Financial viability of forest certification in industrial plantations: a case study from the Solomon Islands

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Abstract

Forest certification has been promoted to encourage sustainable use of natural forests. While its use in industrial plantation forests has not always been welcomed (World Rainforest Movement 2002), forest certification offers great opportunities in the tropics. This paper assesses the profitability of forest certification of an industrial hardwood plantation in the Solomon Islands by the Forest Stewardship Council. The results of this study suggest that industrial plantations can achieve significant financial benefits from sustainable forest management confirmed by a recognised certification scheme. This positive outcome will, however, depend on the marginal costs incurred by the plantation company to adapt its practices to meet sustainability requirements stipulated by the certification scheme, and the price premiums obtained by the firm. In the case of the Solomon Islands forestry, the additional costs of sustainable forest management and forest certification, including the transaction cost of forest certification, were far less than the market premium that was obtained from certified logs. The company’s costs would have had to increase by almost two thousand folds before certification could be regarded as financially not profitable. This case study thus demonstrates that it is possible for tropical plantations to have a ‘win win’ outcome from forest certification, achieving net financial benefit as well as ensuring sustainable forest management.

Keywords: forest certification, industrial plantations, financial profitability, Asia-Pacific, Solomon Islands, forest management, forestry.

Abbreviations/ Acronyms used

EFI    European Forest Institute
ENGO   Environnemental non-government organisations
EIU    Economic Intelligence Unit
FAO    Food and Agriculture Organisation (of the UN)
FC     Forest Certification
FSC    Forest Stewardship Council
KFPL   Kolombangara Forest Products Ltd.
NR     Net revenue
PEFC   Pan European Forest Certification
SFM    Sustainable forest management
TNR    Total net revenue
WRM    World Rainforest Movement
1. Introduction

In a world where wood demand is increasing, forestry is often seen as an important vehicle for economic development in forest-rich developing countries. However, with rapid deforestation and associated loss in biodiversity and other forest services, community pressure has increased to reverse this trend and secure preservation of the shrinking natural capital. Furthermore, there have been strong calls for changing forest management practices to encourage sustainability of forest areas already logged (Jenkins and Smith 1999, Kanowski 1998). The need to balance competing demands on forests as a source of forest wood products and other forest services has resulted in new initiatives. Promotion of tropical timber plantations and the use of instruments, such as forest certification (FC) and labelling of forest products is encouraged (Kanowski 1997, 1998). The use of both these approaches is projected to grow in the future (Jenkins and Smith 1999). However, these approaches are not without controversy.

Forest plantations, which are defined as those forest stands established by planting and/or natural seeding, are either of introduced species or intensively managed stands of indigenous species. They have one or two species at planting, even aged class, and regular spacing (FAO 2000a). The former are often encouraged in order to substitute wood supply from natural forests and thus potentially alleviating logging pressure from natural forests (FAO 2000b, Kanowski 1997, Sedjo 1999). Investments in industrial plantations are increasingly shifting from public to private entities (Sedjo 1999).

In developing countries in the tropic and subtropic region, investments in forest plantations appeal to private investors due to favourable climate conducive to high timber productivity and low opportunity costs for land and labour in developing countries are the main natural advantages in these regions (Brown et al. 1997, FAO 2000, Sedjo 1983). In contrast, the additional costs of developing social and physical infrastructure to support plantations and business operations are often also high. Risk associated with insecure land tenure and political instability are high, at times discouraging private investors (Sedjo 1999).

Finally, an emerging source of risk for private investors is the opposition from environmental non-government organisations (ENGOs) about environmental and social impacts of industrial plantations, particularly when plantations replace natural forests. The major concerns often raised include: the displacement of native forests, flora and fauna and indigenous people; the impacts on soil and water because of intensive silvicultural practices, and; high risk from pests and disease due to monoculture of desired species (Bowyer 2001, Sedjo 1999).

