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The Effectiveness of Non-State Governance Schemes: A Comparative Study of Forest Certification in Norway and Sweden

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Abstract. During the last decade, we have seen the emergence, under the auspices of non-state authorities, of market-driven governance schemes for certification of forest holdings and eco-labelling of wood products. Do these schemes affect actual management practices and environmental protection in forestry? This article examines the effectiveness of forest certification in Norway and Sweden – two ecologically and politically similar countries, but with different certification schemes. It is found that certification processes in both countries have resulted in high participation in certification schemes, high market penetration by certified forest organisations, and reduced conflict prevalence over forestry practices. Although forest certification seems to have modified on-the-ground practices in ways that lead to less environmental deterioration of forests, we still know too little about forest certification's environmental impact and efficacy as a problem-solving instrument. More research is therefore urged in these areas.

Key words: eco-labelling, effectiveness, environmental governance, forest certification, forestry, Norway, private authority, Sweden, voluntary standards

1. Introduction

In recent years, and "new" environmental policy instruments such as eco-taxes, voluntary agreements, certification and eco-labels have been added to the inventory of regulatory, "command-and-control" instruments (Jordan et al. 2003a, b). At the same time, attention has shifted from deforestation and loss of biodiversity in tropical forests to conservation and sustainable use of all types of forests (Humphreys 1996; Gulbrandsen 2003). In the absence of a forest convention or strong international commitments to protect forest biodiversity, forest certification is widely regarded as one means to effectively promote sustainable forest management in both developed and developing countries.

Most forest certification schemes involve the development of standards and operational guidelines; accreditation of independent third parties (certifying bodies);

forest management auditing (verification of compliance with standards and guidelines); and product eco-labelling (tracing forest products through the supply chain). The immense increase in the total number of hectares covered by some forest certification schemes in the last decade is evidence of the supply side support for this instrument. However, there are significant differences in perceptions of legitimacy, applicability, rigour and efficacy of certification schemes among different stakeholders. Certification has thus become one of the most controversial issues in international forest policy discussions (Elliott 1999). This study seeks to assess the *effectiveness* of forest certification in Norway and Sweden in fostering sustainable forest management and environmental protection in forestry. We have selected these two forest-rich Nordic countries not only because of their many similarities, including administrative traditions and relationship between business, non-governmental actors and the state, but palpable differences with regard to the development and proliferation of forest certification schemes.

This article first provides a brief introduction to the emergence of forest certification at the international level, the measurement of effectiveness and certain variables of likely importance in determining effectiveness. This is followed by a comparison of the certification processes and schemes in Norway and Sweden along the proposed determinants of effectiveness. In the main part of this study, we assess the effectiveness of forest certification in the two countries by exploring participation in certification schemes, supply chain support for certification, the prevalence of forestry conflicts, interplay with public policy instruments, and impact on forestry practices.

2. The Emergence of Non-State Authority in Global Forest Governance

In the last decade, a growing literature has analysed the so-called ''privatisation of governance'', characterised by shared public and private authority, state transformation and increasing reliance on voluntary standards, such as eco-labels and other market-driven instruments. Scholars have examined, *inter alia*, the emergence and impact of non-state authorities and hybrid private–public regimes (e.g. Clapp 1998; Cutler et al. 1999); how such actors and institutions gain rule-making authority (Cashore 2002); perceptions of the legitimacy and efficacy of voluntary standards (Raines 2003); and even the emergence of ''illicit'' private authorities, such as transnational organised crime and corporate mercenaries (Hall and Biersteker 2002). More specifically concerning forestry, authors have explored the evolution of market-driven forest certification schemes (Elliott 1999; Cashore et al. 2004); their social and political dimensions (Rametsteiner 2002; Boström 2003b; Meidinger et al. 2003); and whether forest certification might fill the gaps evident in international agreements pertaining to forestry (Gulbrandsen 2004) or fully supplant intergovernmental co-operation on forestry (Bernstein and Cashore 2004). In extension of the latter argument, forest certification has been identified as a new institution or arena of private authority, perhaps representing the most advanced

case of ''non-state market-driven'' rule-making dynamics globally in the environmental field (Cashore 2002). However, surprisingly little is known about the effectiveness of certification and eco-labelling in fostering sustainable forestry and actually reversing environmental deterioration in forests. Through an examination of forest certification in Norway and Sweden the present paper aims to contribute to our understanding of the effectiveness of non-state market-driven governance systems.

There are two leading forest certification schemes in Europe, both of which are applied in the Nordic context. Much as a result of the failure to develop a global forest convention in the preparations for the 1992 UN Conference on Environment and Development (UNCED) and the International Tropical Timber Organisation's (ITTO) refusal to take action on eco-labelling, the Forest Stewardship Council (FSC) was established by private initiative in 1993 to provide a voluntary, market-driven certification and labelling scheme (Humphreys 1996). With the World Wide Fund for Nature (WWF) assuming a leading role, the scheme was set up by non-governmental organisations (NGOs), forest companies, timber traders and other stakeholders. To promote ''environmentally appropriate, socially beneficial and economically viable'' forestry, the FSC has developed ten global principles, accompanied by a number of criteria, for ''well-managed forests''.[1] These must be further elaborated by national, regional or company-specific performance standards through a process in which ecological, economic and social interests take part on an equal footing. The FSC's international board approves certification systems consistent with the scheme's principles, criteria and rules.

With the support of WWF and other environmental organisations, professional purchasers and consumers, FSC certification could translate into greater market access and sales for forest companies. However, most non-industrial forest owners felt that NGO interests dominated the FSC and that the scheme was unsuitable for the small-scale forestry predominant in many European countries because of the stringent standards, high adaptation costs and lack of a group certification option (Gulbrandsen 2004).[2] Largely as a result of the dissatisfaction with the FSC scheme, various national and regional certification processes were launched at the initiative of forestry interest organisations. With the International Organization for Standardization's (ISO) approval of the ISO 14001 environmental management system (EMS) standard in 1996, a credible alternative for third-party certification was established. ISO 14001 is a generic standard intended for use in any industry, sector or service, meaning that it does not specify on-the-ground forest management rules. Although the standard was widely adopted for third-party certification of forest management, the forest owners still lacked an internationally recognised scheme attesting specifically to sustainable forest management.

