FOREST CERTIFICATION AND SMALL FOREST ENTERPRISES:
KEY TRENDS AND IMPACTS - BENEFITS AND BARRIERS

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January 12, 2005

ACKNOWLEDGEMENTS

The authors wish to thank the case study authors for sharing their certification experiences and also to thank reviewers (Greg Blomstrom, Richard Donovan, Mike Jacobson, Deanna Newsom, and Liz Yolin) for their comments and suggestions.

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PREFACE

There are important developments underway in the global forest industry that are changing the opportunities for both small and large scale operators. A major trend is the increasing consolidation of the forest industry—the 50 largest forest companies now process forty percent of the world's wood. This consolidation is taking place throughout the commodity wood sector, including pulp, paper, and all types of structural wood. Consolidation in the commodity wood sector is a response to the greater competition created by globalization of trade. The share of transport costs in the final cost of wood products has decreased as a result of the use of standardized containers and efficiencies in the shipping industry, making the origin of the wood less significant a factor than the other costs of production. New competition from distant producers puts pressure on companies and SFEs to reduce production costs to match their competitors. Two responses from the industry to the need to control production costs and be more flexible are (1) more investment in new technology and more sophisticated equipment and (2) streamlining the business by divesting the plantation and forest management operations and increasingly relying on specialized timber managers, including smallholder outgrowers or contract growers. Countries with good growing conditions for plantation wood have responded to the new demand of the industry by investing in plantation programs as an incentive to private industry and farmers. Chile, New Zealand, Argentina, Brazil and South Africa have all invested in plantations, and this has dramatically increased the supply of commodity wood in the marketplace. The hardwood sector or other higher quality wood product segments are less consolidated, with more opportunities to find competitive niches even for small-scale production.

In this environment today's smallholder wood producers are making choices about sustainable forest production and about the advantages and/or feasibility of entering markets and market chains for certified wood products. This leads to a greater differentiation between two types of smallholder timber enterprises—those producing commodity wood from plantations and those producing hardwoods or wood from natural forests. For those smallholders who manage natural forests, there is increasing competition from less expensive sources of plantation wood in some of their traditional niches, particularly in Latin America where large quantities of plantation wood are maturing in the temperate regions of South America.

For those smallholders who are outgrowers of plantation wood for community wood markets, cost of production is an increasingly important factor for their ability to stay in the marketplace as are the relationships with wood processing companies and other potential buyers. For those smallholders in the higher value timber markets – hardwoods and tropical woods for higher wood product grades and finished products – certification is attractive if it can help them to access niche markets that recognize their products' quality and, in the case of timber from natural forests, the multiple social and environmental values of sustainable forest management.

In this competitive marketplace, smallholders seeking certification in response to demand from their buyers for certified raw material can find themselves subject to forest management criteria and standards that are not compatible with their scale of production or operation. With certified wood markets still in their early stages of growth, smallholders can find it difficult to justify the added expense of running certified operations. Smallholders in North America and Europe include those who manage forests for their non-market values and only harvest commercial products intermittently. The affordability of certification becomes an even greater issue to them.

As forest certification moves into a second decade, the issues of equity and autonomy in forest certification standards are being approached in new ways. A global scheme with multiple stakeholders like that of the Forest Stewardship Council was not originally designed for the specific situation of small forest enterprises (SFEs) and currently struggles to streamline procedures for SFEs which would lower entry barriers. The FSC and its accreditation bodies have responded to the issue by introducing modifications to its auditing and assessment procedures geared to the smallholder producer. It has introduced group certification to spread the costs of evaluations and audits and "Small and Low Intensity Managed Forest" standards (SLIMFs) to simplify the certification process for smallholders and communities whose scale or frequency of harvest puts less pressure on the environment. Neither of these new options, however, has yet been able to significantly reduce the cost of forest certification in the developing countries or emerging economies.

This review looks at case material from a range of international and national forest certification schemes to evaluate the emerging issues for smallholder certification. It finds that forest certification schemes following industry standards, like the Sustainable Forest Initiative (SFI) in the United States and the Programme for the Endorsement of Forest Certification (PEFC) standard have developed more organically around the significant participation of smallholders in timber supply as outgrowers and as natural forest managers. PEFC has paid special attention to smallholder cooperatives and tried to fit in their cost and operating structures, while SFI has partnered with the Tree Farm program to reach out to U.S. smallholders and help address the added cost of certification. However, the adaptability of these systems, especially PEFC, which depends on strong underlying regulatory structures, to developing country situations is not yet clear.

For all of the forest certification schemes, the inherent barriers to smallholders continue to limit the percentage of smallholder producers seeking and achieving certification, particularly where there is very little presence of cooperative organization. As the most active certification program in developing countries, the ability of FSC to offer certification to smallholders is important. It is timely that those supporting FSC forest certification pay attention to the lessons learned in the other certification schemes on how best to incorporate smallholders. The time is now to effectively modify FSC procedures and standards need to be effectively modified to fit the reality of smallholder forestry.

The lowering of entry barriers to smallholders is a topic of high importance for sustainable forestry, one that will only increase in importance as smallholders become a more significant source of wood supply. If smallholders and small forest enterprises are to be able to compete equitably with other types of producers in an expanding marketplace for certified products, all of the certification schemes need to find better ways to reach them and to modify their approach and criteria to lower these barriers.

Michael Jenkins
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INTRODUCTION

As certification of forest management practices enters its second decade, questions have been raised regarding the impacts of forest certification and its future trajectory. While many of the concerns that led to the development of forest certification initially were focused on environmental issues, subsequent issues have emerged related to the social and economic impacts of forest certification (Thornber et al. 1999). Among these are: concerns of inequalities in access to certification systems by small forest enterprises (SFEs); whether SFEs enjoy any benefits from certification; whether certification is affordable; and whether certification changes forestry practices (Higman and Nussbaum 2002).

This paper explores these questions by reviewing the role of SFEs in the North American and European regional contexts in terms of land area and wood supply. It also discusses inherent constraints that SFEs face in sustainable forest management and market access. Three forest certification systems are reviewed and summarized in relation to the barriers they pose for SFES and the benefits they bring to them. Lastly, future trends and issues for SFEs are discussed as well as the potential of other mechanisms to reach similar goals. Elimination of barriers and increases in benefits are part of a wider discussion of whether certification systems should be concerned about recruitment of SFEs.

OVERVIEW OF SMALL FOREST ENTERPRISES

DEFINITION

There is an apparent lack of consensus in the forestry community regarding the definition of a 'small forest enterprise' (Nussbaum et al. 2001). Forestland area is not an optimal method for defining SFEs, as wood volumes originating from a given area vary dramatically among regions and forest types.[1] However, we will use an area-based definition of SFE in this paper since alternative definitions have not yet been sufficiently developed to use here. One such alternative approach is that of Nussbaum et al. (2001) who suggest a method for defining a SFE that includes area, production rate, ecological importance and social importance.

In the context of the United States, an SFE is often referred to as a non-industrial private forestland owner, woodland owner, or, more recently, family forestland owner. These terms do not have a strong connection to ownership size, although family ownerships tend to be small. Rickenbach (2002) refers to small ownerships as approximately 400 or fewer hectares. Most ownerships in the U.S. are much smaller with over 90% being less than 41 hectares (Birch 1996).

In the European context the term 'small forest enterprise' is not a fully established concept. It refers to private forest ownership, in contrast to state and community forestry, but excludes private forest industries and other private companies that own forestland. In this article the focus is on non-industrial private forest owners -- i.e. families and individuals having forest properties.

[1] However, property size is a relevant indicator on the production potential of a forest holding, along with the climatic and edaphic factors. When the production potential of a forest holding provides regular and significant revenues, forest owners tend to be more active in their forest management. Comparing among boreal, temperate, and tropical forests on the basis of area has little meaning. Productivity is one of many factors impacting the frequency of harvest.

SCOPE – NORTH AMERICA AND EUROPE[2]

In the contiguous U.S., the forest area owned by 4.9 million family owners represents approximately 44% of the 251 million hectares of forestland. Family ownership varies by region of the country: it is 59% in the North, 64% in the South, and 17% in the West. The West differs significantly from other regions because of the predominance of public ownership in those states (Butler and Leatherberry 2003). Family forestland ownership in the U.S. is fragmented. Just over 60% of all landowners own less than 3.6 hectares (Butler and Leatherberry 2003). Despite this small average size, harvest from SFE lands represents nearly 60% of the entire industrial fiber base in the U.S. and the proportion is expected to grow in the future (Mehmood and Zhang 2001; USFS 1997; USFS 2003).

In Canada, public ownership accounts for over 90% of forestland, while in Mexico 80% is community owned in tracts larger than usually defined as SFE (Madrid and Chapela 2003). This paper, therefore, does not include an analysis for Canada or Mexico.

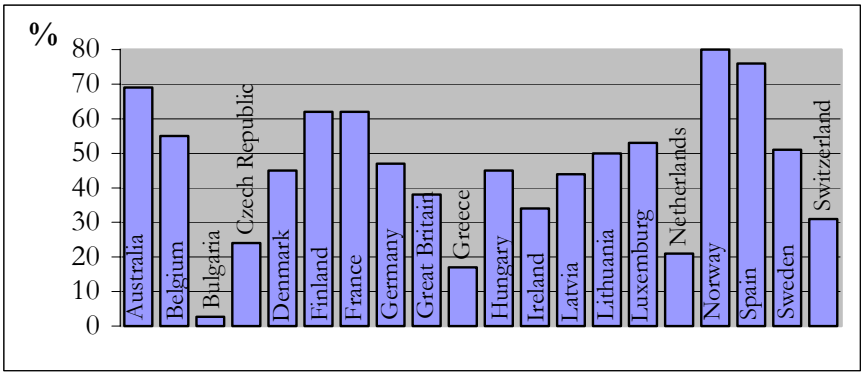
Private forest ownership predominates in the European Countries. Figures on the percent of private forests in a country vary among sources because company-owned forests are often included in the data on private ownership. In 2003, 15 EU member countries, private forest land provided 58% of the wood supply (FAO 2000). Private forests are often on more productive soils than public forests. Productivity is further enhanced through management activities, resulting in a higher proportion of the marketed timber coming from private than public forests.

The countries with the highest percentage of private non-industrial forest land are: Portugal (79%), Austria (69%), Spain (76%), Finland (62%) and Sweden (51%). The least percentage of private non-industrial forest land can be found in the UK (38%), Netherlands (21%) and in Greece (17%) (FAO 2000) (**Figure 1**). In other European countries the situation is variable; public forest ownership is the norm in Russia, Ukraine and Belarus, whereas land restitution and privatization has increased the percent of private ownership to 49% in the former Yugoslavia, to 45% in Latvia and to 70% in Slovenia. Poland has limited the privatization process and private ownership constitutes less than 1% of forest area (FAO 2000).

In Europe, land holdings tend to be very small. In Finland, 26% of forest holdings are smaller than 50 ha whereas only 4.1% of forest holdings are 200 ha or larger, the average size is 34.5 ha (SVT Agriculture, Forestry and Fishery 2001:52). The size structure of forest holdings is very similar in other Scandinavian countries, and in Central Europe, the share of small-size holdings (less than ten hectares) is even more dominant. In the new EU countries undergoing land restitution the fragmentation of forest ownership is very high: the average size of private forest ownership in Poland is 1 ha, in Estonia 15 ha and in Latvia 8 to 9 ha (WB/WWF Alliance 2000-2001). Overall, in the EU candidate countries over 60% of ownerships are five hectares or less (UN-ECE/FAO 2000).

[2] European forestry data varies widely depending on the source's definition of Europe (eg. EU countries, Western Europe, including or excluding Russia, shifting EU membership). We exclude Russia from the figures presented here.

Figure 1: Private Forests in Europe as Percent of Total Forests, by Country



Sources: Statistical Office of the European Communities 2000; EESC 2002 ; CEPF 2003(web13.10).

MANAGEMENT OBJECTIVES OF SFEs

SFEs are extremely diverse in their backgrounds, attitudes and motivations for owning forestlands. Although SFEs represent a critical component of the global fiber supply chain, especially in Europe and the U.S., their motivation for owning forestland is often not focused only on timber extraction or economics. In fact, according to Birch (1996), over half of U.S. owners had not harvested from their land during the last five years (Butler and Leatherberry 2003). In Finland, this figure was 36% (Karppinen, Hänninen, and Ripatti 2002). Economic and environmental motivators are both important to SFEs regardless of their home country (Butler and Leatherberry 2003; Sanderson, Colborne, and Beesley 2000; Lindström, Hansen, and Juslin 1999).

Forest management objectives of SFEs are typically different than those of corporate and public ownerships, although today all owners generally subscribe to some set of economic, ecological and social objectives. SFEs typically have multiple objectives for owning forestlands and these are reflected in their management. Metla (2002) has grouped owners into several categories depending on their management emphasis: (i) multiple management objectives, (ii) recreational values, (iii) employment opportunities provided by forest management or (iv) economic security as an investment. Forest management objectives tend to vary according to the size and production capacity of a forest holding. If the forests have the capacity to provide a significant volume of wood products, their management is more production-oriented than holdings providing merely wood or non-wood products for domestic use.

In many cases, owners of SFEs live on their forestland and consequently possess a strong emotional attachment to the land. Woodlands are a typical component of the small family farm. For example, in the U.S., 39% of the forest of SFEs is associated with a farm and nearly half of the area of SFE-owned forestland in the U.S. is part of a primary residence (Butler and Leatherberry 2003).

In Finland, forestry has traditionally provided essential supplementary income for farmers, especially during the winter. Commercial values of forests have a great importance for over 50% of forest owners there, but today the management objectives focus increasingly on biological, aesthetic and socio-cultural values. One-fifth of forest owners prioritize recreational values in forest management and about one-tenth of forest owners consider forests as an investment that provides economic security (Karppinen, Hänninen, and Ripatti 2002).

FUTURE CHANGES IN FOREST OWNERSHIP

With increased urbanization and fragmentation of forest holdings, large areas of forests are being incorporated into suburbia or rural homes, which likely present a totally different set of ownership motivations. In the absence of strict land-use regulations, forestland will be converted to higher value uses. The fragmentation associated with development decreases forest connectivity and patch size and has negative ecological consequences. Population pressure and development of infrastructure increases the risk of conversion of forestland to other land-use forms. However, in absolute terms, forest area in the U.S. and most European countries has increased in recent years due to the natural or active reforestation of abandoned agricultural fields.

Over 60% of U.S. SFE owners are over the age of 55 (Butler and Leatherberry 2003). In the coming decades there will be a huge turnover in forestland. In general, forestland does change hands rather often. For example, Birch (1996) found that nearly 36% of SFE owners had held their land for less than 15 years. Inheritance and estate taxes often cause owners to harvest ahead of plan or even sell their land. Inheritance also often results in parcelization, when land is divided among multiple heirs. Increases in regulations are a disincentive for ownership and can discourage SFE owners from maintaining their ownership.

In Scandinavian countries, forests were traditionally owned by farmers, the state or the forest industry. In Finland, urbanization has left only 22% of forest owners as active farmers, but they own over one-third of private forests. The largest group of forest owners is retirees (37%) who own one-third of the private forest area. 30% of forest owners are salary earners having one-fourth of the private forest area and the remaining 10% include entrepreneurs and other groups (Karppinen, Hänninen, and Ripatti 2002).

In other European countries, the ties with farms and forestry are less strong but significant. Forest lands are usually inherited from parents and increasing numbers of forest owners will be older and live in urban settings, potentially setting the stage for future land fragmentation. The situation is somewhat different in Eastern European countries where forests have been state-owned up until recent land reforms. The reforms shift forest tenure from public to private hands through restitution to the descendants of the former owners or sell forest land in a privatization process to anyone interested. The parties buying forests tend to be active in its development and commercialization.

SFEs AND MARKETING

Small enterprises of any kind face significant barriers to operational success, especially with respect to marketing. We overview these interrelated barriers: 1) insufficient market power and 2) underdeveloped marketing expertise and knowledge.

