

Forest Certification in South Africa

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Paper presented at the Symposium

Forest Certification in Developing and Transitioning Societies:
Social, Economic, and Ecological Effects

Yale School of Forestry and Environmental Studies
New Haven, Connecticut, USA

June 10 & 11, 2004

ABSTRACT

The South African forestry industry is predominantly based on plantation forestry. More than 80% of the plantations were certified in a market driven certification process during the late 1990s and early 2000s. As a net exporter of forestry products the procurement of new markets and the securing of existing markets were critical. The forestry industry saw certification as a marketing tool and accepted it fairly easily. What makes this certification effort even more remarkable was that it took place without a national FSC standard and with very little government intervention. Certification audits are conducted according to certification body generic checklists, while government is still developing a set of minimum standards for sustainable plantation management.

Some of the constraints to certification include the large number of small-scale timber growers (who find it difficult to cope with the costs of certification and to comply with the management standards set by certification), the absence of a national standard and high HIV/AIDS infection rates that could influence the future sustainability of forestry operations. The positive impacts of certification manifest in more environmentally sustainable forestry operations and a heightened social awareness amongst foresters. The forestry industry has accepted certification as a self-regulatory tool to ensure the sustainability of its operations and foresters are increasingly embracing certification and incorporating it in their management systems.

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I. INTRODUCTION

South African foresters are used to being in the public environmental spotlight. Commercial, plantation forestry activities are restricted to the higher rainfall areas of the country that include ecologically very sensitive mountain catchments, responsible for 85% of South Africa's stream runoff (Immelman *et al.* 1973). These mountainous areas are important tourist destinations frequented by local as well as international visitors who come to enjoy their scenic beauty and ecological diversity. It is then not surprising that the forestry industry has been criticised for planting exotic "green desert" in these beautiful parts of South Africa.

In reaction to growing public criticism during the past two decades, the industry adopted a number of guidelines for sustainable, environmentally friendly forestry operations. Forestry companies started to measure their operations against their own internally developed standards as well as standards set by the industry. The global drive towards forest certification in the 1990's presented an opportunity for South African foresters to receive recognition for already high standards in sustainable forest management. It was thus possible for South African foresters to slip into certification fairly easily, resulting in South Africa having 80% (1,088,071 ha) of its plantations certified (18% having both FSC and ISO certification) (Anon 2003b) (Total plantation area in 2002 was 1,351,402 ha [FSA 2003]). Compared to world standards this must be a record percentage.

This huge certification effort is even more remarkable if it is considered that it is a purely industry driven effort with no or very limited support from Government or environmental Non-Government Organisations (NGOs). The forestry industry is a net exporter of forestry products and saw certification as a way of procuring new export markets and maintaining access to existing markets.

Foresters are starting to see certification and the associated systems as a useful management tool that can guide them in their day-to-day operations. With this attitude certification in South Africa is becoming a "want-to-do" activity instead of something that is being forced on reluctant foresters. It provides foresters with a way of measuring their own activities with the reward being a certificate to prove that they are maintaining sustainable levels of forest management.

At the same time certification has brought a heightened awareness of the social issues related to forestry. Better communication mechanisms exist between foresters, their rural neighbours and employees. Certification could however prove to be disastrous for micro timber growers who cannot afford the costs associated with certification compliance. It might potentially prevent them from selling their timber and deprive them of a livelihood.

This document will elaborate on the above-mentioned points and discuss plantation forestry certification in South Africa as a case study of a predominantly market driven certification effort.

II. BACKGROUND FACTORS

Ownership and tenure

South Africa has a land area of 122.3 million hectares. Forestry takes up 1.1% of this area with grazing being the biggest land user at 68.6%. In 2002 plantation forestry occupied 1.351 million hectares with:

- 52.2% planted in pine trees,
- 38.9% planted in gum,
- 8.3% planted in wattle,
- 0.6% under other species such as poplar.
- 56% of the plantation area managed for pulpwood,
- 37% managed for sawlogs
- 6.9% managed for other uses such as mining timber (FSA 2003)

Private timber companies are the biggest forestry landowners, holding 842,520 ha of the forest land. Government, including SAFCOL (a parastatal company), held 318,366 ha of forestland until the 1999 privatisation effort¹. Individuals/partnerships/trusts hold 186,355 ha and municipalities 4,161 ha (FSA 2003).

There are currently 12 private timber companies in South Africa with landholdings larger than 5000 ha (*Table 1*). All of these companies are currently FSC certified. Four of the 12 are new companies that were established as a result of the Government's privatisation of State forest assets. The oldest of these new companies is Singisi Forest Products that was established in 2001. These companies do not own the forestry land but lease it from Government. One of the conditions of the privatisation process was that the new companies had to acquire certification from an internationally accredited organisation within 24 months of the commencement of the lease agreement. If the company does not receive certification or loses it, the lease agreement can be terminated (Frost *et al.* 2003).

Other forestry landowners include approximately 1,800 timber farmers (Mayers *et al.* 2001) (commercial farmers with on average between 100 and 200 ha under trees) who

¹ After years of negotiation Government plantations were placed on the market in 1999 in a privatisation bid. Plantations were divided into seven geographic business packages and investors were invited to bid for a 75 % shareholding (of which at least 10% needed to be Black owned) per package. Minority shares in each package are held by government (10%), workers (9%) and the National Empowerment Fund (6%) in order to secure Black institutional investment in forestry. Government also determined that the land associated with the plantations should remain in public ownership. Investors were consequently not offered title to land, rather the use-rights to it through a mechanism of a long-term lease (Mayers *et al.*, 2001). Currently new forestry companies manage all the packages as illustrated in Table 1. Approximately 85,000 ha of plantations are still under government control. These consist of approximately 70,000 ha commercial plantations in the former homeland areas and 120 small scattered plantations, extending over 15,000 ha, producing material not generally sold under commercial contract but utilised by local people (Mayers *et al.*, 2001).

supply their timber to cooperatives. Many of these commercial timber farmers were able to obtain certification through group certification schemes managed by the NCT Forestry Co-operative Ltd.

There are nearly 19,000 small or micro growers in South Africa, holding woodlots averaging around two hectares and totalling around 42,000 ha in extent. Just over 12,000 of these growers are participating in company-sponsored outgrower schemes (the companies provide the farmers with loans, seedlings and advice and the farmers sell their trees to the companies) falling under SAPPI (Project Grow), Mondi (Khulanathi) and the South African Wattle Growers Union (SAWGU) (Mayers *et al.* 2001). Due to the small scale of operations it would be very difficult for these micro growers to certify their plantations.

Table 1. Forestry companies in South Africa

Company	Land tenure	Remark
Amatola Forestry Company (Pty)	Public	Privatised Government plantations in Eastern Cape
Global Forest Products Pty Ltd	Private	Venture between Mondi and Global Environmental Fund
Komatiland Forests (Pty) Limited	Public	Privatised Government plantations in Mpumalanga
Masonite (Africa) Limited	Private	
Mondi Forests	Private	
MTO Forestry (Pty) Ltd Western Cape Region	Public	Still being managed by SAFCOL
NCT Forestry Co-operative Ltd.	Private	
Northern Timbers	Private	
SAPPI Forests Pty Ltd	Private	
Singisi Forest Products Pty (Ltd)	Public	Privatised Government forests in Eastern Cape
Siyaqhubeka Pty Ltd	Public	Privatised Government forests in KwaZulu-Natal
Steinhoff Southern Cape (Pty) Ltd	Private	

The forestry industry provides work to approximately 60,000 people. An additional 40,000 jobs are provided through primary processing facilities (FSA 2003).