In 1998–1999, national forestry interest groups of several European countries set up the Pan European Forest Certification (PEFC) Council to facilitate the mutual recognition of national certification schemes and to provide an ''internationally credible framework'' for such schemes.[3] PEFC, renamed the Programme

for the Endorsement of Forest Certification schemes in 2003, is an umbrella certification and labelling scheme based on the criteria, indicators and operational guidelines developed by the Ministerial Conferences on the Protection of Forests in Europe (MCPFE), commonly referred to as the pan-European process. A similar development has taken place in North America with the establishment by the American Forest and Paper Association of voluntary certification under the Sustainable Forestry Initiative as a response to FSC, and the lead taken by the Canadian Pulp and Paper Association in introducing the Canadian Standards Association's forest certification scheme (Cashore et al. 2004). Following the launch of a number of business-dominated schemes, environmentalists' hope that FSC would become the one and only global standard-setting body for sustainable forestry quickly waned. To the disappointment of environmentalists, many forest companies and non-industrial forest owners have preferred these schemes and in consequence more lands are certified under them than FSC in both Europe and North America.

3. Analytical Framework

How, then, do we measure the effectiveness of forest certification as an institution of environmental governance? First, we need to clarify precisely what we mean by the concept of institutional effectiveness. A common-sense understanding would be that an institution is effective if it solves or alleviates the problem that motivated its creation (Young and Levy 1999; Underdal 2002). This is what Young and Levy (1999) call the problem-solving approach to assessing regime effectiveness. Following this definition, forest certification would be effective if environmental deterioration of forests is eliminated or reversed. However, as Young and Levy remind us, measuring problem-solving effectiveness is not straightforward because in many cases it may be almost impossible to isolate the causal effects of a specific institution. Moreover, measurement of the environmental impact of forest certification on the ground *may* be premature because this instrument has only recently been widely applied in Norway and Sweden. To circumvent these problems, we could conceive the effectiveness of forest certification as (1) the degree to which this instrument modifies *on-the-ground practices* in ways that (are likely to) reverse or alleviate environmental deterioration in forests. Although a useful indicator, a broader approach is called for to assess the effectiveness of non-state market-driven instruments. Because forest certification is a voluntary, private sector instrument, (2) *forest owner participation* is vital to impact on forestry practices across a wide front (Rametsteiner and Simula 2003; Gulbrandsen 2004). Acknowledging that participation is a "precondition" for effectiveness, scholars have investigated the conditions under which forest owners may grant rule-making authority to certification schemes (Cashore 2002; Cashore et al. 2004). Likewise, (3) *supply chain support* for these schemes is another useful indicator of effectiveness. The support of stakeholders such as environmental organisations and indigenous peoples may

be critical to a particular scheme's legitimacy and credibility in the marketplace (Cashore 2002; Boström 2003a; Meidinger et al. 2003; Cashore et al. 2004; Gulbrandsen 2004). To the extent that greater market access or price premiums flow from certification and eco-labelling, producers would find the option of joining attractive, resulting in further diffusion of the preferred management practices. Assuming that players who accept the rule-making authority of a scheme would not want to stir up a fight, (4) the *prevalence of conflict* in the forestry sector may indicate how successful forest owners have been at integrating environmental concerns in forestry practices (Framstad 1996). One would expect that widespread participation in certification schemes that promote sustainable forestry and forest protection would impact favourably on conflict levels. On the other hand, certification could also result in new conflicts. And in some regions, such as British Columbia in Canada, there was still large-scale dissatisfaction in the environmental movement even though environmental concerns were integrated into the forest policy (Cashore et al. 2004). Finally, (5) the *interplay with public forest policy* may also indicate a scheme's effectiveness (Rametsteiner 2002; Boström 2003b; Cashore et al. 2004). Overlapping public and private institutions, such as public sector bodies and forest certification schemes, may reinforce each other's policies and enforcement capacities (positive interplay) or they may disrupt or impede each other's effectiveness (negative interplay) (Young 2002). In sum, we need a multidimensional conception of effectiveness in the study of voluntary, market driven private sector instruments, which incorporates aspects that would have been ignored in a problem-solving approach. We therefore break the dependent variable down into the following components:

- *Forest owner participation*: Measured as share of forestland certified by a scheme.
- *Supply chain support*: Manufacturer, retailer and purchaser support for a scheme.
- *Forestry conflicts*: The prevalence of conflict over forestry practices before and after certification.
- *Public policy instruments*: Interplay with public forest policy.
- *Forestry practices*: Behavioural change among forest owners and environmental impact.

The following variables are expected to be particularly important determinants of effectiveness:

1. *Initiation*: Leadership in the agenda-setting phase of certification processes matters in explaining whether the FSC gains forest owner support, or whether an industry competitor emerges. The FSC is promoted by a number of resourceful environmental organisations, such as the WWF and Friends of the Earth. When environmental groups succeed in assuming an early leadership role, setting the agenda and framing the certification issue in public discourse, forest owners are more likely to participate in the FSC to gain credit with environmentalists and purchasers. Conversely, when industry and forestry interest organisations assume

leadership in the agenda-setting phase, a business-dominated competitor is more likely to emerge.

