EMERGING TRENDS IN FOREST CERTIFICATION
THE ROLE OF CHAIN OF CUSTODY SYSTEMS

RESEARCH REPORT

A RESEARCH PARTNERSHIP BETWEEN

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EXECUTIVE SUMMARY

The voluntary certification of forest products companies to ensure adherence to sustainable standards is a new development in the world of forestry. In North America there are a number of substantially different certification programs available to interested parties, each with its own costs and benefits. Among the many differences between certification programs, the structure and methods of verifying the supply chain – also called the chain of custody or simply COC – is an area where very different approaches have been applied and where the results are not completely understood.

The scope of this study is limited to North American certification programs and includes a comparison between the origins, credibility and supply chain verification systems of the four leading certification programs widely implemented in North America: the Canadian Standards Association's (CSA) Z809 standard on Sustainable Forest Management; the American Forest and Pulp Association's (AF&PA) Sustainable Forestry Initiative (SFI); the International Organization for Standardization's (ISO) standard 14001 on Environmental Management Systems; as well as the Forest Stewardship Council's (FSC) certification program. A comprehensive review of available literature and an examination of the recent developments in the specific chain of custody rules applied by each of the four leading certification programs suggest that the FSC chain of custody program is unique in both its rigour and credibility.

Literature-based findings are supplemented by data gathered from a telephone survey of 48 FSC COC certificate holders in Canada and the United States. The data collected through this survey reveals that 82 percent of respondents plan to renew their certification, while 80 percent do not receive a premium for their certified products, 76 percent have not recuperated the costs of their certification, and 27 percent presently do not sell certified products. Our data suggests that FSC COC certification has a bright future despite the lack of market incentives. Further, it appears that the benefits certification does provide may be extremely important to its future.

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Re and s*ource* mean reciprocal, to use something from the Earth and then to be the source of its renewal. Today's dictionaries define "resource" as any property that can be converted into money. Yet if we go back to the original sense of the word "re-source", we will find that the biological sustainability of our forests lies embodied in a word that we blithely use but do not fully understand. (Maser, 2001)

1. Introduction: A Paradigm Shift in Forestry

Forest certification is an integration of many closely linked forces and points of view on both regional and international levels. Since its inception in the early nineties, the movement for forest certification has developed several systems that can potentially serve as a bridge between traditionally antagonistic perspectives. As perspectives about forestry and resource management and the state of the world's forests change, increasing public pressure is compelling forest harvesting operations to incorporate the tenets of sustainable forest managements (SFM).

In 1988, Frederick J. Deneke, former assistant director of the USDA Forest Service Cooperative Forestry program describes the spectrum of attitudes concerning forestry as ever-developing. Deneke illustrates how in recent decades Pinchot's anthropocentric and utilitarian concept of forest lands came to represent the mainstream values. This view prevailed as ecologists like Aldo Leopold inspired a new ideology of land use advocating a more integrated approach to ecology and biology, which is now gradually gaining influence on forest management. Contemporary thinkers like Chris Maser revitalize these biocentric ideals by applying them in a modern context. Deneke suggests that these views will come to influence the mainstream and that new voices will push the leading edge of resource management forward, demanding that perpetual improvement remain an integral part of any land ethic.

The forest certification movement originates from the ideologies of those on the fringe of resource management. As an approach born out of multiple desires for improvement, forest certification has the potential to realign our "re-source" use and our long-term needs as a society. Forest certification seeks to reconcile the economic goals that drive the forestry industry with the ecological ideals of a vocal minority of customers. Their success in this regard determines the types of certified operations, the status and even the viability of each scheme. Overall, certification standards address a growing public desire for accountable and responsible practices in industry; they provide a mechanism for consumer driven change in an industry where government legislation regulation could or perhaps wood not.

2. The Evolution of Forest Certification

Certification is a relatively simple approach for the verification and reinforcement of standard practices. It is applied in market sectors where the recognition of standards is meaningful to buyers. A wide variety of products and practices are certified through a number of certification agencies. The best known of such agencies include the International Organization for Standardization (ISO), the Underwriters Laboratories (UL) in the U.S., and the Canadian Standards Association (CSA). Perhaps the direct inspiration for many of the early proponents of forest certification has been the success of organic agriculture certification. As a largely consumer-driven market, food products certified as organic acknowledge farmers for environmentally responsible practices by providing a premium on their products. Advocates of voluntary forest certification believe the same approach should be applied to forest products. If concerned consumers are willing to pay a premium for responsibly produced forest products, then certification may make responsible forestry economically viable for producers and processors.

By providing economic incentives for SFM certification, forest managers have the opportunity to pursue (at least appear to) the goals of sustainable management without risking the company's bottom line. Though there are many interpretations of the term, most forest managers are familiar with the concepts and practices of sustainable forest management, (Maser and Smith, 2001). Certification does not require a leap of faith on their part. The concepts of sustainable forest management which have been incorporated into forest certification are not new ideas. They have been key elements of international agreements and guidelines including the Brundtland Commission's report on Sustainable Development and the United Nations "Earth Summits" held every five years since 1992. These meetings have, at times, addressed forestry directly. The "Criteria and Indicators" established by the Montreal Process working group in 1995 helped to codify and solidify targets for SFM in temperate and boreal forests (Montreal Process, 1995). The general international consensus that progress towards sustainable development and resource use is imperative, in conjunction with the growing knowledge of these concepts within the industry, has facilitated the widespread acceptance of forestry certification programs(Nordin, 1996). This suggests that economic factors, not a lack of expertise is the main obstacle to the adoption of sustainable practices, and often lead the companies harvesting forests to consider only the "lowest common denominator" in their management strategies.

The progress political bodies have made toward standards of sustainable development is the result of the continuing efforts of concerned professionals in academia and industry. These individuals have lead the search for solutions to our current resource management problems, and attempted to bring them to the forefront of public debate. The rapid growth of interest in forest certification can also be attributed to a groundswell of public concern about the sustainability of forestry practices over the last twenty years (Kiekens, 1999; Nordin 1996; Kajiwara 1999). These concerns, which were amplified by the campaigns of environmental organizations, focus on rates of deforestation, particularly those of ancient forest lands, worldwide (Rickenbach et al., 2000). The force of public pressure was greatest in Europe where the limited extent of remaining forests was most evident (Maser and Smith, 2001). This concern was transmitted to the North American market, where pressure from European buyers and the domestic public began to have an effect on the industry.

Environmental Non-governmental organizations (ENGOs) are the most pressing force behind the movement towards voluntary certification schemes. Their campaigns to mobilize public support for alternatives, boycott irresponsible firms and agitate for more sustainable forest practices can, in effect, create sanctions on the products of specific corporations (Kiekens, 1999; Rickenbach et al., 2000; Mater 1997). These campaigns and the public pressure that has emerged with and because of them have generated concerns amongst the marketing and public relations departments in the forestry industry. As a result, forestry companies have made substantial commitments toward sustainable forestry practices in order to avoid tarnishing their corporate image and the financial risks that boycotts present (Hayward and Vertinsky, 1999).

Forest certification has developed as a very logical extension of the global dialogue about "sustainable development". Voluntary 3rd party certification approaches have been recognized by ENGOs, foresters and the general public as capable of generating a win-win situation; one where firms gain market benefits, while buyers and ENGOs are assured of the established standards being met. The continuing evolution of such systems is based on the ideal of perpetual improvement, which provides the basis for the forest certification movement in all of its manifestations.

2.1 Key players in Forest Certification

2.1.1 Buying Groups

Presently, public demand is focused in buying groups: non-profit, non-governmental trade organizations that coordinate transactions of certified wood products by encouraging retailers to buy and the market the products (Rickenbach et al, 2000). Such a commitment improves the image of those organizations involved and creates further demand for certified wood products. Examples of buyers groups include the Certified Forest Products Council (CFPC) in the United States, Europe's 95+ Group, and the World Wildlife Fund's (WWF) Global Forest Trade Network (GFTN). The continued growth of these trade organizations has spurred the growth of certified wood markets in North America and abroad (Rickenbach et al, 2000).

2.1.2 Certification Agencies

Examples of certification bodies include the Forest Stewardship Council (FSC), the Canadian Standards Association's (CSA), the American Forest and Pulp Association's (AF&PA) Sustainable Forestry Initiative (SFI) and the International Organization for Standardization's (ISO). Certification agencies are forced to evolve rapidly in order to keep pace with the industry and avoid becoming irrelevant. This often involves changing the provisions used to govern the certification body. The Forest Stewardship Council (FSC), for instance, has made considerable adjustments to its structure in the last ten years (CFPC, 2002). Each certification organization has had to adapt to meet the needs of its members and jockey for position in the burgeoning market. Stringency of criteria and indicators has become a selling point for some certification programs. This perception of credibility is maintained with their rigorous supply chain verification method. The converse trend also occurs; other systems with less stringent standards may be able to attract firms because of the lower indirect costs of adjusting to their standards.

2.1.3 Forest Management Companies

Forest managers play the critical role in certification by accepting external audits of their cut blocks, or providing their own data to the certification body. Forest managers must commit to continual improvement to become certified. This entails constructing an apparatus within the corporation to account for its environmental impact. Costs for the certification of forest management operations are generally higher than those of companies further down the supply chain. Direct costs are generally higher because audits are more detailed and take longer to complete. Indirect costs include, the purchase of new capital and substantial modification of harvesting methods, and can also be substantial. These impediments have made the adoption of certification by forest managers a slow process. Unprocessed logs, however, carry documented premiums which may offset some of these costs (Hayward and Vertinsky, 1999).

2.1.4 Processors

Certified mills and other processing facilities face a number of the same challenges as forest managers. Shortages of certified wood forces most certified mills to handle both certified and non-certified product. The FSC requires the segregation of wood from certified sources as it is being processed. This is problematic for mills accustomed to sorting logs by species without regardless of origin. Further complicating operations is the lack of harmonization among systems. In general, processors incur these costs relative to the size of their operations. Large firms with a variety of processing and/or forest management facilities may save on costs by pursuing multi-site certification for all operations (FSC Doc. 6.0, 2002). Meanwhile, small firms dealing primarily or wholly in certified products may also pursue certification at very low cost. Mid sized saw and pulp mills, however, generally have little impetus to become certified. This tendency limits the supply of wood labelled certified and the growth of its market.

2.1.5 Retailers

Retailers act as promoters of certification to the general public through advertising, whether it is in the form of in store materials, on-product labels or staff training. If a certification agency requires a supply chain verification scheme, retailers can drive demand up the chain in their search for certified products. Certain retailers with substantial buying power have significant leverage with respect to suppliers and may eventually prove an important force for the expansion of certification at both the processing and forest management levels.

2.2 Important differences between Forest Certification Systems

This section outlines some general distinctions between the different certifying bodies. For a more specific point by point comparison of certification systems see appendix II.

2.2.1 Origins and governance structure

The origins of a certification program determine its credibility among the different players in the movement. Environmentally conscious consumers probably consider programs developed with substantial ENGO involvement more legitimate than those developed by the forestry sector. Foresters and executives within the industry would likely be more receptive to a certification program developed by their peers.

The origins of a certification program also help shape the scope and stringency of its standards. The American Forestry and Pulp Association (AF&PA) requires that all of its members participate in the Sustainable Forestry Initiative (SFI). The corporate demographics within the Sustainable Forestry Board that governs the SFI has led to the creation of standards that seek to insure continuous improvement of forest management, without setting many specific guidelines for SFM.

The FSC was developed as a result of extensive efforts of environmental and social NGOs. There is a perception in the forest certification movement that it is believed to be more rigorous and more favourable to a wider spectrum of consumers than those developed by the forestry industry (Rickenbach et al., 2000; Nordin, 1996). ISO creates standards aimed at facilitating trade (ISO website) in different sectors, and has outlined a framework for forest certification in their document 14001. The CSA forest certification system, in terms of the credibility of its origin, falls somewhere between the FSC and the SFI systems. It was developed by the non-profit Canadian Standards Association at the request of an industry panel (Armson, 1996).

The origins and governance structures reflect the fundamental ideals and principles of a certification body. These have vital implications for the motivation and long term goals of the systems and their continued growth (Meridian Institute, 2001).
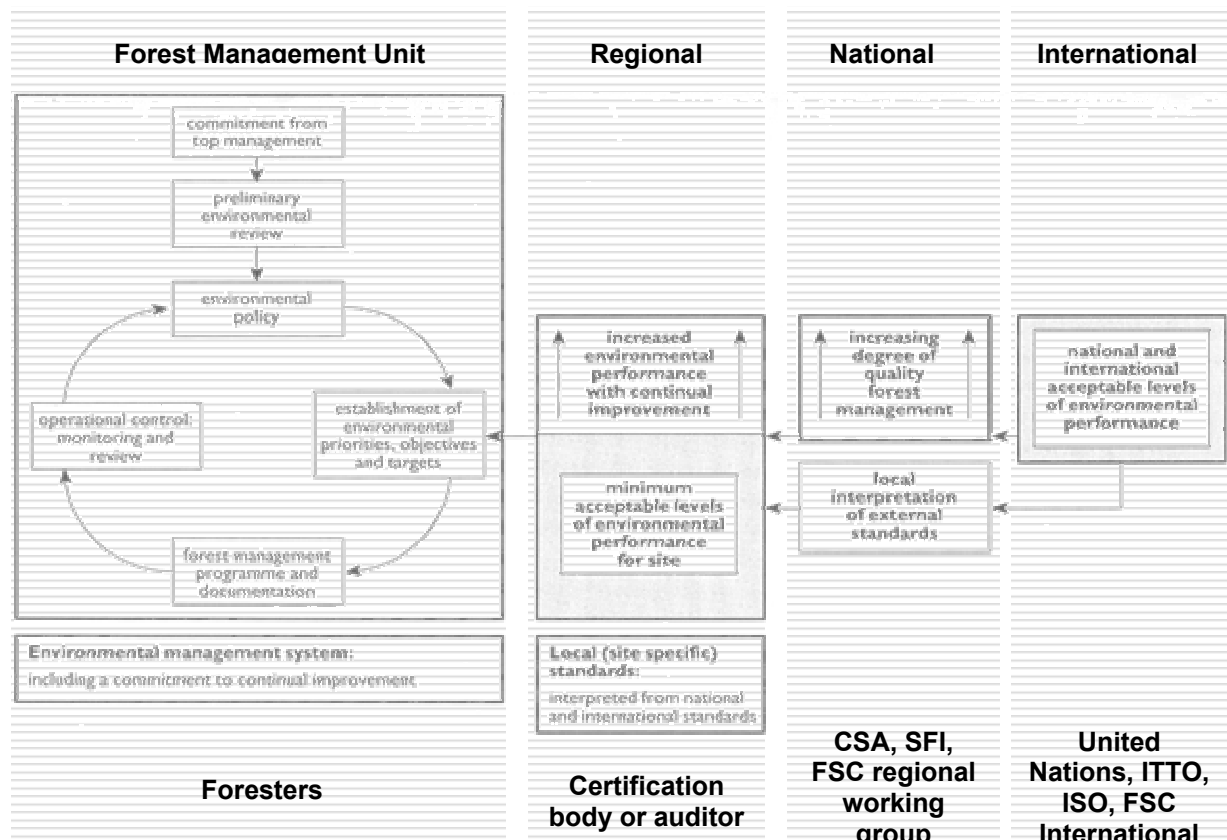

Figure 2.2.1 Generic Structure and Process of Forest Certification (modified from Upton and Bass, 1996)

2.2.2 Scale of Operations

Another key distinction between certification programs is the scale level at which the program's administrators are active. Figure 2.1 shows a schematic representation of the information flow from the International level (at right) to the individual forest management unit (at left). Along the bottom of the diagram, the scales at which each certification system operates are noted.

The CSA and SFI systems both function at the national level. They integrate guidelines from international agreements and programs from groups like the International Timber Trade Organization (ITTO) and the ISO into regional standards. Meanwhile, FSC regional working groups, operate at the same scale level as the CSA and SFI but have a higher body to answer to – the FSC international council.