Some proponents of industrial plantations, on the other hand, assume it is more socially desirable to pursue only sustainable timber production from specialised plantations and promote other services by natural forests. This assumption is based on the

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1 Forest services cover a wide range of ecological, social and cultural beneficial non-extractive roles of forests such as clean water, recreation, spirituality, erosion or biological diversity conservation (FAO 1998).

2 In this paper forest products refer to those mainly for industrial uses: roundwood, sawnwood, wood-based panel, pulpwood, paper and paperboard products (FAO 1998).
perception that the balance between the costs for defining and implementing sustainable forest management (SFM) practices and the benefits of doing so is more favourable for plantations than natural forests. Knowledge about the conditions of SFM in industrial plantations and mechanisms to deliver SFM practice is not clearly known and there are calls for more research to address these (see, for example Brown et al. 1997, Evans 2001, Kanowski 1997, Varmola and Carle 2002).

On the other hand, proponents of multiple-use forests encourage the adoption of less intensive management practices (Carrere and Lohmann 1996) that promote the supply of timber products as well as the provision of environmental goods and services. It is the latter that the FC is meant to encourage. Because of the close association between its purpose and the less intensive forest management FC is, however, thought to disadvantage industrial plantations (Sedjo et al. 1998).

FC involves an accredited body certifying that a forest is managed sustainably and allowing producers to label their products as such. FC labels provide consumers with information and assurance that the forest from which that timber is sourced is sustainably managed. This allows the consumers to express their willingness to pay for and, the product market prices to also reflect, the value of non-marketed goods and services supplied by forests. Without certification, consumers are not likely to have appropriate information to base their values for non-marketed goods and services, nor do they have the incentive to do so because of their public goods nature (Wills 1997). These values are not reflected in the prices of timber products. Flaws in the signalling mechanisms to convey to forest owners the true values of forests cause distorted patterns of incentives and discourage the protection and preservation of forest services (Barbier 1998, Pearce et al. 2001, Perman et al. 1999, Tietenberg 2000, Wills 1997).

FC is meant to signal to forest owners and managers the values of also promoting the supply of forest services, and thus also reward them for adopting SFM practices. Financial incentives to introduce SFM practices would thus arise from the consumers’ preferences for certified products (Varangis et al. 1995, Sikod 1996).

There, thus appears to exist potential synergies between industrial plantations and FC, as FC can help improve financial returns from plantation operations by selling certified timber products at a higher premium. Second, FC is aimed at delivering forest management practices in line with stakeholders’ views. This may result in enhanced public acceptance of plantation forests, which could only benefit plantation operations. FC could therefore provide forest managers with a means to overcome lack of investment incentive and stakeholder acceptance to establish industrial plantations.

These opportunities of FC in industrial plantations are reflected in the rapid rate of FC adoption under various FC schemes, principally the Forest Stewardship Council.

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3 Sustainable forest management is conceptualised as the sustained provision of goods and services from forests (Pearce et al. 2001).

4 Public goods exhibit non-rivalry and non-excludability in consumption. Non-rivalry exists when one person’s consumption of the good does not reduce the amount available to others. Non-excludability exists when there are no economic means to exclude non-payers from consumption. For instance, the forest service of biodiversity conservation is non-rival, as the enjoyment of biodiversity does not detract from other individuals’ opportunities to enjoyment, and non-excludable, as the cost for excluding non-payer from the information about the biodiversity existence would be exceed the benefits (Wills 1997).
(www.fscoax.org) and the Pan-European Forest Certification (www.pefc.org); the Forest Stewardship Council is the oldest and most widely recognised certification system in the world. Figure 1 shows the share of FSC certified plantations and natural forests for the world, tropical and subtropical America, Africa and Asia. The certified plantation share is greater than that of natural forest for the world and for the illustrated subregions. It appears that, because plantations are simpler ecosystems, it is easier to change practice to comply with the standards required by FC than in the case of natural tropical forests.