2. *Inclusiveness in standard development*: This is the degree to which a broad range of stakeholders are included in the standard development process. With substantial decision-making power in standards development, forest owners are likely to find it attractive to participate in the scheme. Conversely if forest owners feel excluded from standards development or deprived of real decision-making power, they are likely to leave the process (Cashore et al. 2004). Participation of a broad range of interests, including economic, ecological and social, is assumed to foster the legitimacy and credibility of a certification scheme among professional purchasers and customers, thus increasing supply chain support (Cashore 2002; Boström 2003a; Cashore et al. 2004; Gulbrandsen 2004). Conversely, if a certification initiative fails to convince purchasers that the standards have been developed within a broad and inclusive process, supply chain support is likely to be low and the level of conflict in the forestry sector is likely to remain high or increase.
3. *Individual or collective participation*: This refers to whether certification contracts are signed on an individual basis or if forest owners' associations make participation in a certain certification scheme a requirement of membership or timber sales through the association. Because forest owners who refuse to participate in a collective membership scheme may lose their trading channels for timber (channelled through the association), high participation in the scheme is likely to result. Individual participation is likely to be high when transaction costs are low and the benefits of participation are high (See also Cashore et al. 2004).
4. *System operation*: A scheme may be performance based (focusing on outcome), management-system based (focusing on process), or based on some combination of the two. In a performance-based scheme, compliance with sustainable forest management standards must be verified by on-the-ground audits. A management-system-based scheme does not dictate compliance with certain standards, but requires that continual process improvements be demonstrated in audits. An undertaking certified by the latter kind of scheme is usually required to have an environmental policy and goals in place, but can generally decide for itself the environmental performance level it aims for. Because performance-based schemes require compliance with substantive on-the-ground standards, we suggest that they are more likely to modify forestry practices in ways that lead to less environmental deterioration than management system-based schemes.
5. *Stringency of the standards*: This is an ambitiousness measure attuned to the degree to which a scheme requires forest owners or managers to implement behavioural changes. As a point of departure, we suggest that the more stringent and wide-ranging the environmental standards, the greater the likelihood to modify forestry practices in ways that lead to environmental amelioration (Gulbrandsen 2004, p. 86). On the other hand, there could be an inverse relationship between the stringency of the standards and forest owners' participation,

because many owners do not accept a scheme with demanding and intrusive standards (Cashore et al. 2004). This would obviously reduce the scheme's capacity to change forestry practices across a wide front.

6. *International orientation*: Linking domestic schemes to international processes or certification schemes is likely to increase supply chain support due to preference for legitimate and widely recognised schemes and labels. Because private authorities are not accountable for their actions in the sense required by notions of democratic governance, there may be an "accountability deficit" in governance dominated by private authorities (Rosenau 2000, p. 192). Linkage to intergovernmental criteria, indicators and operational guidelines, such as the pan-European, would be one mode of increasing legitimacy. Alternatively, in opposition to intergovernmental co-operation on forests, linkage to international forest certification schemes supported by a broad range of stakeholders and recognised in the marketplace, would be another.

4. Forest Certification in Norway and Sweden

How do the Norwegian and Swedish certification processes and schemes relate to the proposed determinants of effectiveness? In what follows we compare forest certification in the two countries along the dimensions above.

4.1. Initiation

In 1994, WWF Sweden and the Swedish Society for Nature Conservation established an informal group of scientists and stakeholders. They worked out a set of criteria for conservation of biodiversity in Swedish forestry (Elliott and Schlaepfer 2001, p. 644). At the initiative of these organisations, a Swedish FSC working group was established in 1996, with participation from all the major environmental groups, the indigenous Sámi people, the large forest companies, forest owners' associations – that is, the membership organisations of non-industrial forest owners – and other players. According to Elliott (1999, pp. 385–389) the working group's agenda was largely set by the NGOs. This was accepted by the forest companies, but led to resentment in the forest owners' associations (ibid.).

By contrast, the 1995–1998 Living Forests project was established by the Norwegian Forest Owners' Federation, representing the forest owners' associations in Norway, and Norske Skog, the only major Norwegian pulp and paper company, to work out national standards for sustainable forestry and build environmental skills among forest owners. Unlike Sweden, with her mixture of industrial forest companies and non-industrial forest owners, Norwegian forestry is almost entirely made up of small-scale forest owners. WWF Norway and the Norwegian Society for Nature Conservation participated in the standards development group along with representatives from outdoor life, labour organisations

and two ministries. Living Forests was initially *not* a process for developing a forest certification scheme in Norway. However, as part of the project, a certification committee was established in 1997 to consider different certification options, including FSC, ISO 14001 and the EU Eco-Management and Audit Scheme (EMAS).

4.2. Inclusiveness

Ecological, economic and social interests were represented in equal measure on both the Swedish and the Norwegian working groups. However, while Sámi representatives in compliance with FSC regulations participated on the Swedish working group, they were not included in the Norwegian process, because reindeer herding by the Sámi in Norway mostly takes place in areas of little value to forestry. In contrast, indigenous use of forests has divided opinion in Sweden following expansion of forestry in the 1980s to areas used for reindeer herding in the mountainous Northwest of the country (Hellström 2001). Government agencies were not allowed to participate on the Swedish FSC working group (but experts from agencies were consulted in various issues), but the Norwegian departments of agriculture and environment did participate on the Norwegian Living Forest standard development group.

In Sweden, the forest owners' associations, representing small forest owners, withdrew from the venture largely owing to inclusion of Sámi representatives' demands. While the small forest owners became isolated as a result of NGO, labour and Sámi backing, the industrial forest companies did not oppose Sámi demands, which were mainly directed at non-industrial forest owners in Northern Sweden (Elliott 1999, pp. 385–387). The Sámi demands, along with strict environmental standards and uncertainties concerning group certification options, divided the forest owners' associations. In the end, they agreed to collectively leave the process (ibid.). By the end of 1997, the remaining members of the working group had agreed on a Swedish standard that subsequently was approved by the FSC. This was the first national FSC standard to be developed in the world (Elliott and Schlaepfer 2001, p. 645).

In Norway, all participants in the Living Forests project agreed upon 23 standards for sustainable forest management in 1998. These standards, accompanied by criteria and indicators, were used to certify forest associations. However, WWF and the Norwegian Society for Nature Conservation argued that because the Living Forests standards they had agreed to had not been developed with a view to certify forestry operations, they required further elaboration. They thus proposed to set up a Norwegian FSC working group, to adapt the Living Forests standards to FSCs principles and criteria in a process where ecological, economic and social interest and the Sámi people had equal decision-making power. The forest owners rejected the proposal and opted instead for the ISO management-system-based certification in combination with the performance level defined by the Living

Forests standards. Hence, the type of certification scheme was determined solely by the forest owners.

4.3. Individual or Collective Participation

While the Swedish FSC scheme is voluntary and contracts are signed with each and every forest company or owner, participation of forest owners in the Living Forests scheme is in practice mandatory when their membership association is certified. Most of the timber traded in Norway is brokered through the forest associations. Forest owners supplying timber through the associational system are required to comply with the Living Forests standards. Those who refuse to participate collectively through their associations lose traditional trading channels for timber. Thus, participation is encouraged by the carrots of low transaction costs and increased (or at least continued) sales, and defection discouraged by the stick of reduced sales. The Swedish FSC scheme is arguably more suitable for industrial forest companies than non-industrial forest owners, because transaction costs are, in relative terms, lower for large-scale than small-scale forestry holdings.