Insufficient Market Power

SFEs tend to have insufficient market power due to external forces such as globalization and internal factors such as low harvest volumes and low economies of scale. They are seeing strong impacts from the forces of globalization and industry consolidation in the U.S., Central Europe and Scandinavia. Global

wood markets, increasingly dominated by large corporations, mean that local log market conditions for SFEs are changing drastically. In some areas, SFEs that once had access to ten or twenty potential buyers for their logs are now often faced with only one or two. Often, the forest industry buys standing timber from SFEs, leaving little possibility for the land owner to retain control of high value specialty logs. This places more market power into the hands of processors and less into the hands of SFEs. In addition, small players can only offer small volumes without economies of scale and are therefore disadvantaged in the marketplace. The natural diversity of forests increases the challenge for SFEs, since any given harvest results in logs of different species, sizes and qualities. Due to their relatively small size, it may be difficult for the SFE to accumulate sufficient volume to make up a truckload. Lacking a truckload quantity limits the ability of the SFE to find a market that specifically demands that type of log.

As a result of these forces, SFEs are increasingly looking to mechanisms for creating market power. In the U.S., SFEs are focusing on the potential of cooperatives to help them become more competitive in the marketplace (Barten et al. 2001). This strategy has proven extremely effective in Northern Europe where vertically integrated forest owner cooperatives rank among the largest forest industry companies in the world. Forest owner associations, often together with the forest industry, have developed procedures to overcome the problems related to the sales of small volumes. In some models, forest owner associations negotiate sales and logistics on behalf of several forest owners and in other models the forest industry centralizes purchasing to defined areas.

Despite the historical success of cooperatives in Europe, efforts to develop cooperatives in the U.S. have experienced significant difficulties. The natural independence of Americans is contrary to the basic premise of a cooperative. As markets continue to evolve and power is shifted further to the side of processors, the economic potential for cooperatives will increase regardless of these cultural challenges. "Cooperate to compete" may be an imperative for the future.

Another method of increasing market power is through the creation of a sort yard where logs can be consolidated, sorted and offered to the marketplace. A sort yard presents the log buyer with a known, consistent source of supply. The average SFE does not harvest regularly enough to be recognized by log buyers and the sort yard can eliminate the downside of the individual owners' low and intermittent harvest volumes. Still, one challenge in creating a successful sort yard is incorporating a large enough land base to make it practically feasible (Wagner et al. 2003). Sort yards and auctions are a common method of log sales in Japan where landholdings are much smaller than Europe or the U.S. Regular timber sales or auctions have also been used in several European countries. Today, an increasing amount of timber is sold standing which allows more flexibility to the timing of sales and harvesting.

Landowners are also working to increase their market power by vertically integrating. Some SFEs are purchasing portable sawmills and processing their own logs. There are clear opportunities to increase value, especially with the more unique logs if owners are sophisticated marketers. Another way to vertically integrate is through contract cutting. An outside mill does the processing, but the SFE retains ownership of the logs and resulting sawn products. The SFE must, in turn, develop markets for those products. This effectively circumvents the traditional market infrastructure. However, any time the landowner must begin developing new markets with unfamiliar products, there are many pitfalls.

Underdeveloped Marketing Expertise and Knowledge

Small operations, forest-based or otherwise, often lack essential managerial capacity. One person may be responsible for all aspects of an operation. For example, Hovgaard and Hansen (2004) quote a small secondary wood products manufacturer:

> "I [do] all the finances. And all the marketing. I do all the personnel. I do hire and fire, progress reports. What else do I do? Gosh, everything else basically. Go to all the meetings, deal with everything."

With such diverse duties, it is virtually impossible for an individual to be an expert in all aspects. Many SFEs have an inherent love for forests and trees that motivate their ownership and they may have little interest in becoming experts on the business side of their operations. Combined with the fact that SFEs typically market timber only occasionally, it is not surprising that they may lack sufficient marketing expertise to maximize their returns. Recent fast-paced market changes in the Pacific Northwest of the U.S. have left many SFEs behind and as a result, they are unsure of the right strategy for the future (Wagner et al. 2003). Many have traditionally grown larger logs, but this is no longer consistently rewarded in the marketplace (see **FSC case study 1**). Consequently, these owners are forced to reconsider their management objectives and style.

In a highly competitive log market, SFEs are able to rely on natural market forces to assure their economic return. In this setting, the SFE is not required to have significant market knowledge but must do an adequate job of implementing the timber sale. If the SFE sufficiently describes (volume, grade, etc.) the timber sale in the prospectus and provides that prospectus to a suitable number of potential buyers, competition assures a good price.

However, it is important to note that the majority of landowners do not implement these basic practices when conducting a sale and most do not seek professional advice (Rosen and Kaiser 2003). When artificial constraints are introduced into the system – e.g. significant consolidation of the processing infrastructure –, landowners must improve their marketing expertise. Marketing is a totally different skill set that must be developed. The owner must understand well the specific needs of individual mills and deliver product that meets those needs. This lack of understanding is particularly a problem in Eastern European countries which have not had private forestry for the past 50 years; forest owners there have little experience in the timber trade and limited access to market information (EESC 2002).

Given that most owners fail to seek professional advice and fail to utilize existing pricing data, it is a big step for most to become proficient marketers. In countries with long traditions in private forestry, forest owner associations can provide information and guidance. This works well in countries where forest owner cooperatives are influential, whereas in countries without such a history of cooperatives, such as Eastern Europe and the U.S., skepticism towards joint projects and lack of resources slow the transfer of information.

An illustrative example of the importance of marketing expertise and accompanying market knowledge is the Oregon large log (30" or larger on the big end) market. Reduction of harvests from federal lands in the U.S. West has caused a significant shift in the processing infrastructure. Most mills now concentrate on relatively small logs and produce commodity dimension lumber. There are few mills remaining that actively purchase large logs. Within this set of fewer than 10 mills, each is exploiting a unique marketplace niche and thus demands different log qualities. The SFE that understands the unique log-

quality needs of each processor is in a position to maximize return from a harvest based on sorting logs to fit those quality demands. It is often the case that SFEs in Oregon do not even know the mills that actively demand large logs and they clearly do not have the market knowledge to understand the small differences in quality demands among the mills. In this case, SFEs often sell their entire sale to a particular company that then sorts the logs and markets them to the appropriate mills, capturing the added value.

Market information and resulting market knowledge are critical for SFEs to successfully market products from their forestlands. Landowners that possess good market information (via their own knowledge/research or through a consultant) reap higher returns than landowners that rely on loggers to manage timber sales (Bennett and Cleaves 1997). For traditional products such as logs there generally is an information infrastructure that exists. States and/or companies and forest owner organizations may compile log prices and publish pricing reports (Rosen and Kaiser 2003). A simple process of networking with log buyers, other owners and agency personnel can give considerable insight into the market situation and its current developments. Markets for certified forest products are nascent and, depending on the forest certification system, present additional marketing challenges for large and small forest enterprises alike. These issues are further explored under the sections **Barriers to Certification** and **Benefits of Certification**.

REVIEW OF CERTIFICATION AND SFE

Three certification systems have been selected for discussion in this paper: the American Tree Farm System (and the associated Sustainable Forestry Initiative (SFI)), the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification Schemes[3] (PEFC).[4] Together these systems represent 88% of forest certification worldwide (Atyi and Simula 2002). Although the authors recognize that SFEs are prevalent and relevant to forestry in other parts of the world, we have limited our analysis to North America (mostly US) and Europe due to the greater availability of data on SFEs in these regions and the location of two of the three certification systems in these regions. In-depth descriptions of each system can be found in various articles (Atyi and Simula 2002; Meidinger, Elliot, and Oesten 2003). We will limit our discussion to aspects most relevant to certification of SFEs.

MAJOR FOREST CERTIFICATION SYSTEMS AND THEIR APPROACH TO SFEs

American Tree Farm System/Sustainable Forestry Initiative

Founded in 1941, the American Tree Farm System (ATFS), a program is offered by the American Forests Foundation, originated as a way for private landowners to indicate their active management to the public. The first certified Tree Farm was a Weyerhaeuser Company property in western Washington State. For more than four decades the program continued to grow primarily as a public information and education program that included a mix of industrial and SFE forestlands. As forest certification systems

[3] Formerly the Pan-European Forest Certification System.
[4] Websites are www.treefarmsystem.org; www.fsc.org; and www.pefc.org respectively.

began to develop in the 1990s, the ATFS took the opportunity to grow into a full-fledged third-party certification system.

This growth was prompted in part by the development of the Sustainable Forestry Initiative (SFI), which was initiated in the early 1990s by the American Forest and Paper Association (AF & PA) in response to public concerns about the sustainability of forests and to guide industrial members in standards for sustainable forest management. Since its introduction in 1994, the SFI has grown to include over 136 million acres (54 million ha) of primarily industrial forest lands in the U.S.. The standard certification procedures have also gone through a number of revisions designed to address a wider array of sustainable forestry issues, to provide the option of third-party audits, to deploy an eco-label and to give the program a third-party identity separate from AF & PA. Currently, the program is overseen by the Sustainable Forestry Board, an entity separate from the AF & PA.

SFI's orientation to large industrial forest owners is a problem for many AF & PA members who get much of their fiber from other lands (referred to as gatewood), including SFEs. AF & PA estimates that SFEs in the U.S. supply over 50% of the raw material used by SFI participants (AF & PA 2003). One way the SFI program has dealt with this issue was to sign a mutual recognition agreement in July 2000 with the American Tree Farm System (ATFS). The main feature of the agreement from the SFI perspective is that wood coming from lands certified under the ATFS is considered to be equivalent to certified wood coming from SFI certified lands. From the SFE perspective, the ATFS is an inexpensive way to gain market access to certified raw wood markets that are dominated in most important timber areas of the U.S. by the SFI program participants. Given that the SFI recognition of ATFS is the main conduit for SFEs to the SFI system, the ATFS is discussed in detail in this paper.

A hallmark of the ATFS has been free initial certification inspections by a professional forester, acting as a volunteer of the ATFS or, in some areas, by state foresters. After inspecting the property records and taking a tour of the property, the inspector issues a report that either gives the property certified status or pioneer status (conditional certification), or s/he denies certification. If the property reaches certified status, it receives an ATFS sign for the property, a certificate of certification, and a subscription to the Tree Farmer magazine (for a yearly subscription fee). Certified Tree Farmers are also eligible for annual recognition contests and occasional tours and educational programs. Tree farm certifications are reviewed once every five years to ensure that the property still meets the AFF Standards.

As certified forestry has become more defined by stricter guidelines (written management plans and third party audits), the ATFS has modified its standard several times, increasing requirements for certified status, requiring special training for inspectors and requiring all participants to have a written management plan. The current revision was adopted in December 2002 and became effective in July 2004.

Forest Stewardship Council

Founded in 1993, the Forest Stewardship Council (FSC) is often considered a model, especially by environmental groups, in standard-setting for sustainable forest management and for rigorous, independent, third-party assessments and audits. The FSC is an international system with significant areas

certified in the US, Canada and Europe (70% of FSC certificates are located in these regions). It is one of the few systems,[5] and the largest, operating in the tropics.

The FSC's standard-setting authority is vested in the general assembly of the FSC. The general assembly consists of three equal chambers: economic, environmental and social. Each chamber is further divided into northern (developed country) and southern (developing country) membership with equal voting powers. The FSC International secretariat is responsible for accrediting certification bodies, auditing performance and approving national standards established by national multi-stakeholder working groups. About one-sixth of FSC support comes from membership and program fees with the rest coming from private foundations and donors (Meidinger, Elliot, and Oesten 2003). Although nearly a dozen organizations are accredited under FSC, the field is dominated by two for-profit certifiers (SGS and SCS) and two non-profit certifiers (Rainforest Alliance/SmartWood and Soil Association/Woodmark) (Atyi and Simula 2002).

FSC certification requires a field visit by a multi-disciplinary team, consultation with local stakeholders, peer review of draft reports by two to three independent reviewers, negotiations with clients on terms and conditions and annual audits. A full reassessment is required every five years. Certifying bodies charge full fees for these services as well as collecting fees for the FSC. Donor subsidies for assessments for SFE and community forests have been critical for inclusion of these clients into the FSC system.

It was not until 1996 that FSC offered a model for group certification of forest management operations. Later, in 2002, the FSC also offered a group model for small chain of custody (COC) operators. Despite some success in group certification, FSC in general has not attracted large numbers of SFEs to the system. In 2004, the FSC adopted new procedures for Small and Low Intensity Managed Forest units (SLIMFs, called the Family Forests Program in the US) to facilitate SFE access to FSC certification. These are discussed in the section titled **Forest Stewardship Council - Barriers**.

Programme for the Endorsement of Forest Certification Schemes

The Programme for the Endorsement of Forest Certification Schemes (PEFC) was established by European private non-industrial forest owners to improve the access of small-scale private owners to certification. The PEFC Council was established in June 1999 along with the publication of the requirements for standard-setting and certification procedures.

PEFC is a framework for the endorsement of national certification systems conforming to the requirements set by the PEFC Council. Organizations or individuals having forests certified by an endorsed scheme or processing certified timber may use the PEFC label in accordance with the rules on chain of custody and labeling. All the requirements regarding standard setting, standard endorsement, performance level requirements and certification procedures are presented in the PEFC Technical Document and related Annexes. The document is available at the PEFC web site. The technical documentation was fully revised in 2002 after a comprehensive assessment of the development needs in the framework.

[5] Other systems extending certification for tropical forest include LEI in Indonesia (recognized by FSC) and MTCC in Malaysia. Systems under development include CERFLOR in Brazil and a national scheme in Ghana (Atyi and Simula 2002).

Any national PEFC governing body can apply for membership in the PEFC Council, whether it has been established expressly for that purpose or is an existing organization with an interest in the PEFC framework (**Table 1**). Membership does not guarantee endorsement of national standards, but the national PEFC governing body submitting a standard for endorsement should be a member of the PEFC Council. Standards set by these bodies can vary widely from country to country. Some are more oriented to field-based indicators (Sweden and Finland) while others are more ISO and process-oriented (Germany and France) (Meidinger, Elliot, and Oesten 2003).

Table 1: Members of PEFC Council

Country	Organization
Australia	NAFI (on behalf of Australian Forest Standard)
Austria*	PEFC Austria
Belgium*	WoodNet asbl
Brazil	The Brazilian Institute of Metrology and Quality (INMETRO)
Canada	Canadian Standards Association
Czech Republic*	PEFC Czech Republic
Chile	CertforChile Council
Denmark*	PEFC Denmark
Estonia	PEFC Estonia
Finland*	Finnish Forest Certification Council (FFCC)
France*	PEFC France
Gabon	PEFC Gabon
Germany*	PEFC Germany e.V.
Ireland	PEFC Council of Ireland
Italy	PEFC Italia
Latvia*	PEFC Latvia Council
Lithuania	PEFC Lietuva (PEFC Lithuania)
Luxembourg	PEFC Luxembourg
Malaysia	Malaysian Timber Certification Council (MTCC)
Norway*	PEFC Norway
Poland	PEFC Polska
Portugal	Conselho Da Fileira Florestal Portuguesa
Russia	National Voluntary Forest Certification Council in Russia
Slovak Republic	Slovak Forest Certification Association
Spain*	PEFC España
Sweden*	Swedish PEFC Co-operative
Switzerland*	HWK Zertifizierungsstelle
United Kingdom*	PEFC UK Ltd
U.S.	American Forest And Paper Association (on behalf of SFI and ATFS)

*Source: PEFC web-page 19.01.2003. * PEFC-endorsed national schemes.*

The PEFC Council emphasizes independent standard setting, certification and accreditation of certification bodies and thus has chosen to rely on the certification and accreditation procedures of the International Organization for Standardization (ISO). Certification bodies in the endorsed schemes must have an accreditation from a national accreditation body that is a member of a European and/or international accreditation forum. PEFC Council requires that the accreditation be specifically for forest certification within a defined timeframe and not only to ISO 9001 and/or ISO 14001 standards.

PEFC recognizes individual certification, group certification and regional group certification. This flexibility allows an effective use of existing forestry organizations and procedures for monitoring and

control when certification arrangements are defined at national levels. The responsibilities and credibility of the organization of group and regional certification is studied as part of the conformity assessment prior to the endorsement. Countries where forest owners are organized and forest administration is effective have been able to take advantage of the regional group certification, because the existing organizations have been responsible for administration and internal control activities related to certification. For these reasons, PEFC has quickly grown through active recognition of national forest certification systems to include the largest forest area under certification in the world (38% in 2002) (Atyi and Simula 2002). PEFC group and regional certification has been criticized for variation in standards among countries and, in some cases, automatic registration of landowners without their explicit consent or knowledge (see **PEFC Case Study 1)**.