At the regional level verification and auditing procedures are carried out by auditors, alternately called 'certifying bodies', registrars, and certifiers by the different programs. These organizations perform periodic audits of forest management units or facilities certified under the program that has accredited them. Examples of certification bodies for the FSC program in North America are: Scientific Certification Systems (SCS) and Smart Wood in the United States; and the Silva Forest Foundation in Canada.

The operating scale has a strong impact on a certification program's effectiveness and dynamics. Systems that exist on both an international and regional level are likely to be more widely adopted than those limited to the national or regional level – like Alberta's Forest Care program. Regional programs may not benefit from the market recognition enjoyed by the organizations that are tied to an international body. However, the converse is also true; programs like the ISO 14001 standard on environmental management may be regarded as too general, and vague to offer a high degree of applicability in specific regions.

2.2.3 Verification Method and Frequency

The rigorousness of verification methods is also a strong determinant of credibility for forest certification systems. Different auditing practices balance the opposing demands of cost-effectiveness and acceptable rigour in their own way. The proportion of field audits, which are conducted on the site, and systems audits that rely on company figures and the overall frequency of audits is an important consideration (Hughes, 1996).

Examining various certification systems on this basis shows substantial differences between both the independence of the auditor in, 2nd or 3rd party verification schemes (CFPC, 2002). First party verification schemes rely on the audits and records of the forest managers to ensure that a certification system's guidelines are being met. 1st party certification systems are generally referred to as systems based approaches. 2nd party verification is conducted by auditors from the certification organization itself. Auditors independent of both the land owner and certification system are contracted audit forests and processing operations in 3rd party verification schemes. 2nd and 3rd party auditing systems are considered performance based systems, where specific indicators are considered by auditors and certain criteria are met by managers and processors. The FSC's 3rd party certification system was designed to identify exemplary forest management, and is as result the most rigorous system overall (FSC Doc. 1.1, 2000). The others suffer from reduced credibility due to a lack or the infrequency of 3rd party audits to varying degrees (Kajiwara and Malinick, 1999; Meridian Institute, 2001).

2.2.4 Public Involvement at Various Stages

Whether it is implemented in the standards-setting phase, during specific applications for certification or as a separate input mechanism, openness to public input helps make a certification system more accountable and credible to the consumers. A quick examination of the comparison table in appendix II shows that public involvement in certification proceedings ranges from almost none, as in the SFI's system, to the considerable input by individuals implicit in the structure of the FSC. The FSC represents the more open and accessible style of certification (CFPC, 2002).

2.2.5 Supply Chain Verification/Chain of Custody

Chain of custody (COC) certification is a key component of a consumer-oriented certification system's makeup. Supply chain verification ensures that products labelled as coming from certified forests are what they claim to be. The variation between different supply chain verification systems is substantial (Meridian Institute, 2001; Kajiwara, 1999; Kiekens 1999).

SFI has recently implemented a voluntary system-based supply verification system similar to the one used by the CSA. These systems were constructed to motivate suppliers to certify their buyers in order to establish the credibility of their operations to their own end consumers through the use of a label. The use of the SFI on-product label has only just begun (Chapel, 2002; SFI, 2002). Though all three of the leading certification systems possess a degree of supply chain verification and can offer the use of an on-product label to interested firms, the differences between the three systems are extensive and meaningful.

The credibility of the verification system is based on the scale of the verification body, the frequency of verification audits and the rigorousness of the standards to be met for such audits. These standards concern minimum percentages of forest certified inputs that can be present in products labelled certified, and the degree of segregation between certified and non-certified inventory. Based on these criteria, the FSC's 3rd party audited chain of custody certification system is the most developed and extensive of supply chain verification systems (Meridian Institute, 2001; FSC Doc. 6.0, 2002; CSA Plus 1163, 2001; SFI, 2002). This suggests that tracking products from their certified origins is more important to the FSC than to the other certification bodies.

2.3 Survey-based Research Comparing Certification Systems

The relative youth of the forest certification movement and uncertainty concerning its future has stimulated the interest of researchers. The studies that have been conducted focus on the different views of certification from within the industry. Forest certification has been studied from the standpoint of commercial interests (Wilson et al., 2001), forest managers and owners (Hayward and Vertinsky, 1999), and buyer demand (Spinazze and Kant, 1999). Furthermore, a comparative study of the variation in size and products of FSC certified merchants was conducted by Humphries and published in 2001. Each of the studies is able to reach a few tentative conclusions, which, when viewed in conjunction, provide insight into the development of forest certification over recent years.

In 1995 and 1998, Humphries et. al. (2001) conducted two mail surveys of FSC COC certified companies in the United States. They inquired about the types of products these companies produce, their current certified and non certified sales volumes, the anticipated future certified

sales volumes, and the premiums received for their certified products. The survey they mailed in 1998 included additional questions concerning the motivation for certification, how the firm's certified sales had changed over the last few years, and the nature of the perceived costs and benefits of certification. The results from their survey present a summary of the development of FSC certification (Both COC and FM) until 1998. Most of the companies surveyed were motivated to become certified by environmental issues, did not receive a premium for their certified products, and were experiencing or anticipating an increase in their certified sales. Humphries et al characterize the FSC forest management and chain of custody certification system in the late nineties as one driven by environmentally conscious executives wishing to participate in the increasingly diverse buyer and seller network provided by the FSC. Though augmented sales figures may be part of the impetus toward their certification, it this research showed that it is clearly not the most prominent.

Wilson et al. (2001) conducted a telephone survey of Canadian forest product manufacturers that were listed in industry directories. The questions it contained were designed to gauge the awareness Canadian companies concerning the different forest certification systems. They found that industry executives were most knowledgeable of the ISO 14001 system, followed by the CSA and then the FSC. Furthermore, respondents ranked these certification systems in the same order in terms of their suitability to their own operations. Only 36 percent of respondents were not certified or actively pursuing certification. 23 percent were certified by three or more organizations. Their results showed that the most prominent advantage of certification was that it appeased public pressure from ENGOs and secured public confidence. The FSC was viewed as achieving both these goals most effectively. The major disadvantages reported were increased paperwork, direct costs, insufficient premiums, and increased restrictions on operations. The respondents perceived the FSC as being less associated with the first two disadvantages than the other systems, but more liable to restrict FM operations. This survey provides a context for us to study the role of the FSC system in the forest certification movement.

Hayward and Vertinsky (1999) conducted interviews with 20 forestry operation executives and small non-industrial landowners certified by the FSC. The interviews were primarily concerned with the costs and benefits, as well as the motivations, for certification. Contrary to results from others, premiums were reported to be the most prominent benefit of certification, asserted by 70 percent of interviewees. Further, more than half of the interviewees claimed that certification provided an advantage in the market place. Reduced ENGO pressure was only indicated by 20 percent of interviewees. More than fifty percent of the industrial foresters reported slight changes in management as a result of certification, less than twenty percent had to undergo definitive change, and over 65 percent reported an increase in their operation costs. These costs were not found to be balanced by a large demand for certified products, however confidence that this would change was high. In spite of potentially high costs and few tangible benefits, the FSC-certified forest managers that Hayward and Vertinsky (1999) contacted remained optimistic.

Spinazze and Kant (1997) used a consumer survey to gauge the market potential of certified forest products in Ontario. They surveyed 73 end consumers shopping for wood products at big-box retailers in the Greater Toronto Area about their views on Canadian forestry and forest certification. They found that Ontario consumers were willing to pay at least an 8 percent premium for most certified forest products. Further, 90 percent of their respondents reported that all things equal, they would buy a labeled certified product over one with no label. The results

obtained by Spinazze and Kant (1997) demonstrate that the market potential for certified products depends on geography, demographics, and the product in question.

Results from previous survey-based research highlight some of the emerging questions and expectations surrounding the future of forest certification. There is no current study that integrates the perspectives of organizations throughout the certified supply chain in a contemporary context. This is a consequence of the recent development of FSC COC certification and the fact that the means of contacting these organizations has only been made available quite recently. Our work attempts to fill this gap in the literature and elucidate many of the uncertainties surrounding FSC COC certification.

3. Goals, Research Questions, and Hypotheses

3.1 Goals
We defined three broad goals to be achieved through our research:

1) To identify and compare the supply chain verification systems of the Forest Stewardship Council (FSC), Canadian Standards Association (CSA), and Sustainable Forestry Initiative (SFI).

2) To understand the emergence and evaluate the impacts of the FSC's chain of custody (COC) process.

3) To describe the flow of certified forest products through the FSC's chain of custody as well as the different players involved.

3.2 Research Questions and Hypotheses
In order to address the three aforementioned goals, we designed four research questions:

3.2.1 Research Question 1
How do the various certification systems differ in their approach to "supply chain verification"?

Hypotheses:
i)   Supply chain verification systems differ primarily to the extent to which their methods of verification are credible.
ii) The FSC has the most developed, stringent, and well recognized supply chain verification system.

3.2.2 Research Question 2
What are the motivations for acquiring FSC COC certification?

Hypothesis:
i)   Main motivations include gaining market access, appeasing NGO pressures, and satisfying buyers' demand.

3.2.3 Research Question 3

How are North American COC certified companies affected by their certification?

<u>Hypotheses</u>:

i)   The majority of companies in North America have not yet recuperated the costs associated with obtaining an FSC COC certificate.

ii)   Furthermore, this is due to an inadequate supply of certified wood products and the absence of premiums on these products.

3.2.4 Research Question 4

What are the dynamics within the FSC supply chain and how do they affect the different players in the chain of custody?

<u>Hypotheses</u>:

i)   Organization size is not a limiting factor in acquiring FSC COC certification.

ii)   Supply of certified wood products in the supply chain is inadequate.

iii)   COC processes are mainly driven by buyer organizations that are responding to consumer demand.

4. Methods

The first phase of our research involved a thorough review of the relevant literature to compare the various supply chain certification schemes employed by the FSC, CSA and SFI. This analysis was based on the literature provided by the various certifying bodies, much of which was available online. Such information was complemented by articles derived from a variety of prominent forestry journals such as the *Forestry Chronicle* and the *Journal of Forestry*. Our first research question was addressed by these results.

The focal point of our research was based on an in-depth telephone survey conducted over the course of four weeks in the months of October and November 2002 by the seven authors of this research paper. The survey contained 26 questions designed to address our three final research questions. A copy of the questionnaire is included in the appendix of this report (appendix I).

The survey investigated the FSC's chain of custody (COC) certification system in Canada and the United States. The FSC's database (accessible at http://www.fsc-info.org/english/dbcoce.asp) provides all registered FSC COC holders in North America along with their contact information. Using a random number generator, we selected 48 companies. Of these 48 companies, our sample was divided as to represent 8 percent of FSC COC companies in Canada, 7 percent of COC companies in the United States, 10 percent of COC/FM (chain of custody/ forest management) companies in Canada and 9 percent of COC/FM companies in the United States. Such proportions are representative of the general distribution of these categories in the databases.

Fulfilling our 48 interviews was done with a 56 percent response rate. Non-responses were largely due to time constraints and inconveniences, and not reflecting a bias in our respondents.

Our survey questions were varied and mostly categorical in nature. A few of the questions we included were either quantitative or descriptive. With regards to the categorical questions,

possible answers were classified according to a key, which can be found in appendix IV. Possible answers were not directly given to respondents, but were later place according to this key. Data was inserted into an Excel spreadsheet which can be found in appendix VII. Charts of these values were created using Excel. Cross tabulations were then undertaken where they were thought to reveal interesting trends. Pertinent additional comments provided by respondents were compiled. These are also included in appendix VI, and provided us with a better understanding of the extent of differing perspectives about forest certification in general.

The use of a telephone survey was chosen over a mail survey due to the excessive time requirements posed by the postal system. An e-mail survey was avoided due to its marginal reliability. The use of a telephone survey proved to be a valid tool for the study of the FSC certified product chain, as we had anticipated from the success of earlier attempts (Wilson et al., 2001; Spinazze and Kant, 1997). One difficulty encountered in our questionnaire arose as we tried to obtain sale figures from companies, information they often preferred to withhold from us. In retrospect, we found it more productive to ask questions concerning percentage sales volumes, and to infer questions of company size from employee numbers instead of net sale figures.

5. Analysis

5.1. Comparing Key Elements of Certification Systems

Research Question 1: How do the various certification systems differ in their approach to "supply chain verification"?

Hypotheses:
i) Supply chain verification systems differ primarily to the extent to which their methods of verification are credible.
ii) The FSC has the most developed, stringent, and well recognized supply chain verification system.

5.1.1 Origins of Various Certification Systems

Forest certification is often referred to as a singular movement, but is, in reality, a general concept that incorporates different and multifaceted and sets of ideals, organizational structures and goals. The immediate future of forest certification is currently filled uncertainty. There is an evident need for various systems and approaches to be explored before a stable synthesis can be created and viable for the long term. Our research is a step in this process. The conditions that have led to the development of forest certification are as diverse as the practices, industries and products they are designed to regulate, and several different systems have been spawned as a result. The differences between these systems must be identified and explored before their implications for the larger movement can be inferred.

5.1.1.1 ISO Standard 14001

In Canada, the most widespread form of certification applied to forestry is a set of standards developed by the International Standards Organization in 1993 (SFCW, 2002). These standards,

referred to collectively as ISO standard series 14000, pertain to a wide variety of environmental management and impact assessment procedures (ANSI, 2002). They were designed to be applicable to almost any firm in any industry interested in improving their environmental management systems and receiving international recognition for doing so. Governments and organizations are also able to adopt the 1400 series as a regulatory device. The ISO standards were not specifically designed for forest management, though, the design for a systems-based apparatus provided by the ISO 14000 is grounded by the principal of continual improvement, a key SFM tenet. Under ISO 14001, third party verification is optional (Mater et al., 1999). Despite its broad application and lack of forestry-specific design, the ISO standard has been widely accepted by the forestry industry as a relatively risk free means of improving environmental management or gaining recognition for standards already in place. In Canada, the ISO 14001 effectively provides a voluntary framework for the environmental impact assessment of the forestry industry.

5.1.1.2 The Canadian Standards Association (CSA)

Despite its wide adoption in Canada, criticisms of the ISO system were prevalent enough to compel academics and other actors in the Canadian forest product industry to consider formulating a uniquely Canadian approach to forest certification. The Canadian Standards Association (CSA) was commissioned by an industry trade association to do just that. The CSA was to develop a standard based on the ISO format which would address both the limitations of the systems-based ISO approach and the specific concerns of the industry in Canada. The end product was the CSA standard Z809 for sustainable forest management introduced in July of 2001.

Proponents of the CSA standard argue that it is the most suitable and effective certification method for the Canadian context (Nordin, 1996). It was created with the widespread support and involvement of many respected Canadian academic and professional forest managers. Conversely, critics suggest that the CSA system lacks credibility due to its industry-sponsored origins and its less stringent standards than the FSC (Ack, 2001). The CSA retains many of the systems based components of the ISO 14001 system, but requires third party verification at regular intervals in addition. Its standards are therefore more structurally rigorous than those of ISO 14000. The rapid growth of certificate holders under the CSA system immediately following its introduction, however, suggests that standards are easily met by current industry practices with minimal modifications.

5.1.1.3 The Sustainable Forestry Initiative (SFI)

In the United States, the American Forest and Paper Association (AF&PA) created a second industry-led initiative towards certification in 1995, the SFI. The SFI system was modeled in part on the much older American Tree Farm System which has helped standardize practices for small, non-industrial woodlot managers in the US since 1941. The AF&PA wanted to extend a similar system to the industries of its members and secure some positive recognition for improved forest management. The SFI was designed by the AF&PA to raise forestry standards across the industry while providing its members an alternative to more complex and costly certification systems.