Vertical Integration

Most of the forestry companies mentioned in *Table 1* are vertically integrated with their own primary processing facilities. Sappi Forests and Mondi Forests are divisions of large international pulp and paper companies. The South African forest operations of these companies feed into their South African based pulp mills. Other companies such as Singisi Forest Products and Global Forest Products supply roundwood to their own sawmills. NCT Forestry Cooperative Ltd. exports its members' timber in roundwood or chip form to processors in the Far East.

The timber companies also have geographic swapping arrangements with each other where timber from one company is delivered to another company's processing facility if it is geographically closer to the forest area. In return the receiving company supplies some of its timber to the other company's processing facility in that particular geographic area. Through these arrangements money can be saved on the transport of timber (personal observation²).

In the case of Mondi Forests vertical integration had a direct effect on certification. In 1996, after receiving several requests for FSC certified timber, the General Manager of Mondi's timber division formally requested that Mondi's forests should be certified. This request initiated the certification process at Mondi Forests (Frost *et al.* 2003). In this case market forces demanded certified products from a company that supplies timber from its own plantations, to its own sawmills. To be able to sell certified products, the processing division had to have access to certified raw material and placed pressure on the company owned plantations to become certified.

Annual Production

Total roundwood production in 2002 was 16.6 million m³. The average mean annual increment is approximately 12 m³/ha/yr. Pine plantations are managed on a 20 to 30 year rotation while gum plantations are managed on a 6 to 10 year rotation. Due to land use pressure and a strict afforestation permit system land area under plantation forestry only increased by 284,720 ha over a 23-year period from 1980 to 2002. Forest management and silvicultural operations are directed at increasing the yield from the existing plantations with a lesser focus on new afforestation. To illustrate this point, plantation area increased by only 16.4% between 1980 and 2002 but production increased by 39.9% over the same time period (FSA 2003). It is estimated that the mean annual increment could be increased to approximately 15 to 18 m³/ha/yr through genetic tree improvement and site species matching (DWAF 1997).

Afforestation Permit System

It was recognized in the early 1970's that forestry activities located in mountain catchment areas reduce stream runoff. Since 1972 permits had to be obtained from government for any new tree plantings. In the second half of the 1990's forestry has been classified as a Stream Flow Reduction Activity and afforestation permits have been replaced with water-use licenses. For any new afforestation to take place an intensive environmental impact assessment must be conducted and only after it has been determined that the specific catchment has sufficient water available will a license be

² Personal observations are based on consulting work that enabled the author to communicate with a large number of leading forestry players. The author was part of the team which developed national Principles, Criteria and Indicators for sustainable forestry in South Africa and he also accompanied certification bodies on a number of plantation audits as a representative of FSC.

granted. Forestry companies also need to pay a water tax based on the estimated amount of water that their plantation holdings use per annum (Anon 2002a).

These regulations have made it very difficult to expand plantation forests. Timber growers are unhappy with these regulations, as the other agricultural industries are not regulated in the same way. As these regulations are part of forestry legislation, certification bodies audit compliance with permits and licenses during certification inspections (personal observation).

Primary Processing and Markets

South Africa is a net exporter of forest products with a total export of R 11.2 billion³ per annum. It imports forest products to the value of R 5.4 billion annually. The forestry industry contributes 1.3% to the GDP and 8.7% to the Agricultural GDP. Total annual sales of forest products equate to R 13.8 billion as illustrated in *Table 2* (FSA 2003). The forest products industry currently ranks among the top exporting industries in the country, contributing 4.29% to the total exports in 2001, and 1.86% of total imports (Anon 2003c).

The major exports of South African forest products include:

- pulp, especially dissolving pulp
- packaging, paper and board
- printing and writing paper, especially newsprint
- wood chips; an estimated 1,5 million tons is exported annually (Mayers *et al.*, 2001).

Table 2. Total annual sales of forest products (FSA 2003)

Product	R billion
Pulp	8.6
Chips	1.5
Lumber	1.9
Panels	0.6
Mining timber	0.1
Other	1.1
Total	13.8

There are 182 primary processing facilities in South Africa (FSA 2003). *Table 3* gives a breakdown of these facilities as well as an indication of the volume of timber processed by them.

³ Exchange rate US\$ to South African Rand: US\$1 / R 6.26 – 12/04/04

Table 3. Primary processing facilities (FSA 2003)

Primary processor	Number	Timber intake (million m ³)
Sawmills	103	3.7
Pulp and paper mills	20	12.3
Mining timber producers	12	0.5
Other	6	0.3
Pole	41	
Total intake		16.8

The South African market for certified timber is not well developed. It is mainly restricted to secondary timber processors such as furniture manufacturers who buy certified timber from primary processors and who are exporting their final products. To illustrate this point only two out of 19 clients of a sawmill in KwaZulu-Natal, with full chain of custody certification, demanded certified timber (personal observation). It can generally be accepted that South African consumers are ignorant of the meaning of certified timber and that the companies obtain certification to satisfy foreign markets. Despite the low demand for certified timber in South Africa 113 primary and secondary processing companies have Chain of Custody (CoC) certification (FSC 2004).

Subsistence use of forest products is limited to the harvesting of timber for fuelwood. It is estimated that approximately 11 million tons of fuelwood are used per annum (Gander 1994). This wood is coming mainly from woodlands, closed canopy forests, community woodlots and harvesting waste from commercial plantations. Fuelwood harvesting is an informal activity where very little control is exerted by government or private companies. Unlike other African countries little if any charcoal production is taking place at the community level.

III. THE EMERGENCE OF FOREST CERTIFICATION

Initial Support

Before the first democratic elections in 1994, South Africa was isolated from the world through sanctions and boycotts. With the advent of democracy in 1994 these barriers to the rest of the world were demolished and South Africa found itself exposed to world markets and international competition. South African timber product manufacturers found international markets for their products but were faced with requests for certified products.

B&Q as a leading UK-based retailer of low cost Do-It-Yourself (DIY) and household products was an important customer amongst South African DIY product exporters, offering high volume orders for pine products. This company made it clear that it would only buy from FSC certified suppliers by the year 2000. B&Q's agent in South Africa, Alpine Trading, was instrumental in raising awareness of FSC throughout the South African forest products sector. Alpine Trading's early experience of promoting

certification was that it was regarded as “a money making scheme” and only companies supplying directly to B&Q accepted it (Frost *et al.* 2003).

The DIY market is highly competitive and the pressure to become FSC certified intensified considerably once significant volumes of certified pine products became available from Poland. South African exporting companies found themselves in a situation where they had to convince their supplying sawmills that they should be FSC certified (Mayers *et al.* 2001).