Although such a complementarity exists between FC and industrial plantations, the nature of this complementarity has not explicitly been explored to any extent. In many countries within the Asia-Pacific region there is shift in the supply of wood from natural forest to industrial plantations, which has largely been prompted by increasing logging restrictions and forest protection (FAO 1998). FAO projects the annual rate of plantation establishment in the region is at about 1 million ha per year from 1995 to 2010 (1998). According to the FAO there exists further opportunities to increase not only the rate of fast-growing short-rotation plantations but also those of longer-rotation types. There are, however, for reasons discussed above, also difficulties for large investments to pursue an expanded plantation program in the region. Internationally, little consideration is being given to the potential of the FC to help address the difficulties faced in encouraging plantation forests, especially of longer-rotation hardwood plantations (FAO, 1998). Literature on plantation investments and sustainability does not adequately address financial implications of the adoption of FC by plantations (Brown et al. 1997, Evans 2001, FAO 2000, Sedjo 1999, Sève 2001).

The research presented in this paper is intended to inform policy decision-makers about the role of FC in industrial plantations and addresses the question: Can FC generate net financial profit in tropical industrial plantations in developing countries? The research is based on a case study from the Solomon Islands, where the political and infrastructural circumstances are particularly unfavourable for private investments in the forestry sector (EIU 2002). There is, however, scope for plantation establishment, given the importance of the forest industry for the country’s economy and the strong logging pressure on its natural forests (Sheehan 2000, Solomon Islands Central Bank 2001). The research findings will be relevant to the other Pacific Island nations with hardwood industrial plantations of similar characteristics. The insights from this research can also be of significance for other tropical and subtropical industrial plantations in developing countries worldwide.

The paper is organised as follows. The following section provides a brief overview of FC as a process and the analytical framework used in this paper. This is followed by a brief overview of the Kolombangara forest case study site. The next section provides an overview of the method used to determine financial viability of the FC and data collected. Finally, the results are presented, interpreted and discussed, before drawing some general conclusions.
Figure 1 Share of FSC certified plantations and natural forests by region

Source: Forest Stewardship Council (FSC), 2002a. ‘Certified forests by FSC-accredited bodies’ http://fscoax.org/principal.htm (9/19/02)

2. Forest Certification Process

FC provides civil society with a means of exercising influence on the management of forests (Kanowski 1998). For a firm certification provides a means by which it can consolidate its reputation in an increasingly uncertain world (Garcia-Johnson 2001; and Sasser 2003). There are many different FC approaches used in the world, such as FSC, ISO 14001 and Pan European Forest Certification (PEFC) schemes. Although the process of certification is the same across different schemes, they vary slightly in details (Kanowski et al. 1999).

The Forest Certification System (FSC) used by the Kolombangara Forests Products Ltd. typifies the operation of FC. The FSC, founded in 1993, has two main functions: the establishment of generic Principle and Criteria of good forest management, which define the conditions of SFM under the FSC scheme, and the accreditation of certification bodies (FSC 2002a). Using its Principles and Criteria template, summarised in Table 1, FSC encourages countries and regions to develop and implement their local standards reflecting local forest ecosystems and socio-economic environments (FSC 2002b).

FSC-accredited bodies paid for by the forest company assess and compare individual forest management practice against previously defined local standards (FSC 2002b). Once validated, a certification is awarded that enables labelling of forest products through the whole supply chain informing consumers about the sustainability of the
forests from which the timber was sourced. Consumers can, as mentioned earlier, then make informed decisions signalling their preferences and their willingness to pay for certified timber products via market purchasing.

FC hinges on the assumption that the price premium received for certified products provides sufficient financial incentives to compensate their additional costs of changing its management practices consistent with the SFC’s SFM standards. Certified, compared to non-certified, producers face different cost and market revenue structures, since certification imposes on producers a cost of adjusting their forest management to comply with the standards of SFM. It also includes the transaction cost of the actual certification process which is also borne by the producers (Sedjo et al. 1998, Simula 1996, Upton and Bass 1995, Varangis et al. 1995).