4.4. System Operation

By requiring conformity to specific forest management standards, the Swedish FSC scheme is performance based. The Norwegian scheme is based on the ISO 14001 EMS standard, with the Living Forest standards defining the performance level. ISO 14001 does not prescribe the required output of an operation, but the required quality of the process to be applied. Norwegian environmental organisations allege that while compliance with the Swedish FSC standards must be verified in audits, Norwegian forest owners may become and remain certified before complying fully with the performance standards as long as they demonstrate improvements in audits. In practice, though, the two schemes operate quite similarly. Compliance is verified in audits conducted by independent and accredited certification bodies, audits are conducted twice a year (Norway) or annually (Sweden) on selected samples on the ground, forest holdings that comply with the standards obtain a certificate valid for 3 (Norway) or 5 years (Sweden), and the standards are revised after 5 years. However, the Swedish scheme has, in compliance with FSC rules, established mechanisms for consultation between ecological, social and economic interests and a public summary of audit reports is available from certifiers. Table I sets out the main operational features of the Norwegian and Swedish schemes.

4.5. Stringency

The Living Forests standards generally appear less intrusive and demanding than the Swedish FSC standards. Perhaps the most salient difference is that while the Swedish FSC requires that at least 5% of the productive forest is permanently set aside, compliance with the Living Forests scheme results in conservation of

Table I. The operation of the Norwegian and Swedish certification systems.

System features	Norwegian Living Forests	Swedish FSC
Management-system-based or performance-based standard	Combination	Performance based
Compliance is verified	Yes	Yes
Audit frequency	Twice a year	Annually
Audit body	Third party certifier accredited by state agency (Norwegian Accreditation)	FSC accredited third party certifier
Audit scope	On-the-ground samples	On-the-ground samples
Transparency	Audit reports not publicly available	Public summary of audit reports
Consequence of non-compliance	Normally corrective action requests; certificate may be suspended in exceptional cases	Normally corrective action requests; certificate may be suspended in exceptional cases
Mechanisms for consultation	None	Discussions in Swedish FSC Council between economic, ecological and social interests
Re-certification	Every third year	Every fifth year
Revision of standards	After 5 years (not decided what will be done after first revision)	Every fifth year

approximately 1% of the forestland. The Swedish FSC standards are stricter than the Living Forests standards with regard to registration, handling and protection of natural forests and habitats with red-listed species. With the exception of some harvesting methods and forest road construction, the same can be said for requirements concerning ditching, preservation of dead wood and non-productive forestland, exotics, the use of herbicides, and the rights of Sámi people. Because the Swedish FSC standards are stricter, more demanding and less discretionary than those of the Living Forests, we would expect the Swedish scheme to have a greater impact on forestry practices than the Norwegian scheme. Table II compares the Norwegian and Swedish standards on salient environmental and social issues.[4]

4.6. International Orientation

The Norwegian department of agriculture required the Norwegian scheme to conform with the criteria, indicators and operational guidelines of the pan-European ministerial conferences.[5] It is endorsed by the PEFC Council, which provides forest holdings with access to the umbrella scheme's own product eco-label, subject to

Table II. The stringency of the Norwegian and Swedish certification standards.

Standards	Norwegian Living Forests	Swedish FSC
Set aside areas	Approximately 1%	At least 5%
Natural forests and key habitats	The qualities of natural forests and key habitats must be sustained	Natural forests (pronounced uneven-aged, multi-layered, and with a great abundance of old trees and dead wood) and key habitats must be registered and preserved
Clearcuts and harvesting methods	Restrictions on the use of clearcutting and intensive harvesting methods	Use of some clearcutting and intensive harvesting methods permitted
Ditching	Minimise new ditching; permitted where it does not harm biologically valuable mires and wetlands	New ditching prohibited
Dead wood	Large windfalls that have been on the ground for more than 5 years must be left in the forest	Dead wood should be protected from forest measures; standing dead wood should be left when thinning and regeneration felling
Forest road construction	Restrictions on the construction of roads on biologically valuable forestland	No specific requirements
Non-productive forestland	Afforestation permitted; drainage ditching on bogs and forest wetland must be avoided	Land-use change not permitted, management only permitted to preserve the natural biodiversity of biotopes
Chemicals	Minimise use of herbicides; permitted in silviculture when clearly more efficient than mechanical methods	Chemical pesticides and herbicides that are harmful to the environment and health should not be used
Genetically Modified Organisms	Prohibited	Prohibited
Exotics	Permitted where natural regeneration is too slow to yield economically sustainable harvest	Minimise use; only permitted in exceptional cases following consensus decision in FSC Board
Outdoor life	All commercial activity must be conducted in such a way that public access to forests is maintained	Outdoor life should be taken into consideration in forest management
Indigenous peoples	No specific requirements beyond following government regulations	Sami people's rights protected

chain-of-custody requirements. The Swedish scheme takes a more simplified approach than other nationally developed FSC standards, but generally conforms with the scheme's global principles, criteria, and operational guidelines. The scheme is approved by the FSC, which gives certified Swedish forest companies the right to label forest products with the FSC logo, subject to chain-of-custody requirements. As FSC arose in opposition to intergovernmental co-operation on forests, the Swedish scheme is not linked to the pan-European criteria and indicators. A summary of the main differences of the Norwegian and Swedish schemes is set out in Table III.

5. The Effectiveness of Forest Certification

We have seen above that there are considerable differences between the Norwegian and Swedish certification processes and schemes. Do these differences impact on the effectiveness of forest certification in the two countries? In what follows we explore effectiveness along the five dimensions introduced in the analytic framework, that is, participation, supply chain support, forestry conflicts, interplay with public policy instruments, and forestry practices.

5.1. Participation in Certification Schemes

The more producers participate in a certification scheme, the more likely it is that the scheme will change forestry practices. In 1998, the first forest owners' association in Norway was certified. Three years later, all eight regional associations in Norway were certified in accordance with the ISO 14001 EMS standard and the Living Forests performance standards, comprising about 80% of the productive forestland in Norway. Because participation in the certification scheme in practice is mandatory for the members of an association, almost all forestland controlled by small forest owners in Norway is certified. The Norwegian Forest Owners' Federation explain that achieving maximum credibility in the markets for forest products would require the widest possible participation of forest owners. They thus made participation mandatory on the forest associations' suppliers.[6] The remaining 20% of the forestland is owned by the state, local authorities and forest companies. This land has also become certified by the same system, meaning that virtually all commercially productive forests in Norway are certified.