It took time to convince sawmilling companies that FSC certification would be required if South African products were to be exported. Sappi and Mondi (the largest forestry players in SA) could afford to ignore the demands since they were focusing more on the paper market (where interest in certification was much lower) than on wood for value-added products. Certification, however, received a big injection when Mondi's single biggest sawn timber customer opted for FSC certification (Mayers *et al.* 2001).

Mondi became one of the first South African forestry companies in 1996 to initiate an FSC certification process for its plantations. The responsibility for this task was given to the environmental team of the Forestry Division. Initially the team found that response on the ground was very mixed with approximately 20% of the foresters accepting certification, 60% having a neutral opinion and 20% opposing certification. Through training, workshops and the implementation of an innovative system for staff to report Corrective Action Requests (CAR), staff was trained in forest certification. Mondi's Northern region was certified in 1997 and its entire operations in 1999 (Frost *et al.* 2003).

SAFCOL (the parastatal forestry company which operated Government plantations during the 1990's) opted for certification as a way of demonstrating environmental credentials. SAFCOL had faced considerable criticism from local NGOs and had been looking for a way of demonstrating its social and environmental credentials for a number of years. The General Manager of SAFCOL was committed to obtaining FSC certification and after 24 months of hard work a main assessment by SGS took place. A major CAR was raised and only closed out a year later. The environmental manager felt that the initial failure to obtain certification actually helped to develop ownership of the FSC principles and criteria. Staff went from meeting FSC requirements because they were told to do so, to being proud of getting it right by managing their forests in an environmentally and socially responsible manner. The entire SAFCOL forestry area was certified by 1998 and it was only after certification was underway that SAFCOL began to receive requests from buyers for certified timber (Frost *et al.* 2003).

SAPPI Forests opted for ISO 14001 certification instead of FSC certification. This choice was aimed at satisfying the demand from customers for an independently verified environmental standard. An environmental “Green Team” was responsible for implementing ISO 14001. Team members visited every plantation once a month and they found that the system was popular with most staff. The ISO 14001 system helped to create commitment to good management on the ground (Frost *et al.* 2003). Over time the

demand for certified timber from SAPPI's milling operations became so great that this side of their operations was certified in 2000 and the whole of SAPPI Forests Pty Ltd. received FSC certification in 2003 (FSC 2003). According to SAPPI spokespersons it was easier to obtain FSC certification once all the ISO 14001 systems were in place (personal communication).

Once the "big three" forestry companies were certified the chain of custody certification process became much simpler (Mayers, *et al.* 2001). A second round of certification among manufacturers ensued resulting in a total of 113 chain of custody certificates being issued in South Africa by 2003 (FSC 2004). South African companies began to receive requests for FSC products from international buyers such as Homebase, Wicks, Great Mills and Metpost in the UK, Bauhaus in Germany and Home Depot in the USA (Mayers, *et al.* 2001)

The pulp and paper companies were initially less enthusiastic about certification as they experienced low demand for certified products. The introduction of the FSC's percentage based claim policy in 2000 provided this wood products segment with a means to obtain the use of an FSC label for a product with a proportion of its material sourced from non-certified forests. The introduction of the percentage-based claim has meant that this market is now becoming responsive to companies looking to certification as a potential mechanism for gaining market access (Frost *et al.* 2003).

The success in selling certified timber to the pulp and paper market can be illustrated by the example of NCT Forestry Co-operative. NCT Forestry Co-operative started to provide private timber growers, with middle-size holdings (average about 120 ha each), a group certification management system in 1999. A strong demand for FSC certified pulpwood from the Far East assisted this company in increasing its turnover in 2001 by R 151 million to R 572 million (36% increase upon the 2000 turnover) (Anon 2002b).

In a survey of the smaller private timber growers that was conducted in 2000, nearly all the respondents indicated that access to international markets was very important. They indicated that the main reasons for certification were to procure new international markets and to maintain old markets (Ham 2000).

Decisions to apply for certification by the timber companies were, however, not only a result of market pressure. Other business and reputational reasons were:

- Demonstrating environmental commitment
- Improving internal systems and efficiency
- Staying ahead of the game
- Dealing with supply chain pressure
- Responding to environmental and social criticism
- Anticipating certification becoming an industrial standard
- Complying with increasing investor scrutiny (Mayers *et al.* 2001).

As can be seen from the above discussion, South Africa's adoption of certification was mostly driven by market demand. Although companies did not necessarily receive premiums for certified timber, certification did open markets and secured existing international contracts. These markets and contracts demanded FSC certified timber, effectively steering the forestry industry towards this specific certification standard and preventing the adoption or development of non-FSC certification standards.

Institutional Design

While timber companies adopted certification as a way of showing that their operations are environmentally sustainable, Government's Department of Water Affairs and Forestry (DWAF) had to define its role in the sustainable management of the industrial forestry sector. It had to find ways of balancing the economic effects of industrial forestry against the cost of water resources and environmental and social impacts. Government had to deal with two opposing viewpoints related to implementing ways and means of achieving sustainable forest management (DWAF 1997).

The viewpoint from the forestry industry was that sustainability should be self-regulatory and that private companies should decide for themselves whether or not to apply environmental management. This approach is driven by market forces, where buyers and consumers of forest products demand high environmental standards and proof of sustainable operations (DWAF 1997).

Parties supporting legal regulation argued that voluntary environmental management systems and standards, even when sanctioned by international standards' authorities, remain open to abuse. Some minimum level of statutory regulation is required to achieve broad compliance and to ensure that the forestry sector as a whole is sustainable. This view is promoted among environmental NGO's and government agencies in South Africa (DWAF 1997).

It was recognized that there is some common ground between the two viewpoints and it became generally accepted that a set of minimum standards, enforced by statutory regulation, should be developed. These minimum standards should ensure a reasonable level of compliance with basic environmental norms. However, the statutory minimum standards would not be sufficient to achieve high standards of environmental management. It was reasoned that through market forces companies would be driven to adhere to these higher standards of environmental management (DWAF 1997).

Approaches to the development of a procedure for the establishment of national criteria and indicators as minimum standards for sustainability were discussed in 1997. The objectives of the procedure were to:

- reach agreement on criteria and indicators of sustainable forest management
- influence all management systems and current certification systems through the authority of a national set of criteria and indicators
- examine the need for further information (DWAF 1997).

The development of a national set of minimum standards was taken further with the incorporation of a section on the promotion and enforcement of sustainable forest management in the National Forest Act (Act 84 of 1998). The Act provides for the Minister of Water Affairs and Forestry to:

- “determine criteria on the basis of which it can be determined whether or not forests are being managed sustainably;
- indicators which may be used to measure the state of the forest management;
- and appropriate standards in relation to indicators and
- create or promote certification programmes and other incentives to encourage sustainable forest management” (RSA 1998).