The SFI program is a compromise between the ideals of leading edge of professional foresters in the US and the need to maintain an economically prosperous perspective on certification. Jean

Mater (1997) suggests that this type of certification program is a valid attempt from within the industry to correct fundamental problems with forestry practices which would not be widely addressed without such an approach. Like the CSA standard, however, the ease with which many AF&PA members were able to achieve SFI certification suggests that actual modifications of practice were incremental, at least in the short term. It is no surprise that many critics claim that the SFI was created 'by the industry, for the industry' (Rickenbach et al., 2000).

5.1.1.4 European Programs

While not included in this research project, a number of alternative standards for forest certification exist around the world, most notably in Europe. Concern about forest practices and limited forest resources encouraged early involvement by both European industry and the public. Current European standards include, but are not limited to a Finnish Standard, a Swedish standard, a Pan European standard called Pan European Forest Certification (PEFC), and a British program for small woodlot managers called the Woodlot Assurance Scheme.

5.1.1.5 The Forest Stewardship Council (FSC)

The Forest Stewardship Council is unique among forest certification programs in that its genesis was the result of cooperation between environmental NGOs and the forest industry. In the years preceding its creation, many considered such a collaboration to be impossible. Conceived of by the World Wildlife Fund and developed through a series of meetings in the early 1990s, the Forest Stewardship Council sought to integrate social, environmental, and economic concerns into its certification program. By developing an international framework mandating that regional working groups administer FSC policy, the defined scope of the FSC program was international from the start. These regional bodies use the same three chambered structure as the overarching Forest Stewardship council. The three chambers, composed of environmental, social and economic interests, set the FSC apart from other certification systems.   Though this same multi-stakeholder approach has been incorporated into other certification systems, such as the CSA and SFI systems, no other certification program has been as successful as the FSC at integrating a wide variety of viewpoints. Whether this accountability and the theoretically balanced structure will be retained by the FSC as the forest certification movement evolves is not clear. For the moment, however, most commentators agree that FSC certification sends a stronger message in terms of its openness and willingness to include disparate perspectives than other certification systems (Rickenbach et al., 2000; Meridian, 2001).

5.1.2 Performance-based vs. Systems-based

There are two approaches to certification methods which define forest certification systems along the lines of credibility. Systems-based certification programs rely on the forest manager or firm to set up and monitor a suitable environmental performance tracking system. In contrast, performance-based systems require third party verification to monitor the applicant's ability to conform to standards set out by the certification agency.

Performance-based systems are recognized as the most rigorous, reliable, credible and desirable form of certification (Mater et al., 1999). In fact, many environmental NGOs, buyers groups and public land managers solely recognize performance-based certification systems as being adequately stringent in terms of compliance and verification (CFPC, 2002; Mater et al., 1999). The Forest Stewardship Council has employed the performance-based approach through its standards and accreditation system internationally for the past ten years (Mater et al., 1999).

Between these two extremes of rigor in verification, we find the pragmatic approach taken by the Canadian Standards Association in developing their forestry standards. The goal of the CSA system is to reduce the complexity and costs associated with certification, while maintaining an adequate degree of credibility.

5.1.3. Questions of Credibility

Despite all of the different systems that have been developed on the basis of sustainability, none have gained universal acceptance; each system has its proponents and detractors. The scientific community harbours doubts about the very notion of sustainability. It has been argued that supposedly sustainable forest management ensured by the different systems fails to adequately consider the biological community of certified forest space. The FSC, in turn, responded to these allegations in an article in the journal conservation biology with both comments and suggestions about how FSC policy could be changed. In fact, the FSC requested specifically that concerned scientists provide suggestions addressing biodiversity, wildlife and other areas of concern, and identify communication between ecologists, conservation biologists, foresters and loggers as essential in the construction of optimal SFM guidelines (Cauley, 2001).

Swallow and Sedjo (2000) argue that certification may actually entail strong negative impacts on global biodiversity and the sustainability of forest production by leading to a reallocation of land toward less ecologically sustainable uses. It is important to realize, however, that ecological AND market interactions need to be taken into consideration. The blind pursuit of high and potentially expensive environmental standards on individual forests, without an understanding of the coincident valuation by consumers, may lead to a degradation of the larger scale ecosystems within which the certified forests exist (Swallow and Sedjo, 2000).

The certification bodies themselves also seem to find the credibility of rival systems questionable in many cases. This is made clear by SFI documentation (SFI, 2002) that regards a DFA certified by any ISO 14000 system, the ATFS, or the FSC as authorized for SFI certification, while only FSC certified forests can produce products certified under the FSC system (FSC Doc 1.1, 2000). The CSA accepts the FSC's standards as adequate for certification under their system. From these policy statements it appears that there is a pecking order in respect to credibility within the forest certification community.

Members of the forest product industry don't necessarily consider all the schemes equally credible either. This is evident in our research. Our survey included four questions about whether the participant was aware of parallel schemes and regarded them credible to themselves, the market and NGOs. Of FSC COC certificate holders, 81% were aware of the SFI system. Most of those who held an opinion about the credibility of the SFI and CSA systems regard as them credible, and maintain that the market does as well (Fig. 5.1.1). The respondents do not, however, believe that most environmental groups regard the two systems as credible.

Furthermore, all the established certification systems have limited provisions for public involvement. If one of the goals of these systems is to reign in the power of big business over industrial forestry, then who fills the vacuum? In the FSC system, control is moved to social and environmental groups with seats in the two respective chambers of the council (FSC Doc 1.1, 2000). The ISO compatible systems-based approaches, such as those of the SFI and CSA, decentralize control from individual forest managers to trade organizations and standards

associations. In none of these systems does government, the nominal voice of the public, or representatives from the populous at large, play a pivotal role.

The SFI relies on the US government to establish and enforce social and environmental regulations adequately (Meridian Institute 2001). If the government is able to sufficiently protect the public's well being, then the SFB need not concern itself with anything but the "sustainability" of their certified operations. The FSC, conversely, relies on different social and environmental organizations to provide insights on behalf of specific segments of society that do not feel they are represented well enough in the existing power structures (FSC Doc 1.1, 2000). The lack of explicit public involvement and regulation in these systems make all these systems vulnerable to questions of their overall credibility.
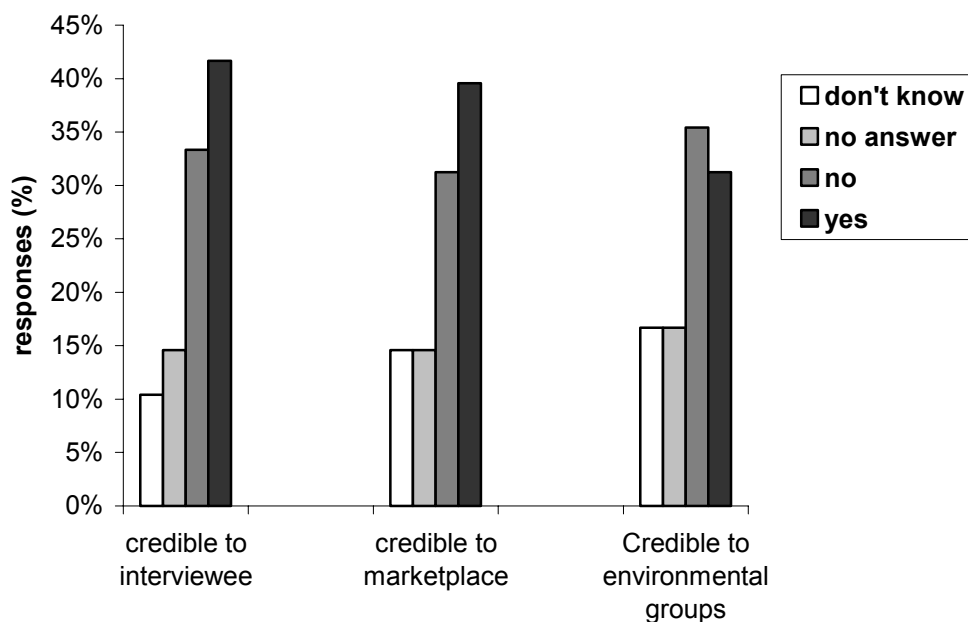
Figure 5.1.1. Interviewee Perceived Credibility of SFI and CSA systems as compared to FSC

5.1.4. Supply chain verification

Supply chain verification ensures the public that certified labels are not being applied to uncertified products. It is employed by a variety of different industries. From its inception, the FSC has employed a Chain of Custody certification scheme to achieve supply chain verification (Kajiwara, 1999; Rotherham, 1997). In order to display the FSC certified label, each owner of the timber (and/or other forest products it was assembled from) must obtain a chain of custody certificate. A certificate holder must segregate all their products originating from certified sources from the rest of their inventory. Detailed records must be kept of all inventory and submitted to the FSC (FSC DOC 6.0, 2002). Furthermore, spot checks by a third party inspector hired by the FSC are conducted on an annual basis. Thus, only products that pass

through a distribution chain certified by FSC from cut block to the final retailer are authorized to be sold with an FSC label (Meridian Institute, 2001).

The SFI developed a supply chain verification system in 2001. SFI, however, took a systems based approach (Meridian Institute, 2001). Processors and distributors, under this system, must document the total input that SFI certified products contribute to their total inventory. If this volume surpasses the percentage required by the SFB, these sources can use the SFI Certified Participant label (SFI, 2002). One requirement included for the use of the SFI Participant Label, is that one third of firm's product is from a certified source subject to third party verification according to SFI or affiliated regulations. Two thirds of the input must be from a certified source. These products can then be sold to any of three types of SFI participating "secondary manufacturers" (Participating Manufacturers, Publishers, and Retailers) that have their own set of similar regulations, and their own labels. These firms are required to obtain third party verification of their sources, inputs and outputs on a regular basis. The SFI supply chain verification remains a voluntary program (Meridian Institute 2001).

The CSA developed a similar chain of custody system in 2001 as well (CSA Press Release, 2001). The CSA COC guidelines outline a voluntary system where the extent of the supply chain verification is the impetus of the initial producer and processors (CSA PLUS 1163, 2001). These businesses then pressure all of their customers down the supply chain to certify. The CSA COC raceme is not mandatory either; the list of the processors authorized to use the CSA logo on their products only includes two firms as of late 2002. Due to the fact that SFI and CSA label use is reliant on voluntary programs, much or most of the certified wood products by the two systems is sold with no certification label.

The different approaches to supply chain verification carry with them both costs and benefits through which they impact the dynamics of the certification system as a whole. The systems based approaches of the SFI and CSA COC systems are essentially supply driven; they are voluntary measures for concerned producers to ensure that their products are being sold with a certified label (Rotherham, 1997; SFI, 2002; CSA PLUS 1163, 2001). Indirect costs arise from increased record keeping as every source is recorded. This can be problematic for traditional timber and fibre processors who have been supplied by numerous small woodlot owners, often without filing transaction records. Furthermore, only very large and determined firms are able to ensure that all their buyers down the supply chain obtain the rights to use the certified label. It is therefore difficult to assure that their certification scheme's logo is on their product when it is bought by the end consumer.

The costs attached to FSC COC are all the more strenuous for wood processors. The necessity for product segregation is inherently problematic for sawmills and pulp mills, where organization by species is the norm and of the product origin is not a serious consideration (Kajiwara 1999) (Rotherham1997). Implementing FSC guidelines can mean serious capital investments for mills. The benefits for retailers, however, are far more concrete, especially as NGO's take action against companies they view as ecologically irresponsible. Unlike primary producers, which for the most part leave the marketing to manufacturers and retailers further down the supply chain, retailers actively market their certified products. The tangible economic benefits to having a certified label on products have yet to be established, so processors remain sceptical about the necessity of COC certification and label and their ability SFM (Rotherham1997).

The proliferation of different labels has the tendency to create confusion in the marketplace. If every label is considered representative of SFM, then the whole practice of labeling will lose its meaning (Teisl and Roe 2000). Also, not every forest product that is certified by a specific certification agency is labeled with that agency's logo. Teisl and Roe (2000) recommend that the multiple certification organizations coordinate their education and awareness campaigns to produce unified labels that provide explicit information on forestry practices, because confusion could seriously constrain consumer demand.

Sedjo and Swallow (2000) point out even greater undesirable side effects associated with eco-labeling. Voluntary eco-labeling would cause the average price of wood to increase if certification is costly and/or there is an increase in consumer demand. This would lead to ample price increases of certified wood. This may bring about a net shift towards increased consumer demand for non-certified wood or other products, leading to land reallocated in favour of intensive, low cost harvest. Thus the ecological impacts driven by economic interactions may actually oppose the improvements and certification-induced gains on existing certified forests (Sedjo and Swallow, 2000).

The different supply chain verification schemes of the three predominant certification bodies in North America reflect their fundamental differences, and will have a profound impact on how they will develop within our increasingly brand oriented free market economy. The actual ramifications of these differences are far from certain.

5.1.5. Survey Respondents' Knowledge of Certification Systems

Through our comparison of the various certification systems we established that the FSC's chain of custody system is the most credible and verifiable. Further, data from our survey revealed that the FSC is perceived as more credible to environmental groups than the CSA or SFI. When our respondents were asked why they chose FSC COC certification they sited a variety of reasons, most of which were congruent with our comparative findings (Figure 5.1.2). The most prominent answers were that the FSC is most stringent (40%), it is the most established (31%), customers demand it (23%), and it is internationally recognized (21%). Only 13 percent of respondents selected the FSC because they were unaware of comparable certification systems.
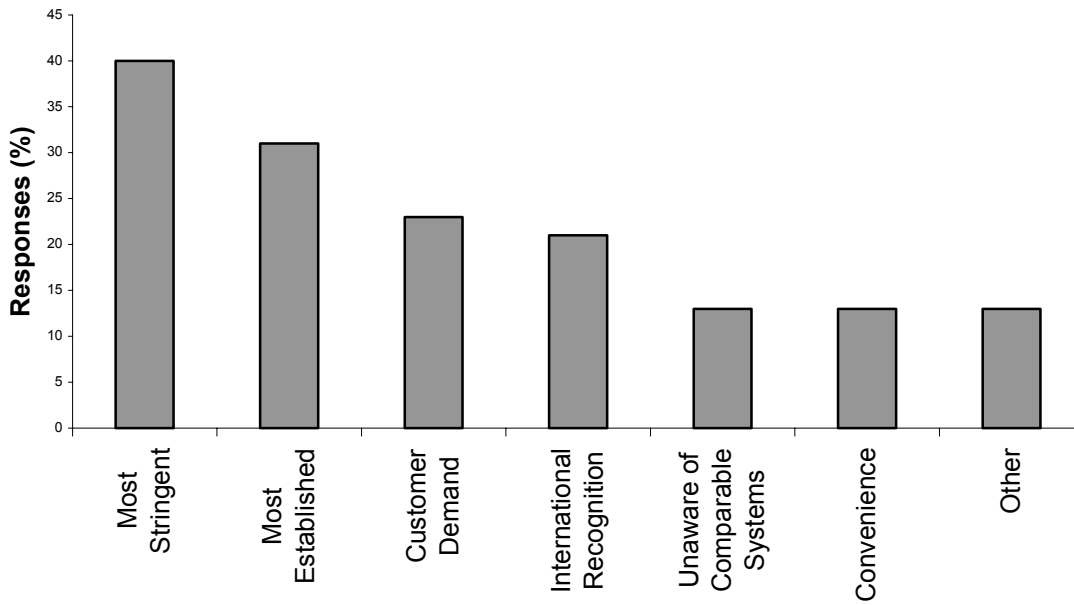
Figure 5.1.2 Reasons for pursuing FSC certification (n=48 with multiple answers possible)

On the surface, respondents seemed to be well aware of the comparable certification systems which are active in North America. 81 percent of respondents were aware of the parallel certification systems run by the CSA and SFI. The level of their knowledge of these systems, however, is less certain. When asked whether they would support a harmonizing of chain of custody standards (n=46), 74 percent responded yes. This response was somewhat unexpected as FSC COC certified organizations would likely be diluting their credibility and compromising their standards for sustainable forestry through harmonization. Perhaps this can be explained by the prospect that harmonization would help to open the market for sustainable wood products and increase a presently inadequate supply.