The cost of FC will vary depending on state of forest management prior to certification, the standards adopted in the certification assessment and the actual cost of assessment and monitoring. The more unsustainable the current practice and the more stringent the SFM standards, the greater will the cost be to the producer to change and/or introduce sustainable management practices (Sedjo et al. 1998, Simula 1996, Upton and Bass 1995). Part of the cost of SFM is the opportunity cost of foregone production due to lower intensity of harvesting or proportion of area set aside for protection and conservation purposes. Of course, the opportunity cost of foregone production is bigger for highly productive forests, such as industrial plantations.

The cost of certification would include a fee to carry out the initial assessment of forest management unit, the cost of gathering, recording and evaluating the internal information about forest management practices and the external knowledge to assess the viability of FC (Sedjo et al. 1998, Simula 1996, Upton and Bass 1995). In small island nations far away from the main centers where accredited forest certifiers are likely to reside, the cost would also include additional air fares and accommodation.
<table>
<thead>
<tr>
<th>Principles</th>
<th>Criteria</th>
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<tbody>
<tr>
<td>1 Compliance with laws and FSC principle</td>
<td>Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria.</td>
</tr>
<tr>
<td>2 Tenure and use rights and responsibilities</td>
<td>Long-term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established.</td>
</tr>
<tr>
<td>3 Indigenous people’s rights</td>
<td>The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognized and respected.</td>
</tr>
<tr>
<td>4 Community relations and worker’s rights</td>
<td>Forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities.</td>
</tr>
<tr>
<td>5 Benefits from the forest</td>
<td>Forest management operations shall encourage the efficient use of the forest’s multiple products and services to ensure economic viability and a wide range of environmental and social benefits.</td>
</tr>
<tr>
<td>6 Environmental impact</td>
<td>Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.</td>
</tr>
<tr>
<td>7 Management plan</td>
<td>A management plan - appropriate to the scale and intensity of the operations - shall be written, implemented, and kept up to date. The long term objectives of management, and the means of achieving them, shall be clearly stated.</td>
</tr>
<tr>
<td>8 Monitoring and assessment</td>
<td>Monitoring shall be conducted—appropriate to the scale and intensity of forest management—to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.</td>
</tr>
<tr>
<td>9 Maintenance of high conservation value forests</td>
<td>Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach.</td>
</tr>
<tr>
<td>10 Plantations</td>
<td>Plantations shall be planned and managed in accordance with Principles and Criteria 1 - 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world’s needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests.</td>
</tr>
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</table>
Producers would hope to offset the joint costs of SFM and FC by greater revenues expected from certified products. As mentioned earlier, certification allows producers to enter markets for certified products, which generally fetch higher prices. Alternatively, producers may be able to prevent loss in market share as consumers shift their purchasing habits and seek timber only from certified operations (Haener and Luckert 1998, Sikod 1996, Varangis et al. 1995, Upton and Bass 1995). Firms can also consolidate their reputation as a responsible supplier of timber sourced from sustainably managed forests and increase their market share (Sasser 2003). The net benefit to producers will, however, depend on the cost increase imposed by FC, with no certainty of a favourable outcome over a long term (Swallow and Sedjo 1999).

3. The case study
The Kolombangara Forest Products Ltd (KFPL) is a hardwood plantation-based operation in the Western Province of the Solomon Islands. The KFPL, a joint venture between the UK-based Commonwealth Development Corporation and the Investment Corporation of the Solomon Islands, was established in 1989. Favourable climate and highly productive lands for plantations, together with a cheap land lease provided by the government (SIS$1,784,000 for 33 years in 1992), with already 8,000 ha of plantation to develop further, were the main initial drivers attracting private investments. The plantation was established on forested lands, already publicly owned. This caused public contention, as well as the comprise of mainly exotic species such as *Eucaliptus deglupta*. (KFPL 1999a).