STATISTICS ON SFE PRESENCE BY CERTIFICATION SYSTEM

The data presented in this section focuses on forest management operations certified under each system. It does not include chain-of-custody certification which only exists within the FSC and PEFC systems. However, the existence of credible COC systems is the only means to deliver the certification seal to customers, trace wood sources and deliver market benefits for certified operations.

American Tree Farm System

In 2004, the ATFS had over 51,000 members across the U.S., with 33 million certified hectares (average forest size of 173 ha) (Yolin 2004). Tree Farm certifications are offered free of charge to participants. Certification inspections are performed by more than 4,500 professional foresters who offer the inspections gratis. Training of inspectors is coordinated by each state Tree Farm Committee and also by the ATFS Washington DC staff.

Forest Stewardship Council

In 2004, there were 674 forest management certificate holders worldwide under FSC, comprising a total of 46.9 million ha of land. Across the FSC system, landowners with less than 100 ha comprise less than 4% of all certificate holders (**Table 2**). Landowners with less than 1000 ha still comprise only 15% of all FSC certificate holders and under 1% of the forest area certified (FSC Database 2004).

Table 2 shows the FSC certificate holder breakdown by size and region. Across all regions, the largest groups of certificate holders fall into the over 10,000 ha and 1,000 to 5,000 ha ranges. Europe and Eastern Europe contain 44% of all FSC certificate holders and the largest number of landowners under 100 ha with certificates (70% of global total).

Table 2: FSC FM Certificate Holders by Forest Size and Region, 2004

Forest Size (ha)	World (% of total)	North America (US & Canada)	Europe & Eastern Europe	Rest of World
<100	27 (4%)	5	19	3
100-499	32 (5%)	8	17	7
500-999	45 (7%)	11	21	13
1,000-4,999	156 (23%)	37	60	59
5,000-9,999	81 (12%)	8	37	36
10,000 +	333 (49%)	47	139	147
Total	**674**	**116**	**293**	**265**
Percent	**100%**	**17%**	**44%**	**39%**

This data does not capture individual SFEs who are certified as part of a group. The largest number of group certificates is found in the 1,000 to 5,000 ha range with parcel sizes ranging from 0.5 ha to over 1,000 ha (based on SmartWood database 2003).

Programme for the Endorsement of Forest Certification Schemes

In 2004, PEFC had certified forests in 13 European countries, Chile and Australia, totaling an area of 55.3 million ha. Most of the area certified was in Finland (40%), Norway (17%) and Germany (13%). The PEFC certified areas and percentages are presented in **Table 3**.

Table 3: PEFC-Certified Forests in 2004

Country	Certified Forest Area	Percent of Total PEFC Area
Australia	1,092,678	2%
Austria	3,924,000	7%
Belgium	230,528	0%
Chile	986,414	2%
Czech Republic	1,936,583	4%
Denmark	12,249	0%
Finland	22,355,596	40%
France	3,491,022	6%
Germany	6,957,611	13%
Italy	356,053	1%
Latvia	31,364	0%
Norway	9,231,700	17%
Spain	315,779	1%
Sweden	4,075,932	7%
Switzerland	316,850	1%
UK	9,125	0%
Total	**55,323,487**	**100%**

Source: PEFC 2004 (online).

Division of PEFC certification among individual, group and regional certification is presented in **Table 4**. PEFC does not collect statistics on individual forest holdings within a group or regional certificates.

Table 4: Areas of PEFC Individual, Group and Regional Certification

Country	Minimum Area	Maximum Area	Average Area
Regional Certification			
Austria	129 000	683 000	436 000
Czech Republic	1 985 328	1 985 328	1 985 328
Finland	740 000	6 590 000	1 685 385
France	23 061	456 890	162 418
Germany	76 861	1 819 260	593 367
Latvia	13 376	13 376	13 376
Group Certification			
Denmark	4 434	4 434	4 434
France	91 988	91 988	91 988
Norway	98 000	2 350 000	911 690
Sweden	7 528	1 187 002	256 223
UK	3 000	6 125	4 563
Individual Certification			
Denmark	166	546	373
Latvia	4 450	4 450	4 450
Norway	77 100	77 100	77 100
Spain	1 219	76 014	29 299
Switzerland	0	9 000	377

Source: PEFC Council 2003.

BARRIERS TO CERTIFICATION

American Tree Farm System - Barriers

As the ATFS has morphed from a public relations focus on active management of private forests to a third-party forest certification program over the past 10 years, the requirements to become certified have steadily increased. In the early 1990s, participants were required to have a written management plan, something that many SFEs do not have. The 2004 standard, which was adopted in December 2002 and initiated in July 2004, incorporates a whole new set of standards and field indicators that were inspired by the Montreal Process Criteria and Indicators of Forest Sustainability and created by a process with extensive outside review and input. These changes in the ATFS have been difficult for some of the long-time participants. ATFS is attempting to overcome these frustrations through their outreach and education programs to participants and state Tree Farm committees.

For the smallest SFEs, these new requirements of management plans and extensive recordkeeping for operations are a significant enough burden that ATFS is looking to group certification options as a way to efficiently bring these properties into certified status.

ATFS has completed a pilot test program of 4 group certifications and now offers group certification to eligible groups. Rather than doing individual landowner inspections and requiring plans for each property, a group of owners belonging to a particular program are audited. A MeadWestvaco landowner assistance program in South Carolina with 340 landowners and 375,000 acres completed a successful certification audit in January 2003. In April 2003, F&W Forestry Services received Tree Farm certification for 600,000 acres they manage throughout the southern U.S. for some 100 SFE clients. From the numbers above, it appears that the average size of ownership for the two pilot tests was in

excess of 1,000 acres per landowner. A real challenge for ATFS will be to extend these group certifications to include the more typical 10-100 acre SFEs common across the U.S.

ATFS is extremely encouraged by these initial group assessments and hopes to extend the program to many more SFE groups. In 2004, six ATFS Group Certification Lead Auditor training courses were held resulting in over 80 trained lead auditors. The Manual for Certification Bodies is complete and contains the Standard Operating Procedures for Group Organizations, Group Managers and Group Members and the Standard Operating Procedures for Certification Bodies, in addition to numerous forms and checklists to assist in the auditing process. In addition, a Manual for Group Organizations, Group Managers and Group Members is available, providing SOP-01, necessary policies & procedures and forms and checklists to assist in organizing and preparing the Group Organization for an audit. Group Members must conform to the AFF Standard. In addition, the Group Organization will be audited to 25 additional criteria.

Despite the free services offered to date and the decades of work ATFS has done with SFEs, they have only been able to recruit 1.6 % of US forest landowners with ownerships of 4 ha or more (Rickenbach 2002). This underscores the difficulties and challenges of recruiting SFEs in the U.S. to a forestry program and perhaps underlines the need for alternative mechanisms to promote sustainable forest management for SFE.

> "Among the factors that we encountered were: a limited awareness of the emerging demand for trees from certified forests by many, if not most, non-industrial landowners and some foresters; the reluctance of some landowners to commit to participation in what was perceived as a "big brother or industry-sponsored program"; valid concerns on the current and potential future cost of conformance by landowners and F&W Forestry (who pays for what); and the realization that while the demand for certified products appears to be increasing, little evidence of increased value or market share has been demonstrated.
>
> Inconsistent cash flows from well-managed, non-industrial forestlands and general unwillingness to cede elements in the decision-making process to others will continue to limit the acceptance of and participation in certification programs for many landowners."
>
> *Source: ATFS Case Study 2- F&W Forestry Services, Inc.*

Forest Stewardship Council - Barriers

The FSC has recognized the need to simplify certification for SFEs but continues to be constrained, in part, by a universal system meant to be applied on an international scale. The FSC principles and criteria (http://www.fscoax.org/principle.htm) are global and cannot be altered without ratification of the FSC general assembly. Flexibility in the interpretation of those principles and criteria (i.e. the indicators) can be adjusted by national and regional standards. Within the FSC, certifying bodies and others have developed new certification models to address ways to lower certification barriers (but not standards) for SFEs.

Several authors have discussed barriers to FSC certification for SFE and community forestry operations (Bensel 2001; Thornber and Markopoulos 2000; Thornber, Plouvier, and Bass 1999; Higman and Nussbaum 2002; Scrase et al. 1999). The overarching barrier is cost, for both the certification process

itself (direct costs) and compliance to certification standards (indirect costs) (Scrase et al. 1999). Each is examined below.

Direct costs of certification include the price of an initial assessment, annual audits and reassessment at year five. An assessment team can range from one to three or more members and includes, under the FSC system, public and stakeholder consultations as well as a field review of forest management practices and documentation of those practices. FSC procedures require an annual audit, even if no harvesting activity took place that year, and a complete reassessment every five years. Although each certifying body has discretion in matching the size of the team to the size of the forestry operation, there are certain minimum and fixed costs so that the costs per hectare for assessments and audits are much higher for SFEs than large industrial ownerships (Simula 1996; Scrase et al. 1999). In temperate forests where SFE harvests might take place once every 8 to 20 years, the annual audit and five-year reassessment requirements become especially burdensome, i.e. annual costs balanced against once-a-decade revenues.

Compliance or (indirect) costs to meet certification standards can vary widely depending on the initial quality of forest management practices. Common compliance issues for SFEs include: lack of a forest management plan; assessing the environmental impact of forestry practices; monitoring yields and regeneration rates, and inventories of rare and endangered species. Even a well-managed SFE can struggle to fulfill these requirements. Surveys have shown that only between 5% and 20% of SFEs in Pennsylvania use consulting foresters or have management plans (O'Donnel and Roane 1992; Washburn, Jones, and Nielsen 1998). Yield and regeneration monitoring is extremely rare for these owners. While data from larger regional surveys on rare and endangered species can be folded into a management plan, it is really beyond the means of a SFE to generate such information where it is missing.

> "The difficulty lies in finding appropriate standards or requirements for this type of operation. GFELT believes many requirements are not adapted to forest management on small landholdings. A for-profit organization such as GFELT, dependent on woodlot owners' financial capabilities, runs a very tight budget. It is not surprising that any additional activity will have a significant impact on bearable costs. Certifiers and the FSC should try to avoid demanding too much paperwork from these kinds of organizations who have scarce human resources. Perhaps more guidance should be given to applicants to help them understand what is actually required by FSC and how it is possible to comply with the requirements."
>
> *Source: FSC Case Study 2- Groupement de l'Est-du-Lac Témiscouata (GFELT).*

Other barriers for SFEs include the lengthy and complex language of FSC principles and criteria, irrelevant or infeasible requirements initially designed for large industrial operations such as indigenous rights, social impacts, monitoring of worker health and safety, and required land set asides for conservation (Higman and Nussbaum 2002). Some of these indicators and requirements vary by country, and some countries, such as Germany, have removed some of the irrelevant indicators for SFEs (such as required land set asides).

The group certification model was designed specifically for SFEs. In this model, the certificate is held by an individual (i.e. resource manager or consulting forester), cooperative, land owner association or other legal entity that provides technical assistance, monitoring and oversight to group members to ensure compliance to FSC standards. This allows the direct and indirect costs of certification to be spread over a

larger number of owners and a larger land base. A potential secondary benefit of this model is the possibility of aggregating supply for sales and attracting more buyers/bidders in the sale process.

> "We have greater market potential because of certification. We're not a large enough company to register on anyone's scale for normal timber production. We are however among the top 10 producers of FSC-certified timber on the west coast. While that market potential has not materialized into any actual benefits, we appreciate the potential."
>
> *Source: FSC Case Study 1 - O'Neill Pine Company.*

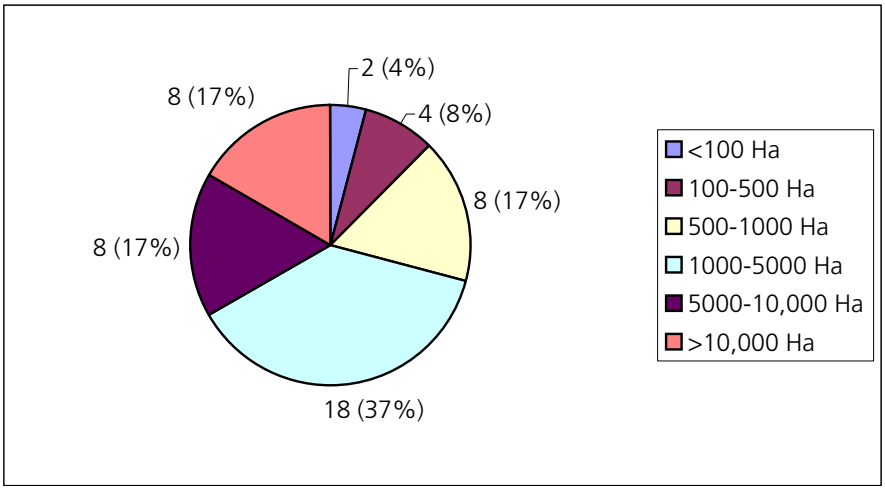
However, the group model creates additional costs of administration and/or organization as well as spreading costs among group members. Determining minimal cost-effective sizes for groups is difficult to do as "reasonable" costs vary depending on harvest volumes, frequencies and market prices (Smith 2002). We have not found comparable data on ATFS or PEFC group certification costs which in many cases is subsidized through the use of industry, county and state foresters in the case of ATFS and through woodlot associations in the case of PEFC.

> "So far the main costs on changing forest management and timber procurement to meet the requirements of certification have been the responsibility of forest owners, supervising forestry organizations (regional forestry centres, forest management associations) and contractors, whereas the possible direct benefits are profited by the exporting industry. Although the regional group certification is very cost-efficient, the costs of e.g. external audits are quite significant if carried out by non-profit Forest Owners' Unions. In the long run, a feasible division of responsibilities and benefits would contribute to the true continuous commitment to the certification."
>
> *Source: PEFC Case Study 1- Regional Group Certification in the Pirkanmaa Province, Finland.*

Clearly, not all SFEs wish to be part of a group or options for forming a group might be limited in certain areas. However, group certification is currently the only viable model within the FSC for lowering costs. **Figure 2** presents data on the number of group certificates issued by the Rainforest Alliance/SmartWood program.[6] Most of these are resource managers, i.e. consulting foresters, offering forest management services to SFEs. The largest number of certificate holders fall in the 1,000 to 5,000 ha range (37%). In group certification case studies presented by Smith (2002), forest holding size within group certificates ranged from 8 to 1,200 ha.

[6] The FSC does not label group certificates in their database, so we used Rainforest Alliance/SmartWood data as an example.

Figure 2: FSC-SmartWood Group Certification by Forest Size (2003)



The latest FSC attempt to reach out to SFEs is through the SLIMF initiative (Small and Low Intensity Managed Forests) (FSC 2002). The SLIMF procedures recognize three "types" of SLIMFs and propose differences in streamlined procedures according to the "type".

One type of SLIMF is defined by size. National initiatives are allowed to define "small" as long as the minimum ceiling is 100 ha and the maximum does not exceed 1000 ha. FSC-US has set 1,000 ha or less as the definition for small. The second type is defined by intensity of harvesting. Low intensity operations are defined by the international standard of less than 20% of mean annual increment harvested annually AND an area of less than 5,000 m^3. The third type is a group of SLIMFs where all the group members meet either the size or intensity criteria.

Table 5 summarizes the major differences. The justification for the streamlined procedures is the reduced risk of environmental damage by forest operations that are either very small or harvest at low intensities.