Sweden was the trailblazer in developing and implementing a national FSC standard. The development of a quite demanding, advocacy group-supported national standard led, however, to a different outcome than in Norway. Immediately following the non-industrial forest owners' withdrawal from the FSC working group, the forest owners' association Södra – the only association with industrial facilities in Sweden – realised that an alternative to the FSC had to be developed to prevent loss of market shares to the forest companies. Lead by Södra, each of the six

Table III. A comparison of forest certification in Norway and Sweden.

Salient dimensions	Norwegian Living Forests	Swedish FSC
Initiation	Norwegian Forest Owners' Federation and forest industry	WWF Sweden and Swedish Society for Nature Conservation
Inclusiveness	Equal participation from economic, ecological and social interests, but Sami representatives did not participate	Equal participation and decision-making powers from economic, ecological and social interests
Individual or collective participation	Collective; non-industrial forest owners supplying timer through the associational system are required to comply with the Living Forests standards	Individual; contracts signed with each forest company or owner
System operation	Based on Living Forests performance-based standards and ISO 14001 management-system-based certification	Based on Swedish performance-based FSC standards and operational guidelines
Stringency of sustainable forest management standards	Flexible and quite discretionary environmental and social standards	Strict and quite wide-ranging environmental and social standards
International orientation	Pan-European criteria and PEFC scheme; scope for use of PEFC-logo, subject to chain of custody requirements	Based on FSCs global principles and criteria; scope for use of FSC-logo, subject to chain of custody requirements

Swedish forest owners' associations developed their own standards, defining the environmental performance level of their members' forestry practices. Using conformity with these standards as a requirement for certification, the associations signed contracts with forest owners on a *voluntary* basis. The result of collective (mandatory) and individual (voluntary) certification is clearly reflected in the statistics: while all forestland owned by members of the Norwegian forest owners' associations is certified, only about one third of the forestland owned by members of the Swedish associations is certified.[7] With FSC certification of all the industrial forest companies, slightly more than half of the commercially productive forestland in Sweden is certified in sum, but this is still far less than almost all of the forestland in Norway.[8]

By certifying their management systems to ISO 14001 or EMAS, Norwegian and Swedish forest owners' associations obtained a combination of performance and

system-based forest certification schemes. Although certification to an EMS standard gave some credibility to the forest associations, it was obvious that certified timber and wood products needed an internationally recognised logo attesting to sustainable forestry. In the absence of a credible alternative to FSC, forest associations in the Nordic countries went ahead and forged an alternative themselves – the PEFC scheme. With PEFC's endorsement of the Nordic 'family forestry' schemes in 2000, all certified forest associations in Norway were included in one international scheme, while two competing international schemes gained a foothold in Sweden. Currently, FSC is approximately five times larger than PEFC in Sweden, and almost half of the country's forestland is certified in conformity with the Swedish FSC standard (National Board of Forestry 2003).

The development of competing certification schemes to the FSC in both Norway and Sweden – driven by forestry interests – resembles steps taken in many countries. Non-industrial forest owners felt they had little say in the FSC and that the scheme was made for large forest holdings. A certification scheme's legitimacy among target groups and sensitivity to their needs thus appear to be important for their participation. Because Norwegian forest owners distrusted the FSC and believed that environmental interests and forest companies dominated the decision-making processes it has been extremely difficult to "sell" this scheme in Norway. That environmental interests, in collaboration with the large forest companies, were at the forefront in establishing FSC in Sweden no doubt contributed to the small forest owners' dissatisfaction with the process and rejection of the outcome. What the forest owners feared most was that FSC would obtain a monopoly on forest certification, which in their view would mean that environmentalists, indigenous peoples and industrial companies in partnership could dictate the terms for sustainable forest management.[9] The formation of PEFC may be seen as strategic move to regain control over an issue area predominated by environmental interests and co-opt the discourse on forest certification.

However, unlike many certification processes elsewhere, the emergence of a forest owners-based certification system has not marginalised FSC in Sweden. On the contrary, the FSC retains a stronger position here compared to most other countries. FSCs success in Sweden can partly be explained by the leadership role assumed by environmental organisations in promoting the scheme, partly, and probably more significantly by the presence of five industrial forest companies,[10] controlling and managing one third of the Swedish forestland. Their large-scale forestry operations, economies of scale and organisational resources enabled them to handle FSC certification. Forestry interests' initiation of the Norwegian certification process and the small-scale family forestry predominant in Norway seem to explain the lack of FSC certified forestland. In conclusion, not only initiation patterns, but also different *ownership structures* in the Norwegian and Swedish forestry sectors explain participation in different schemes in the two countries.

5.2. Supply Chain Support

The Swedish forestry sector is larger and more export oriented than the Norwegian forestry sector, but both countries are highly dependent on export markets for pulp and paper products. The main importers are environmentally concerned European markets, in particular in Germany and the UK. From the industry's point of view, the main purpose of certification is to ensure or improve market access for certified organisations and eco-labelled products. And the greater the supply chain support for a certification scheme, the more likely it is it will influence forestry practices in the desired direction.

Market penetration generally depends upon the demand among professional purchasers for timber and forest products, willingness to pay a premium for eco-labelled products in the marketplace and the position of the eco-label relative to other labels. The WWF has formed powerful alliances with manufacturers and retailers – so-called "buyer groups" – to promote FSC certified timber and wood products. With a professional organisation and national and local groups around the world, WWF is well suited to promote the FSC scheme. In Sweden, influential customers such as Ikea and the office furniture manufacturer Kinnarps participated in developing the national FSC scheme. Although this did not prevent the non-industrial forest owners from choosing another scheme, the backing of major buyers, both at home and abroad, largely explains FSCs success in Sweden. In particular, publicly announced preferences for FSC certified paper and wood products by powerful buyers in Germany and Britain convinced the forest companies AssiDomän and Korsnäs to support FSC-style certification (Elliott 1999; Cashore et al. 2004). Under pressure from these companies, the other members of the Swedish Forest Industries Association agreed to have the association participate on the FSC working group, and the non-industrial forest owners reluctantly decided to join them (ibid.). The large forest companies are all vertically integrated companies, with their own industrial facilities in Sweden (sawmills and pulp and paper mills), and are thus directly exposed to international market pressures. Hence, the requirements of German publishing houses and members of the British buyer group (WWF 95 + group), such as the do-it-yourself retailer B&Q and the supermarket chain Sainsbury's, meant that FSC certification translated into a competitive advantage for Swedish forest companies. By contrast, among the Swedish forest owners' associations, only Södra operates its own mills. Södra was in fact inclined to support FSC certification (Elliott 1999, p. 387), but in the end the association joined the other forest owners when they abandoned the FSC working group in 1997.