The country was gripped in an adverse political climate, resulting in a coup d’etat in June 2000 (Amnesty International 2000), with subsequent poor economic development, lack of infrastructure and skilled workers (EIU 2002). The venture was thus characterised by 3 of the 4 negative aspects considered by Sedjo (1999) to create hostile environments for industrial plantations. But substantial investment in technology, infrastructure and the expertise of KFPL, and forest certification, helped cope with the political and economic drawbacks. It expanded its operation and is generally regarded as a leading plantation of its type in the Pacific.

The KFPL plantation is part of a 39,402 ha estate, including reserved and protected areas with conservation objectives (KFPL 1999b). The plantation area increased from 8,000 in 1989 to 14,500 ha in 1999, aiming to reach its maximum at about 15,754 ha in 2004 (KFPL 1999b). Two species, *Gmelina arborea* and *Eucaliptus deglupta*, which had best market demand and suited the local environment, dominate the plantation (KFPL 1999b). KFPL’s main exports were peelers and sawlogs to the Asian markets, which averaged about 45,000 to 60,000 cu m per year between 1997 and 2002. The KFPL employed 250 fulltime workers and a further 400 contractors for specific tasks from the local community. As part of its operations the KFPL, being the main employer on the island, provides housing and schooling (KFPL 1999b).

Although the KFPL claimed to adopt forest management and business practices in line with the principles of social and environmental sustainability (KFPL 1999a), there had been some public concerns about its environmental impacts and inadequate provision of local level social benefits. Other issues surrounding its operations include the legality of
the KFPL’s land lease, claiming control on the alienated customary lands (KFPL 1999b), something some local groups have contested in court.

It is understood that KFPL obtained forest certification from FSC in 1998 to gain stakeholders’ recognition of its forestry management policies and to exploit apparent commercial opportunities from certified timber (KFPL, General Manager, pers comm. August, 2002). The KFPL noted that since it already used best practice ‘only minor changes [were] needed to reach the standard required for certification’ (Mountain Forum 1998). Amongst the changes needed were an improved management plan that included specific research and monitoring of environmental impacts, such as water and nutrient removal in harvesting; renovation of some physical infrastructure and adoption of new practices to improve work safety. They also needed to proactively involve the community, especially over matters related to land disputes (Soil Association Woodmark 2000).

The KFPL, following certification, was able capture niche markets requiring FC. The demand for certified logs came particularly from Vietnamese furniture manufacturers supplying to the European markets. In 2002, KFPL’s General Manager noted that ‘FC has given to KFPL a competitive edge which allowed KFPL to overcome the market difficulties from the in-country political instability in 2000 and the following up of the 1997 Asian market downturn’. In contrast to the commercial success, FC did not apparently help to achieve full stakeholder acceptance, as the local tensions with the local population of some nearby villages were still going on as well as the disputed with ENGOs about KFPL’s environmental and social impacts.

### 4. The method for financial appraisal

The financial assessment of forest certification involves comparing present values of financial returns, net of costs, of the forest activity ‘with and without’ certification.

\[
\text{NR (net revenue)_{ certification} = TNR (total net revenue)_{ (certified business)} - TNR (total net revenue)_{(business-as-usual)}}
\]

Where TNR_{(certified business)} is the net revenue from certification (TNR), which is equal to the difference in total revenue net of costs associated with the plantation forest and logging and transport plus the costs of certification. TNR_{(business-as-usual)} is the total revenue net of costs associated with the plantation forest without certification. NR (net revenue)_{certification} is then the profit obtained by the company from certification.

Operationally, because of the commercial-in-confidence nature of the business venture, it was more practical to estimate the additional net financial profit achieved by the KFPL’s investment in FC, rather than estimate the actual profits with and without (in this case also the before and after ) certification. For each year, the additional costs and revenues were estimated for the period 1997\(^5\) to 2002\(^6\) and these were then compounded using the 10\% interest rate\(^7\) to determine the net financial profit, as of 2002.