Table 5: FSC SLIMF Procedures (FSC 2004)

SLIMF "Type"	Eligibility Criteria: Does not allow forest areas to exceed 100 ha	Major Streamlined Procedures	Minor Streamlined Procedures
Single			
Small Forest	≤ 100 ha (National Initiatives can expand this definition up to 1,000 ha)	• One-person evaluation team • Annual field monitoring not required • Full re-evaluation at 5 years replaced with re-certification audit	• No peer review of report • Simple public summary report
Low Intensity Managed Forest	Harvest rates < 20% of MAI (mean annual increment(AND total annual harvest < 5,000 m^3	• One-person evaluation team • Annual field monitoring not required • Full re-evaluation at 5 years replaced with re-certification audit	• Simple public summary report
Group			
Group of SLIMF (total area <1,000 ha)	All individual members meet small forest criteria (≤ 100 ha) OR low intensity criteria	• Lower risk-adjusted sampling • Field monitoring needed for 3 of 5 years • Full re-evaluation at 5 years replaced with re-certification audit	• No peer review of report • Simple public summary report
Large Group of SLIMF (total area > 1,000 ha)	All individual members meet small forest criteria OR low intensity criteria	• Lower risk-adjusted sampling • Field monitoring needed for 3 of 5 years • Full re-evaluation at 5 years replaced with re-certification audit	• Simple public summary report
Not a SLIMF	Anything not fitting above criteria	Standard procedures	Standard procedures

The only major cost savings in the streamlined procedures are reduction of team size for individual SLIMF evaluations, eliminating the necessity for annual field audits and the use of "re-certification audit" visits for reassessment in the fifth year rather than a complete reassessment (although "recertification audit" is not defined). In theory, this could reduce costs by 50% for a small group SLIMF from $50,000 (five years direct costs plus reassessment) to $25,000. None of these streamlined procedures touch on the issues of management plans and monitoring requirements, i.e. the high indirect costs of certification for SFEs.

"More significant than the hard dollar costs have been the indirect costs of staff and contractor time spent meeting FSC guidelines. It is very difficult to isolate indirect costs due only to certification. Especially since many of the requirements were something we intended to eventually accomplish.

For example, because of SmartWood's emphasis on planning, we have mapped growth rings on over 600 stumps. We believe in good growth modeling so we likely would have done the mapping anyway, so it is probably not fair to charge that cost to certification. On the other hand, even though we appreciate snags as a component of healthy forest environments, we likely would not have created a company-wide snag inventory. That cost we feel is fair to attribute to certification and estimate about $3,000 per year in indirect certification costs.

A third area of indirect cost is trees left standing and not harvested because of certification. Against our timber consultant's advice, we continue to place no dollar cost of certification in this area. We believe most of the harm done in this area was due to changes in Washington State law, not certification. We may be leaving more trees due to certification, but we believe we will be able to harvest many of those trees in future rotations.

Certification has become a driver to do good forest management and planning now rather than getting around to it later. We have better plans, documents and practices because of certification."

Source: FSC Case Study 1 - O'Neill Pine Company.

Programme for the Endorsement of Forest Certification - Barriers

A precondition for PEFC-based certification is that a country can present a national forest certification system including the standard implementation arrangements, certification arrangements, and results of standard testing and chain of custody verification requirements. Countries with solid forestry organizational structure, advanced and effective forest and environmental legislation and with established certification bodies have been able to meet these preconditions and develop national standards that have been submitted to PEFC. On the other hand, the countries where the forestry sector is not well organized and influential associations capable of coordinating the development process are lacking have not been able to develop such systems. PEFC endorsement requires this considerable national-level initiative and consensus on the implementation of sustainable forest management because the framework does not have any procedures for certification in the absence of a national-level standard. PEFC does not allow certification bodies to develop interim standards, which is possible in the FSC framework.

Demanding and well enforced forest legislation is not a precondition but it provides a commonly recognized framework for standard setting at the national level. It has proved to be difficult to reach a consensus on adequate performance requirements in certification without the support from solid legislation. A lack of certification and accreditation organizations in a country also discourages the elaboration of national forest certification systems.

The lack of domestic demand for certified products and certification costs have been seen as hindering elements to forest certification in general in Europe (Raunetsab et al. 2002) but that may be changing. Demand for certified domestic products comes from importers of forest products from other EU and non-EU countries who often demand certification of their suppliers. This is especially the case in Germany, the Netherlands and somewhat in UK. PEFC certification is known among well-informed wholesale businesses but not among common retailers or consumers. It has not yet fully provided the competitive advantage or market risk avoidance wished by the producers. However, despite the fact that

FSC is estimated to have the largest proportion of demand for certified products, PEFC demand seems to have increased slightly during the past years (FAO 2002).

"Although forest certification was deemed to focus on the management of tropical and sub-tropical forests, the leading parties considered it as an essential and potential tool to promote the exports of timber products from the Czech Republic. The most significant export countries of Czech timber products are Austria and Germany. Processing and trading of timber coming from sustainably managed forests is significant for them not only in view of business opportunities but also for political reasons. Companies want to demonstrate their environmental and social responsibility. Currently, the significant customers do not offer any price premiums, so we cannot speak about price differences between certified and non-certified timber. However, the trade of non-certified timber is more difficult because most of the major customers prefer certified timber."

Source: PEFC Case Study 2 – PEFC in the Czech Republic.

Certification costs are composed of the expenses related to the costs of (i) the changes of forest management to conform to the set criteria, (ii) organization of individual/group/regional certification, training and internal oversight and (iii) external auditing. In general, the PEFC framework allows cost-efficient approaches to the organization of certification, which often also increases the efficiency in external audits. However, the costs of training and information dissemination can be considerable but are absorbed by the organizing associations.

The level of the PEFC Council membership fees varies according to the timber production of the country. For the national governing bodies in countries with high production, such as Russia or Poland, this can be a deterrent for membership application.

"Private non-industrial forest owners joined the regional group certification through the decision made in the annual meeting of their local Forest Management Association. All members in the association joined the certification process, if they did not individually express their wish to resign from the process. Although this collective approach is the only way to reach the thousands of small-scale forest owners, it requires enormous inputs in information to ensure that the members understand the requirements and know how to implement them. In Finland, practically all the forestry works are planned, implemented or supervised by a regional or local forestry organization, which is a precondition for such a collective approach in the membership in regional certification."

Source: PEFC Case Study 1 – Regional Group Certification in the Pirkanmaa Province, Finland.

BENEFITS OF CERTIFICATION

For buyers and consumers of certified wood, a benefit is knowing that supply sources are sustainable and not the result of cut-and-run operations that could disappear over the short to medium term. As the forest products industry increasingly divests its land holdings, it is becoming more dependent on third parties for its raw material needs. Demanding certified wood sends a strong signal to suppliers that processors are concerned about their long term supply. Accordingly, the greatest potential benefit of certification for all stakeholders is improved forest management practices leading to long-term sustainability and protection of endangered species and habitats.

American Tree Farm System - Benefits

Because the ATFS existed prior to the current era of market-oriented certification, participants historically associated themselves with it to gain free advice from a professional forester, recognition for their active management efforts and ongoing education through the Tree Farmer magazine. As SFI participants have begun to place market source restrictions on the wood they will accept, ATFS participants have begun to gain a market access advantage over SFEs who are not members. To date, ATFS certification has been free to any SFE. Given the potential market access benefits alone, Tree Farm status makes sense for many SFEs. It is certainly less expensive due to subsidized audits and less demanding standards than any other system available in the U.S. for SFEs.

> "Many industry publications and extension information are telling us about the certification process, requirements and possible long-term benefits. In choosing to obtain certification through the Tree Farm System, we felt it would help us to have a more professional level of tree farm management and it might facilitate in marketing our logs. From information we were looking at and tours we attended in the wood products industry we felt there would not likely be any increased value to our log prices as a result of certification. For this reason, it does not make a lot of sense to invest very much financially in obtaining certification, which makes the Tree Farm system, with its free audit, an attractive option."
>
> *Source: ATFS Case Study 1 – Decker Tree Farm Certification.*

Forest Stewardship Council - Benefits

The most commonly discussed benefit of forest certification is market access and market premiums. These benefits were widely touted early in the movement when many companies and countries were calling for a boycott of tropical timber or timber from old growth forests (high conservation value forests). Certification was developed as a means for consumers and buyers to support sustainable forest practices without using the blunt tool of boycotts which punish sustainable forest management as well as unsustainable practices.

Although some producers are able to negotiate price premiums for their wood, they are the exception rather than the rule. This usually occurs with high grades of highly valued commercial species with limited supplies such as cherry, mahogany or redwood. The ability to use FSC certification to gain access to new markets or maintain market share is fairly well documented. In fact, this might be the real market benefit for most producers who struggle to market lower grades of wood and lesser known species. Large manufacturers committed to using FSC wood have expressed a new interest in certified red maple and

locust as they search for low-cost options within the certified wood market. Similarly, community operations in Guatemala are experiencing an unprecedented interest in little known secondary tropical species as buyers search for certified wood supplies.

An important current trend in the U.S. is high interest in "green building" in the commercial construction sector. Many new structures are being built to standards created by the U.S. Green Building Council, called Leadership in Energy & Environmental Design (LEED). Forest Stewardship Council-certified wood holds special status within the LEED standard as the only accepted certification system for wood products. Accordingly, industry experts say that the LEED standard is the most important demand driver for FSC certified wood in the U.S. today.

However, SFEs, due to low and irregular volumes of wood, are not robust negotiators in wood markets. Learning how to access and benefit from certified wood markets can be challenging for large industrial producers, let alone SFEs with minimal market exposure. Even though large retailers such as Home Depot and B&Q have stated policies preferring FSC-certified wood, the production chain reaching back to SFEs with small volumes is long and tenuous.

> "Unfortunately, the demand for certified wood is taking longer than expected to materialize. When requests are made to GFELT, the absence of local certified mills combined with a low production level of certified wood prevents them from satisfying potential clients. For this reason, GFELT considers that no positive outcomes came out of certification. Aside from learning about the certification process and the importance the FSC-certification program places on field performance as compared to other programs, the organization is still waiting for a return on their investment."
>
> *Source: FSC Case Study 2 – Groupement de l'Est-du-Lac Témiscouata (GFELT).*

> "The reduction of large logs from federal and state forests has forced the lumber industry to re-tool for small logs. Weyerhaeuser expects to have a standard 35-40 year rotation on Douglas fir. In a few short years we have gone from a premium on large logs, to no premium, to a penalty, to a rejection by many mills of large logs. Our sustainable forestry practices, supported by FSC certification, aim to develop large logs.
>
> Beyond mill problems, there is no FSC-certified lumber warehouse. Producers like OPC produce only a few times a year while FSC-certified lumber is needed throughout the year. Without the warehouse, producers like us will continue to sell 99% of their logs on a non-certified basis and architects specifying FSC-certified wood will continue to be frustrated that contractors can't get supplies."
>
> *Source: FSC Case Study 1 – O'Neill Pine Company.*

Many SFEs are not motivated by market forces alone and have multiple objectives and goals in pursuing sustainable forestry practices. Third-party certification is a means for them to receive independent recognition of their forestry practices. In the case of forest concessions or devolution of forest management rights to smallholders, forest certification can also confer legitimacy to both the forest manager and to the government entity that has devolved the authority. SFEs in the Pacific Northwest of the U.S. where forest practices are highly regulated have indicated that the costs of FSC certification would be worthwhile if they could receive some regulatory relief from state forest agencies. To date, this has not happened. However, FSC certification can fulfill some regulatory functions in the import and

export of species on CITES Appendix II lists where documentation is required to show that the wood came from a sustainable source.

> "We felt our management was better than industry standards and believed it should be recognized for being the "cream of the crop". Another motivation to certify was the threat of ever increasing governmental regulations. We hoped certification would allow us to keep doing business."
>
> *Source: FSC Case Study 1 – O'Neill Pine Company.*

An important benefit of FSC certification for all stakeholders is improved forest management practices leading to long-term sustainability and protection of endangered species and habitats. Newsom et al. and collaborators, in a forthcoming study of FSC preconditions and conditions given to forest management operations in the U.S., calculated the percentage of operations that were required to make certain forest management changes as a result of the certification process. This study found that system elements such as Management Plans, Monitoring and Inventory were the most commonly addressed thematic areas (by 94%, 79% and 71% of certified operations, respectively), followed by high profile ecological elements such as High Conservation Value Forests and Woody Debris, Snags and Legacy Trees (by 71 and 63%, respectively) (Newsom et al. 2004). Smaller operations were less likely than larger operations to receive preconditions or conditions related to: 1) wildlife; 2) high conservation value forests; and 3) conflict resolution with stakeholders, neighbors and communities.

> "We had to learn to value forest elements that we had not previously placed as high a value upon. Snags and downed wood that were only in the way prior to certification became inventory items that we cruise and hold ourselves and our contractors accountable for. We would have eventually developed the in-depth planning and documentation required by SmartWood, but certification moved our schedule up and we completed it sooner."
>
> *Source: FSC Case Study 1 – O'Neill Pine Company.*

However, as short-term economic decisions are made, the question of who bears the costs of improved practices (often with longer term benefits) is an issue.

Programme for the Endorsement of Forest Certification - Benefits

European forest owners and the forest industry are the strongest supporters of the PEFC. All parties aim at improved market access, environmental image, better market communication and improvements in sustainable forest management (Raunetsalo et al. 2002). The PEFC framework allows innovative approaches and applications in national certification systems that take national characteristics into consideration. Although the scope and general performance level of the standards must meet the requirements of Pan European Operational Level Guidelines, national criteria may focus on the issues relevant in the country and thus increase efficiency in the enhancement of sustainable forest management.

Not many studies have been carried out on the implications of PEFC forest certification on the level of forest management. Experience in Finland has shown that the criteria are fairly well incorporated into the rules and guidelines for forest management planning, implementation and monitoring and any non-

conformity found in internal or external audits is taken seriously. Certification has definitely increased the emphasis on environmental and social aspects, as defined in the criteria, in forest management.

> "Certification requirements introduced a few additional requirements e.g., on protection of key biotopes, small water bodies, consideration of environmental impacts in forest road construction and supplementary ditching as well as in the implementation of seedling stand treatments and first thinnings. Most of the requirements were already included in the recommendations but forest certification enforced their implementation in practice."
>
> *Source: PEFC Case Study 1 – Regional Group Certification in the Pirkanmaa Province, Finland.*

Flexibility in the organizational arrangements takes full advantage of existing forest administration, monitoring and control systems which results in cost efficiency and better integration of certification into practical forest management. PEFC is the most cost-efficient forest certification approach for private non-industrial forest owner if national procedures on standard setting and system development are in place. The ability to overlay PEFC certification on top of existing standards, regulations and organizations has also been criticized as forest owners in an association may, by default, be included in certification without their explicit knowledge or consent.

> "Private non-industrial forest owners joined the regional group certification through the decision made in the annual meeting of their local Forest Management Association. All members in the association joined the certification process, if they did not individually express their wish to resign from the process."
>
> *Source: PEFC Case Study 1 – Regional Group Certification in the Pirkanmaa Province, Finland.*

CONCLUSIONS AND FUTURE TRENDS AND ISSUES

CERTIFIED FORESTS

The vision behind certification was to create an incentive for conducting good forest management. Is better forest management needed by SFEs and, if so, does certification serve as a useful tool for improving management? In the U.S., very few SFEs have a management plan but this in itself does not mean poor management. In Europe, woodland owner associations and a stricter regulatory environment promote active forest management. If improving management on SFE land can be accomplished through a combination of tools – what role does/could certification play?

Given the above described situation for SFEs, it may be surprising that any have embraced certification. For example, to receive FSC certification, multiple constraints like costs, compliance and access exist (Nussbaum et al. 2001). Add to this the fact that many have found it difficult to benefit in the marketplace from certified status and it becomes clear that the motivation must come from other areas. In fact, many SFEs that are certified have become so through no action of their own but through the decision of their forest owner association (i.e. PEFC in Finland).

The ECE/FAO (2002) study carried out in 32 countries concluded that in the near future the number of new certification schemes, area of certified forests and supply of certified products will increase, because new schemes have been developed and several standards have been revised. The standards have been continually improved and this will result in new land bases and new certified products. Stakeholder participation is also emphasized in the evolution of systems by many schemes. Demand for certified products is likely to increase, which will benefit all the schemes. Consumers are not yet well aware of certification and its implications but consumer campaigns are likely to become more common and increase awareness. Some governments are also setting specifications for certified timber thus influencing which schemes will develop and to what extent (Raunetsab et al. 2002).

CERTIFICATION AND MARKET ACCESS – NOW AND THE FUTURE

There are clear examples where certification has not only increased market access for SFEs but has also resulted in premium prices. However, these examples are not the norm. Generally it can be said that the higher the value-added for a product, the more likely it is that certification might obtain a premium. Extensive research has shown consumer interest in the concept of certification, but only recently has experiment-based research been conducted that tests actual consumer reaction to labeled wood products. The exploratory research on the topic shows that a forest-certification ecolabel has a significant positive impact on consumer choice when there is no price difference as compared to an unlabeled product. However, the proportion of consumers who choose a labeled product at even a small price premium over an unlabeled product is much smaller (Anderson and Hansen 2004).