Having two competing schemes to deal with is not considered ideal by the Swedish forest companies. Deliveries of timber from PEFC-certified (and non-certified) forest owners represent a serious problem for the mills least self-sufficient in FSC wood, who, in the absence of mutual recognition, cannot market their wood products with the FSC logo due to chain-of-custody requirements. The problem is exacerbated by the "wood swapping" system, whereby timber harvested is sent to the nearest

mills – regardless of ownership – to reduce transportation costs (Cashore et al. 2004). Hence, both within the FSC and the PEFC system, mills with little supplies of company harvested wood have difficulties meeting labelling requirements. After lobbying by Swedish forest companies, the FSC has taken steps to allow greater flexibility in chain-of-custody tracking (ibid.), but a satisfactory solution still eludes them. From the forest industry's perspective, this could reduce the effectiveness of forest certification. Moreover, proliferation of different eco-label schemes in general seems to confuse customers and weaken the credibility of such policy instruments (Jordan et al. 2004). The global rivalry between FSC and PEFC, and, not least, the supporters of each scheme, may discredit both, putting the reputation of forest certification in the line in the process. Because Sweden is the only forest-rich country in Europe in which both FSC and PEFC have a strong position, the problems with two competing schemes are particularly severe here. In an effort to resolve the situation, forestry interests and environmental organisations have taken steps to work out a Swedish mutual recognition framework for forest certification or "build a bridge" between FSC and PEFC ("the Stockdove process"). However, neither Swedish nor international efforts to achieve mutual recognition have met with much success.

Most of the Norwegian pulpwood is sold to the domestically based multinational corporation Norske Skog, the second largest supplier of newsprint in the world. Among the most important buyers of printing paper originating from Norwegian forests are the large publishing houses in Germany, in particular the giants Springer Verlag and Otto Versand. Following environmental NGO pressures in 1993–1994, German publishing houses demanded supplier documentation that the paper originated from sustainable forestry (Sæther 1998, pp. 190–191). Development of national sustainable forest management standards in Norway was largely a response to such demands (Gulbrandsen 2003, p. 109). So far, the story resembles the Swedish case. However, although Norske Skog is a major pulp and paper company, it is a minor forest owner, not least compared to the Swedish forest companies. In fact, the company's strategy in recent years has been to sell off its forests and specialise in processing printing paper, with the result that it hardly owns forestland anymore. The choice of certification scheme was thus left to the forest owners' associations.[11] Although the powerful German publishing houses demanded verification that Norwegian forests were sustainably managed, they had relaxed their former preference for FSC certified wood as a result of limited supplies and protests from non-industrial forest owners in Sweden, Finland, Austria, France and Germany. And because the Swedish and Finnish non-industrial forest owners had already rejected FSC-style certification, Norwegian forest owners could reap the benefits of their work to promote competing schemes in the marketplace. As mentioned earlier, FSC certification would require further elaboration of the Living Forests standards through a multi-stakeholder process, but this would not be necessary with ISO 14001. Hence, the choice of ISO over FSC may be regarded as a utility-maximising choice, in the sense that forest owners, at

the lowest cost, could ensure that Norske Skog would continue buying their timber and the company's customers would continue buying its printing paper. While the industrial forest companies in Sweden responded to market pressures (and opportunities) by choosing the widely recognised FSC scheme, the lower market exposure of non-industrial forest owners in both Norway and Sweden go a long way to explain their decision to develop competing and more flexible programs (see also Cashore et al. 2004).

In sum, forest certification in Sweden and Norway is clearly not driven by consumers' willingness to pay a premium for eco-labelled products, but rather by the requirements of professional purchasers, responding to pressures from environmental organisations. Currently, certified products from both countries are not only accepted in their important export markets, demand is rising. Supply side support is therefore likely to continue to impact forest management and practices in the two countries.

5.3. Forestry Conflicts

The absence of conflict in the forestry sector may be indicative of the success of forest owners in integrating environmental measures in forestry practices (Framstad 1996; Cashore et al. 2004). Has certification been successful as a conflict-dampening or resolving instrument? From the 1960s to the 1980s, Swedish forestry was subject to intensive conflicts over such issues as the use of non-native tree species in silviculture and afforestation, clear-cutting, protection of old-growth forests in the south and mountain forests in the north, and the use of herbicides. With the certification processes in the 1990s, the intensity of conflicts has been significantly reduced (Hellström 2001; Boström 2002). A study by Elliott and Schlaepfer (2001) shows that some degree of common understanding between forestry interests and NGOs was reached with the incorporation of environmental concerns in public policy instruments in the first half of the 1990s. Hence, changes in public policy helped assuage disagreement and gave incentives for the different parties to engage in dialogue. By working together to formulate a Swedish FSC standard, that mutual understanding of problems and issues was further cemented (ibid.).

Norwegian environmental organisations have also campaigned actively to promote sustainable forestry practices and forest protection. A new and apparently successful early 1990s' strategy was to target publishing houses in the important German export market for Norwegian paper. The Living Forest project may be regarded as a project aiming at both reassuring buyers that Norwegian forestry is ecologically sustainable and reducing the likelihood of conflict with the environmental movement. However, clashes of opinion in Norwegian forestry have virtually always been more benign than in Sweden (Hellström 2001), which may partly explain why Norwegian forest owners opted for ISO instead of FSC, while the Swedish forest companies' chose FSC in order to gain "credit" with environmentalists and avoid protests over forestry practices.