In 2001 the Committee for Sustainable Forest Management (sub-committee of the National Forestry Advisory Council, which advises the Minister on forestry matters) appointed a group of consultants to develop a national set of Principles, Criteria, Indicators and Standards (PCI&S) for sustainable forest management in South Africa. The process was funded by the UK Department for International Development (DFID). The development process centred on a very intensive stakeholder consultation process. Stakeholders from forestry, environmental groups, labour unions, etc. were consulted at every step. The process was completed in 2002 and the PCI&S are currently being tested.

Considering the large number of plantations being certified in South Africa cognisance was taken of the various certification processes during the development of national PCI&S. In the selection of a core set of initial criteria and indicators from international literature, criteria and indicators from various certification schemes were consulted. These criteria and indicators were incorporated through the stakeholder consultation process in the current set of criteria and indicators (personal observation).

The main objective was not, however, to develop a national FSC certification standard as developed by countries such as Sweden. The purpose was to develop PCI&S that could be used at national, provincial, landscape and local scales, by a range of stakeholders, to monitor trends in forest condition and thereby to guide sustainable forest management (Anon 2002c). These PCI&S can be used to compile a ‘state of the forest’ report, and the National Forest Act provides for the legal prosecution of individuals and organizations not practicing sustainable forestry according to these PCI&S.

When implemented, these PCI&S should form an agreed set of “baseline” minimum standards for South African forestry. Certification standards will then have to reflect these, hence, improving their applicability to the South African forestry context (Frost *et al.* 2003).

The only direct involvement in FSC certification of the South African Department of Water Affairs and Forestry to date was the specification that privatized plantations must be certified within 24 months and the FSC certification of a total of 35,000 ha (6.6%) of the natural closed canopy forests under its control (FSC, 2004). Government has raised some concerns over their capacity to monitor compliance with national standards (Frost *et al.* 2003). Until PCI&S is implemented as a minimum standard and

Government develops the capacity to monitor compliance with these standards it will be up to the forestry industry to regulate itself based on international certification standards.

Standards

South Africa does not have a national FSC standard. Certification audits to date have been based on generic checklists from the two main certification bodies (CBs) operating in South Africa (SGS Qualifor and Soil Association Woodmark). SGS Qualifor is currently the leading certification body and has issued 17 of the 19 Forest Management certificates in South Africa. Differences in the generic checklists of the two CBs could lead to different standards being employed in FSC certification. The possibility exists that forestry companies might perceive it as easier to obtain certification when the one CB's checklist is used compared to the other CB's checklist.

As part of the certification bodies' checklists, references are made to national standard setting documents developed by the South African forestry industry. These documents are:

- Guidelines for Forest Engineering Practices in South Africa. Forest Engineering Working Group of South Africa (FESA), May 1999.
- Guidelines for Environmental Conservation Management in Commercial Forests in South Africa. Forest Industry Environmental Committee, 1995.

Forestry operations are also assessed on compliance with national laws and regulations. (*List of legislation pertaining to forestry in appendix A.*)

Most forestry companies were already employing some form of environmental assessment, measuring against internal company standards, before certification. It was thus fairly easy for them to adopt environmental certification standards. Companies were, however, fairly ignorant of social impacts. The CB checklists focus strongly on the maintenance of social standards and foresters had to become more socially aware. It is then also noticeable that on FSC certified plantations the foresters are more sensitive towards labour, accommodation and community issues than their counterparts on non-certified plantations (personal observation).

Biodiversity and Environmental Pressures

Plantation forestry could very well be compared to agricultural activities where an area is covered by a (often exotic) mono-crop. In this regard aspects such as illegal logging and deforestation would not be applicable in a plantation forestry environment. The loss of biodiversity due to harvesting in plantation forests is also a minor issue as exotic mono-crops of trees are planted with the specific objective to be completely harvested (clear felled) after a number of years.

A loss of biodiversity in terms of the natural areas being replaced by plantation trees is however a heated topic in South Africa. This can be illustrated by the following excerpt from a letter written by an environmental NGO in South Africa:

An FSC label is proof to the consumer that the timber / pulp has been harvested in a forest which has been responsibly managed. 80%, or more than a million hectares of South Africa's timber plantations are FSC certified. However: South Africa's Timber plantations are NOT forests. They are industrial monocultures, with the primary objective of supplying the optimum amount of pulp fiber. Permanent and ongoing destruction of remaining Southern African grasslands to make way for industrial timber plantations is NOT responsible. Uncontrollably utilizing vast quantities of water is NOT responsible. Damaging and impoverishing the soils is NOT responsible. Industry related pollution of river systems with chemicals such as chloride and organochlorides is NOT responsible. Impacting on rural communities livelihoods and altering the environment at the expense of other options is NOT responsible. I am convinced that the mono culture timber plantation model is NOT sustainable, primarily due to the long term damage inflicted on the regions soils.

Many of the issues raised in the above mentioned letter are indeed addressed in the CB checklists and certification can thus be seen as a way of minimizing the impacts of plantation forestry on the natural environment and the people living in close proximity to them. To be eligible for certification, plantation management must ensure that the natural areas on a plantation are protected, that exotic trees are prevented from spreading into adjacent areas, that stream runoff and soil erosion is monitored and controlled, that the rights of local communities are protected, etc.

Through certification plantation forestry companies can acknowledge that their operations do have an impact on the environment but that this impact is reduced to internationally acceptable levels and that operations are performed in a sustainable manner.

Roadblocks and Challenges

Uncertified plantations

With 80% of South Africa's plantations being certified within less than 10 years it must be acknowledged that there were few roadblocks or challenges in the process. The 80/20 rule could however be applied to certification in South Africa. The 80% of plantations currently certified might have consumed only 20% of the time and resources while the remaining 20% of uncertified plantations will most likely require 80% of the resources. The remaining uncertified plantations can be divided into two groups.

The first group is Government managed plantations in the former homelands⁴. These plantations are in a very poor state of management due to decades of bad

⁴ A central element of South Africa's apartheid system was the creation of Black Homelands from the 1950's onwards. The territories, essentially based upon the so called Black Areas identified in the 1913 Black Land Act, were set aside for occupation by members of a particular language group. Originally known as reserves, they were given as a measure of self-government by apartheid theorists intent on

management by homeland administrations. During the process of privatisation of State forest assets many of these plantations were taken over by private timber companies and it is the responsibility of these companies to bring them up to standard. Approximately 85,000 ha of State plantations still remain under government control. It is doubtful if it would be possible to bring these plantations to a management level where they could be assessed for certification (personal observation).

The second group of plantations that present a challenge to certification is those belonging to small-scale micro timber growers. There are approximately 19,000 small-scale timber growers in South Africa managing a total of 42,000 ha (Mayers *et al.* 2001). Two group certification schemes are operational in South Africa but do not cater directly for these micro growers.

The larger timber companies are in the process of trying to incorporate these small-scale growers in their certification programmes. Many of these growers are illiterate and find it impossible to comply with the high levels of administration and management required by certification. As certified timber becomes the norm rather than the exception these small-scale growers might find themselves deprived of a market for their timber (Dlala 2002). For outgrowers not belonging to company outgrower schemes it would be virtually impossible to obtain certification and to sell their products.