What does this mean in practice? To date, final consumers have not significantly influenced the development of forest certification and wood products ecolabeling. Preliminary research in the U.S. marketplace suggests that they will not be important players in the immediate future. In addition, large retailers that have had a major impact on the development of certification are unlikely to provide price premiums and, in fact, many avoid promoting ecolabels altogether, preferring to promote their own

brands instead. There is some recent anecdotal evidence that large certified volumes of wood can bring a premium (Donovan pers. comm.). A lack of consumer involvement and hesitancy on the part of retailers to actively use ecolabels suggests that there may never be a mainstream market for certified, ecolabeled wood products. It could be that certification will continue to have little relevance for most SFEs as a market objective as they are unable to deliver large, consistent supplies. An exception might be tropical wood, where certification is much more important for product acceptance in Europe and to some extent North America.

As outlined above, we suggest that market issues, regardless of certification, are a major constraint for SFEs and their continued success. Certification can add market complexity for the landowner because the certified marketplace is still disjointed and many gaps exist in the infrastructure. For SFEs that have actively pursued certification with a goal of capitalizing in the marketplace, the results are mixed. Owners have faced an undeveloped marketplace where they have been forced to create market linkages to match supply and demand or where lack of local markets demanding certified products results in limited information.

It has been a significant challenge, even for wood products companies marketing finished goods, to develop markets for certified products (Hansen and Punches 1999). Landowners are place-bound and often faced with creating markets for processed products rather than markets for their logs. Expertise to make this happen successfully takes time to develop and SFEs have experienced much frustration. Landowners in developing countries that must rely on international markets for certified product demand are especially disadvantaged (Thornber, Plouvier, and Bass 1999).

IS CERTIFICATION IMPORTANT FOR SFEs?

If certification becomes the norm for large industrial companies and SFEs are providing a minor percentage of their fiber, certification may be rather unimportant. Therefore in Oregon, where SFEs produce only about 16% of the overall wood fiber used in the state, market incentives for certification will be weak. The market pressure for certification might be higher in regions where SFEs make up a much higher percentage of the fiber base.

It is important to remember that the original motivation behind creating forest certification was to positively impact forest management practices and to encourage sustainable forestry practices. Where SFEs are looking for recognition for good practices or forest management advice, ATFS offers both for free. PEFC, built on existing woodland owner associations, recognizes forestry practices compatible with intergovernmental concepts of SFM (e.g. PEOLG-Pan European Operational Level Guidelines for Sustainable Forest Management). Often the changes in performance level requirements are not dramatic, but regular auditing forces better implementation but the underlining regulations and forestry associations must exist. The costs for entry to the FSC are high and improvements in forest management can be attained but SFEs would need to perceive compensating benefits to take on the extra costs.

How will industrial and societal evolution over the next decade impact SFEs and their involvement with certification? Currently, for the average SFE in Europe and North America, certification is likely to be of relatively minor importance in comparison to other issues. Forest fragmentation, pressure on land conversion, increased regulations, shifts in management objectives away from fiber production and limited market power are larger overarching issues for SFEs. The market value of certification might

depend more on forest and market dynamics where buyers want constant supplies and verification of sources, especially if they come from controversial regions.

Owners in the state of Washington recently saw major reductions in available standing volume due to increased regulations (additional riparian set asides). This sort of regulation will certainly increase and continue to impact small forestry operations. Regulatory relief through certification could provide strong incentives for SFEs for certification. In some tropical countries (Guatemala and Bolivia), third-party certification is a requirement for forest concession holders and the World Bank also requires certification to invest in forestry programs or operations. Some observations:

- In developing countries, certification can increase the value of forests (with the condition that timber products gain access to export markets) – thus it can provide wealth and improve protection of biological, social and economic values of forests.
- In industrial countries, certification (if disputes between the schemes are settled) can promote the status of wood products compared to steel, concrete etc. and thus expand markets for the sector.
- Within the forestry sector, certification enlarges the scope of management objectives to include environmental and social aspects and it increases the monitoring and transparency which leads to improved practices (varies among certification systems).
- Transparency in certification (detailed public standards, public certification procedures) is a precondition for these developments.

Consolidation in the forest industry for pulp, paper and generic sawn wood products and globalization of markets is set to continue, bringing with it a migration of processing facilities outside of North America and Europe. Those that remain in this segment of the market will grow in size to capture economies of scale in an attempt to compete through low costs. Fewer and larger processing operations increase the power shift away from SFEs toward large integrated companies, especially in the commodity wood markets. Increased competition from tropical and semi-tropical plantation wood creates downward pressure on wood prices, further limiting incentives for forest management for fiber.

The higher value segments of the forest industry – high-value hardwoods, specialty woods and wood products, higher value furniture and finished products – have different cost structures. Smallholders in this segment can compete effectively if they can produce quality products and link themselves to interested buyers. These smallholders may become more able to incorporate the costs of certification, both FSC and other schemes, into their cost structure if they develop relationships to access higher value and differentiated markets. In contrast, smallholders who sell material to the more competitive segment of the marketplace will not be able to afford schemes that add to their costs. They will certify where this cost is borne sufficiently by their raw material purchases (to whom they are linked in a chain of custody) or where the cost is reasonable relative to the size and scale of their forest operation.

In the developing countries, SFEs are an increasing source of plantation wood products. Extensive plantations in the southern cone of Latin America, in southern Africa, and South and East Asia involve non-industrial private lands to increasing extents. While still small in number, chain of custody certification is expanding among industrial processors in these countries and among industrial processors that import raw or processed material. Outgrower schemes offer an important economic opportunity for

farmers outside of agriculturally rich areas and particularly in countries with limited natural forest cover. Forest certification in developing countries needs to pay attention to the access that these SFEs have to forest certification where they produce a significant share of the raw material for domestic processing or for processors with export markets. This is particularly a challenge for FSC schemes, as other schemes are likely to increase their international scope over time.

THE WAY AHEAD

There is no available data to compare total group certification costs among the three systems given the differences in allocation of costs (forest owners, forestry associations, state foresters providing free audits, etc.) and variations in the sizes of groups. All three systems are moving in the direction of group certification for SFE and there are many ways to subsidize and distribute those costs.

PEFC and ATFS were both developed specifically for SFEs and thus have lower barriers to entry. The PEFC framework facilitates easy entry of various national and regional forestry standards and groups. Furthermore, the highly organized forestry sector in parts of Europe presents a structure that is easy to envelop. Future growth under the PEFC systems is likely in Central and Eastern Europe where land is being privatized and through the endorsement of applicable non-European schemes in the U.S., Canada, Chile and many other countries.

In contrast, U.S.-American SFEs are for the most part unorganized and unassociated. Despite ATFS presence for over 50 years and the provision of free services, the program has been adopted by only a small number of SFEs in the U.S. The ATFS is promoting group certification options and improving the market incentives for members and is likely to grow as a result but not as robustly as PEFC where the SFE forestry sector is more organized.

FSC will continue to struggle to capture SFE clients given the high entry barriers. As a global system with multiple stakeholders it was not originally designed for SFEs and has difficulties defining procedures for SFEs which would lower entry barriers. Although good progress has been made in including community forestry operations and larger groups in certification, individual SFEs are likely to find continued high costs and requirements.

Market requirements for certification are likely to remain over the short to medium term, but the specification of one certification system over another is likely to decrease as businesses struggle to secure supplies from one or more competing systems. It is likely that all major systems except FSC will have mutual recognition in the relatively near future; thus, the situation in the market will become one of FSC versus the rest. The potential market advantages for a SFE to be certified under one system versus another are likely to decrease over time.

As certification moves into the second decade, there are a number of important recommendations that emerge from this review:

- As the forest industry increases in competitiveness, all forest certification schemes will need to monitor the access of SFEs to the norms and standards, particularly in countries and scenarios where small-scale producers are not well organized in cooperative structures that spread costs among members.
- FSC needs to study the experience of PEFC and ATFS/SFI in tailoring their schemes to the needs and interests of smallholder forest managers and apply the relevant lessons learned to the standards for SFEs to increase its equity and affordability by finding innovative means to allocate costs.
- Countries and donors interested in increasing the proportion of certified smallholders should promote and finance government programs and industry programs which assist SFEs with improving their management and administrative practices along the lines of the ATFS experience.
- Countries with a significant proportion of SFEs managing plantation and/or natural forests should collect some of the biological and environmental data that is needed at a landscape level, making certification of individual operations more cost-effective.
- Countries should review their policy, legal and regulatory frameworks to determine whether these frameworks foster the desired participation of SFEs in the forest sector, enable them to compete legally in the marketplace and support their multi-dimensioned forest management objectives.
- Countries with significant SFEs in natural forests and donors supporting forest certification should analyze the cost structures of these SFEs and support the modification of certification procedures and relocation of indirect and direct costs of certification to enable more of these SFEs to become certified, given market trends and the multiple values for which these forests are being managed.

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FSC CASE STUDY 1: O'NEILL PINE COMPANY

by Richard Pine, President

BACKGROUND

O'Neill Pine Company (OPC) is a third-generation family operation with its headquarters in Salem, Oregon and its forestlands in the state of Washington. We received FSC certification for forest management and chain of custody by SmartWood on July 1, 2000. All of our properties are within 5 miles of Interstate 5 in the Southwest area of the state. Communities within this region are Centralia, Chehalis, Winlock, Napavine, Vader and Rochester.

We retain the overall management of company lands, but because of our distance from the timberlands, we work through others to accomplish most tasks. Washington Timber Management serves as our timber consultant contracting for logging and log hauling and marketing the annual timber harvest. An outside service provider conducts regular timber visits and provides much of the forest management labor. Independent contractors are hired from time to time for tree planting and some vegetation control.

We own 47 properties ranging in size from 2.8 to 69 hectares. The average property size is 19 hectares for a total of just under 894 hectares. There is no old growth on the properties and all trees are planted with the intention of future harvest. The properties exhibit a fairly wide variety of forest types and topography is extremely varied, ranging from a gentle in slope (< 20 %) up to 50%. The bio-environment for much of the land is typical of Western Washington, which under "normal" historic conditions would be a species mix of Douglas-fir, western red cedar and some hardwoods such as alder. From a stand-perspective, multi-age and multi-species conifer stands were probably not the norm for most of the properties.

We have developed a tentative timber plan through the year 2110. Based on our growth models, the land can easily sustain harvest of one million board feet per year. We generally schedule 2-4 harvest areas per year from January through September. Certification was considered carefully before going forward with the following 1999 corporate resolution:

RESOLUTION 99-07-04

SMART**W**OOD IS AN AUTHORIZED CERTIFYING BODY FOR THE **F**OREST **S**TEWARDSHIP **C**OUNCIL **(FSC)**, AND

FSC CERTIFICATION IS RECOGNIZED INTERNATIONALLY AS A BRIDGE BETWEEN THE TIMBER INDUSTRY AND ENVIRONMENTAL GROUPS, AND

MOST **FSC** PRINCIPLES ARE CONSISTENT WITH CURRENT **OPC** FOREST PRACTICES, AND

OPC IS WILLING TO BRING FOREST PRACTICES WHICH DO NOT COMPLY IN LINE WITH **FSC** PRINCIPLES, AND

THE BOARD HAS PREVIOUSLY AUTHORIZED EXPLORATION OF CERTIFICATION THROUGH THE PRE-ASSESSMENT STAGE, AND

OPC HAS RECEIVED THE RESULTS OF THE PRE-ASSESSMENT AND BELIEVES IT CAN MEET THE STANDARDS OF CERTIFICATION FOR A REASONABLE COST, AND

FSC CERTIFICATION MAY BRING ADDITIONAL PROFIT TO THE COMPANY, AND

FSC CERTIFICATION MAY ALLOW US TO KEEP DOING BUSINESS AS USUAL DESPITE INCREASING REGULATION AND PUBLIC PRESSURE, AND

FSC GOVERNING PRINCIPLES, AS APPLIED TO **OPC**, REPRESENT SOUND, MODERN FORESTRY, THEREFORE

WE AUTHORIZE EXPENDITURE OF COMPANY FUNDS AND DIRECT COMPANY OFFICERS TO OBTAIN A FULL ASSESSMENT FROM **S**MART**W**OOD AND REPORT BACK TO THE BOARD FOR FINAL ACCEPTANCE AND APPROVAL OF CERTIFICATION AS A PRIMARY BUSINESS STRATEGY.

We chose to certify because we felt we already had excellent forest management practices. As one certifier said "FSC guidelines do not bring in everyone in the business – as do industry standards – but who shows up as the cream of the crop." We felt our management was better than industry standards and believed it should be recognized for being the "cream of the crop". Another motivation to certify was the threat of ever increasing governmental regulations. We hoped certification would allow us to keep doing business.

Another reason for becoming certified was best expressed by Scott Ferguson of Individual Tree Selection, located in Portland. Mr. Ferguson was the first SmartWood Certified forester in the Northwest. He said in a recent article that the attraction to Certification for him was "a formal peer review process, support of changes and improvements, and a cooperative network of people who were interested in sustainable forestry."

We discussed the marketability of the FSC eco-label with mixed opinions. While rational economics would require us to justify the cost and effort of certification with at least an expectation of a premium for our eco-labeled product, we chose to go forward even without a guarantee of profit from certification.

BARRIERS TO CERTIFICATION

We entered the certification process with the expectation that our practices were already very good. In some areas we even found our certifiers encouraging us to "loosen up". We avoid pile-burning out of air pollution concerns. They encouraged us to burn piles and harvested stands if we could obtain permits. We adhered rigidly to an annual harvest allowance. They encouraged us adopt a five-year average sustainable yield goal.

In other areas we had to learn to value forest elements that we had not previously placed as high a value upon. Snags and downed wood that were only in the way prior to certification became inventory items that we cruise and hold ourselves and our contractors accountable for. We would have eventually developed the in-depth planning and documentation required by SmartWood, but certification moved our schedule up and we completed it sooner.

Our biggest concern in maintaining certification is the increasing leave tree requirements. Washington's Fish and Forest rules are already the most restrictive in the country. On March 20, 2000, Governor Locke removed 17% of our productive ground to untouchable riparian zones with one stroke of a pen. FSC certification requires us to far exceed the strictest environmental laws in the country.

SmartWood initially submitted a budget of $4,329.20 for the completion of our certification. Our annual audit fee was estimated to be approximately $500. Our actually hard dollar costs are as follows:

Table 6: Annual Cost of Audit

Year	Annual Cost in Dollars
1999	$5,304
2000	$1,607
2001	$1,261
2002	$1,215
2003	$1,335

More significant than the hard dollar costs have been the indirect costs of staff and contractor time spent meeting FSC guidelines. It is very difficult to isolate indirect costs due only to certification, especially since many of the requirements were something we intended to eventually accomplish.

For example, because of SmartWood's emphasis on planning, we have mapped growth rings on over 600 stumps. We believe in good growth modeling and we likely would have done the mapping anyway, so it is probably not fair to charge that cost to certification. On the other hand, although we appreciate snags as a component of healthy forest environments, we likely would not have created a company-wide snag inventory. That cost we feel is fair to attribute to certification is about $3,000 per year in indirect certification costs.

A third area of indirect cost is trees left standing and not harvested because of certification. Against our timber consultant's advice, we continue to place no dollar cost of certification in this area. We believe most of the harm done in this area was due to changes in Washington State law, not certification. We may be leaving more trees due to certification, but we believe we will be able to harvest many of those trees in future rotations. We may lose some either to blow down trees or trees getting beyond marketable diameters.

BENEFITS OF CERTIFICATION

Certification has become a driver to do good forest management and planning now rather than getting around to it later. We have better plans, documents and practices because of certification.

We have greater market potential because of certification. We're not a large enough company to register on anyone's scale for normal timber production. We are, however, among the top 10 producers of FSC certified timber on the west coast. While that market potential has not materialized into any actual benefits, we appreciate the potential.

The primary benefit of certification has been public relations. We are certainly not a household name, but more people in and out of the timber industry know OPC because of certification. We have been the subject of very positive newspaper and magazine articles and have been favorably received for public speaking engagements. In an era when cutting trees is a routine subject of hostility, we are acknowledged as being on a positive track.

