.
- The need to modify the use of chemicals.
- The need to define a maximum clearcut size.

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Höck *et. al.* (2003) further discussed whether certification had been worthwhile in New Zealand with the observation that the companies that had been certified the longest also valued it the most and considered that it was beneficial to their management practices.

4. CORRECTIVE ACTIONS BY FSC PRINCIPLES AND CRITERIA

Environmental issues are specifically targeted by two of the FSC principles: #6 Environmental Impact Plan and #9 Maintenance of High Conservation Value Forests. In addition, components of two other principles, #8 Monitoring and Assessment and #10 Plantations, also address environmental issues.

4.1 Principle #6: Environmental impact plan

The aim of this principle is to maintain the ecological functions and the integrity of the forest. It covers such topics as biological diversity and its associated values, water resources, soils, unique and fragile ecosystems, and landscapes. The highest number of preconditions and CARs were raised under this principle for every company, averaging approximately 9 per company. Figure 1 shows the frequency of issues raised per criterion

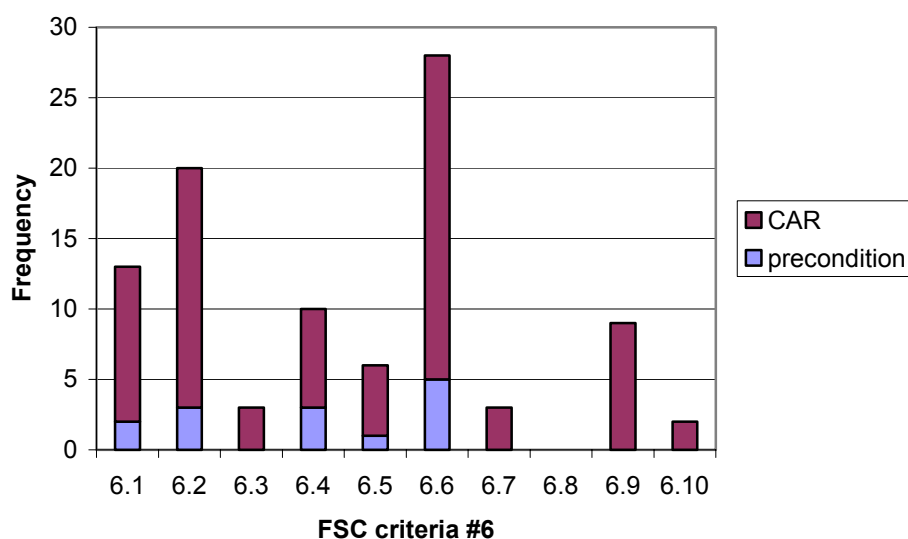


Figure 1. Frequency of preconditions and CARs per criterion of FSC principle #6

Issues raised under criterion 6.6, included management systems to promote alternatives, and minimise use of chemical pesticides and to provide proper equipment and training to minimise risks. Specific issues were the usage of chemicals banned under FSC, the lack of strategies for phasing out chemical usage, no promotion of alternatives nor searching for alternatives, and insufficient information available to stakeholders or no consultation with stakeholders on the use of chemicals. Issues relating to appropriate disposal were also mentioned occasionally.

Of interest in New Zealand is that companies have been certified in spite of using 1080 (sodium fluoroacetate) for possum control. FSC certification would not normally be

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possible for companies using this compound which is on FSC's list of banned chemicals. However in New Zealand it has been allowed, through an FSC derogation, because of broad (though not unanimous) support from regulatory agencies and environmental groups, due to perceived benefits of pest control on adjacent natural forest systems and the current lack of any possible effective alternative. This highlights the importance of interpreting the FSC Principles and Criteria in the context of the situation in which they are applied.

Criterion 6.2 is aimed at safeguarding rare, threatened and endangered species and their habitats and issues raised included the need for more information on these species and their habitats (e.g. through survey), for public consultation on these species, for protection strategies, and for implementing these strategies. Also stated was the need to protect representative ecosystems and natural vegetation.

Criterion 6.1 addresses the assessment of environmental impacts, including landscape level considerations. The need for or improvement of such environmental impact assessments, particularly at the landscape level, was a frequent issue. Specific requirements included improving riparian margin management, and the need to include such assessments into the strategic and annual planning process.

Less frequently mentioned was criterion 6.9, which requires exotic species to be controlled and monitored to avoid adverse ecological impacts. The most frequent issue here was the need for wilding control, both within forests and in neighbouring lands.

Other requirements included the need for survey protocols and maps of environmental concerns (such as ecosystem maps) for the guidance of contractors, for public visual assessments and for the assessments of new lands/new plantings. Minor mention was made of older trees, for example, keeping 2 large trees per hectare and having policies on old growth and minor species. Another minor issue related to the New Zealand Forest Accord (NZIF, 1995), for example in regard to compliance for alternate species and with communication and commitment.