Figure 5.1.3 Respondents' awareness of parallel certification systems (n=46)

5.1.6. Views on Harmonization

According to our research, most (74% of) FSC COC certificate holders would support a harmonization of supply chain verification standards by the active certification systems. A harmonization of standards will likely dilute more stringent certification systems, such as the FSC's, while benefiting less rigorous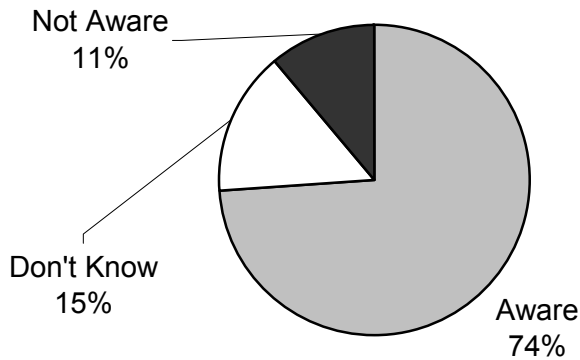 systems with an improved reputation. On the other hand, a harmonized approach to supply chain verification standards may be able to mitigate many of the apprehensions and concerns over the long term viability of the various certification systems, and act to promote certification as a whole. The feasibility and implications of harmonization are still very questionable, but it is interesting to note that the support for this type of initiative is high among FSC COC certificate holders

5.2. Motivations for Seeking Certification
Question 2: What are the motivations for becoming COC certified?

Hypothesis: Main motivations include gaining market access, appeasing NGO pressures and satisfying consumer demand.

Forest certification is still in its infancy. FSC COC certification only began in 1993, and the majority of organizations have received their certification since the year 2000 (Appendix III). In order to better understand the recent emergence of forest certification we looked at the motivations for organizations to become certified. Particularly, we were interested to see if the motivations to become certified were market based. The findings from our survey, shown in Figure 5.2.1, directly addressed this issue. Our data demonstrates that the main motivation to become certified is market access. 75 percent of respondents were motivated by market access, compared to 33 percent by environmental concern, and 15 percent by public pressure (ie. pressure from environmental NGOs or the general public). These findings were consistent with our hypothesis. Earlier studies conducted by Humphries et al. (2001) and Carter and Merry (1998), however, did not find market access to be as dominant a motivation for pursuing certification.
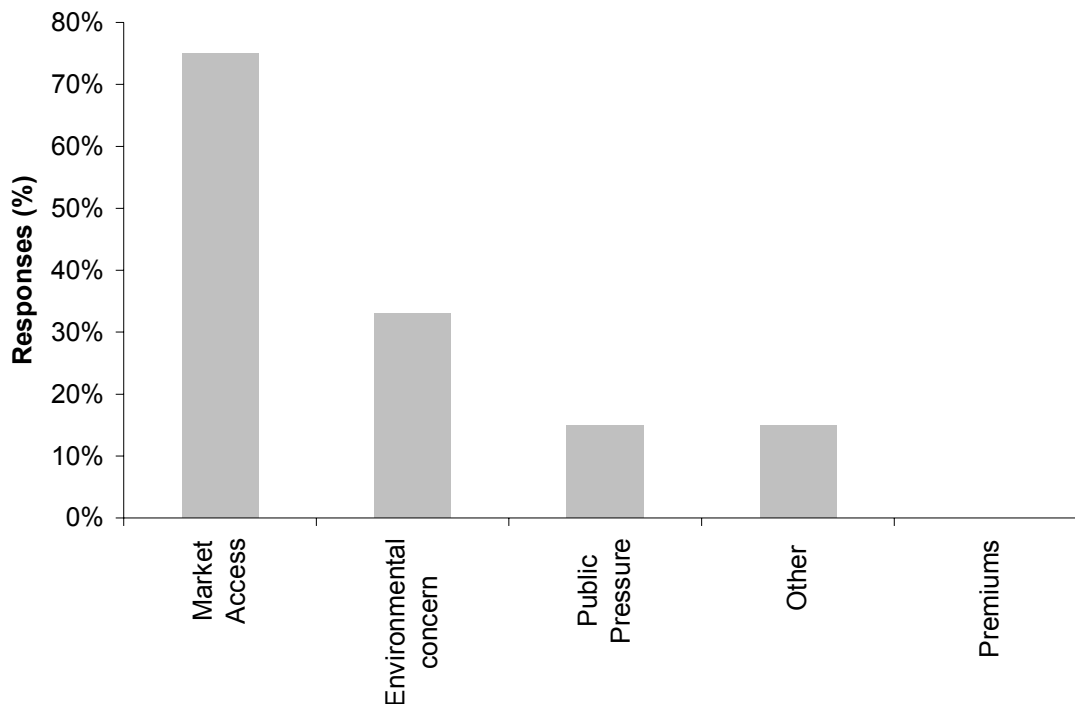
Figure 5.2.1 Motivations for becoming COC certified (n = 48 with multiple answers possible)

What is it about market access that makes it such an important motivation in becoming certified? The data collected in our survey suggests that this trend is related to the desire to secure present market relations. The general idea is that even though companies may not foresee immediate benefits from certification, they feel it is still worthwhile to comply with certified standards in order to retain existing buyers, maintain their competitive edge and secure their public image. This idea will be discussed in greater detail in section 5.4.

The two most popular responses displayed in Figure 5.2.1 are interesting because they demonstrate the different types of motivations an organization may have to become certified. Our hypothesis did not account for the importance of environmental concern as a motivation for becoming certified. This reflects the widespread bias that organizations are only interested in forest certification as a market-based mechanism. However, similar studies have also found a surprising commitment to environmental issues by certified companies. Humphries et al. (2001) found 77 percent of their respondents to have entered the certification market for environmental reasons.

In order to further assess the interest that certified organizations have in environmental issues, our respondents were asked if they were involved in any other environmental initiatives. Approximately 33 percent of the organizations interviewed responded that they took part in other environmental programs, and of these organizations 75 percent stated environmental concern as their motivation for becoming certified. The data here suggests two things: firstly environmental concern was underestimated as a motivation for becoming certified, and secondly some

organizations which do not become certified for environmental reasons may still be involved with other environmental initiatives.

Another interesting result seen in this graph is that none of our respondents mentioned premiums as a motivating factor for becoming certified. The absence of premiums within the certified wood product industry has been documented in previous market studies of certification. Humphries et al (2001) found that none of their respondents were motivated to become certified by increased profits.

In order to gain a greater understanding of the importance of market access within the FSC COC certification system, we cross-referenced the 36 companies that responded market access as their motivation for certification with their benefits from certification. Our goal was to reveal the extent to which the motivations for certification are realized as benefits. Of the 36 organizations that became certified for market access, 47 percent received the benefit of increased/maintained market access. This response rate illustrates that the main benefit received by companies does in fact correspond to their primary motivating factor. Another interesting finding from this exercise was that 14 percent of those organizations that were motivated by market access do not claim to receive any benefits from certification.
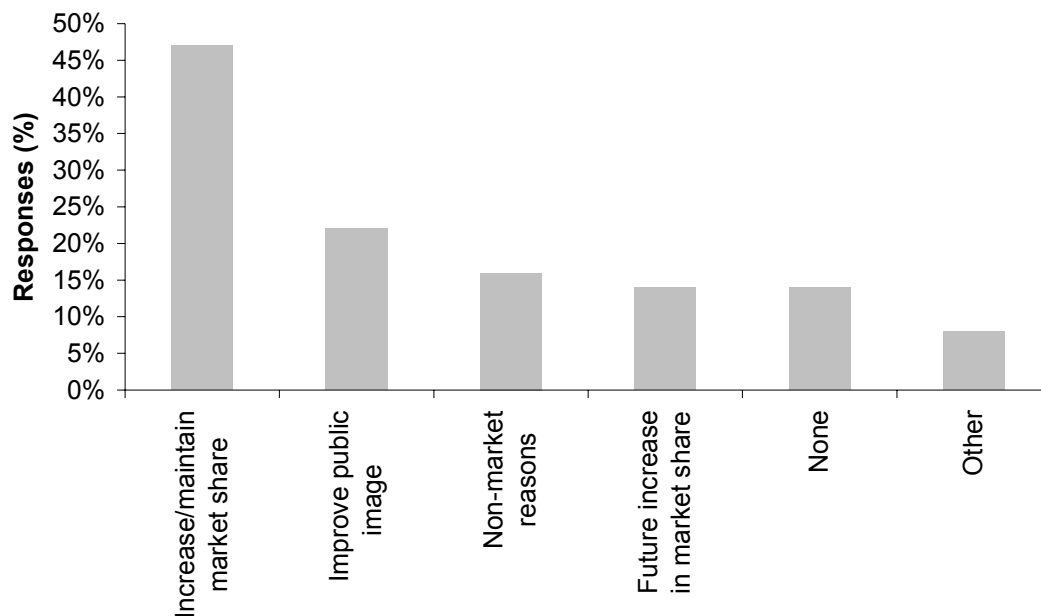
Figure 5.2.2 Benefits received by companies who responded market access as a motivation to becoming certified (n=36 with multiple answers possible)

5.3. Effects of Certification

Research Question 3: How are North American COC certified companies affected by their certification?

Hypotheses:
i) The majority of companies in North America have not yet recuperated the costs associated with obtaining an FSC COC certificate.
ii) Furthermore, this is due to an inadequate supply of certified wood products and the absence of premiums on these products

5.3.1 Certification Costs

Examining the nature of the costs incurred by certified companies provides insight into some of the ways companies have been affected by the certification process. Figure 5.3.1 provides the amounts companies have invested in certification. Our data reveals that most companies interviewed have invested between 1001 and 100,000 US dollars.

Figure 5.3.1 Amount invested in certification by interviewed companies (n=41)

These costs, can largely be attributed to the price of certification itself, the yearly auditing required and to various company specific internal adjustments. Figure 5.3.2 reflects company

responses regarding the nature of their internal adjustments. The two most common internal adjustments reported were record kee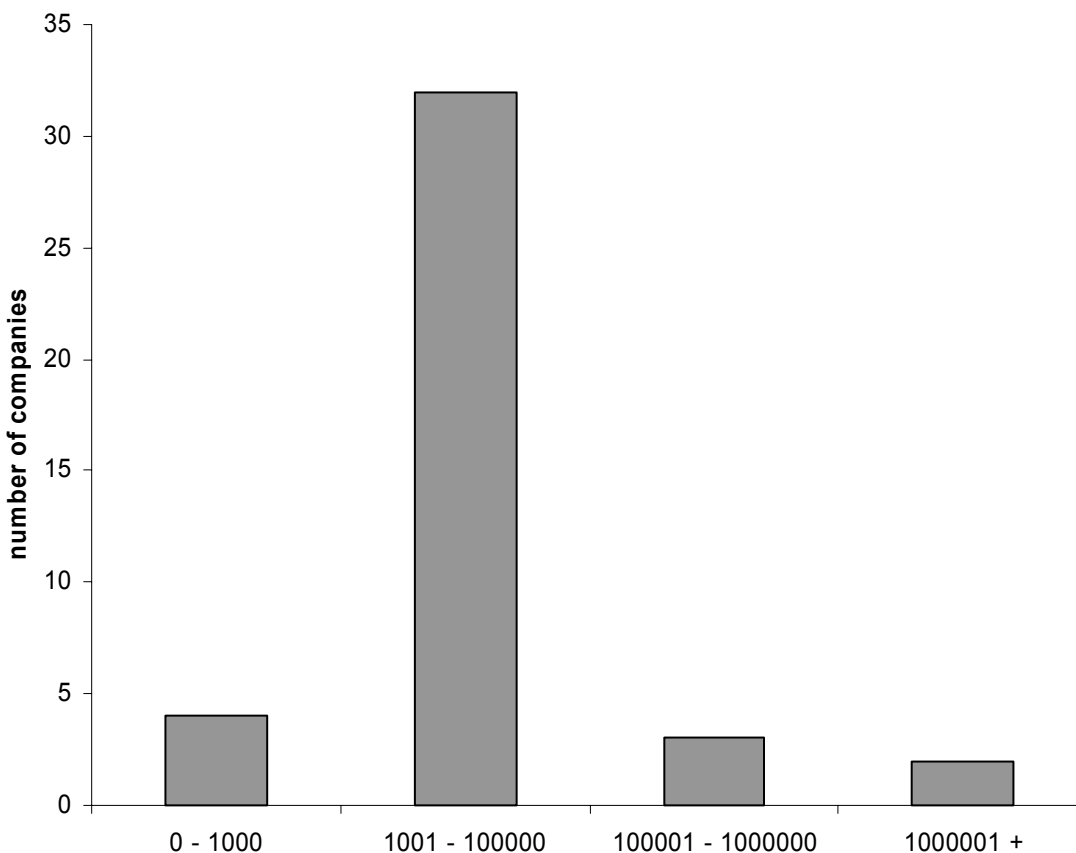ping and product handling. Such adjustments reflect the FSC's requirements to keep certified products separate from non-certified products and to maintain detailed accounts of such products. Surprisingly, 11 percent of interviewed companies responded that they had made no significant internal adjustments for certification. It can be noted that some of these companies mentioned already having adequate product handling and record keeping systems in place before certification. Similarly, companies already certified under ISO or SFI for example already had the necessary procedures in place, and were thus not required to undergo any significant changes.
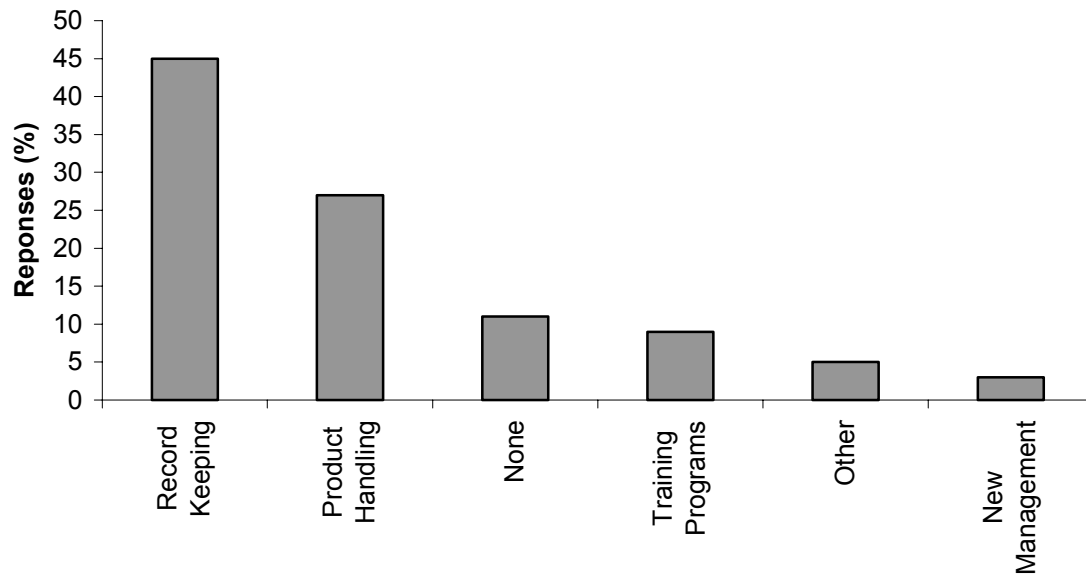
Figure 5.3.2 Internal adjustments undergone by companies (n=48 with multiple answers possible)

5.3.2 Cost Recuperation

Having examined the nature of certification costs, it becomes interesting to investigate whether or not companies have recuperated these costs. In fact, our analysis found that 76 percent of companies had not yet recuperated the costs of their certification (Figure 5.3.3). The hypothesis pertaining to our third research question is thus supported by our data, as the majority of companies holding FSC COC certificates appear to have not yet recuperated the costs of their certification.
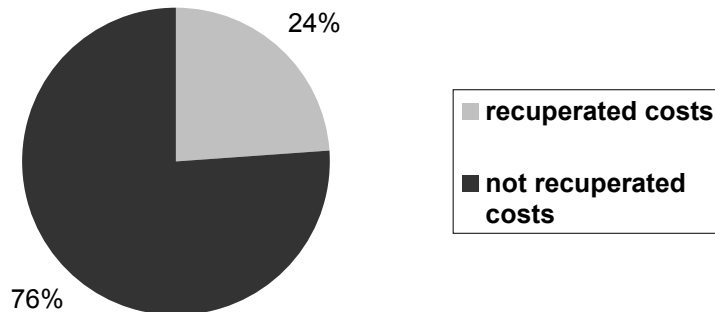
Figure 5.3.3 Percent of companies who have/have not recuperated the costs of certification (n = 42)

Such findings were expected, given the relative youth of certification and the corresponding fact that most companies had only just recently become certified. Among the companies interviewed, the longest FSC membership was 8 years old. Such was an exception however, as 75 percent of our companies had acquired their certification during or prior to the year 2000. Given the recent nature of certification, our data was unable to test for an association between the number of years a company has been certified, and whether or not they have recuperated their costs. Such information might be available in a few more years when more companies may have recuperated their costs.