Absence of a national standard

Another potential roadblock might be the absence of a national certification standard. With 80% of plantations certified according to the generic checklists of SGS Qualifor and Soil Association Woodmark, companies are not too keen on investing in a national standard setting process. Questions can however be raised as to the future credibility of certification in South Africa. Being one of the countries in the world with the highest percentage of certified plantations, competing countries on the world timber market might question the value of South Africa certification if it is not done according to a uniform standard. Government has developed a set of national Principles, Criteria and Indicators as a minimum standard but there seems to be reluctance from both government and industry to use these PCI&S as the basis for a national certification standard (personal observation).

HIV/AIDS

HIV/AIDS probably poses the greatest risk to the social and economic sustainability of forestry in South Africa. Deaths from AIDS now equal all other deaths in South Africa and amount to about 650 persons per day. There are an estimated 1,500

removing all Africans from white South Africa, and to use the Homelands simply as pools of migrant labour. Four of these areas later chose independence (recognised only by South Africa) while six other became self-administrating territories within RSA. The system was scrapped in 1994.

new infections daily. Infection rates among forestry workers are estimated to be as high as 39% in areas such as KwaZulu-Natal (Anon 2003d). The impacts of HIV/AIDS on forestry include higher rates of absenteeism, workers who cannot cope with the physically demanding working environment, medical care for sick employees, loss of workers with expert skills and a need to train new workers.

In rural communities one of the most disastrous secondary impacts of HIV/AIDS is the large number of AIDS orphans. It is estimated that by 2014 South Africa would have 5.7 million AIDS orphans. Currently Government provides an R 450 a month foster care grant per orphan. By 2014 this would amount to R 2.5 billion per month, excluding medical costs and school fees (Anon 2004).

Forestry companies do have policies and systems in place to address the effects of HIV/AIDS. Companies such as Mondi provide anti-retroviral therapy to employees and assist them if their medical aid runs out. Forestry companies employ, however, fewer labourers presently, as they are making extensive use of contractors to perform forestry activities. Contract workers are not covered by company HIV/AIDS programmes (Anon 2003d).

The certification checklists of CBs evaluate the living and working conditions of employees but do not assess HIV/AIDS programmes directly. This could be seen as a critical gap in assessing the sustainability of forestry operations.

IV. THE REACTION TO CERTIFICATION

Forest Policy Community and Stakeholders

Stakeholder consultations during the development of the national PCI&S showed that although people welcome a certification process driven by independent organizations such as FSC, there is still a high level of suspicion against forest management activities. This was especially apparent in consultations with non-governmental environmental organizations, who indicated that they still believe that environmentally damaging forestry activities continue even when plantations are certified. In some instances individuals remark that they cannot believe that a certain forestry operation received FSC certification (personal observation).

It seems however that these beliefs and assumptions are in many instances based on observations that are not related to checklists or standards. Most of these stakeholders have not seen the CB checklists against which plantations are being audited. They are also not aware of the process of Corrective Action Requests (CARs) where it is assumed that a plantation cannot be 100% environmentally friendly and that as long as a plan (with time frame) exists for the solving of problems, a certificate can be granted (personal observation).

As foresters become more familiar with certification the quality of certified operations has also improved, with fewer CARs being issued during surveillance

inspections now than in the past (personal observation). Over time environmental groups and concerned citizens will most likely notice that forest operations are much closer to 100% environmentally friendly than they were in the past.

Forest Owners

In general forestry companies accepted certification without problems. Where managers at the plantation level might have seen it as an added burden, medium to top-level managers were easily convinced of its benefits.

Current Status of Forestland Certification

There are currently 19 Forest Management FSC certificates issued in South Africa representing 1,088,071 ha. 18% of forestry operations are certified under both FSC and ISO 14001 (FSA 2004). In the case of SAPPI Forests the company obtained ISO 14001 certification first and then FSC certification. The ISO certification assisted them in getting their plantation operations ready for FSC certification. *Table 4* presents a list of the Forest Management certificates issued in South Africa.

Table 4: Forest management certificates issued in South Africa (FSC 2004)

Company	Certificate number
AFC – Amatola Forestry Company (Pty.) Ltd.	SGS-FM/COC-0123
African Environmental Services Group Certification Scheme (AES)	SGS-FM/COC-1337
Amatola Forestry Company (Pty)	SGS-FM/COC-0885
Department of Water Affairs and Forestry Directorate: Indigenous Forest Management - Southern Cape	SGS-FM/COC-1231
Global Forest Products Pty Ltd	SGS-FM/COC-0809
Komatiland Forests (Pty) Limited	SGS-FM/COC-0068
Masonite (Africa) Limited	SGS-FM/COC-1015
Mondi Forests - Lowveld, Komati, Piet Retief, Natal and Zululand.	SGS-FM/COC-0084
MTO Forestry (Pty) Ltd Western Cape Region	SGS-FM/COC-0133
NCT Forestry Co-operative Ltd.	SGS-FM/COC-0348
NCT SLIMF	SGS-FM/COC-1598
Northern Timbers	SGS-FM/COC-0561
SAPPI Forest Products	SGS-FM/COC-0442
SAPPI Forests Pty Ltd	SA-FM/COC-1230
Sinoisi Forest Products (Pty) Ltd – Glen Garrv	SGS-FM/COC-1544

Company	Certificate number
Forests	
Singisi Forest Products (Pty.) Ltd. - Baziya	SGS-FM/COC-1503
Singisi Forest Products Pty (Ltd)	SGS-FM/COC-0780
Siyahubeka Pty Ltd	SGS-FM/COC-0870
Steinhoff Southern Cape (Pty) Ltd	SGS-FM/COC-1143

Except for the Department of Water Affairs and Forestry certificate, all certificates are for plantation forests. The DWAF certificate is the only one covering natural closed canopy forests.

Some of the earlier certificates were issued in 1997 and these operations have already been re-certified. As discussed previously it is still very difficult for small scale operations to be certified due to the high costs associated with the certification process and the intensive levels of administration and management required from mostly illiterate forest owners [see section “Roadblocks and Challenges: Uncertified Plantations”].

Current Status of the Certified Marketplace

Dunne (2000) reported that FSC currently has no following among South African retailers, and that the manufacturers of primary or secondary timber products are involved either directly or indirectly in the export market. I tested his statement by phoning ten hardware stores in and around the city of Cape Town and asking them for FSC certified building timber. One of the stores could supply me with FSC timber, three knew about it but did not stock FSC timber and the remaining six stores had no idea what I was talking about.

The supply chain for certified timber products can be summarized as follows (*Figure 2*):

- Timber from a certified plantation is processed at a sawmill with a chain of custody certificate. It is then either exported or sold to local secondary processors, also with a chain of custody certificate.
- The secondary processors manufacture products such as knock down furniture from certified timber and export it to retailers in countries such as the UK, Germany or the USA.
- In some instances certified timber is sold unspecified by primary processors to local wholesalers/retailers as there is a demand for timber but no specific demand for certified timber (personal observation at sawmill in KwaZulu-Natal). With 80% of South Africa’s plantations certified, there is a very good chance of buying unmarked certified timber in hardware stores in South Africa (unknowingly the ten hardware stores that I consulted could have had FSC timber in stock!).