GENERAL BARRIERS

In many ways this is a difficult time to be in the timber business, certified or not. The decline of the Asian economy dried up our most profitable buyers of logs. The decline in demand, coupled with a greater global timber productive capacity, has created a surplus of available wood. Even though this region is experiencing record home-building, prices for logs have gone down and are not expected to rebound.

Washington State has extensive environmental protection laws and relatively high labor costs. It will be difficult for this region to compete with global suppliers of wood fiber who do not face similar environmental restrictions, can pay far less for labor and in some cases get substantial government subsidies for their raw materials. In fact, the Pacific Northwest, one the best areas in the world for growing trees, is soon expected to be a net importer of wood products for the first time.

The reduction of large logs from federal and state forests has forced the lumber industry to re-tool for small logs. Weyerhaeuser expects to have a standard 35-40 year rotation on Douglas-fir. In a few short years we have gone from a premium on large logs, to no premium, to a penalty, to a rejection by many mills of large logs. Our sustainable forestry practices, supported by FSC certification, aim to develop large logs.

LESSONS LEARNED

We believe there are two critical areas for the near-term success of FSC: sustaining environmental group support and building infrastructure. We are certified by FSC, the American Tree Farm System, and SFI, the acknowledged industry certification system. Environmental groups must maintain strong support for FSC and do their part in educating the public on the differences between FSC and SFI certification. It is our opinion that support from environmental groups weakens when for-profit business is involved.

We also believe that, supported by a recent OSU study, environmental consumer decision-making is very weak when an environmental option costs even a little more money to buy. A Home Depot manager stated at an industry meeting in 2002 that in order to work, certified wood needed to be transparent to the consumer. Reading between his lines this seems to mean that certified wood will not get a price premium.

The other critical issue for FSC success is to build infrastructure. Some mills in Washington have certified for chain of custody but not enthusiastically. They do not like having two distinct supply piles or having to clear out their mill before starting a run of FSC wood. They feel trapped not being able to treat the logs as a commodity and borrow from one pile to meet the specifications on their output. For the past two years we have not been able to find a buyer of certified wood that would pay as much as buyers of non-certified wood.

Beyond mill problems, there is no FSC-certified lumber warehouse. Producers like OPC produce only a few times a year while FSC-certified lumber is needed throughout the year. Without the warehouse, producers like us will continue to sell 99% of their logs on a non-certified basis and architects specifying FSC-certified wood will continue to be frustrated that contractors can't get supplies.

To become FSC certified at this time is not rational from a business perspective. Companies that are most comfortable with FSC certification, like Collins Pine, Fort Lewis, Zena Timber and OPC, seem to be guided by non-business drivers.

Early in our certification discussions we posed a difficult question to which we have yet to find a satisfactory answer. If FSC certification is successful, FSC will yield increasing power over our company and other larger and more market dominant players will become certified and we will have lost. If FSC certification is not successful, we will have wasted money and effort and lost. Knowing that we lose on both ends of the spectrum, we have struggled to find a way that OPC wins with certification. In hindsight, we may now be experiencing our opportunity and missing it because we were not willing and able to invest in the supply chain between our logs and the contractors who desire FSC-certified wood.

While we continue to fulfill our requirements to stay certified on an annual basis, we would be hard pressed to decide to start the certification process today.

FSC CASE STUDY 2: GROUPEMENT DE L'EST-DU-LAC TEMISCOUATA (GFELT)

by Nicolas Blanchette

BACKGROUND

Groupements (Resource management organizations) such as GFELT were created in the early 1970s during a period of socio-economic instability as a way to stimulate local economies and favor local control of the *Est-du-Lac Témiscouata* region development. Owned by local woodlot owners, *groupements* focus on managing forests, creating local employment opportunities and investing in the local forest capital.

Today there are 44 *resource management organizations* across the province. They are members of the *Regroupement des sociétés d'aménagement forestier* (RESAM), an umbrella association that defends their interests at various political levels. More than 25,770 woodlot owners are members of the *groupements*, which manage a cumulative area of 1.3 million hectares of forests. With such an important forest landbase under their supervision, *groupements* are able to consider landscape issues in forest management while individual woodlot owners continue to define management objectives.

GFELT is owned by more than 400 woodlot owners and is located in the Lower St. Lawrence forest dependent region of Eastern Quebec. Their board consists of six woodlot owners and six forest worker members. All six municipalities within GFELT's area of influence are also represented among these members. One additional seat is reserved for a non-member of the organization who, although not a member, benefits from its services.

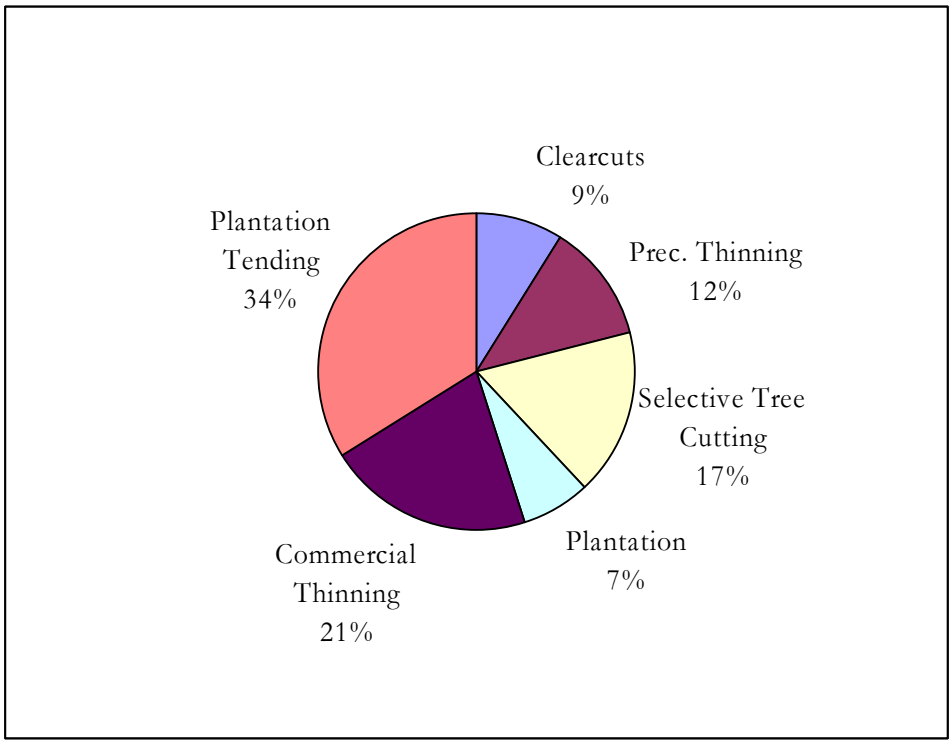
The organization offers forest management services primarily to its own members on private land - an area of more than 62,000 ha. It only recently began forest management activities on public land for forest companies. Forest composition in the area is diverse, with good representation of both hardwood and softwood species as shown by their yearly lumber production (see **Table 7**). Out of a total of 63,116 annual allowable cut (AAC) on private land, GFELT harvests some 42,807 m^3 a year.

Table 7: Total Volume of Various Forest Products

Category	Volume (m^3)
Pulp/Softwood	1220
Lumber/Softwood	9800
Cedar	1700
Larch	1640
Pulp/Hardwood	8500
Lumber/Hardwood	3500
Pulp/Poplar	5300
Lumber/Poplar	11150

Types of silvicultural operations are equally diverse and are adapted to the forest stands found in the area. As the pie chart below reveals, most of GFELT's operations in 2003 concerned forest management (i.e., plantation, pre-commercial thinning and plantation management). These account for more than 53% of the organizations' activities. Clear cuts account for 9% of their activities and can be no greater than 4 ha. GFELT estimates that annual forest operations occur on 2.5% of the total forest area and on 50% of their members' woodlots.

Figure 3: GFELT's Activities in 2003



In 2001, following their endorsement of RESAM's sound forest management policy, GFELT decided to take on the challenge of forest certification. In their view, the demand for certified products was a reality and would increase in the near future. GFELT determined that it had the necessary elements in place to take a leadership role in demonstrating the feasibility of forest certification on private lands in the province. With their strong partnership with RESAM and the Lower St.-Lawrence Model Forest (LSLMF), GFELT decided to seek certification according to the Forest Stewardship Council (FSC) as it was seen as the most rigorous, internationally-recognized and credible certification program available. They also believed that among certification programs, that FSC was less expensive to maintain and that it required less paperwork than other programs.

BARRIERS TO CERTIFICATION

GFELT was the first to seek certification on private land in Quebec. It encountered many difficulties that other organizations will mostly likely avoid. The first difficulty lay in identifying the FSC standard it had to use. At that time no FSC standard had been developed for the mixed-hardwood forests found in their

area. Although other standards existed in neighboring regions, GFELT believed these standards were not well-adapted to regional characteristics and small landholders. This situation and the lack of FSC material in French caused misinterpretations of certain requirements even though GFELT had support from a wide pool of professionals and researchers. These obstacles significantly increased the difficulty of an already lengthy process.

Having determined which standard it had to use, GFELT encountered other difficulties, such as requirements that were inappropriate for their type of operations. For example, since operations take place on private land and forest management objectives are given by woodlot owners, landscape issues are not necessarily considered by the *groupement*. GFELT would certainly not have been able to comply with many of these requirements without the support of the LSLMF. Financial and human resources limitations combined with the non-existence of some resource-based information would have precluded GFELT from complying with those obligations within the same timeframe. A substantial amount of effort had to be deployed to calculate the AAC (annual allowable cut) for the region, develop indicators that would enable them to evaluate environmental impacts caused by their activities and develop the necessary monitoring mechanisms.

These extra efforts amount to noticeable cost increases in the organization's present and future operations. According to GFELT, the indirect costs of certification are higher than to be expected. It is fairly straightforward to understand how the new landscape and monitoring requirements can result in higher expenses for an organization that manages individual woodlots. Other costly improvements include increasing communications with the general public and beneficiaries, as well as organizing additional capacity-building opportunities for forest workers.

On the other hand, direct costs of certification are considered excessive by GFELT. Discussions about Small and Low Intensity Managed Forests (SLIMF) policy and procedures were only in their infancy at that time. In GFELT's opinion, the audit process must be modified to reduce costs and be better adapted to small-sized operations. Audits should require less time and sampling should be reduced to recognize the low potential of environmental impacts considering silviculture operations occur on less than 2.5% of the area annually.

BENEFITS OF CERTIFICATION

GFELT's first objective was to demonstrate the feasibility of obtaining FSC certification on private woodlots in Quebec. By doing so, it hoped to clear the path to certification for other similar organizations in the province. GFELT believes that, as demand for certified wood increases in the near future, certification will allow GFELT to respond to future demands.

Unfortunately, the demand for certified wood is taking longer than expected to materialize. When requests are made to GFELT, the absence of local certified mills combined with a low production level of certified wood prevents them from satisfying potential clients. For this reason, GFELT considers that no positive outcomes came out of certification. Aside from learning about the certification process and the importance the FSC certification program places on field performance as compared to other programs, the organization is still waiting for a return on their investment.

GENERAL BARRIERS (TO MARKETS AND SFM)

The main challenge for this type of organization is addressing each individual owner's/member's objectives ranging from wood production to wildlife and habitat protection all the while respecting other forest users. Reconciling all these different views with forest management objectives is very complex, and even more so when financial and human resources are scarce. To overcome this situation, one of the *groupement*'s strategies is omnipresence in the field. In this way, forest technicians keep close track of the forest's development, build a strong relationship with owners and are aware of other forest users' activities.

Of course, operating on such a large territory creates other challenges. GFELT has operations in six municipalities, each of which has its own forestry by-laws. Combined with provincial laws, it becomes more and more challenging for GFELT to prescribe sound forestry practices while respecting relevant legal requirements. Another constraint lies in prescribing activities with respect to the Private Woodlot Forest Development provincial program that subsidizes silvicultural treatments. The program is an incentive to woodlot owners to invest in and harvest their forests. However, it does further restrict an already heavily regulated environment.

LESSONS LEARNED

GFELT's certification demonstrated that forest certification is possible on private woodlots. It also proved the efficiency and the capability of the *groupements'* formula in obtaining certification. It is true that the institutions collaborating in managing private woodlots in Quebec in the most populated regions of the province also contribute to the forest's sustainability. GFELT agrees that FSC certification and sound forest management activities are more easily achieved through a team effort. Although GFELT's structure is based on collaboration, certification highlighted the need for more cooperation on several occasions. As mentioned before, many of the FSC standard requirements would not have been met if it were not for the help of different organizations.

The difficulty lies in finding appropriate standards or requirements for this type of operation. GFELT believes many requirements are not adapted to forest management of small landholdings. A for-profit organization such as GFELT, dependent on woodlot owners' financial capabilities, runs a very tight budget. It is not surprising that any additional activity will have a significant impact on bearable costs. Certifiers and the FSC should try to avoid demanding too much paperwork from these kinds of organizations who have scarce human resources. Perhaps more guidance should be given to applicants to help them understand what is actually required by FSC and how it is possible to comply with the requirements.

Monitoring procedures are essential to evaluate environmental impacts associated with harvesting. An organization cannot pretend to survey the evolution of the forest canopy if they are unaware of harvest operations occurring on lands woodlots that are part of the certified pool, nor can they acknowledge that harvests are well executed and follow sound management practices. Although monitoring activities on private woodlots represent many challenges for organizations such as GFELT, they are viewed as a fundamental prerequisite for forest certification.

Looking back, GFELT would most likely have postponed their application for certification. They produce only a small amount of certified lumber, local lumber mills do not have chain-of-custody certificates, and markets for certified products are far away. The *groupement* would still apply for FSC certification, as they view it as necessary to gain better access to markets. However, year after year the organization asks itself whether certification is a worthwhile experience, as costs to keep the certificate are high and market benefits still have to become reality.

PEFC CASE STUDY 1: REGIONAL GROUP CERTIFICATION IN THE PIRKANMAA PROVINCE, FINLAND

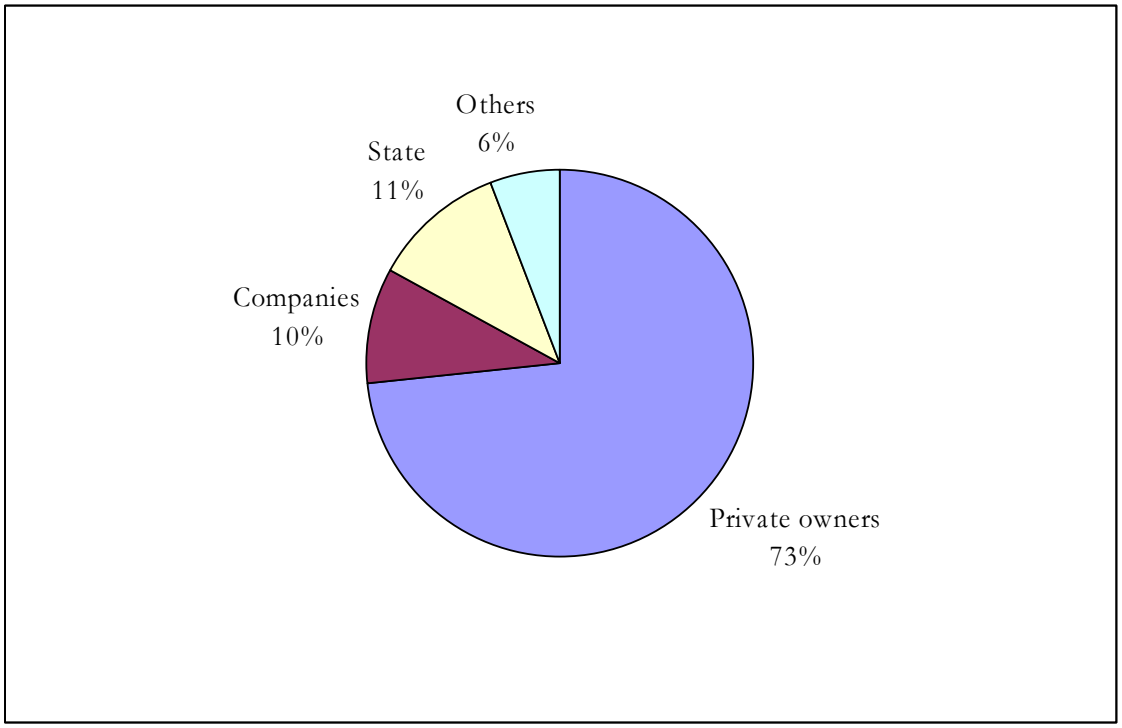
by Hanna Nikinmaa

BACKGROUND

The Union of West Finland's Forest Owners in the Pirkanmaa Province applied for forest certification based on the Finnish Forest Certification System (FFCS) in the spring of 1999 and received the certificate on December 16, 1999 by DNV-Certification Oy/Ab. In May 2000, the Pan European Forest Certification Council (PEFC) endorsed the FFCS and subsequently the already FFCS-certified forests in the Pirkanmaa Province were recognized within the PEFC framework as the performance requirements and certification procedures of the FFCS complied with the PEFC requirements. Annual surveillance audits have been carried out since the certification and the more comprehensive certification audit is foreseen in the summer 2004 when the current certificate expires.