Other reasons explaining why companies had not yet recuperated their costs might include the fact that in general, companies are only selling a very small proportion of certified wood products. Figure 5.3.4 illustrates that 77 percent of companies that plan to renew their certification have less than 20 percent in certified sales. Furthermore, 27 percent of all companies (n=30) are currently selling no certified wood products. Addressing whether this is due to a lack of demand or supply is discussed in section 5.4 regarding chain of custody dynamics.
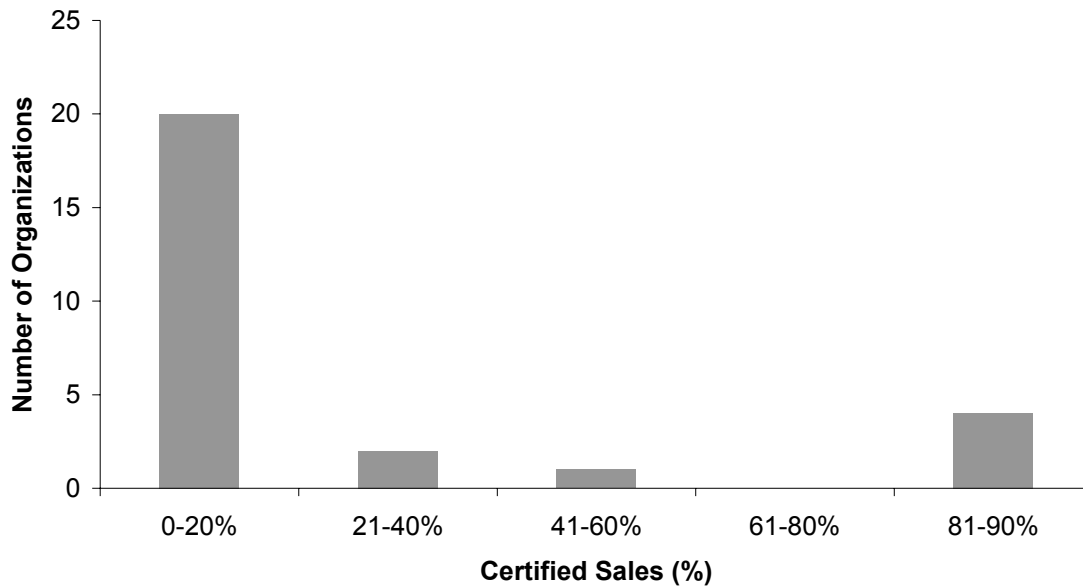
Figure 5.3.4 Percentage of certified sales of those organizations that plan to renew (n=27)

A third explanation as to why companies are not recuperating their costs of certification lies perhaps in the fact that most companies are not receiving premiums from the sales of their certified wood products. Figure 5.3.5 in fact reflects that 80 percent of companies have not received a premium on their certified FSC COC products. A closer look into the topic of premiums finds that of the 48 companies surveyed only 4 percent of them receive a premium above 15 percent (Figure 5.3.6). Thus, not only are premiums rare but the existing premiums are also very low. This finding is consistent with much of the literature. In particular, Humphries et al. (2001) and Carter and Merry (1998) found a large majority of their respondents to be receiving no premiums; 71 percent and 63 percent respectively.

We had hypothesized that the reason the majority of companies have not yet recuperated the costs of their certifications was due to an inadequate supply of certified wood products and the absence of a premium on these products. While we cannot directly assert the actual reasons why companies are not recuperating their costs, it is illuminating that premiums remain insignificant and certified sales are low. The question of supply adequacy will be further addressed in section 5.4.
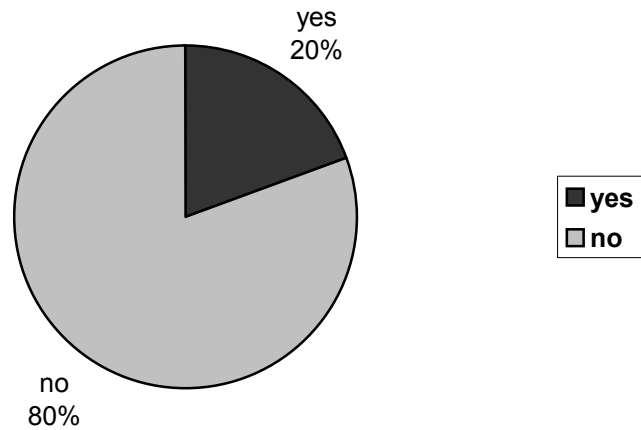
Figure 5.3.5 Percent of companies that receive a premium from certified products (n = 46)
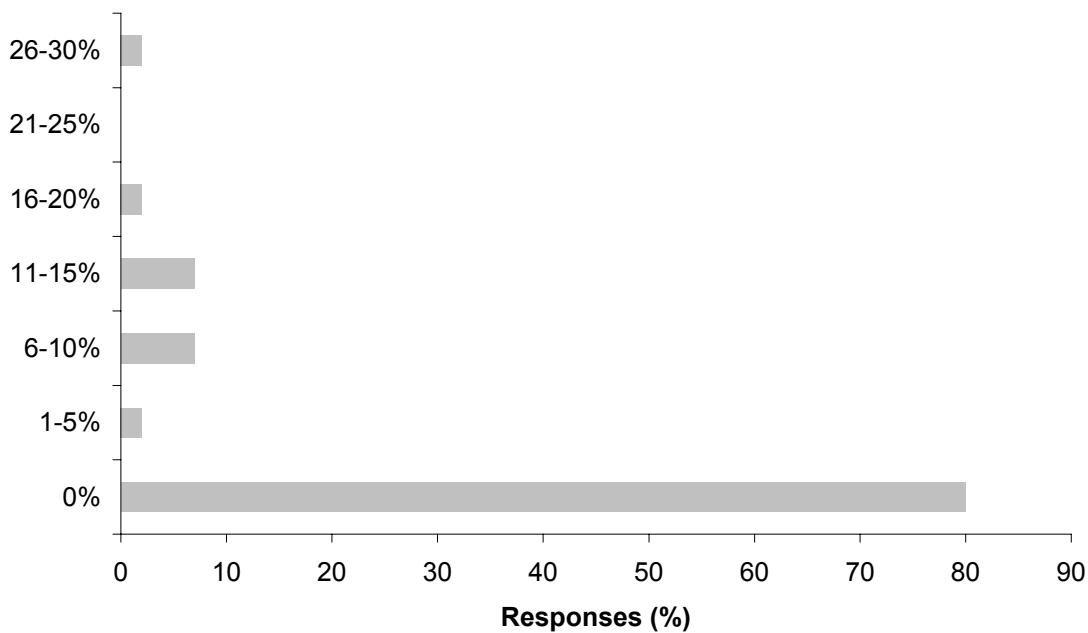
Figure 5.3.6 Size of premium received by companies (n = 46)

5.3.3 Benefits of Certification

Given that most companies are incurring significant costs through their certification, and that most have yet to recuperate these costs, the question arises as to why these companies are renewing their certification. Looking into the reported benefits of certification helps to answer this question. The types of benefits most commonly reported were: retaining market access

(42%), improving public image (31%), non-market benefits (17%), and future market access (13%) (Figure 5.3.7). Only one respondent claimed that certification increased profits, a result that is consistent with our data on premiums.
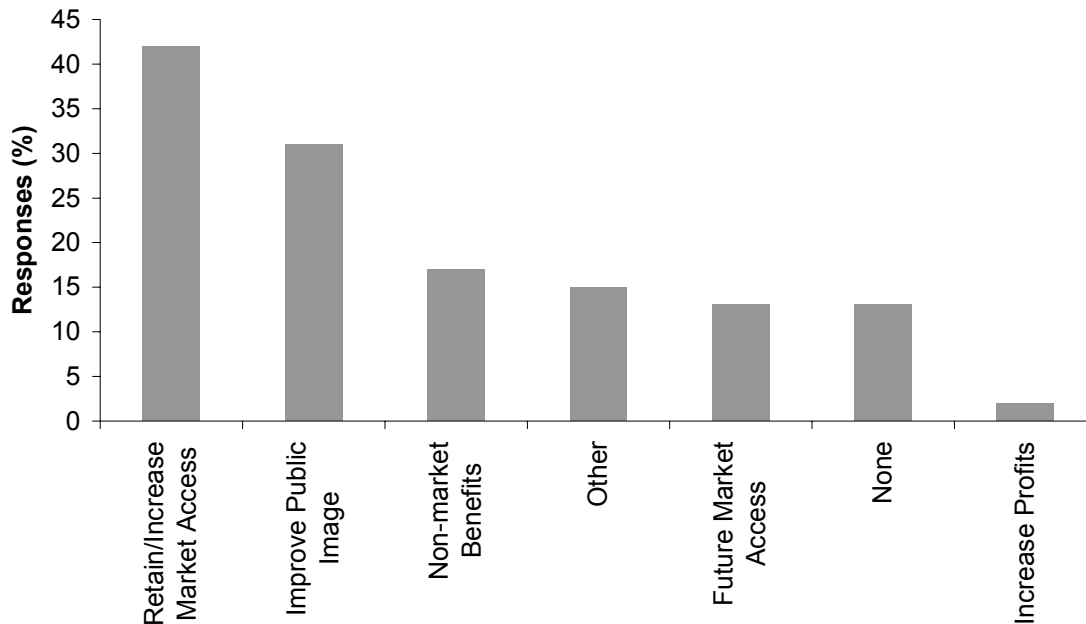
Figure 5.3.7 Benefits received by companies from certification (n=48 with multiple answers possible)

The presence of market access (retained or future) as a reported benefit was a particularly significant finding, as it was also the most important motivation behind attaining certification. As previously touched upon, none of our respondents mentioned premiums as a motivation for becoming certified. Another interesting finding was the prevalence of non-market benefits that were received (17%). These include aesthetic benefits or benefits arising from supporting the local community. This is noteworthy given that forest certification was established as a market mechanism to promote sustainable forestry. However, as our data suggests, benefits unrelated to the market appear to play a key role in determining whether certain organizations renew their certification.

Benefits in fact appear to be intricately tied to whether or not companies will renew their certification. Our survey revealed that 82 percent of companies plan to renew their certificate when it expires. Also, 88 percent of companies report receiving benefits from certification. Figure 5.3.8 examines the results of cross referencing data on received benefits with data pertaining to renewal. It was found that 88 percent of those organizations that receive benefits from certification also plan to renew their certification when it expires. Our data thus suggests that the benefits derived from certification are extremely important to the future of certification even though they may not currently be fulfilling some of the more expected market based benefits.

| | | Benefits | | |
		YES	NO	TOTAL
Renewal	YES	37	2	39
	NO/DON'T KNOW	5	4	9
	TOTAL	42	6	48

Figure 5.3.8 Renewal of Certification versus benefits derived from certification (n=48).

5.4. Dynamics Within the Supply Chain

Question 4: What are the dynamics within the FSC supply chain and how do they affect the different players in the chain of custody

Hypotheses:
i) Organization size is not a limiting factor in acquiring FSC COC certification.
ii) Supply of certified wood products in the supply chain is inadequate
iii) COC processes are mainly driven by buyer organizations that are responding to consumer demand.

5.4.1 Organization size is not a limiting factor in acquiring FSC COC certification

In examining the dynamics that exist within FSC's chain of custody, it is first essential to examine the nature of the players involved. To do this we assessed the geographic location of the different companies, the type of products they sell, and finally the size of their organization. In terms of location, it should be reminded that of the responding companies, 83 percent of them were chosen from the United States, with the remaining in Canada. Companies were categorized according to the map represented by Figure 5.4.2, with dividing lines being extended northward in order to place Canadian companies. The portion of respondents located in the west was found to be the same as the portion located in the northeast, at 33 percent. Similarly, the portion of respondents located in the south was equal to that of those located in the north central, at 17 percent (Figure 5.4.1). This is surprising, given previous studies (Humphries et al., 2001; Carter and Merry, 1998), which found a large majority of companies to be located in the west (47% and 63% respectively). In terms of wood products, lumber and architectural products were found to occupy the largest share, with respective values of 28 and 26 percent (n=47) (Figure 5.4.3). Information concerning product profile was obtained from the FSC database. Architectural products included doors, moldings and siding. All other categories of wood products accounted for a surprisingly similar proportion, ranging from 9 to 13 percent. The latter includes furniture, plywood, veneer, specialty products, logs, brokerage, flooring and other products. While lumber was also the most commonly found product in the previously mentioned studies (Humphries et al., 2001; Carter and Merry, 1998), flooring was a significant second (with 41% and 27% respectively), whereas in our study it is placed last at 9 percent.

In order to assess the various sizes of our respondents' organizations, we chose to compare their current total sales volumes. Current sales were widely varied, ranging between total sale volumes of 65 thousand and 2.5 billion US dollars. A significant number of companies (31%) were unwilling to divulge information on sales figures, and 8 percent did not have access to the actual numbers. From the 29 companies that did respond, three had sales volumes under 1 million, with the majority (76%) of companies having between 1 and 100 million (Figure 5.4.4). In order to accurately test our hypothesis, that size does limit whether or not a company becomes certified, we would need similar figures (total sales volumes) for the wood products industry as a whole. Although we do not have such numbers and can therefore not conclude upon the role of company size in becoming certified, our data does suggest that certification is not directly a function of size. For if it were, the slope pertaining to Figure 5.4.4 would grow in an exponential fashion. This is not the case, as it draws more of a bell-curve function. Furthermore, the three smallest companies that we interviewed were all planning to renew their certificate, suggesting that once certified, company size was not a limiting factor. Finally, it is informative to look into the studies of Humphries et al. (2001) and Carter and Merry (1998), who chose to look at the number of employees in the interviewed companies as an indicator of company size. The studies found that companies with 1 to 10 employees were the most common (with 32% and 48% respectively) while second was a close tie for companies which had 11 to 25 employees (with 23% and 32%) and companies with over 100 employees (with 18% and 20%). Both ends of the spectrum thus seem to be viable, supporting our first hypothesis that size is was not a limiting factor in acquiring FSC COC certification. To reiterate however, while this hypothesis was not rejected, it was neither completely confirmed, requiring additional data on the wood products industry as a whole.