Of course, the environmental pressure groups are in danger of losing much of their impact when certification processes are accepted and conflict levels abate. There is a risk that players will be satisfied with what has been achieved and fail to act should new knowledge or evidence of harmful forestry practices appear (Boström 2002). This is particularly true in Sweden, where the successful and large-scale implementation of the advocacy-group backed FSC scheme serves as a show window for the rest of the world. On the other hand, certification may also be a source of new differences of opinion between environmental and forestry coalitions. As a result of controversy over the implementation of the Living Forests standards in 2001, the Norwegian environmental organisations refused to work with the forest owners. Pursuing this line further, the environmentalists have tried to disassociate themselves from the forest owners and the Living Forest project. In their own defence, the forest owners point to the agreement reached on the Living Forests standards in 1998 by all parties, including the environmentalists. Arguably, the focus of discord in Swedish forestry has shifted from public forest policy to the different certification schemes. While discussing the environmental stringency of competing standards is important, much of the debate has been about technicalities and the problems that emerged as a result of the lack of mutual recognition. One should also keep in mind that environmental organisations, not least the WWF, have invested heavily in promoting the FSC scheme, whereas forestry coalitions with no less intensity have worked to garner support for PEFC. Clearly, there is an element of self-interest in promoting either scheme, not only among forestry owners, but also in the environmental movement.

5.4. Interplay with Public Policy Instruments

Public authorities, forest owners and NGOs are all careful to express that forest certification acts as a *supplement* to public policy instruments. Nevertheless, the emergence of private authorities in any policy sector is likely to affect the design or use of public policy instruments. The question is, then, whether there is any evidence of changes in public forest policy as a result of certification processes.

Both Swedish and Norwegian NGOs promoted forest certification partly because they realised that a rigorous public regulation of environmental concerns in forestry was not a likely prospect, and because they got more ''mileage'' out of lobbying the market than the government (Elliott and Schlaepfer 2001; Gulbrandsen 2003). Forest owners, in contrast, saw forest certification not only as a way to ensure market access, but also to dissuade the government from regulating the forestry sector. The argument was that if the forest owners could prove that they took responsibility for protecting environmental qualities in forests themselves, more rigorous public policy regulation would not be necessary. In Norway, it was articulated clearly by the forestry sector in 1997 on the occasion of a proposal from the department of agriculture to amend the Forestry Act, the effect of which would be to impose stronger environmental constraints on forest owners. The forestry interests

protested strongly, arguing that certification had made stricter public regulations redundant. In the end, a majority of the Standing Committee on Business and Industry in the Norwegian Parliament agreed with the forest owners and rejected the amendment (NSCBI 1999).

In 1997 the Norwegian department of agriculture launched the project *Environmental Inventories in Forests* to develop a scientific method for biodiversity mapping. The method is now in use in the implementation of the Living Forest standard on "biologically valuable areas", which require forest owners to register and conserve key biotopes. While the agriculture department presented almost 6 million Euro to the Norwegian Institute for Forest Research to provide a sound scientific basis for the method, environmental organisations are critical of the way it has been practised. The system gives responsibility for identifying biologically valuable areas to forestry planners, usually in the employ of forest associations or companies owned by the associations. It means that forest owners will gain control over registration procedures formerly the province of biologists (Gulbrandsen 2003). That said, the actual development of the method could be regarded as a way to facilitate the voluntary conservation of biological "hotspots" and its application to comply with certification requirements may thus be regarded as *positive interplay* between public and private governance.

Boström (2002, pp. 49–52) argues that certification of Swedish forest owners is likely to impact on public forest policy in several ways. For example, the National Board of Forestry and representatives of certification schemes have discussed how rules granting compensation for protection of biotopes could be adjusted to certification standards requiring forest owners to set aside a certain percentage for wild growth. What should be avoided is that forest owners claim compensation from the state for conserving key-biotopes in instances where this merely is a result of their compliance with a certification standard. Forest certification is also likely to affect public authorities' unwritten rules for controlling forest operations. Swedish forest owners are obliged to report planned felling, but the authorities have limited capacity to make fieldtrips to verify that the information submitted is correct. Considering the significant personnel cutbacks in the Swedish forestry administration in recent years, field inspections of forest operations may increasingly be left to private certification bodies and their annual audits. In the same vein, public authorities are likely to prioritise control of non-certified forest owners over certified.

Whereas forest certification generally is portrayed as supplementary to public policy instruments, evidence suggests that forest certification not only is affected by public regulations and administrative culture (Boström 2003b), but is also likely to affect the design and application of public policy. The FSC and PEFC both require adherence to national laws and regulations, and may as such strengthen the integration of environmental concerns in forestry practices. By carrying out regular field inspections, certification bodies verify conformity to both private and public regulations. On the other hand, this means that private authorities will now be

doing work previously thought to be a public responsibility, such as control of felling and protection of forestry environments. The examples from Norway illustrate how positive interplay may arise between public and private governance, but also how self-imposed measures can be used effectively as an argument to prevent stricter public policy. Developments in Sweden suggest that private authorities may gain influence at the expense of public governance and control. Hence, one may argue that forest certification is likely to weaken rather than strengthen public policies and authorities. That is not to say that demands on and control of forest operations are necessarily weakened, but that regulatory regimes change with private actors accepting more responsibility for rule making and compliance verification.

5.5. Forestry Practices

At the end of the day, forest certification will be judged on its ability to change forestry practices in ways that reverse environmental deterioration of forests. This is partly a question of the stringency of the certification standards and partly of compliance with those standards.

Independent certification bodies accredited by forest certification schemes audit forest operations on the ground. One might expect that regular forest management auditing and certification bodies' authority to suspend the certificate of non-compliant forest holdings would encourage compliance with standards. Corrective Action Requests, that is, requirements to correct non-compliance, and other issues addressed by certifiers, shed light on the impact of forest audits. A study by Dahl (2001), commissioned by the WWF and the Swedish Society for Nature Conservation, shows improvements in forestry practices in Sweden following FSC certification. She found that a number of rules had been implemented successfully, including those concerning key habitats, forests exempted for nature conservation, transition zones and buffer zones, soil scarification and natural regeneration. Some criteria had only been partially implemented, including those addressing trees with high biodiversity value, trees with good chance of developing into large, old trees, dead wood, landscape ecology planning, balanced age distribution in a landscape perspective, and red-listed species outside key habitats. The distribution of Corrective Action Requests shows that two-thirds addressed environmental concerns, a quarter were issued in connection with social issues, while less than 2% addressed economic issues such as productivity and yield (Dahl 2001).