The Pirkanmaa Province covers a 1.23 million-hectare land area in Southern Finland. Forests (911 000 ha) covering 74.3% of the land. The share of protected forests is 2.6% (32 000 ha) (Regional Plan 2003). Figure 4 illustrates the structure of forest ownership in the Pirkanmaa Province.

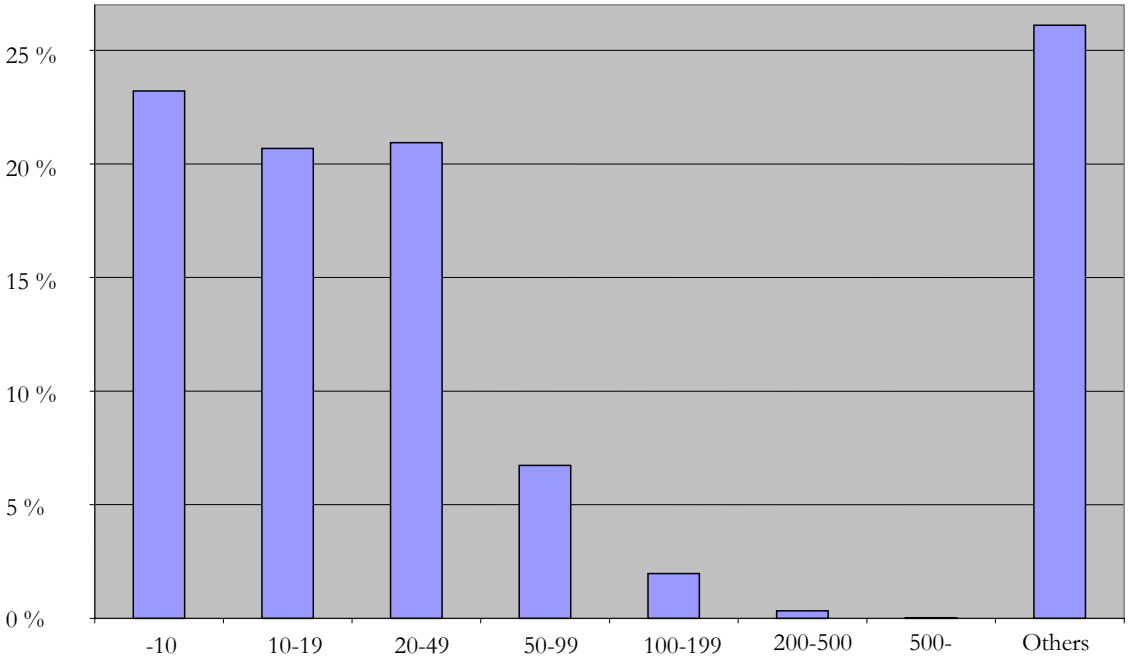
Figure 4: Forest Ownership Structure in Pirkanmaa Province



Source: Finnish Statistical Yearbook of Forestry 2002. Metla.

The great majority (73.4%) of forests are owned by private, non-industrial forest owners, who provide 87% (3.03 million m3/a) of the annual commercial roundwood removals in the region.

Figure 5: Number of Non-Industrial Private Forest Holdings by Size Class in Pirkanmaa Province



Source: Finnish Statistical Yearbook of Forestry 2002. Metla.

The category 'others' includes mostly forest owners owning less than four hectares of forests. The average size of a forest holding is around 25 hectares. Forests are mainly mixed spruce and birch forests or pine forests. The most dominant tree species is spruce *Picea abies,* followed by pine *Pinus silvestris* and birch *Betula sp.*

In Pirkanmaa Province about 11 000 people are employed in the forest sector (including the furniture industry). This figure represents 5.3% of the total employment in the Province.

In the regional group certification, all the forest owners groups – private non-industrial forests owners, forest industry, state forestry, communities and other owner groups – agreed jointly to implement certification requirements in their forest management and applied for one forest certificate for the whole province. This joint approach was justified because close to 80% of the commercial roundwood harvested on private non-industrial forests are standing sales and harvesting is carried out by contractors hired by the forest industry. The forest industry supervises the harvesting work according to the terms of contract with the forest owner, as well as general and company-specific guidelines on forest management including the certification requirements. The organizations representing forestry contractors and forestry staff have also agreed to comply with the requirements.

The forest sector including several large size paper, pulp and wood-products industries in the Province depends on the export markets for their products. It is in the interests of forest owners and forest industry to strive for good forest management and for a good reputation in national and international markets. Forest certification according to the FFCS scheme adapted to the national conditions and belonging to the international PEFC framework was deemed a feasible solution to improve forest management and gain international recognition. The regional forest organizations recognized that

certification can provide an effective additional tool for control and enforcement of better practices in the sector.

BARRIERS TO CERTIFICATION

Certification introduced a few additional requirements e.g., protection of key biotopes and small water bodies, consideration of environmental impacts in forest road construction and supplementary ditching as well as the implementation of seedling stand treatments and first thinnings. Most of the requirements were already in place but forest certification enforced their implementation in practice.

Information dissemination and training required the most resources in regional certification. All parties operating in forest management should be fully aware of the relevant requirements and know how to implement them in all situations. The certification process followed the revision of the Forest and Nature Conservation Act, which had been introduced to forestry staff, workers and forest owners. Training projects continued with the inclusion of the forest certification procedures and requirements.

Private non-industrial forest owners joined the regional group certification through a decision made in the annual meeting of their local Forest Management Association. All members in the association automatically joined the certification process unless they individually expressed their wish to resign from the process. Although this collective approach is the only way to reach the thousands small-scale forest owners, it requires enormous inputs in information to ensure that the members understand the requirements and know how to implement them. In Finland, practically all the forestry operations are planned, implemented or supervised by a regional or local forestry organization, which is a precondition for such a collective approach to regional certification.

The certification process was supported by a national project that provided material and support for information dissemination and training. Auditors focused on the level of awareness and information regarding the requirements and their implementation into practice and despite these efforts, in a few cases neither forest owner nor the representative of a forest organization was fully aware of the requirements or of their implementation. These cases were usually listed as non-conformities in the internal or external audits.

The documentation including guidelines and registers is quite comprehensive in Finnish forestry but considerable amendments and revisions were needed before it was fully compatible with the needs of the certification requirements.

Certification costs can be classified into the following groups:

- costs on preparative activities (information, training, revision of documentation)
- costs on changes in forest management (increased number or retention trees, larger buffer zones, etc.)
- costs on internal audits and other additional controls
- costs of external audits and issuance of a certificate.

BENEFITS OF CERTIFICATION

The certification process has increased cooperation among the organizations in private forestry, forest industry, state forestry, environmental administration as well as social and environmental NGOs. It has provided a new forum to discuss the general principles and targets of forest management, although the Forest Act in force already requires elaboration of a regional level target program for forest management.

Certification has introduced some new requirements with expanded environmental considerations and they also require measures to ensure efficient regeneration and appropriate treatment of young stands. It contributes to the protection of environment and efficient timber production. In general, certification has contributed greatly to the implementation and enforcement of existing guidelines and recommendations of the forestry organizations. Regular audits (internal and external) reveal quite efficiently any non-conformities to the certification requirements in the area.

The market benefits from certification materialize in the export markets and mostly apply to the forest industry. The applicant Forest Owners Union and the member forest owners benefit indirectly from the good reputation of FFCS-certified timber and timber products processed in the region.

GENERAL BARRIERS

Regional group certification is the only feasible solution in the Pirkanmaa Province where the majority of timber is procured from close to 30,000 private non-industrial forest holdings. Individual certification of the smallholdings would be extremely expensive and cause problems in chain of custody verification in the transport and processing chains. These would raise the processing costs also to the level where the price competence of timber products would be lost. The first parties to suffer from non-competitive forest industry are the forest owners who will loose the good markets for their timber.

So far the main costs on changing forest management and timber procurement to meet certification requirements have been the responsibility of forest owners supervising forestry organizations (regional forestry centers, forest management associations) and contractors, whereas the possible direct benefits are captured by the exporting industry. Although the regional group certification is very cost efficient, the costs of e.g., external audits are quite significant if carried out by non-profit Forest Owners Unions. In the long run, a feasible division of responsibilities and benefits would contribute to the true continuous commitment to certification.

In Finland, forest legislation, forest management recommendations and certification requirements are well inter-linked; legislation sets the baseline which is exceeded when the recommendations and requirements are followed. Therefore, the legislative or traditional framework does not set any barriers to the certification.

LESSONS LEARNED

The initiative for a regional certification must be taken by all key stakeholders in the forestry sector in order to achieve the commitment needed from all parties. In the early phase, the cost-sharing should be thoroughly discussed because the tendency is to let the forest owners' organizations (i.e. private non-industrial forest owners) bear the costs where as the processing and exporting industry can benefit from the certification.

Today, practically all forestry organizations have certified quality and/or environmental management systems in addition to forest certification. Lack of coordination between the audits in the different systems often results in repetitive audits focusing more or less on the same issues. Better coordination and mutual recognition of audits would increase efficiency and maintain the motivation to improve forest management procedures.

In regional certification, the certification group composed of all participants is not functional. Meetings are regular but inactive forest owners have not been motivated to attend the meetings or discussions. However, the operational forest certification committee where all major forestry organizations are represented is active in administrating the regional certification. The applicant organization, the Union of West Finland's Forest Owners, chairs the forest certification committee and group.

PEFC CASE STUDY 2: PEFC IN THE CZECH REPUBLIC

by Pavel Hes, National Secretary PEFC Czech Republic

WHY FOREST CERTIFICATION WAS INTRODUCED

In the mid 1990s, the Czech forestry sector composed of the Ministry of Forestry, forest faculties in universities, the Forest Management Institute and major forest owners initiated a discussion about introducing forest certification. Although forest certification was deemed to focus on the management of tropical and sub-tropical forests, the leading parties considered it an essential and potential tool to promote the exports of timber products from the Czech Republic.

Czech forest management has traditions dating from the period of Maiestas Carolina in 1350 when the first regulations for forest use were issued. By the end of 1990s, it was evident that the only available international forest certification scheme, FSC, was not feasible as a means for certify forests in the Czech Republic. Therefore, it was decided to develop a national forest certification scheme. The Working group for certification was established under the established National Certification Centre that elaborated the national scheme "Czech Forest Certification Scheme" (CFCS).

At the same time, the PEFC Council was established and the Czech Republic became an early member. It was decided that CFCS had to be modified in order to follow the requirements for mutual recognition (PEFC Council endorsed CFCS in 2001). The working group of the National Certification Centre was transformed into the PEFC Governing Body -Czech Republic whose mission is the administration of the CFCS scheme, issuance of logo licenses and the promotion of the PEFC scheme and sustainable forest management. The National Certification Centre currently serves as an advisory and support centre for all certification schemes operating within the Czech Republic.

CERTIFIED FORESTS

The structure of forest ownership is presented in **Table 8**. None of the wood processing companies owns large forest properties, therefore industrial forest ownership is insignificant in the Czech Republic.

The area of certified forest in 2002 reached 1.8 million hectares. The certified management units included two state enterprises, 158 private and 370 communal forest owners. In 2004, the certified area was 1,929,745 hectares (**Table 8**).

Table 8: Certified Forests in the Czech Republic - 2004

Ownership	Total forest area (ha)	Forest ownership share (%)	Total certified area (ha)	Share of the total certified area (%)	Number of issued certificates
Forests of the CR	1 604 336	60,7	1 355 768	70,26	119
Other state property			222 020	11,5	47
Municipal forests	396 459	15,0	201 569	10,45	370
Physical entities	642 263	24,3	105 913	5,49	115
Legal entities			44 474	2,3	43
Total	**2 643 058**	**100**	**1 929 745**	**100**	**694**

Forest owners managing several management units with specific forest management plans have a certificate for each unit. Such owners are mainly large private owners and the state.

The main tree species in the Czech Republic is spruce, covering 53.8% of the forest area; pine covers 17.4%, oak 6.5%, beech 6.2% (**Table 9**). About 75% of Czech forests are certified according to the CFCS.

Table 9: Timber Resources in the Czech Republic

	Tree species composition (ha; %)					
Species	**Year**					
	2000		**2001**		**2002**	
	ha	%	ha	%	ha	%
Spruce	1, 397, 013.0	54.1	1, 395, 328.0	53.9	1, 391, 970.0	53.8
Fir	23, 138.0	0.9	23, 020.0	0.9	23, 092.0	0.9
Pine	453, 159.0	17.6	451, 911.0	17.5	450, 224.0	17.4
Larch	97, 170.0	3.8	98, 053.0	3.8	98, 397.0	3.8
Other coniferous	4, 587.0	0.2	4, 484.0	0.2	4, 906.0	0.2
Total coniferous	**1, 975, 065.0**	**76.5**	**1, 973, 099.0**	**76.3**	**1, 968, 589.0**	**76.1**
Oak	163, 761.0	6.4	164, 930.0	6.4	166, 603.0	6.5
Beech	154, 791.0	6.0	157, 381.0	6.1	160, 976.0	6.2
Birch	74, 560.0	2.9	74, 629.0	2.9	74, 505.0	2.9
Other broadleaves	186, 185.0	7.1	199, 347.0	7.6	188, 865.0	7.2
Total broadleaves	**576, 808.0**	**22.3**	**583, 125.0**	**22.5**	**590, 949.0**	**22.8**
Total without unstocked areas	2, 551, 873.0	98.8	2, 556, 224.0	98.8	2, 559, 538.0	98.9

Representation of broad-leaved trees has increased in the last 50 years from 12.5% to 22.4% of the total volume but yet the great majority of harvested merchantable timber is coniferous.

Table 10: Harvested Timber Volumes

Timber supply (1 000 m³)				
Delivered assortments (excl. imports)		**2000**	**2001**	**2002**
Roundwood		8, 386.0	8, 229.0	8, 073.0
of which	coniferous	7, 721.0	7, 540.0	7, 580.0
	broadleaves	665.0	689.0	493.0
Pulpwood		5, 081.0	5, 054.0	5, 453.0
of which	coniferous	4, 436.0	4, 380.0	4, 773.0
	broadleaves	645.0	674.0	680.0
Forest chips		34.0	81.0	8.0
of which	coniferous	34.0	80.0	7.0
	broadleaves	0.0	1.0	1.0
Fuelwood		940.0	1, 010.0	1, 007.0
of which	coniferous	660.0	680.0	650.0
	broadleaves	280.0	330.0	357.0
Total timber supply		**14, 441.0**	**14, 374.0**	**14, 541.0**
of which	**coniferous**	**12, 851.0**	**12, 680.0**	**13, 010.0**
	broadleaves	**1, 590.0**	**1, 694.0**	**1, 531.0**

IMPLEMENTATION OF CERTIFICATION

Certification Process

The main objective in developing CFCS was to create a simple, non-bureaucratic, transparent and cost-efficient certification process. As a result, the model of regional certification was accepted – the model that conforms to the situation in the Czech Republic, where there are more than 150000 private and 4000 communal forest owners that manage an area of more than 1 million hectares (approx. 40% of total forest area). About 60% of the private forest holdings are less than 1 hectare in size. For the purposes of forest certification, forest owners are grouped into Associations of Forest Owners and Managers, which represent forest owners and apply for a certificate from a certification body. The Associations also ensure that internal audits are carried out as appropriate.