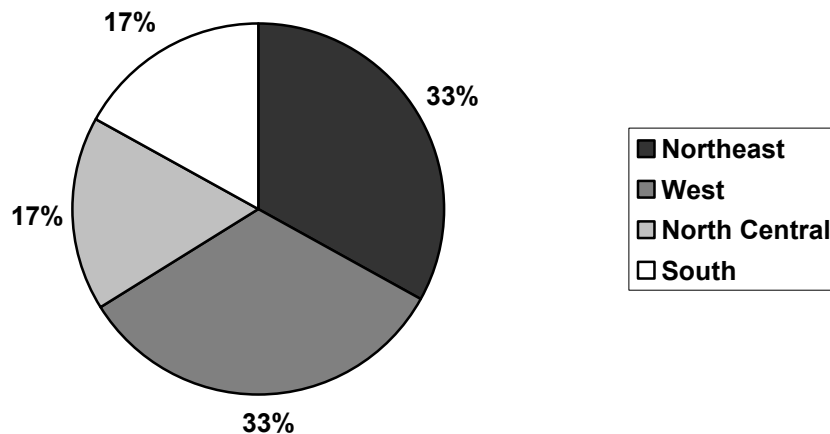**Figure 5.4.1 Company location (n=48)**

Figure 5.4.2 Geographic categories for locating companies (dividing lines extended northward for Canadian companies)
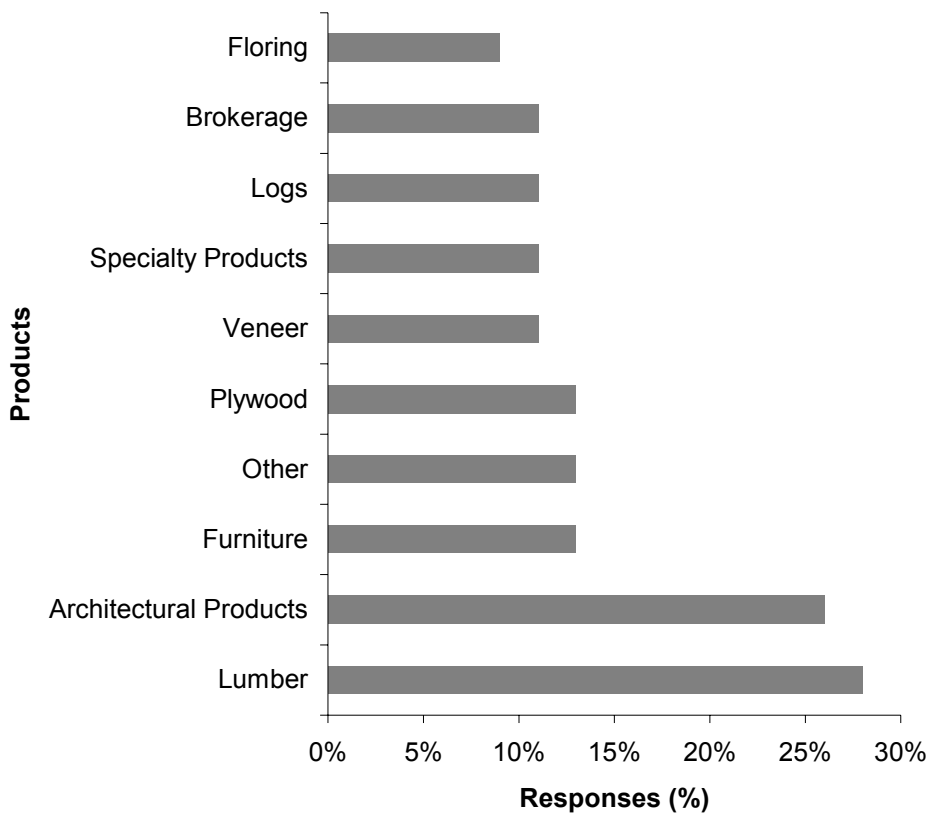

Figure 5.4.3 Responses on product profile (n=48 with multiple responses possible)
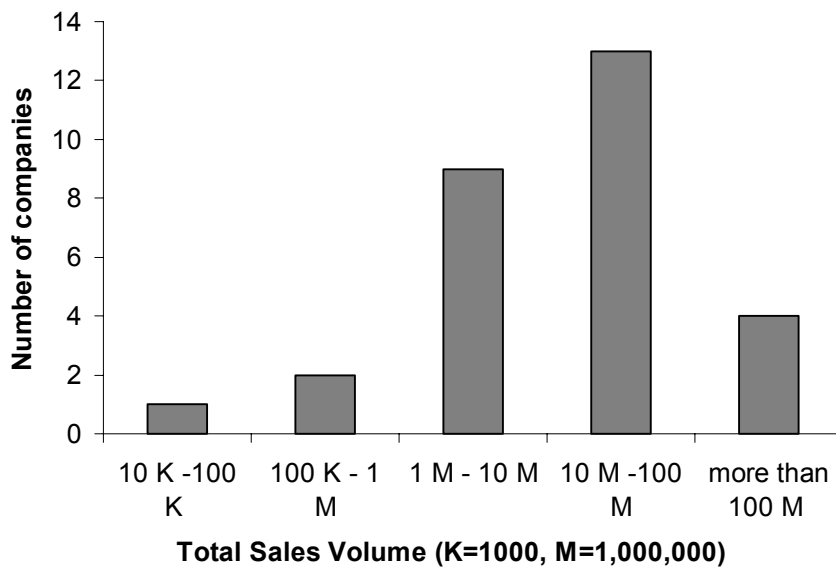
Total Sales Volume (K=1000, M=1,000,000)

Figure 5.4.4. Current total company sales in US dollars (n=29)

5.4.2 Supply of certified wood products in the supply chain is inadequate

In reflection of our own findings, the studies by Humphries et al. (2001) and Carter and Merry (1998) found consistent supply to be the most cited problematic issue encountered in the procurement of certified wood. In our research, 60 percent of responding companies replied that the current supply of certified wood products did not meet their organization's demand (n=47) (see first bar in Figure 5.4.5). Seeking to establish whether such supply problems were related to the nature of companies, we cross referenced data on supply adequacy with data pertaining to geographic location and size.

When looking at the influence of geography on the adequacy of supply, we found that the south tended to have a marginally higher percentage of respondents with an adequate supply (50%), following in descending order with the northeast (47%), the west (38%) and the north central (25%) (Figure 5.4.6). Such findings however are not statistically significant enough to infer the existence of an association between geographic location and whether or not companies have an adequate or inadequate supply. Similarly, cross referencing adequacy of supply with the size of companies (n=27) does not yield any significant trends (Figure 5.4.7). All size categories ranging from 10 thousand to 10 million appear to have an equal likelihood of presenting supply shortages. One interesting finding is that the four largest respondents (with over 100 million dollars in sales volumes) all have insufficient supply. A possible explanation might be that once the larger companies have undergone getting certified, they have the capacity to process a large amount of certified wood products. Therefore, large companies may be more likely to run into supply constraints with regards to certified wood products. Our data thus suggests that supply shortages are not a function of either company location or size.

A second element in understanding the issue of supply consistency is further revealed by the second bar in Figure 5.4.5. Although 60 percent of all COC companies mentioned having an inadequate supply of certified wood, 63 percent (n=8) of FM certificate holders answered that they had enough supply to meet the demands of their buyers. The question thus arises: How does one explain this apparent contradiction? While none of our data is able to further address this discrepancy, one hypothesis is that COC/FM companies are mainly supplying themselves and their local community, and do not communicate with other COC holders who find themselves in need of certified wood. In such a case, the problem thus becomes one of geographic location and communication. Such a scenario finds support in the study by Humphries et al. (2001), which found that 77 percent of respondent purchased certified products directly from domestic suppliers.

This suggested lack of communication between FM and COC certificate holders, in fact would seem to pertain to all players within the supply chain. Figure 5.4.7 in fact depicts a situation where there appears to be little change in the structure of the players involved in a given supply chain. In fact, 81 percent (n=47) of companies have the same buyers as they did prior to certification, and 72 percent (n=43) of companies have the same suppliers as they did prior to certification. While our second hypothesis regarding the limited supply of certified wood products appears to be confirmed, new questions addressing the particularities of FM companies arise.
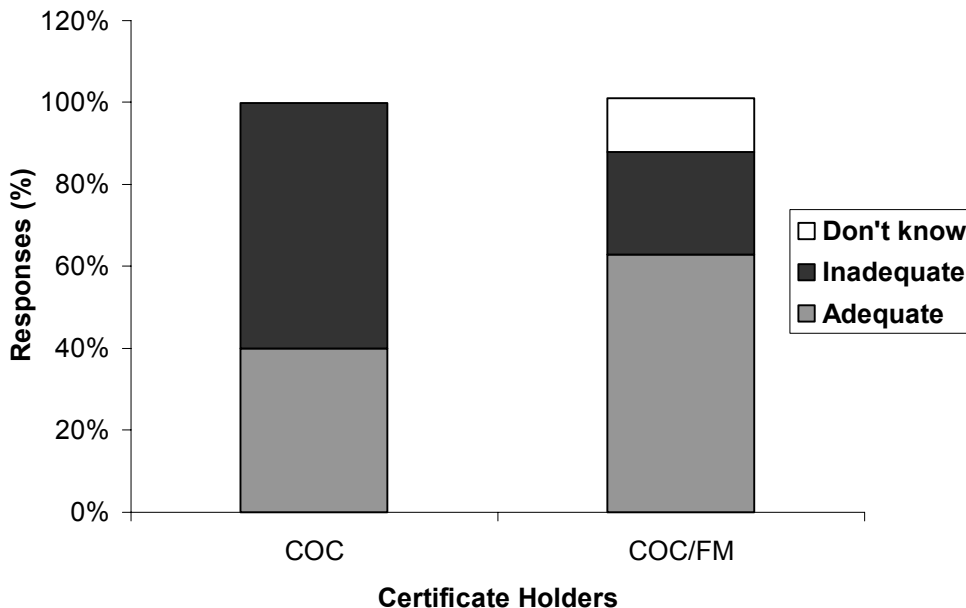
Figure 5.4.5 Adequacy of supply in certified wood products for all COC certificate holders (n=47) and for COC/FM certificate holders (n=8)
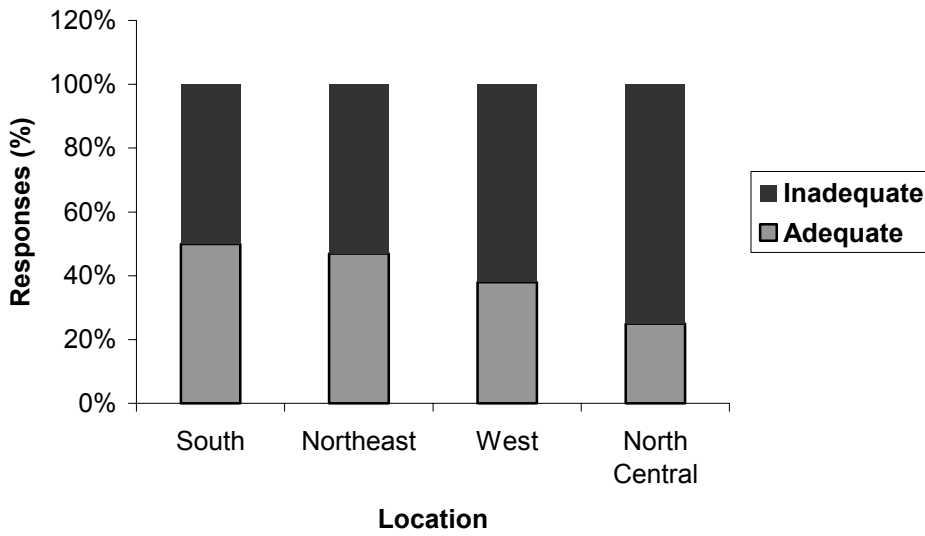
Figure 5.4.6 Supply adequacy according to geographic location (n=47)
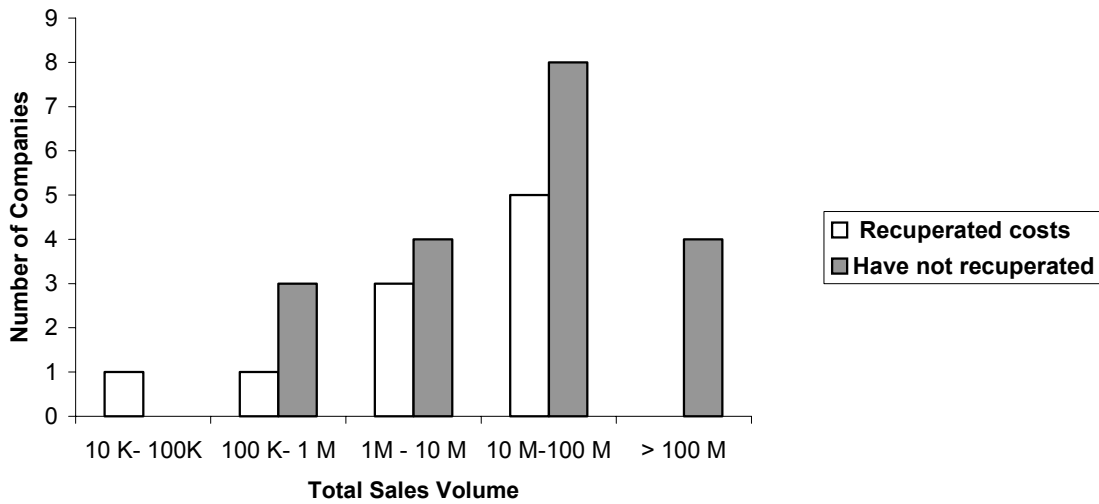
Figure 5.4.7 Cost recuperation relative to total sales volume (n=29)
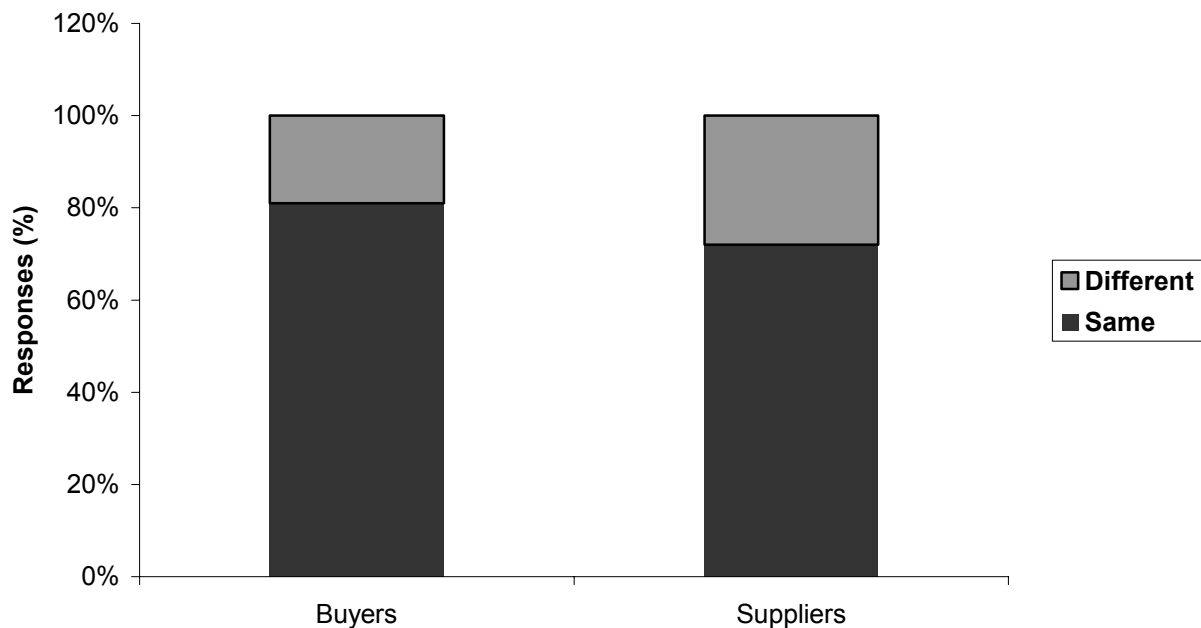
Figure 5.4.8 Respondents currently possessing the same buyers (n=47) or suppliers (n=43) as they did prior to certification

5.4.3 Hypothesis 3: COC processes are mainly driven by buyer organizations that are responding to consumer demand

The general deficit in supply encountered by COC certificate holders, previously discussed, reflects the demand driven nature of the certified wood products industry. This is also supported by the significant number of respondents (75%) that mentioned market access as a reason for becoming certified. Market access corresponds to companies who were responding to the demand for certified wood products of a particular buyer. This buyer was most often one the company had previously been selling to, a dynamic which has been discussed in terms of there being little change in buyer/supplier relations after certification (Figure 5.4.8). As our study did not focus on the retail end of sales, we cannot fully answer our third hypothesis. Our data thus enables us to conclude on the first part of our third hypothesis, in that COC processes appear to be mainly driven by buyer organizations, which are driving their existing suppliers to become certified. We were unable to determine however whether or not this buyer driven process was directly a result of consumer demand, as our study did not focus on the factors influencing retail organizations. Our third hypothesis was thus partially confirmed.