Rametsteiner (1999) argues that FSC certification and audits would be likely to improve forestry practices in Europe. His study indicates that FSC certification in European countries has improved the protection of rare and threatened species and their habitats, widened tree diversity and the conservation of mixed stands, and reduced the use of chemicals in forestry. Similar to Dahl, he found that most Corrective Action Requests addressed ecological and social measures in forestry and the state of written documentation in forest management.

Compliance may take several forms, however, dependent, *inter alia* on the stringency and rigour of certification standards and audits. Norwegian environmental organisations have criticised the Living Forest standards for imprecision, creating ample opportunities for forest owners to evade or circumvent them without formally being in breach of the standards. The environmentalists claim that the requirements concerning registration and preservation of natural forest and habitats with red-listed species are particularly unclear, and may result in felling of key biotopes before proper registration is completed (Gulbrandsen 2003, p. 97).

A number of violations of the Living Forests standards by the largest forest owners' association in Norway, representing 16,500 forest owners, was brought to public attention by the Norwegian press in February 2000 (Jensen 2000). Following an audit by the certification body which confirmed several of the allegations, the association's ISO certificate was provisionally suspended. The most serious breach was lack of proper procedures for handling and protecting key biotopes until they had been properly registered. The systems for environmental skills building among the forest association's members proved also inadequate. Environmental organisations claimed that the non-compliance was evidence that forest owners did not care about the Living Forest standards as long as they could get away with it. The forest owners, on the other hand, argued that the provisional withdrawal of the certificate showed that non-compliance had tangible consequences and did indeed work. Several instances of alleged serious non-compliance with the FSC standards have also been reported in the Swedish press (Mäntyranta 2002), but certified Swedish forest companies and owners have not been penalised by having their certificates suspended.

Due to the stringency of the scheme, one would expect improvements in FSC-certified Swedish forest companies to be greater than among PEFC-certified Norwegian forest owners, but because there are no systematically comparable data, that cannot be examined here. A study comparing the impact of certification in Southern Sweden shows that FSC-certified owners set aside more forestland and leave more dead wood and deciduous-dominated stands than PEFC-certified owners (Andersson 2002). To date, there are no studies that ascertain the degree of implementation of the Norwegian Living Forest standards. According to Rametsteiner and Simula (2003, p. 95), there is little doubt that forest certification in general has resulted in improvements in internal auditing and monitoring among forest organisations. But we still know too little about forest certification's environmental impact and efficacy as a problem-solving instrument. These are areas in urgent need of closer examination.

6. Conclusion

It is vital to be able to demonstrate that forest certification is effective in promoting ecological awareness and practical measures in forestry for its legitimacy as an environmental standard. In taking a broad approach to exploring effectiveness, this study has looked at indicators such as participation, supply side

support, interplay with public policy instruments, and impact on conflict levels in the forestry sector. We have found that forest certification in both Norway and Sweden has been effective in terms of participation, market penetration, and – in some measure – conflict management. Differences in leadership in the certification process, ownership structure, market exposure, and the level of conflict in the forestry sector explain divergence in support for certification programs in the two countries. While environmental interests had the initiative in Sweden, forestry interests were at the forefront in developing a forest certification scheme in Norway. More importantly, while the large Swedish forest companies were obliged to respond to market pressures and were additionally in a position to absorb the conversion costs that accompanied FSC certification, Norwegian forestry is almost entirely based on small-scale family holdings. Non-industrial forest owners in both Norway and Sweden rejected FSC certification due to narrower market exposure than the forest companies and their belief that environmental, social and forest company interests dominate the decision-making process. These variables go a long way to explain why the FSC has five times the endorsement in Sweden than the PEFC, and why there is virtually no FSC-certified forestland in Norway.

What can we say about the true problem-solving ability of forest certification? Has certification modified on-the-ground practices in ways that lead to less environmental deterioration in forests? We proposed that the stronger the environmental performance standards, the greater the impact on forestry practices. Although this might be true when comparing the relative improvement of forest holdings, little consistent support was found for it at the aggregate level. We have seen that a scheme with stringent and rigorous standards (such as the FSC) will not be accepted by all target groups, which obviously foreshortens much of the scheme's capacity to change widespread forestry practices. In Norway, Sweden and most countries in which the FSC is established, less intrusive and more discretionary schemes have emerged.

We have taken a broad approach in this study in order to identify various determinants and indicators of effectiveness. That said, our limited knowledge of the genuine problem-solving ability of forest certification remains a major constraint. Although forest certification seems to have modified on-the-ground practices in ways that lead to less environmental deterioration of forests, we still know too little about forest certification's environmental impact and efficacy as a problem-solving instrument. What should be investigated in future research is the relative improvement of certified forest holdings and impact on the forest biodiversity when using the pre-certification performance level as the baseline.

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Notes

1. See URL: http://www.fsc.org
2. The FSC has later developed a group certification solution for small forest owners.
3. See URL: http://www.pefc.org
4. The table is based on the Swedish FSC standard (Swedish FSC Council 1998) and the Norwegian Living Forests standard (Living Forests 1998a, b).
5. Interview with senior advisor, Ministry of Agriculture, 26 June 2001.
6. Nils Bøhn, The Norwegian Forest Owners' Federation, April 2003 (personal communication).
7. The figure from Sweden is based on statistics from the National Board of Forestry/ Statistics Sweden (2003) and PEFC Sweden (2003).
8. The absolute figures were slightly more than 9 million ha PEFC certified forestland in Norway (PEFC Norway 2003), and slightly more than 2 million ha PEFC and 10 million ha FSC certified forestland in Sweden in 2003 (National Board of Forestry/Statistics Sweden 2003).
9. Nils Bøhn, The Norwegian Forest Owners' Federation, 19 February 2004 (personal communication).
10. Sveaskog (formerly AssiDomän), SCA, Stora Enso (formerly Stora), Holmen (formerly MoDo) and Korsnäs.
11. Sverre Thoresen, Norske Skog, 24 February 2004 (personal communication).

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