Impact of Forest Certification on Forest Management

In our opinion, forest certification is most important for forest management because of the improved awareness of sustainable forest management among forest owners. The certification process has taught forest owners to understand various themes (environmental, social and cultural) in the use of forests, to communicate with the public and to adopt and define new terms related to sustainable forest management and forest certification. Forest administration itself has not changed a lot, because the requirements of sustainable forest management are largely included in the Czech forest legislation.

Difficulties

Social questions were considered as the most difficult requirements to implement and provide evidence for in the certification process. Legislation regarding to these issues is quite complicated and small-scale forest owners are not always aware of the multitude of laws regulating the issues. Compliance to the international treaties was deemed difficult at the practical level but the criteria and indicators of the CFCS standard were deemed feasible to implement in practical forest management.

CERTIFICATION COSTS

Costs of the certification audit and expenses for the Association of Forest Owners and Managers were estimated to be to 2 CZK (0.06 EUR)/hectare/5 years for the certification period of 2002-2007. Forest owners pay the fee before the certificate is issued. It is also necessary to include additional costs for internal audits and membership fees for PEFC-Czech Republic. The total costs for the five-year certification cycle are about 2 CZK (0.06 EUR)/hectare/year.

Expenses that bring to forest owners implementing the certification standards incur due to possible changes of forest management have not been estimated because their level is quite insignificant.

GAINED BENEFITS

In Forest Management

The Czech forest law is one of strictest forest laws in the world, so requirements for forest certification by the PEFC approved CFCS-scheme do not significantly exceed existing normative requirements. The majority of forest owners who manage their property in a responsible way follow the philosophy that the forest is fiduciary property which they have to hand to their successors in a better state than it was when they received it. These forest owners have no significant problems in fulfilling the criteria of sustainable forest management. The regional forest certification system is also based on the assumption that the forest owner who responsibly manages his forest should not be bothered about bureaucracy and extra costs, which especially discourages small-scale forest owners from applying for certification.

The holistic approach to forest management represented in the CFCS/PEFC criteria enables forest managers to make appropriate decisions and to avoid controversial decisions on the use of forests.

From the view of forest owners, in most cases the visit from internal auditors is not considered to be a control mechanism with possible penalties but a possibility to discuss forest management with an independent expert. Many forest managers in private and communal forestry also use a certificate as a confirmation of responsible management.

On the market

There are more than 100 wood processors and traders who have a chain of custody certificate in the Czech Republic. The most significant export countries of Czech timber products are Austria and Germany. Processing and trading of timber coming from sustainably managed forests is significant for them not only in view of business opportunities but also for political reasons. Companies want to demonstrate their environmental and social responsibility. Currently, major customers do not offer any price premiums, so we cannot speak about price differences between certified and non-certified timber. However, the trade of non-certified timber is more difficult because most of the major customers prefer certified timber.

Others Benefits of Forest Certification

Large companies benefit from forest certification as a tool to demonstrate their good forest management to the public.

CONTRIBUTIONS OF AND BARRIERS TO FOREST CERTIFICATION

One of the main contributions of forest certification is the improved image of timber as an environment-friendly raw material. Consuming wood does not threaten the environment; on the contrary, wood consumption is a way to promote responsible management. Another advantage of forest certification is that it defines comparable requirements for forest management in all member countries and decreases discrimination of forest owners/managers from countries where forest legislation is less demanding or extremely demanding.

One of the main barriers to the development of certification is the international pressure on lower costs, which does not allow any price difference between certified and non-certified products. Another barrier is a low awareness of certification within the general public, since promotion activities cannot be sufficiently funded by PEFC Czech Republic.

LESSONS LEARNED

Next year, the Czech Forest Certification Scheme will be revised. The revision will take into consideration the experiences gained during the 4-year implementation of the Scheme and the comments and recommendations of certification bodies, internal auditors and other interested groups.

Forest certification is one of the tools that improve the image of forestry and PEFC-Czech Republic hopes for increased promotional activities as the PEFC logo becomes better known. PEFC-Czech Republic wants to connect these activities with an increased perception of wood as a renewable resource of the future.

ATFS CASE STUDY 1: DECKER TREE FARM CERTIFICATION

By Van Decker, Owner

BACKGROUND

I am Van G. Decker. My wife Ann and I live on our 250-acre Decker Tree Farm located 6 miles south of Philomath, Oregon, USA. Our children are grown and have their own professional employment away from this area. They visit us and the tree farm frequently. We keep them up-to-date on daily as well as future work and planning and discuss the matters with them. Previous to returning to the tree farm 7 years ago, we spent 30 years owning and operating a large cattle ranch in Eastern Oregon. Our children grew up on this ranch. They actively worked on our cattle ranch there as well as on our timber property here. All planning and most of the hands on operational work, including harvesting is done by Ann and me. We hire contractors for planting, spraying, and on occasion, some of the logging.

Part of this forestland was purchased by my grandfather in 1896. More was added by my Dad and Mother in the 1930s. My parents' land was distributed through gifts and their estates to me and my 3 brothers. In 1960, my parents gifted 44 acres of our tree farm to me. Within the past twelve years, I have purchased lands from two of my brothers. I have also added some adjoining property as it became available. Therefore, we have some debt on our land, so some harvest decisions are made to obtain funds for debt service. We are presently cutting timber at a higher rate than is sustainable. Our plan projects to reduce our cut after most of the 50-year plus timber is harvested and then just do thinning in the 30 and 40-year old stands, thus returning to a sustainable plan.

In the 1920s and 30s, much of this land was harvested for firewood which was sold nearby in Corvallis. Prior to this time much of the land was a solid stand of large old growth Douglas-fir (*Pseudotsuga menziesii)* with a few scattered trees of other species. Some timber was harvested for logs. The land was then fenced and pastured with Angora goats and cattle. I grew up on this land tending the goats, cattle and sheep. A few small areas were cleared as farm ground, mostly for hay and forage production. The new stands of Douglas-fir came naturally in some of this grazed area. As pasturing was reduced, the trees grew better and continued to seed in. Most all of the 2nd growth timber stands on our property today are from natural regeneration. My Dad did pre-commercial thinning in these new stands in the 1950s, as parts of them were greatly overstocked.

For 32 years I took no timber off this land. In 1992, I started coming over from my eastern Oregon ranch in the summers and did a little logging with a rented dozer. I began thinning, both pre-commercial and commercial, and cleaning up some of the odd trees on the property. In 1994, we purchased our own dozer and began using it in the summers on this timber property and on our eastern Oregon ranch in the winters for plowing snow.

Now timber is a precious commodity and we recognize the importance of replanting, which we always do after harvesting. Erosion control, low use of pesticides and a higher emphasis on safety are all forest practices which would have been unlikely in my father's and grandfather's time. In early times logging was pretty abusive to the land. Now conscientious owners of timber property recognize that replenishing the trees for future generations and keeping the impact low can benefit both the property and their business.

BARRIERS TO CERTIFICATION

Many industry publications and extension information are telling us about the certification process, requirements, and possible long-term benefits. In choosing to obtain certification through the Tree Farm System, we felt it would help us to have a more professional level of tree farm management and it might facilitate in marketing our logs. From information we were looking at and tours we attended in the wood products industry, we felt there would not likely be any increased value to our log prices as a result of certification. For this reason, it does not make a lot of sense to invest very much financially in obtaining certification, which makes the Tree Farm system, with its free audit, an attractive option.

As part of the requirement of obtaining certification under the Tree Farm System, an operator must have a written Tree Farm Management Plan and pass an on the ground audit. There was very little out-of-pocket cost in preparing this plan, as I did it myself, using techniques I learned through the Master Woodland Manager volunteer training program offered by the Oregon State University Extension Service. It did take significant time to get all the data together into one plan. I have found this plan to be very helpful in reviewing our tree farm's present status and making plans for coming years. It is a very useful tool in explaining our tree farm to visitors as well as to our next generation. A part of our Tree Farm Management Plan is a very site-specific total timber cruise. This is quite useful when planning timber harvests. The plan also covers non-timber issues such as wildlife, watershed protection and recreation.

BENEFITS OF CERTIFICATION

We believe we have been doing a good job of forest management in the past. Through the requirements of documenting management for the Tree Farm System we have become more aware of practices to apply, which ones were the highest priority for each year and we have also been keeping better records of these practices. The tree farm inspectors who have visited our land have been helpful in discussing the points they are looking for and telling us of improvements they have seen done on other tree farms which might fit into our tree farm.

Example tasks from our current management plan include: keep on thinning; harvest as needed; rock more roads each year; plant good quality seedlings; plant cedar in some areas; provide care for seedling establishment via brush cutting, spraying and deer protection; start pre-commercial thinning at early age; and establish a multi-generational plan.

After receiving certification we have had increased visitor use to our tree farm. There are different levels of high school, college, and adult education classes and tour groups. This involvement with other industry people has been helpful to us in raising the level of tree farm professionalism.

To complete our management plan, Ann and I have done a 100% cruise of all the merchantable size timber on our land. I have this information recorded on maps and cruise sheets so it can be easily used to look up the timber volume on any of our lands. We continually update this information as we log. The desire to keep better records on our property has also caused us to set up several well-defined growth study plots where we measure DBH each year to have good data of what tree growth we are obtaining. We have several permanently marked cruising plots which we use for tour groups and classes who visit our tree farm.

Another benefit of the Tree Farm program is the annual Tree Farmer of the Year contest. Besides receiving recognition from the Tree Farm system, the contest allows us to tell our story of good forest stewardship to other citizens through newspaper articles and tours. The Decker Tree Farm has been recognized as an outstanding Tree Farm for Benton County and Western Oregon.

Certification has also helped in selling logs to Georgia Pacific and Weyerhaeuser, two major timber purchasers in our area. A couple of years ago they notified local loggers and landowners that they would be requiring log sellers to either become certified or use a professional logger. They consider the Tree Farm system as sufficient certification to meet their requirements. Although they made this declaration some time ago, it still seems like they also buy gate wood logs from non-certified producers. The market does, however, slowly seem to be moving to certified sources.

GENERAL BARRIERS

From our position, the only barrier has been the time and work of doing the tree farm management plan. My wife and I have spent many hours one winter collecting and summarizing information on our property. Because Oregon already has an extensive set of environmental laws regarding forest practices, our management practices were already at a level at or above Tree Farm certification standards, so little practice changes were necessary to conform to certification standards.

LESSONS LEARNED

At a Home Depot store tour, the lumber buyer told us he did not need certification on lumber from second growth Douglas-fir that is harvested under the Oregon Forest Practices Act. When I visited a Lowe's retail store in San Diego and talked to the floor sales people in the lumber department, they didn't know what I was talking about when I asked if they had certified Douglas-fir lumber. Therefore, it appears that certification has not yet become too important as a marketing tool among local small woodland owners. Perhaps it will sometime in the future. In the meantime, the Tree Farm program will continue to allow us to improve the professionalism we apply to stewardship of our forest.

ATFS CASE STUDY 2: F&W FORESTRY SERVICES INC. GROUP TREE FARM CERTIFICATION

by John F. Godbee, Jr. ACF, RF of F&W Forestry Services Inc. - August 2004

BACKGROUND

F&W Forestry Services is one of America's premier forest resource management and consulting firms and a recognized leader in the Southern United States. Founded in Albany GA in 1962, F&W has grown into a regional network of graduate and advance degree foresters, technicians, appraisers and support staff. Through offices located in 9 states from Virginia to Texas, our clients include small and large family forest owners, other non-industrial landowners, industrial landowners, investors, financial institutions, state and local governments. F&W's commitment to professional excellence enables our clients to enjoy the benefits of their forestland today while conserving and renewing the resources of tomorrow. Consistent with our mission of meeting our client's needs and expectations, F&W Forestry Services, Inc. became the first non-industrial forest management firm in the United State to have its landowner clients group certified by the American Tree Farm System (ATFS) in October of 2003. As of August 2004, the F&W Group Tree Farm had enrolled approximately 1100 tracts and 640,000 acres under Group Certification Number 0002. Group members range from private family forests with less than 50 acres to larger Timber Investment Groups with total ownerships above 10,000 acres.

BARRIERS TO CERTIFICATION

The ATFS group certification process requires Group Managers and the forestlands of Group Members undergo an evaluation by third-party auditors to determine if they were being managed in accordance to the AFF Standards of Sustainability. Accomplishing this objective required the merging of literally hundreds of individual landowner objectives, needs and desires into a single comprehensive program that will meet the needs and objective's of the landowners, the Group Managers and the American Forest Foundation. The absence of a single controlling manager or decision maker makes this task exceptionally challenging. Rather than developing hundreds of individual management plans, F&W developed an F&W Group Plan establishing expectations and thresholds of performance for all forestlands under our management. Each individual landowner client was then provided a copy of this plan and given the opportunity to participate. Landowners electing to participate in the Tree Farm Program signed a formal commitment statement and provided their F&W client manager with a signed list of individual objectives.

Among the factors that we encountered were: a limited awareness of the emerging demand for trees from certified forests by many if not most non-industrial landowners and some foresters; the reluctance of some landowners to commit to participation in what was perceived as a "big brother or industry sponsored program"; valid concerns on the current and potential future cost of conformance by landowners and F&W Forestry (who pays for what); and the realization that, while the demand for certified products appears to be increasing, little evidence of increased value or market share has been demonstrated.

BENEFITS TO CERTIFICATION

Despite the many barriers that continue to exist, the consensus of F&W Forestry Services and our Group Members is that the Group Certification Process was and continues to prove beneficial. Perhaps the most important outcome from this process came from the development and implementation of our F&W Group Tree Farm Polices and Procedures Manual. This provided a formal mechanism for identifying and confirming the clients' individual objectives and a process for improving the communication between F&W and our clients in meeting these objectives. The third-party auditing process provided F&W a mechanism for identifying potential strengths and weaknesses in our management program and the ability to identify goals for continual improvement. Achieving certification also provided independent validation and public recognition of the quality of F&W's management program and our clients' commitments to responsible and sustainable forest management.

GENERAL BARRIERS TO CERTIFICATION

It goes without saying that the cost of certification and the uncertainty as to whose standards of sustainability are appropriate and consistent with various landowner objectives represent major concerns to landowners across the private non-industrial sector. Inconsistent cash flows from well-managed, non-industrial forestlands and general unwillingness to cede elements in the decision-making process to others will continue to limit the acceptance of and participation in certification programs for many landowners. In our experience, while most private non-industrial landowners are strongly committed to managing their forestlands in a responsible and sustainable manner, the lack of sufficient funds and knowledge often limits their ability to accomplish some objectives. As tract size continues to decline the ability to effectively demonstrate or meet landscape level objectives will also become exceedingly difficult to measure. Finally we must be able to define and articulate realistic expectations for non-industrial forest landowners, if certification is to become a viable tool for promoting responsible forest management across all landowners. This was demonstrated in several instances in our third-party audit where the auditors expressed legitimate concerns regarding specific BMP practices in which the operations met expectations for legal compliance but were deemed short of the auditors' expectations for performance. Unfortunately, the American Forest Foundation has also self imposed some artificial limits governing the maximum size of individual tracts and types of ownerships currently eligible for participation in the Tree Farm Program. Without viable alternatives, these forestlands and individual landowners will likely miss the benefits gained from promoting responsible forest management.

LESSONS LEARNED IN THE CERTIFICATION PROCESS

The knowledge that you are practicing good forestry is not sufficient to achieve third- party certification. You must be able to effectively demonstrate and document this commitment to independent third-party auditors. The general awareness and knowledge of certification programs by foresters and landowners varies significantly from one individual to the next. Effective communication between forest managers and client landowners is essential. Good managers and auditors must be able to recognize and accept the limits of individual landowners while assisting them in achieving the program objectives. We found some landowners choose not to participate for a variety of personal and business reasons. Nevertheless, F&W's client managers continue to serve these landowners with all parties committed to applying the same high

standards of forestry in their operations. Third-party certification is an expensive and time-consuming process. Nevertheless, it can be an effective and efficient means for achieving and demonstrating responsible forest management. There is always room for continual improvement.

CONCLUSIONS

Achieving The ATFS Group Certification provided environmental and other quality assurances to our landowner clients and to purchasers of wood from their forests. We believe the American Tree Farm Standard provides a credible and verifiable means of promoting responsible forest management and a cost-effective means for extending the opportunity for participation in emerging certification markets for our clients.