5.4.4 Summary of Supply Chain Dynamics

Companies appear to be certifying in order to retain buyers that are requesting certified wood products. Such companies are in turn, encouraging their suppliers to become certified. In theory, such a "chain reaction" should work its way up the chain, all the way to forest management companies. In practice however, forest management companies would appear not to be responding to this apparent increase in demand, given the supply shortage of certified wood. Although explaining such a phenomenon would require examining both certified and non certified forest management companies, and is beyond the scope of our research, we will propose three potential hypotheses to address this question. The first concerns certified FM holders, and involves the already discussed possibility that they are not aware of this existing demand. Second, is the possibility that forest management companies are reluctant to become certified, as they are not receiving premiums on their wood while incurring the largest costs of any players within the chain. 88 percent of the FM companies we interviewed were in fact receiving no premium. Finally, it can be hypothesized that the more complex and lengthy nature involved in certifying a forest management company, as opposed to a middle of the chain processor, creates a lag time for forest management companies to respond to increased demand in the processing sector. This is especially relevant given the relative youth of certification. The coming years will thus allow for a clearer understanding of the factors influencing forest management companies.

6. Discussion and Conclusions

6.1 New Forms of Certification

Performance based certification systems, such as the FSC, provide a more credible form of certification to environmentally conscious buyers. The FSC approach to certification is more rigorous and has a more demanding supply chain verification system. The market penetration of performance based systems, however, relies upon a great enough demand for wood products to provide sufficient incentives to producers. Our research demonstrates that the demand for FSC certified wood products does not seem to be generating the market incentives it was expected to in theory. Most organizations do not receive a premium for FSC certified wood products, have not recuperated their costs from certification, and do not have a significant percent of certified sales.

The FSC is apparently aware of this trend and has launched a series of ad campaigns to reinforce their brand name and increase the demand for FSC certified wood products from large retailers. Home Depot, for example, has enough clout as a buyer to ensure that their suppliers become COC certified, even when they themselves are not. The future impact of box stores, such as Home Depot, however is not well understood. Information is extremely difficult to extract from large retailers and more research is required.

FSC COC certification is most effectively applied to value added goods, such as hardwood furniture and molding, manufactured by smaller companies which are able to place themselves into the chain of custody relatively easily. These firms require a comparatively small amount of timber for high quality products and are conducive to what the FSC describes as sustainable

forestry. The FSC system is somewhat more difficult to apply to larger and more intensive branches of the industry, such as pulp production, where there is no strong demand from either buyers or end consumers for products from well managed forests. This lack of demand effectively excludes the FSC from having a notable impact on the most destructive form of North American forestry. If the FSC wishes to affect the sustainability of North American forestry as a whole, it should strongly consider and research the possibility of becoming applicable to the softwood and pulp and paper industries.

6.2 The Future of FSC COC

The FSC is still in its infancy and the coming years will be crucial in determining its future success. Our research indicates that the FSC does have a bright future. FSC COC certification has been adopted by a growing number of North American organizations since 1994 and our data is consistent with this trend; 75 percent of the organizations interviewed received their certification since the year 2000 (Appendix III). Further, 82 percent of our interviewees plan to renew their certification when it expires. This trend is somewhat puzzling: FSC COC certification seems to be gaining popularity despite the lack of market incentives. One explanation for this is that FSC COC certification does provide other benefits (Figure 5.3.7) that have engendered confidence among certificate holders. Furthermore, 88 percent of our interviewees that received benefits from certification also plan to renew their certification (Figure 5.3.8). Our data suggests that certified organizations are remaining positive about the future of FSC COC certification because they are retaining their market share, improving their public image, receiving important non-market benefits, and ensuring they will be competitive in the future market.

The next step for the various certification systems will be important in determining their future within the forestry industry. The most likely strategy for the FSC will be to reinforce its status as the most prominent international third party certification scheme through its logo, in the hopes that this will lead to widespread acceptance among environmentally sensitive consumers. Alternatively, the FSC may attempt to integrate other certification programs into their system, thus harmonizing chain of custody standards. The best case scenario for the FSC is one in which their label becomes universally accepted as the standard for bona fide products originating from exceptionally managed forests.

6.3 Issues and Recommendations for the FSC

One of the most important issues the FSC must address if it is to be successful is the inadequacy of the certified wood supply. Our data suggests that there is a general insufficiency of supply throughout the chain of custody, irrespective of geographic location and the size of the organization. Such inadequate supply, however, is likely experienced in different forms. Smaller organizations, for example, may have an inadequate supply because the supply does not exist locally or regionally, whereas larger organizations, which are able to import wood from farther away, may simply be unable to find certified wood products in the quantity that they desire. It is interesting to note, however, that FSC certified forest managers responded to having sufficient supply to meet their buyers' demand. This apparent contradiction in the supply of

certified wood within the chain of custody demands further attention and is a worthwhile topic for future research.

Findings from our research suggest that the FSC might be currently underutilizing the powerful potential of its chain of custody mechanism. The FSC is in the unique position of being able to further expand the market's capacity to produce guaranteed certified wood products. By taking advantage of their existing database, the FSC could further establish a supply information network. The current database is in fact limited, as it does not facilitate communication between buyers and suppliers of certified wood products. It would thus appear worthwhile for the FSC to develop this database to include more relevant information and increase awareness of its existence among certificate holders. Once in place this database could provide important information on what certified wood products are available, where they are located, and at what price. This might help address the apparent contradiction existing between FM holders who appear to have an excess of certified wood available, and COC holders farther up the chain who point to an inadequate supply.

6.4 General Conclusions

Our research suggests that the FSC's chain of custody system is currently the most credible and verifiable; its participants are largely motivated by wanting to maintain their market access; its costs have not been recuperated; its supply of certified wood is inadequate; and its certificate holders remain optimistic despite limited market incentives such as premiums. In addition, it was found that the majority of FSC COC certificate holders are aware of parallel certification systems and would support a harmonizing of their different chain of custody standards.

The primary goal of the FSC is to provide a guarantee that a wood product has come from a sustainably managed forest, according to agreed social, economic and environmental standards (FSC Doc. 1.2, 2000). In essence, they seek to recognize sustainable forestry through voluntary performance based certification. As a voluntary system the FSC ensures that its goals will not be compromised and that its program will not undermine government regulations. The FSC's certification system is an important first step towards achieving sustainable forestry practices, especially in North America where forestry has such a destructive legacy. However it must be acknowledged, that the potential for forest certification to move beyond merely producing sustainable outputs to achieving long-term sustainability, will only fully be realized once such measures are coupled with drastic new consumption patterns.

Appendix I
Questionnaire

1. Is this the first FSC COC certificate that your company has acquired?
2. What motivated your organization to become COC certified?
3. Why did your organization choose to apply for an FSC certificate as opposed to those offered by other certification bodies?
4. Are you aware of parallel certification systems and labeling programs run by SFI and CSA?
5. Do you regard the CSA and SFI programs as credible: a) to you? b) to the market place? c) to environmental groups?
6. Would you support a harmonizing of chain of custody standards that would allow your company to sell certified products from multiple forest certification programs?
7. How much money have you invested in certification?
8. How long has it taken you to recuperate these costs?
9. What have been the internal adjustments made by your organization to become FSC COC certified?
10. What was your organization's total sales volume in the year prior to certification?
11. What was your organization's total sales volume after one year of certification?
12. What is the current total sales volume?
13. What was your organization's sales volume of certified wood products after one year of certification?
14. What is the current sales volume of certified wood products?
15. By what percentage have certified wood products increased or decreased your share of the market for the type of products you sell?
16. Do the certified wood products sold by your organization command a premium in the market?
17. If yes, what is the premium?
18. Is the current supply of certified wood products sufficient to meet your organization's demand?
19. Is your organization still buying from the same organizations as it was prior to certification?
20. Is your organization still selling to the same organizations as it was prior to certification?
21. How has FSC COC certification influenced your organization's brand name?
22. What are the benefits of FSC COC certification?
23. Does your organization plan on renewing your FSC COC certificate?
24. Is your organization involved with any other environmental initiatives?
25. **Asked Exclusively to COC/FM certificate holders*: Can your supply of certified wood products meet the demand of FSC COC buyers?

Appendix II

Table Comparison of Certification Programs

	CSA International	Forest Stewardship Council (FSC)	Sustainable Forestry Initiative (SFI)
Basis for Company Participation	Voluntary	Voluntary	Required for American Forest & Paper Association (AF&PA) membership. Voluntary for third-party certification and non-member licensees.
Scope	Currently limited to Canadian industrial companies. Also includes provisions for small, private landowners.	Used for all types of forest ownership around the world.	Primarily focused on industrial forests in the United States and Canada.
Governance	An independent, non-profit and non-governmental organization. Governed by a Board of Directors, the majority of which are elected by membership with the remainder being appointed by the existing Board.	An independent, non-profit and non-governmental organization. Governed by a Board of Directors and membership formed in three chambers, social, environmental and economic. Board is elected by members.	Program of AF&PA, an industry trade association. Governed by a multi-stakeholder 'Sustainable Forestry Board' appointed by AF&PA; 60% are from outside interest groups.
Public Participation in the Development of Forest Assessment Standards	Multi-stakeholder committee developed standards which were then subject to a public review process. Approved as a Canadian national standard by the Standards Council of Canada.	Global standards developed through consultation with stakeholders and members from environmental, economic and social sectors. National and regional standards developed by working groups through the same process.	Standards set by Sustainable Forestry Board, 60% of which are from outside interest groups; no direct public input.
Public Participation in Individual Forest Certification/Verification	Requires public participation in identifying performance indicators for individual forests.	Any stakeholder can appeal a certificate during the forest assessment process or following certification.	No public involvement in verification assessment. Members of the public may request an investigation of a company for non-compliance.
Public reporting	Public disclosure of certification report is required Standards are not free to the public.	Public disclosure of certification report and management plan are required for forest management companies. Standards and other program information freely available.	Public disclosure of verification report is not required. Collective performance trends are reported annually by AF&PA. Standards and other program information freely available.
Issues Covered by Standards	Standards address environmental, silvicultural, social and economic issues.	Standards address environmental, silvicultural, social and economic issues. Most indicators are mandatory.	Standards address environmental and silvicultural issues. Many indicators are discretionary.
Nature of assessment - Performance-based (on-the-ground) versus systems-based (internal management)	Hybrid performance-based and systems-based assessment incorporating elements of ISO 14001 management systems and monitoring of on-the-ground practices.	Performance-based monitoring of on-the-ground practices and an assessment of the forest management plan.	Hybrid performance-based and systems-based assessment incorporating elements of ISO 14001 management systems and monitoring of on-the-ground practices.

3rd party, independent certification	3rd party certification is required. Accredited registrars provide initial certification, an audit after three years and repeat audits every five years.	3rd party certification is required. Accredited certifiers provide initial certification and repeat annual audits.	1st party verification is required, 2nd party verification and 3rd party certification are optional. If 3rd party certification is chosen, independent certifiers provide initial certification, an audit after three years and repeat audits every five years.
Chain of Custody tracking	Systems-based Chain of Custody based on comparing input and output volumes	Certificate-based Chain of Custody tracks products from forest through each stage of manufacturing and distribution.	None
On-product label	Yes	Yes	Expected debut in early 2002 for third-party certifications only.
Number of participants - 1/02	3 forest management companies.	2511 certified companies (holding 2587 certificates) in 66 countries. 436 companies (446 certificates) are Forest Management and 2122 companies (2141 certificates) are Chain of Custody.	125 AF&PA members. 72 additional organizations outside of AF&PA are licensed under program..
Total acreage - 1/02	14,700,000 in Canada.	71,957,192 globally, 13,528,855 in North America.	105,000,000 in the U.S. and Canada, 46,000,000 of which have been third-party certified.
Endorsement from environmental, social and economic groups	45 supporting groups in Canada (From CSA International)1	499 member organizations in 59 countries (from FSC A.C)2	45 "Organizations Supporting the Goals of the SFI Program" in the U.S. and Canada (from the AF&PA)3

Table adapted from Certified Forest Products Council's "Comparison of Forest Certification Systems" [available at: http://www.certifiedwood.org/search-modules/compare-systems/comparison-of-systems/comparison-of_systems.htm]

Note: This matrix compares the forest certification systems currently operating in North America. Environmental management systems, such as ISO 14001, are not included because they do not specifically address on-the-ground aspects of forest management.

1 List of supporting groups available at: http://www.certifiedwood.org/search-modules/compare-systems/canadian-standards-association-supporters.htm
2 List of member organizations available at: http://www.certifiedwood.org/search-modules/compare-systems/fsc-member-organizations.htm
3 List of "Organizations supporting the goals of the SFI program" available at: http://www.afandpa.org/forestry/sfi/sfi_licensees.html

Appendix III

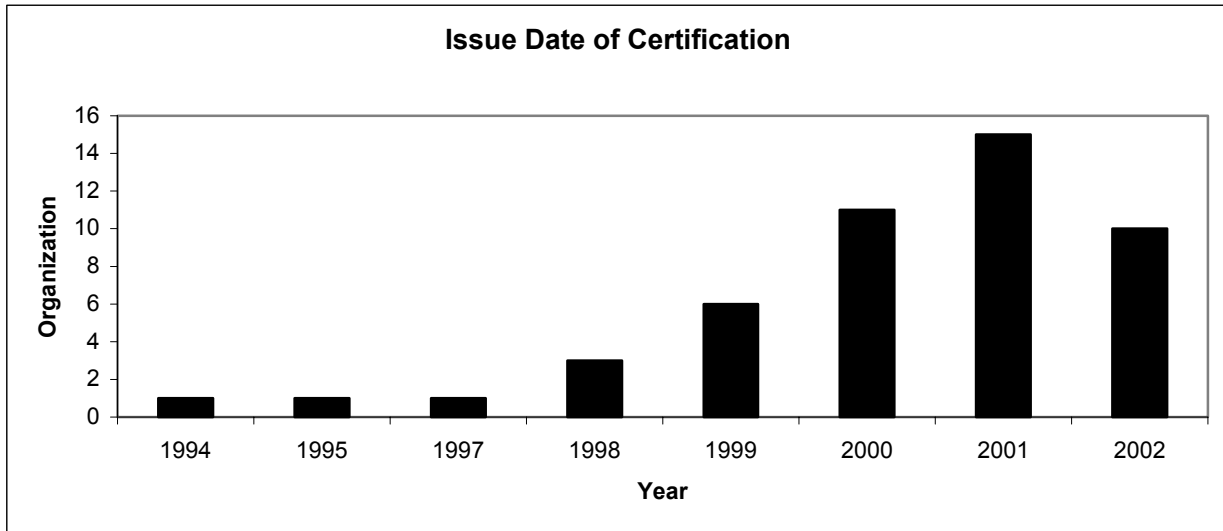## *Growth of FSC COC over time and issue date of interviewees' certificates*