4.2 Principle #9: Maintenance of high conservation value forests

This principle concerns the maintenance or enhancement of the attributes that define high conservation value forests. It was consistently seen as not a problem area, with only one mention of the possibility of discovering high conservation value forests once more assessments had been performed.

4.3 Principle #8: Monitoring and assessment

This principle addresses the need for conducting appropriate monitoring. Of all the issues raised under this principle (Figure 2), most involved environmental monitoring. Auditors imposed no preconditions for Principle 8, unlike most other principles, suggesting overall a lower level of concern with performance.

Criterion 8.2 addresses the monitoring of indicators and specifies the minimum ones that need to be monitored. Two issues dominated – better monitoring of flora and fauna, and improved monitoring of social impacts. For the former, this also included improved documentation, defining the monitoring activities, and better baseline information.

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Improved monitoring of environmental impacts was also specified repeatedly for this criterion.

4.4 Principle #10: Plantations

All the issues that were raised across the companies were environmental ones. While several issues were raised, this was not as frequent as for principle #6.

One of the common issues was the inadequacy of meeting the requirements relating to representative ecosystems and/or rare, threatened or endangered species. This was mentioned several times and under different criteria (10.2, 10.5). Specifically, there was inadequate protection of these species, inadequate restoration, insufficient information to assess needs, and a need for improved strategies.

The need to define a maximum clearcut size (10.3) was listed several times. One organisation was issued a CAR to support research into the environmental effects of clear-cutting and coupe size, given that there was little substantiated information. There was also some mention of issues in connection with waterways, e.g., improved classification of streams, and some mention the management of wildlife corridors and other non-productive parts of the forest.

An important issue for exotic plantation forests is maintenance of some level of species and genetic diversity, and a representative range of age classes.

5. ENVIRONMENTAL ISSUES AND FOREST MANAGEMENT

New Zealand plantations are industrial, intensively managed with a near monoculture (~ 90% radiata pine) and dependent on the use of chemicals and clearfelling. This has had several implications for achieving the certification standards.

Within a typical forest estate there are significant areas of native trees in areas too small to be managed by an independent conservation-oriented authority (for example riparian strips). The monitoring and management of these areas now becomes a more significant aspect for such a company following certification than beforehand.

The intensive management in New Zealand implies planting of quality seedlings, the use of chemicals to control weeds and pests, and clearfelling. Tree improvement and planting per se do not violate any of the FSC P&C, but the use of genetically modified organisms does. It is unlikely that management will be able to totally dispense with the use of chemicals in the near future. Weed growth and competition in very young stands can be severe, especially on the fertile, former pasture land currently being afforested, or after re-foresting harvested areas that had a wide-spaced regime with its prolific vegetation understorey and seed store. A difficult and contentious issue is the use of 1080 poison to control Possums, which carry TB and pose a serious environmental threat to the indigenous forests. However, research should be (and is being) carried out to improve the effectiveness of chemical use practices to continuously reduce the amount of chemical being applied, with a view to ultimately substitute with a non-chemical, environmentally acceptable treatment.

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Clearfelling is part of the silviculture of a pioneer species such as the light-demanding radiata pine, and the issue of size of clear-cut area remains unresolved. In the wider, general sense beyond forestry, New Zealand adopts an “outcome” rather than a “prescriptive” approach to regulation. Notwithstanding the bias in the FSC P&C against clear-felling, FSC certifiers have recommended that research should be supported to provide factual evidence on the effects of clearfelling and size of clear-cut area on biodiversity, flora and fauna succession, and the New Zealand public’s perception of landscape design.

6. HAS CERTIFICATION BEEN WORTHWHILE?

In March 2003, an informal telephone survey was made of seven of the 10 plantation forest companies that had been certified in New Zealand, in order to provide answers to the question “has FSC certification been worthwhile”. The survey was confined to those companies that had possessed their certificate for at least one year, and had received at least one annual audit. One company was certified five years ago and had successfully been evaluated for its five yearly update.

The main reason given by the companies for undergoing certification was strategic market development. The key benefit was improved market access, driven by the USA market and to a lesser extent Europe. Sales contracts direct to the large retailers in the USA, particularly for appearance grade products, necessitated obtaining certification. Part of the more than doubling of the value of NZ forest exports to the USA between 1999 and 2002 from NZ\$246 million to NZ\$524 million per year (June year) can be attributed to the success of this marketing strategy. Additionally, some Asian customers required certified timber in order that they themselves could gain access to the USA and Europe for their remanufactured wood products. Obtaining certification was a necessary precursor to forming customer relationships, entering some new markets and winning orders. Certification is a risk averse strategy for export dependent companies. Being ahead of other companies was a competitive advantage at first, but with increasing numbers of certified suppliers this advantage is now changing to becoming a competitive necessity. One viewpoint was that certification will become so universal that it no longer serves as a point of differentiation between poor and good practice.