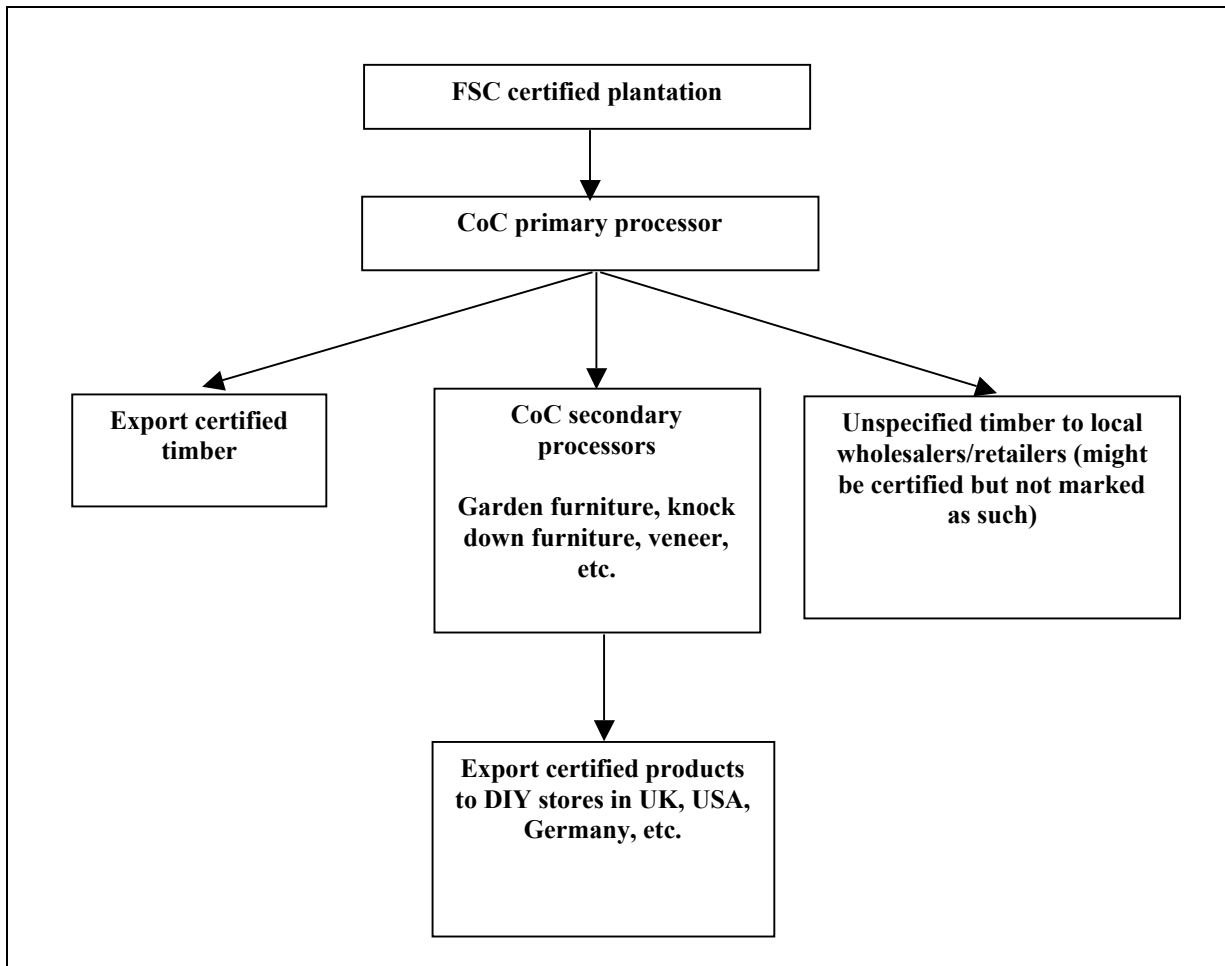


Figure 2. Supply chain for certified timber products

Companies exporting certified timber products have found that they received no price premiums for it and that it was rather a matter of being able to continue selling their products. In general, FSC certification alone appears insufficient to command new business, but combined with an existing relationship with a customer sourcing FSC products, adequate manufacturing capacity or a specific position in the industry, FSC undoubtedly can offer market benefits (Dunne 2000).

One specific market for FSC products demands some attention. *Saligna*, a species of Eucalypt, has rapidly gained prominence in overseas markets as a suitable substitute for tropical hardwoods. The demand for certified *Saligna* timber has caused chronic shortages and sawmills certified to supply *Saligna* cannot keep up with demand. This could inevitably lead to price increases in *Saligna* timber (Dunne 2000).

Some of the products sold by primary and secondary Chain of Custody processors include:

- Moulding, laminating, boring, finger-jointing of pine components into DIY bookcases and wall-mounted shelving kits

- The sawmilling of pine and eucalyptus boards
- Slatted boxes, laundry baskets, CD racks, shelving, clothes pegs, hangers
- The manufacturing of decorative mouldings using sanding dust-based paste
- The manufacture and supply of charcoal and briquettes
- Outdoor garden products from logs
- Veneer slicing
- Furniture and knock-down components (FSC 2004)

Table 5 presents a summary of the number of different products manufactured by the 113 Chain of Custody certificates holders in South Africa.

Table 5. Different products manufactured by CoC processors in South Africa (FSC 2004)

Product	Number of processors manufacturing product
Household wooden products	21
Sawn Timber	46
Charcoal	12
Wood chips	3
Mouldings, boards, doors, flooring	18
Laminated timber	6
Furniture (including garden furniture)	13
Veneer	5
Paper	1

V. EFFECTS OF CERTIFICATION

The effects of forest certification can be assessed according to the impacts that it had on environmental aspects related to forestry, the socio-economic environment surrounding forestry and power dynamics associated with forestry.

Environmental

Certification has had an indirect effect on the natural environment by promoting more environmentally acceptable management practices. The biggest environmental effect can however be found in the change that it brought to the way foresters think about forest management.

Change in Attitude

From a survey conducted in 2000 among private timber growers in South Africa access to markets was identified as one of the biggest reasons for obtaining FSC certification. Growers were unhappy with the high costs and excessive administration associated with certification but saw it as something that they must do to ensure access to markets (Ham 2000).

For this study a similar survey was conducted. Not only were timber growers consulted but also individuals and organizations directly in contact with certification processes (*See appendix B for a list of people consulted*).

It was interesting to note a change in attitude and reason for certification. The ability to procure and secure markets was mentioned less during the 2004 survey and everybody acknowledged that there are few if any price premiums on certified timber. The ability to manage a plantation in a more environmentally and socially sustainable way, by following certification systems, was now mentioned as the biggest benefit of certification.

It was mentioned that foresters new to certification do not like the process as they see it as an added burden, but that foresters who have been working with the system for a number of years accepted it as a management tool. It helps them to think more strategically and in some instances forestry estates are now even competing with each other for the best certification scores.