\(^5\) In 1997 KFPL begun to experience pre-adoption cost for FC in terms of collection of information and preliminary assessments of FC viability.
The KFPL’s increase in cost due to certification was determined separately for those associated with the change in management requirements of SFM under FSC and those directly associated with the certification process itself. To determine the change in revenue following certification, the market revenue flows between the certified business and an assumed business-as-usual scenario were estimated. The business-as-usual condition was projected in consultation with the KFPL.

The revenue flow for the certified business was determined using the actual KFPL’s revenues from the actual sales in the markets requiring FC and on those that did not require FC. The flow revenue for the business-as-usual, in order to deduct the price premium sourced on the markets requiring FC, was constructed on the basis of the same sale quantities KFPL actually experienced by the weighted average prices exhibited for the same products in the markets which did not require FC.

### 4.1 Profitability of KFPL’s Forest Certification

Forest certification provided the KFPL a net gain of about US$2.2 million dollars, at the actual realised weighted average price premium of 36% and an actual cost of SFM of $0.4 per cubic metres, during 1999-2002. The net financial gain is unexpectedly high, due to both a relatively high price premium received by KFPL and a low unit cost of timber production when in Generally, price premiums of 10-20% are regarded as optimistic values (Pearce et al 2001: 14; Varangis et al 1995: 23). Average unit costs from other Asia-Pacific countries are in the range of $35-70 per cubic metre (Varangis et al 1995: 23). At the same time the cost of certification is around the lower end of the range reported elsewhere (see Table 2).

#### Table 2. Unit costs of logs produced from certified plantation forest in Kolombangarra Island, Solomon Islands

<table>
<thead>
<tr>
<th></th>
<th>Cost of Certified plantation Forest (US $)</th>
<th>Cost of certification (US $)</th>
</tr>
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<tbody>
<tr>
<td>Kolombangara Forest Product Ltd*</td>
<td>0.4</td>
<td>0.6</td>
</tr>
<tr>
<td>Other Asia-Pacific countries**</td>
<td>35-70</td>
<td>0.8-1.5</td>
</tr>
</tbody>
</table>


To what extent the low cost of the shift to SFM is due to apparently lower local forest management standards, as claimed by the ENGOs, is uncertain. A local ENGO had questioned the standards used against which the KFPL practices were judged, claiming that KFPL practices were judged against local guidelines for logging practices and

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6 The figures for the year 2002 were collected until September and then adjusted to the whole year.
7 10% interest rate was used on the basis of KFPL’s second best alternative investments from 1997 to 2002.
lower local standards of SFM that were not fully endorsed (EFI 2000). Furthermore, the interpretation of some FSC Principle and Criteria to KFPL estates showed there was weak consensus relating to conditions of sustainability for industrial plantations. For instance, the suitability of allowing a further 3,143 ha of plantation establishment was debated in the light of FSC Principle 6 Criterion 10 and Principle 10 Criterion 9 (FSC 2002b). No doubt the KFPL benefited from a lower opportunity cost for foregone production because certifiers interpreted the expansion to be consistent with the FSC Principle and Criteria (KFPL 1999a). This too was questioned by one of the local ENGOs. There was also some debate about the width of the Buffer Strip Zones adopted by the KFPL, which was greater than that reported in the SFM guidelines; buffer strips protect the watercourse from sedimentation, prevent nutrient loss and create a wildlife corridor. This sparked conflicting views across researchers, certifiers, and ENGOs (KFPL 1999a), as did the maintenance of exotic species in the buffer strips instead of clearing all buffer strips of introduced species.