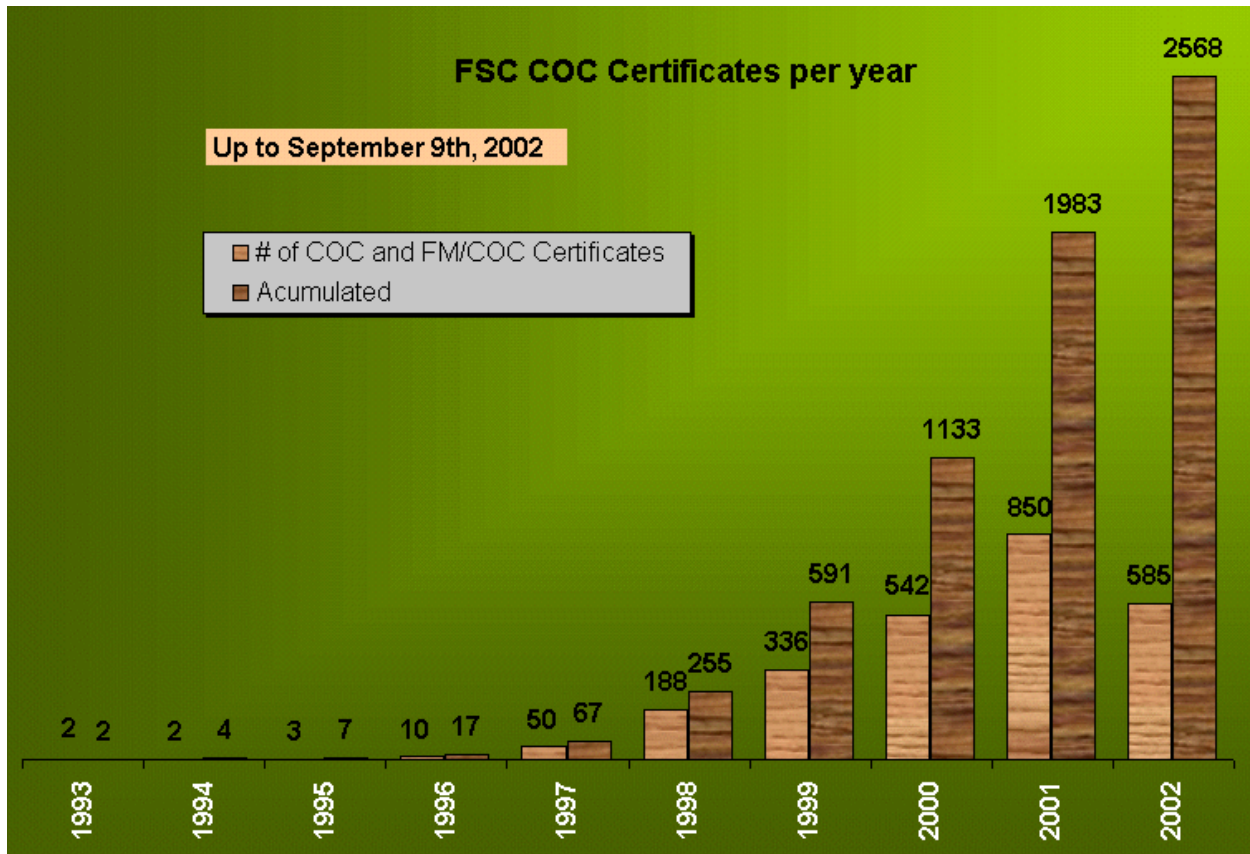**Figure 1 Issue date of COC or COC/FM certificate for interviewees (n=48)**

Figure 2 Accumulation of FSC COC certificates worldwide (source: UNEP-WCMC website) [online at http://www.certified-forests.org/data/coc2.htm]

APPENDIX IV

DATABASE CODE FORMAT

List of Background Variables (V)

V1: <CALLER> = Group Member
V2: <COMP-NAME> = Company Name
V3: <CONT-PERSON> = Contact Person
V4: <CONT-INFO> = Contact Information (telephone number)
V5: <CERT-TYPE> = Certification Type {COC, COC/FM}
V6: <CALL-NUMB> = Call Number {1, 2, 3, 4}
V7: <PRODUCT> = Type of Certified Products Sold
V8: <ISSUE-DATE> = Issue Date of COC Certificate
V9: <COUNTRY> = Home Country {US, CAN}
      US= United States
      CAN= Canada

Interview Variables

For all variables:
-2 = Refuse to answer
-1 = Don't know the answer
 0 = Zero
-> 0 = The number zero in the quantitative case (Qt) or
-> 0 = Absence of response in the qualitative case (Ql) (either because the question was not asked or the question was not applicable to the company interviewed)

V10: <FSC1?> = Is this the first FSC COC certificate that your company has acquired?
{1,2}
1= No, 2 = Yes

V.11: <MOTIVE> = What motivated your organization to become COC certified?
{1,2,3,4,5}
1 = Premiums
2 = Market Access
3 = Public Pressure
4 = Environmental Concern
5 = Other

V.12: <WHY-FSC> = Why did your organization choose to apply for an FSC certificate as opposed to those offered by other certification bodies?
(1,2,3,4,5,6, 7}
1 = FSC is internationally recognized
2 = FSC is the most established (oldest)
3 = FSC is more stringent
4 = Unaware of comparable alternate systems
5 = Customer demand
6 = Convenience
7 = Other

V.13: <AWARENESS> = Are you aware of parallel certification systems and labelling programs run by SFI and CSA?
{1,2}
1= No, 2 = Yes

V.14: < CREDIBLE-SELF> = Do you regard the CSA and SFI programs as credible to you?
{1,2}
1= No, 2 = Yes

V.15: <CREDIBLE-MKT> = Do you regard the CSA and SFI programs as credible to the market place?
{1,2}
1= No, 2 = Yes

V.16: <CREDIBLE-ENV-GRP> = Do you regard the CSA and SFI programs as credible to environmental groups?
{1,2}
1= No, 2 = Yes

V.17: <HARMONIZE> = Would you support a harmonizing of chain of custody standards that would allow your company to sell certified products from multiple forest certification programs?
{1,2}
1= No, 2 = Yes

V.18: <CERT-INVEST> = How much money have you invested in certification?
{x}
x = Numerical value expressed in US $

V.19: <RECUP-COST> = Have you recuperated your costs?
{1,2}
1= No, 2 = Yes

V.20: <RECUP-MONTH> = How long has it taken you to recuperate these costs?
{x}
x = Numerical value expressed in months

V.21: <INT-ADJUST> = What have been the internal adjustments made by your organization to become FSC COC certified?
{1, 2, 3, 4, 5, 6}
1 = New Management/Employees
2 = Product Handling
3 = Training Programs
4 = Record Keeping
5 = None
6 = Other

V.22: <TOTAL-SALE-PRIOR> = What was your organization's total sales volume in the year prior to certification?
{x}
x = Numerical value expressed in US $

V.23: <TOTAL-SALE-1YR> = What was your organization's total sales volume after one year of certification?
{x}
x = Numerical value expressed in US $

V.24: <TOTAL-SALE-CURRENT> = What is the current total sales volume?
{x}
x = Numerical value in US $

V.25: <CERT-SALE-1YR> = What was your organization's sales volume of certified wood products after one year of certification?
{x}
x = Numerical value in US $

V.26: <CERT-SALE-CURRENT> = What is the current sales volume of certified wood products?
{x}
x = Numerical value in US $

V.27: <MKT-SHARE-CHANGE> = By what percentage have certified wood products increased or decreased your share of the market for the type of products you sell?
{x, Inc, Dec}
x = Numerical value in percentage
Inc = Increase in market share (if no numerical value is given)
Dec = Decrease in market share (if no numerical value is given)

V.28: <PREMIUM> = Do the certified wood products sold by your organization command a premium in the market?
{1,2}
1 = No, 2 = Yes

V. 29: <PREMIUM-PERCENT> = If YES what is the percent of the premium?
{x}
x = Numerical value in percentage

V.30: <SUPPLY> = Is the current supply of certified wood products sufficient to meet your organization's demand?
{1,2}
1 =No, 2 = Yes

V.31: <BUYING> = Is your organization still buying from the same organizations as it was prior to certification?
{1,2}
1 =No, 2 = Yes

V.32: <SELLING> = Is your organization still selling to the same organizations as it was prior to certification?
{1,2}
1 =No, 2 = Yes

V.33: <BRAND-NAME> = How has FSC COC certification influenced your organization's brand name?
{1, 2, 3, 4, 5}
1 = Significantly improved it
2 = Moderately improved it
3 = Not affected it
4 = Damaged it
5 = Other

V.34: <BENEFITS> = What are the benefits of FSC COC certification?
{1, 2, 3, 4, 5, 6, 7, 8}
1 = Increase/Maintain market share
2 = Increases profits
3 = Generates a premium for wood products
4 = Improves public image
5 = Future Increase in Market Share
6 = None
7 = Non-market reasons (environmental, moral, or ethical)
8 = Other

V.35: <RENEWAL> = Does your organization plan on renewing your FSC COC certificate?
{1,2}
1 = No
2 = Yes

V.36: <ENV-INITIATIVES> = Is your organization involved with any other environmental initiatives?
{1,2}
1 = No
2 = Yes

**The following additional question regarding COC/FM dynamics was asked exclusively to COC/FM certificate holders?

V.37: <SUPPLY-COC/FM} = Can your supply of certified wood products meet the demand of FSC COC buyers groups?
{1,2}
1 = Yes
2 = No

Appendix VI

List of Acronyms

Certification Bodies

FSC = Forest Stewardship Council

SFI = Sustainable Forestry Initiative

CSA = Canadian Standards Association

ISO= International Organization for Standardization

AF&PA = American Forest and Pulp Association

UL = Underwriters Laboratory

PEFC = Pan European Forest Certification

SCS = Scientific Certification Systems

Types of Certificates

FM = Forest Management

COC = Chain of Custody

Miscellaneous

NGO = Non-governmental Organization

ENGO = Environmental Non-governmental Organization

SFCW = Sustainable Forestry Certification Watch

CFPC = Certified Forest Products Council

GFTN = Global Forest Trade Network

WWF = World Wildlife Fund

ITTO = International Timber Trade Organization

SFB = Sustainable Forestry Board

Appendix VII

General Comments from Interviews

The following comments and anecdotes are recorded anonymously as collected from all interviewees. All comments represent the interpretation of the interviewer and should not be taken as direct quotes. Each interviewer has transcribed their own notes and they are collected here by interviewer name.

Ali:
- frustration with non-cert. of Home Depot (chain stops there)
- estimates that under 10% of mkt. place is cert. (mainly manufacturers and plantations in South countries which are cert.)
- general trend of inadequate supply
- Irony: not enough supply and supply that is there is being sold to companies without cert.
- Big Problem: consumer unawareness of process, mkt. only cares about lowest price (mkt. driven process)….getting worse
- Countries in south (ie. Indo) are not abiding by same standards, lack of social justice
- Small landowners may not become cert. for fear of being locked into timber industry
- believes 80% of cert. wood continues in the chain
- hard to find certified lumber at reasonable price
- 10 FBM output (Big Company)
- hold SFI, FSC, and ISO cert.
- problems with FSC (too political and different standards in Canada and US and different local standards)
- 100% sold under SFI and 10% sold under FSC
- premiums: available on hardwood in Europe (not in North America), and no premiums for softwood
- not enough supply of FSC wood, but enough of SFI
- cert. simplifies negotiations with big companies
- 20% keeps in chain
- buyers not willing to pay more so those who want cert. wood are settling for SFI
- more flexibility in SFI and FSC has too strict standards set by environmental Chamber
- 5-8% of products are certified, but are not sold as such
- because only 8% of a piece of plywood is veneer and buyers only need 70% cert. source to be able to sell as cert., so veneer cert. or not does not matter at this time
- no longer paying more for cert. logs (before it was 3% more)
- 5% of total sales are cert.
- buying low grade timber that isn't worth forest companies bearing the costs of cert because mkt. won't pay premiums

Melanie:
- market demand is for high quality cert. wood products while they have low value products. Thus, the market is not big enough for their products.
- importance of FSC label in Ireland
- high regard of Smart Wood by environmental Groups
- would not answer total sales volumes, but current total sales equal 114 million feet (lumber volume)
- have not received one log with FSC logo!
- would not answer total sales volume but current sales volume of certified wood products is equal to 5% of total sales

Rosanne:
- importance of FSC in Euro. Mkt. place
- cert. helped by already holding ISO 1400
- cert not yet had big impact because they have only sold one product thus far
- only sold one order of certified wood
- buy a lot of cert. wood and don't sell it as cert.
- buy from SFI cert. companies as well
- suspended cert. from FSC, but holds Smart Wood cert.
- Home Depot requirement
- Top-down decision to become certified
- believes FSC is better organized at grassroots level, but in order for certification to work all certification bodies must merge together
- currently SFI and FSC do not work well together

Reid:
- current sales vol. of cert. products is less than 1%
- strongly motivated by demand from Home Depot
- against harmonized systems for fear of loss of control
- business is essentially totally cert. for entirely non-mkt. reasons
- cert. supplier is cheaper, therefore they are able to acquire increased profits
- Home Depot requirement
- No change in overall market share, but without cert sales market share would have been lost
- Re-sell wood products from Fletcher Challenge Mills in New Zealand, all of which are FSC certified
- Indoctrinate employees as internal adjustment!
- Current sales volume of cert wood is 85-90% of total sales
- Janet Webb would like a copy of report
- Renewed FM since 96'
- Became FSC cert by default when SCS harmonized with FSC
- 80-85% of logs come from private lands
- because of lack of premium and costs associated with cert and audits, cert puts producers at an economic disadvantage
- big buyers like Home Depot manage to offload costs on to suppliers through their substantial buying power and demand for certified products

Lisa:
- In order to make cert profitable need increased consumer awareness and demand
- Need to combine cert wood and non-cert wood in order to survive
- On waiting list to receive cert wood
- expected sales volumes as has just been certified: between 500 000 and 2.3 million I cert sales after one year
- probably won't even put labels on products as won't make difference
- claims reforestation healthier than natural forests, and next best thing are plantations
- worried about economic decline (loss of jobs) in mill industry
- problems getting a wide range of products (i.e difficult getting West coast products that aren't available on east coast)

- there is no good national system of networking for supply, therefore many rely on local supply

Ray:
- FSC is most credible, compared to SFI, because of 3rd party structure. FSC has good future; its good for individual businesses and the industry as a whole, though some aspects overly bureaucratic and complicated.
  -FSC has biggest supply of certified hardwoods. In general demand is not present. Supply is difficult to acquire because sawmills reluctant to certify. Future of FSC uncertain.
  -Likes the 3rd party perspective from the FSC. Future profitability of FSC certified wood uncertain.

Mark:
I found there to be a wide range in the types of companies I interviewed, which have acquired FSC COC certification. Further, many of the representatives I spoke to were either unwilling to answer questions regarding hard numbers (ie. sales figures) or were unaware of the answer. For the most part, there seemed to be a consensus regarding the future importance of certified wood and the impact it will have in the market place over the coming years. Currently, many organizations seem to feel that FSC COC cert. is necessary to be competitive even if there sales of cert. wood are not that significant.

According to contact person from Pacific Wood Systems Inc., cert. will only become more important once the amount of projects (ie. architectural projects) which specify the use of (FSC) cert. wood increases. Otherwise the incentive to become certified is weakened.

Also, only certain types of wood products seem to be available. Difficult to attain some types of cert. wood.

Interesting Note: Ornamentum Furniture, one of the COC holders I interviewed from Canada, began as a business with FSC certification as its premise. It is run by one person and his goal is to run a green business in all respects. He deemed FSC COC certification as the best type of certification for his purposes. However, after completing 8 interviews Ornamentum Furniture seems to be an exception to the rule rather than representative of COC holders in North America.

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