Better Forest Management

In 1995 the forestry sector developed a set of guidelines that outlined best management practices to mitigate the environmental impacts of plantation forestry. Although the guidelines were welcomed and supported by the industry, implementation was voluntary. The introduction of certification was seen to provide an incentive to formalize their adoption and it became part of forestry standards and management systems (Frost *et al.* 2003).

The raised profile of environmental issues has led to the improvement of checks and balances in management systems. This includes formalisation of formerly *ad hoc* adherence to company policies and the systematisation of existing systems to ensure consistency in implementation. Internal checklists were developed for company operations, the profile of internal audit systems raised and the number of environmental management staff within the larger companies has increased (Frost *et al.* 2003).

Some of the improvements to operational practices that were stimulated by certification include:

- *Water monitoring.* The main environmental issue associated with forestry in South Africa is its impact on water sources (Frost *et al.* 2003). Foresters have adopted ways of monitoring the impact of operations on water and have become more careful in planning activities so that water sources are not damaged or polluted (personal observation).
- *Riparian zones.* Under the old afforestation permit system a fixed distance had to be observed between streams and compartment boundaries (30 m for streams

and 50 m for wetlands). A delineation protocol⁵ has now been developed with stakeholders, which defines the location of wetlands and streams in the landscape and ensures a more scientific approach towards determining the open area between wetlands and forestry plantings. It is agreed that the most significant physical impact on plantations of the improved practices encouraged by certification is due to criteria related to watercourse management. This includes the felling of trees along watercourses and the rehabilitation of wetlands and riparian zones (Frost *et al.* 2003 and personal observation).

- *Road building and maintenance.* Forestry roads are often neglected and serve as a continuing source of erosion and pollution of watercourses (Frost *et al.* 2003). Improvements include the rating of roads according to size and potential impact, minimizing the impacts of stream crossings, reducing in the number of roads per plantation and increasing general road maintenance operations (personal observation).
- *Management of high conservation value forests.* Nearly all plantation estates have areas of closed canopy natural forest on their land. These forest patches were conserved in the past but certification standards now demand active conservation management plans. These plans include aspects such as the management of the zone between the forest and adjacent plantation compartments (personal observation).
- *Assessment of biodiversity.* Certification standards demand that foresters maintain a record of the natural fauna and flora on a plantation estate. This helps to assess the environmental sensitivity of the area and forestry operations are adjusted accordingly (personal observation).

Social

The strong focus of certification on social aspects was also raised as a benefit during stakeholder consultations for this study, as it helps foresters to concentrate on communication with adjacent communities and employees. This in return creates better relationships and a more positive attitude towards communities. Forest labourers are also benefiting, as foresters need to comply with strict health and safety standards. Some of the direct benefits of a heightened social awareness include the speed at which social changes take place, the development of mechanisms to improve the learning of foresters and staff, improved stakeholder consultation and protection for the staff of forestry contractors.

Speed of Change

⁵ According to the delineation protocol the transition zone between stream and wetland areas and adjacent land is determined. It is only allowed to plant trees 20 m away from this transition zone.

One of the interviewees on the 2004 survey mentioned that certification has had a direct impact on the speed of socio-economic changes related to the forestry labour force and forestry communities. Where changes in aspects such as labour, housing and worker safety might have taken years to be implemented in the past, it now happens very rapidly as foresters need to comply with the social standards set by certification. He found a general willingness and commitment among foresters to comply with social standards.

Mechanisms for Learning

The certification process has highlighted the importance of adequate systems to ensure compliance and to internalise feedback mechanisms. Feedback includes inputs from audits, a change policy and legislative framework, and issues raised by those affected by company activities. The dynamic political landscape of post 1994 South Africa has meant that more stringent demands have been placed on the sector in terms of for instance labour legislation and land reform programmes (Frost, *et al.* 2003).

Assessors on surveillance visits have remarked on the improvement to systems that support companies responding to the requirements of certification, with formalized mechanisms to address issues raised during audits. This has resulted in improved operational manuals and training for staff, especially with respect to social issues. Social issues such as stakeholder consultation were seen in the past as nuisances, which if ignored for long enough, would disappear. More emphasis is being placed on these issues, and mechanisms are being put in place to deal with them (Frost *et al.* 2003).

SGS, as the main certification body in South Africa, has recently started with FSC certification training courses to help foresters in understanding the technical aspects of certification. In the past feedback meetings between foresters and assessors used to be little more than the reading of CARs and a confrontational session where the different sides defended their positions. The SGS auditors currently make more time for the feedback meetings and explanation of the reasons for raising CARs. In such a process much more emphasis is placed on learning (personal observation).

Stakeholder Consultation and Social Benefits

The process of consulting with a broader range of stakeholders stipulated under the FSC process is relatively new. Most companies had forums established to discuss issues with formal groups such as environmental NGOs but no structures existed to communicate with neighbouring communities. Problems included:

- Incomplete identification of stakeholders
- Inappropriate methods of engaging with stakeholders
- Skewed/partial stakeholder responses
- Weak feedback and communication beyond the formal process (Mayer *et al.* 2001)

Compliance with social certification standards is still weaker than and not as well understood as environmental compliance but in general foresters are becoming more

socially aware. The requirements under FSC have brought this issue higher up on company agendas and more pro-active initiatives are underway (Frost *et al.* 2003).

The respondents from the 2004 survey were also in agreement that certification has had direct benefits for the forestry labour force and forest dependent communities. Working conditions with regard to health and safety have improved and the living conditions in forest villages are also better.

Incorporation of Outsourced Forestry Operations

The current trend for outsourcing forestry operations by forest owning companies has focused attention recently on the roles and responsibilities of the parties in relation to certification. The issue of contractors complying with FSC criteria (especially social criteria) has raised concerns. It was initially assumed that as long as the forest owner had adequate systems and practices in place a certificate could be issued. The fact that a certificate covers the forest management unit and all operations related to the FMU (therefore all enterprises undertaking operations in an FMU including contractors have to be in compliance) was not considered (Frost *et al.* 2003).

This resulted in a number of major CARs being raised reflecting the inadequacy of service providers' systems and practices. The outcome has been that companies are now pro-active in encouraging and ensuring that their contractors comply with the necessary standards such as those pertaining to health and safety (Frost *et al.* 2003)

Economic

During a recent indigenous timber auction held by DWAF, it was widely advertised that the timber came from a certified forest. According to a spokesperson for DWAF this had no impact on the number of buyers or the prices paid. It was however noticed that the buyers of the timber did indicate to their market that their products were made from certified timber.

The above-mentioned case illustrates the fact that the perceived market advantage of obtaining FSC certification has not materialized to the degree some companies expected. Many producers did not experience the predicted increase in sales and subsequent expansion of markets (Frost *et al.* 2003).

Few companies regret becoming certified as the process has helped to consolidate and secure existing markets. Some firms feel that having certification has improved their marketability to prospective customers and others report getting orders for new products as these customers try to move away from non-certified suppliers, particularly in Asia (Frost *et al.* 2003).

It is suggested that the relative early certification of South Africa manufacturers helped to improve their position in the market and first-mover advantage has come into

play. In 1996 South Africa hardly featured in Homebase's supply list but it is now estimated that 10% of its timber is purchased from South Africa (Frost *et al.* 2003).