Using breakeven analysis, it is evident that even if the SFM standards for FC were tightened and KFPL were forced to change its management in response to them, costs could have to increase two thousand fold to $8.5 per cubic meters before the company would face losses from certification. This is undoubtedly due to the large price premium actually received by KFPL during the 1997-2002 period and its ability to capture a niche market in Vietnam. As mentioned earlier, KFPL sold its certified logs at an average price premium of 36% more than the prices exhibited for the same products in markets that did not require FC.

KFPL, one of the first operations in the Pacific region to become certified, seems to have also benefited from particular market circumstances in other regions. KFPL’s marketing strategy was essentially to exploit the favourable circumstances and export to Vietnam, which had strong trading links with European retailers of manufactured furniture from certified timber. Figure 2 shows the KFPL’s shares of sales between markets requiring FC and those not requiring FC. It is apparent that market access and marketing capacity would have contributed to the rapid and large shift in KFPL’s sales into highly valued markets requiring FC and would have contributed to its ability to capture valuable price premium. It appears that KFPL’s acquired technological and expert capacities were pivotal to this positive outcome, both factors helping to introduce new practices in forest management as well as recording and assessing internal performances required for FC at minimal costs.

No doubt a firm’s management and marketing skills, combined with appropriate institutional and infrastructural environments conducive to easy market access, are important determinants of achieving market access and capturing premium prices associated with certified products.
Figure 2 Change in the share of certified and non-certified timber sales by the Kolombangara Forest Product Ltd, 1998-2002.


The high price premium achieved by KFPL could, however, be short lived. Niche markets exhibiting substantial price premium attract increasing producers and the price premium is expected to decrease over time (Swallow and Sedjo 1999). Nonetheless, the KFPL has already more than recovered its investment in FC. It is also possible that KFPL also obtained other benefits from the export of manufactured certified forest products. Among the most cited examples are: the productivity increase due to more efficient management practices; the improved staff morale and commitment due to the awareness of benign effects on environment and society and; the acceptance from external stakeholders lowering the risk for boycotts or blockades and thus improving the ‘licence to operate’ (Haener and Luckert 1998, Kiker and Putz 1997, Sikod 1996, Simula 1996, Upton and Bass 1995). Other benefits ‘captured’ by KFPL also include lower environmental risk, which are not captured in the financial net returns already discussed (see section on ‘method for financial appraisal’).

5. Conclusion

The experience of KFPL in forest certification shows that, for a small initial outlay, FC can be a financially viable option for industrial plantation-based operations in tropical and subtropical developing countries. It confirms that FC can bring about substantial financial incentives to plantation operations to change their forest management practices consistent with internationally recognised SFM. However, the net benefits of forest certification depend on two sets of factors: access to high premium markets for FC timber products and the costs of forest certification process and of changing forestry management practices to meet the specified SFM guidelines. Furthermore, the state of the plantations’ pre-certification forest management and the standard of SFM required under the FC will determine the additional costs of certification. However, the difficulties faced by auditors and certifiers in translating the internationally recognized SFM practices into acceptable standards against which the local operations will be judged, is an issue that needs to be addressed.
Attractiveness of forest certification to plantation-based forestry operations also depends on the ability of a forestry company to access the niche market and its market share. Consumers’ willingness to pay for timber sourced from sustainably managed forests and, the price premiums that the timber market can support, will also influence the expected net returns of certification. Finally, while FC potentially could shield industrial plantations from ENGOs’ pressure, thus reducing their investment risk, investment in industrial plantations will ultimately still rely on a country’s socio-economic and political climate – factors over which FC have little scope of influence.

Thus, despite some reservations about suitability of industrial plantation-based forest operations in the tropics and subtropics and, the rationale and intended focus of FC were natural forests, the certification process can still assist countries to achieve the desired balance between the supply of timber products and non-marketed environmental goods. Using forest certification as an instrument, plantation-based forest operations can provide a ‘win-win’ solution to the rapidly decreasing natural forests – provided the certified timber markets are able to reflect the true value of timber products and non-marketed goods and services supported by plantation forests.

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