Companies reported varied success in obtaining a price premium for certified logs and wood products. The first companies to obtain certification were able to demonstrate a price premium for logs, but while good pricing has been maintained, the margin attributable to certification has disappeared. Most other companies have been unable to obtain any premium, but two recent log sales in the North Island have proved an exception. Most people spoken to were of the opinion that there will be no increase in price that can be attributed to certification. This is in keeping with Veisten (2002), who found a median “willingness to pay” retail price premium on certified wooden furniture of only 1% and 1.6% in Norway and the UK respectively. Timberlands West Coast credited FSC certification with assisting them to attract a re-manufacturing plant to locate within their region, thus saving the log transport costs involved in a one way cartage to Nelson or Canterbury with a 250 km haul.

A significant benefit from the evaluation process of obtaining certification and its immediate aftermath has been the necessity to systemise and formalise those processes monitored by FSC. Refining, formalising and documenting practices has meant that a company can now “prove” more convincingly than before that its environmental practices are sound. Whether the benefits of this were outweighed by the costs was a point of discussion.

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FSC certification significantly improves the reputation of a company within the local community in being environmentally and socially responsible. Over the longer term, as a company strives to meet the FSC Principles and Criteria, relationships with stakeholders have improved. FSC provides a forum to talk to neighbours and local environmental NGOs, encouraging openness and building up trust within the local community. Company staff must now pro-actively interact with stakeholders more than before in what has become a core part of the business, providing early, useful information to or from the company or diverting unjustified criticisms, particularly in the case of environmental objections. Certification is recognised by the local authorities, with the environmental FSC P&C paralleling the concerns of regional councils and Department of Conservation. This has “smoothed the path” and made it easier for at least some of the companies surveyed to obtain resource consents under the RMA.

The total costs of FSC certification are not insubstantial. The direct costs are not necessarily high, but the indirect costs are. Indigenous forest or riparian reserves, preserving landscape vistas, older-growth stands and patches with alternative silviculture all reduce pure economic efficiency, but are part and parcel of FSC requirements. The use of chemicals is a necessity for current forest operational practice, given the invasive competition from New Zealand’s exotic noxious weeds and pests. FSC standards are likely to force forestry companies to lead the rural industry (and rural district councils) in reduction of chemical usage; something best tackled by a unified approach to research, rather than relying on an individual company’s initiatives. The interpretation of the meaning of “well managed” plantation forests is evolving, and the standards that companies will have to meet will increase in the future.

A qualitative observation from this early and limited survey is that those companies that have had certification the longest are those companies that value it the most and believe that it has brought the company benefits in management practice.

7. ISSUES FOR THE FUTURE

Concerns expressed by the forest companies about FSC certification are based on the need for maintaining customer confidence in the certification process, particularly internationally. Additionally, evolution of the meaning of “well managed” could raise the cost of certification beyond a level that was economically worthwhile. In support, however, it was considered that expectations of immediate results from such a scheme, particularly with developing countries, has led to undue criticism. The development of the National Standards for the certification of plantation forest management in New Zealand is a positive development. Increasing realisation of the benefits of certification will be an important driver. Companies will need to maintain an awareness of the potential need to meet other schemes for other markets, and the increasing numbers of certified companies internationally.

The destruction of biodiversity, which can result from densely planted, large contiguous areas of one species, is one of the main issues for fast-wood forestry. Fast-wood forestry plantations and land tenure arrangements with indigenous people, together with the conversion of indigenous forests, are some of the primary issues which will need to be carefully investigated and addressed when considering forest certification. New Zealand’s traditional forest industry, primarily for sawlog production is based on *Pinus radiata* grown as a multi-product resource at low stockings on rotations of about 27 years. As a result such stands have

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significant biodiversity within the understorey vegetation, but still have the disadvantages of monocultures when compared to some of the indigenous forest. There is pressure to have significant areas within the forest management unit set aside for indigenous reserves, with the types of reserves selected with due consideration to their rarity or otherwise in the wider ecological region.

It is feasible to certify short rotation fast-wood forestry crops as being “well-managed”. In countries such as Brazil and South Africa a number of companies who are grow eucalypts and acacia species for charcoal and pulp production have been FSC certified. While in both Australia and New Zealand two companies who grow eucalypts for pulpwood or chip production have commenced the FSC certification process. Although not at the final approval process, it does show the acceptance by the forestry industry of achieving high standards for management practices in order to meet the strict FSC principles and criteria. Depending on customer demand for certified product, fast-wood forestry crops will continue to be certified. The issues raised during the FSC process in New Zealand, combined with issues raised in other countries will ensure that management practices will continue to be improved.

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