A non-tangible benefit of certification has been the improved transparency created throughout the supply chain. As individual products are marketed with a unique certification number it becomes easier to monitor quality standards. Previous defects could only be traced to country of origin; now they can be pegged to a specific manufacturer (Frost *et al.* 2003).

There was a perception that the initial lack of FSC certified timber would push up prices but this has not happened. This may be due to the speed with which certification spread and that some manufacturers undertook vertical integration and acquired plantations to ensure adequate supplies. The shift in the market to sourcing FSC certified timber has not resulted in a price increase but certified companies at least seem to have benefited from securing existing markets (Frost *et al.* 2003).

Power

The experience and potential of certification have in part provided impetus to the process to develop a national standard for sustainable forest management. Industry representatives are unanimous in recognizing the positive impact voluntary certification has had on the self-regulation of industry, in particular, concerning legal compliance. The CB auditor at present is playing a role of substitute regulator in the absence of adequate government monitoring (Frost *et al.* 2003).

The process of certification has also intensified the questioning and analysis of social issues in the forestry sector. This in turn has enabled genuine contributions from the forestry sector to be made in wider national debates and negotiations on labour, land rights and affirmative action (Meyers *et al.* 2001).

Certification has had a positive effect on forestry regulation and has assisted in creating a consultative environment where large multi-national corporations such as SAPPI and Mondi must consult forestry communities regarding their activities. Certification has however had a negative effect on small-scale timber growers and placed them in a situation where their very existence is threatened.

In a private timber grower survey in 2000, high costs and excessive administration were mentioned as two of the main constraints for small-scale timber growers to receive certification (Ham 2000). Small-scale timber growers currently have an option to join group certification schemes such as those of NCT and African Environmental Services. FSC has also implemented the Small and Low Intensity Managed Forest (SLIMF) initiative which makes it easier for small-scale timber growers to obtain certification. NCT Forestry Cooperative currently has a SLIMF certificate.

Despite these initiatives micro growers remain the most marginalized group in relation to certification and evidence suggests that the pursuit of certification and its

inherent costs may distract from more pressing needs to improve small holder livelihoods (Frost *et al.* 2003). Small-scale growers belonging to company outgrower schemes do receive assistance in obtaining certification and selling their timber but a large number of small-scale growers are not affiliated to any company. For these growers it is becoming more difficult to sell their timber. They are not certified and would find it very difficult to obtain certification due to financial and management constraints. There are still sawmills accepting non-FSC timber but it is foreseen that this amount will be reduced to zero in the near future (Dlala 2002).

VI. CONCLUSION

Plantation forestry certification is approaching maturity in South Africa. With 80% of plantation areas certified and more than 100 Chain of Custody certificates issued, South Africa can serve as an example for other countries. A number of issues, however, still need to be resolved to ensure the credibility of certification in South Africa. These issues include:

- *Small-scale timber growers.* Even with assistance from companies and group certification schemes it is going to be difficult for micro timber growers to comply with all the FSC certification requirements and to absorb the costs. The possibility exists that micro timber growers who are dependent on forestry for their livelihoods, but who cannot afford certification, would not be able to sell their timber in future. Certification could thus become a barrier that will prevent people depending on forestry for their livelihood from selling their timber.
- *Lack of a national standard.* Certification has been adopted by the private forestry industry in South Africa as a self-regulatory tool. Government, although supportive of certification, has played little or no role in influencing current certification efforts. A national set of Principles, Criteria and Indicators was developed as a minimum standard but has not been implemented yet. There is also no initiative to establish a national FSC standard. The lack of such a standard could place the credibility of FSC certification in South Africa in question.
- *Uncertified plantations.* Some of the plantations managed by the Department of Water Affairs and Forestry are in a poor condition and it would be very difficult to certify them. These plantations are also in ecological very sensitive areas where certification could have assisted in implementing environmentally sustainable forest management practices.
- *HIV/AIDS.* One of the biggest threats to the economic and social sustainability of plantations is HIV/AIDS. It is estimated that infection rates in some of the plantation areas is as high as 39% (Anon 2003d). Certification promotes better living and working environments for forest labour but procedures to address HIV/AIDS are not part of the FSC checklists.

- *Lack of domestic market and interest in certification.* The South African consumer is still very ignorant about certification. There is virtually no market for certified timber products in South Africa. A major effort to create such a demand and to educate South African consumers will have to be launched to ensure that forestry could benefit from a domestic certified timber market.
- *Certification and management of woodlands.* South Africa has approximately 29 million ha of woodlands. These woodlands belong to a diverse range of owners, including Government, private farmers and communities. Management is based on *ad hoc* activities by landowners and there is no clear Government policy about the management and monitoring of woodlands. Research efforts should be directed at finding options for the management and certification of this very important source of timber in South Africa.

The certification of plantations on private land has had less of an environmental, social and political impact than in the case of certified natural forests in the tropics. However, certification has led to plantation forestry being conducted in a way that has less impact on the adjacent natural and social environment than it did 10 years ago.

The forestry industry is currently more positive about FSC certification and it is being seen as more of a way of effectively managing plantations, than just something that must be done to sell timber. Communities and forest labour are benefiting through better relationships with forest managers.

The South African forestry industry should be applauded for the speed with which it has adopted forestry certification. The industry can truly serve as a case study in effective certification. There is no doubt that it will be able to adjust to future changes in forest management and certification.

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Appendix A. National Acts applicable to forestry operations

National Forest Act
National Environmental Management Act
Development Facilitation Act
Municipal Systems Act
Water Act
Environment Conservation Act
Veld and Forest Fire Act
Conservation of Agricultural Resources Act
Extension of Security of Tenure Act
Interim Protection of Informal Land Rights Act
Occupational Health and Safety Act
Basic Conditions of Employment Act
Compensation for Occupational Injuries and Diseases Act
Employment Equity Act
Skills Development Levies Act
National Heritage Resources Act

Source: Berrisford, S. 2002. Legal Standards for Sustainable Forest Management ('SFM'): for the INR Consortium working on Criteria, Indicators and Standards for SFM.

Appendix B. People consulted during this study.

1.	Mr. Craig Norris	Forestry Manager, NCT Timber Cooperative
2.	Mr. Francois Oberholzer	Executive Officer, Forest Engineering South Africa
3.	Mr. Robin Hull	Forester, Sappi Project Grow
4.	Ms. Cobri Vermeulen	Forestry liaison, DWAF Indigenous forest management
5.	Mr. Shaun McCartney	Environmental Manager, Global Forest Products & FSC Council Member
6.	Dr. Dave Everard	Environmental Manager, Sappi Forests
7.	Mr. Walley Menne	Member, Timberwatch
8.	Dr. Michal Brink	Program Director, SGS Qualifor
9.	Mr. Simon Thomas	Forester, Mondi Forests
10.	Mr. Jaap Steenkamp	Executive Officer, Forestry Contractors Association
11.	Mr. Dominic Mitchel	Social expert and SGS auditor
12.	Mr. Mike Howard	Consultant, Fractal Forest Africa

Ten hardware stores in Cape Town.