



**Sveriges lantbruksuniversitet**  
**Institutionen för skogens produkter, Uppsala**

**Swedish forest policy since 1990**  
**– reforms and consequences**

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The Swedish University of Agricultural Sciences  
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Report No 16

Uppsala 2010  
ISSN: 1654-1383

Rapport nr 16



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## **Swedish forest policy since 1990 – reforms and consequences**

*Prepared for IUFRO Division 6: Social, Economic, Information  
and Policy Sciences, Research Group 6.13.00: Forest Law and  
Environmental Legislation*

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## **Abstract**

Similar to many other countries, particularly in Europe, Sweden has revised much of its legislation relating to forestry and environment since 1990. Of immediate relevance to the forest sector are the 1993 Forestry Act and consequent ordinances and regulations, and to forest property acquisition, forest income taxation, and the function of the Swedish Forest Agency. New environmental legislation has consequences for forest policy making, and voluntary certification was introduced. The effects of these changes have been examined and analysed, the latest in a Government forest policy proposition to the Parliament in 2008. The present paper reviews the revised legislation and its consequences.



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## Abstract

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## Introduction

From the late 1980s, the 200-yr-old forestry paradigm of management exclusively for sustained timber yield was challenged all over Europe. The current prominent concept of sustainability was originally established by foresters during the 18th century (Grober 2000), after seeing the possibilities of rational forest management rather than wanton exploitation. Sustainability was high in the agenda in Sweden's first forestry handbook (af Ström 1830), but it took over a century to translate these ideas into legislation. For most of the 20th century, efficient timber production was the objective in the forest countries of Central and Northern Europe, but societal change and growing environmental awareness created a new situation (Schmithüsen et al 2000, Humphreys 2004, Buttoud 2006). In an FAO review of Western European forest policy, Cirelli and Schmithüsen (2000) summarise:

*“Generally, the content of most laws has become multi-purpose oriented and refers in particular to sustainable forest management, public participation, private forestry, Government support to forestry, integration of forestry and related activities, and protection against fires and the adverse effects from natural calamities”.*

Discussing Sweden, but speaking in terms applicable to the general process of change, Göran Sundström of the Stockholm Centre for Organisational Research (2005) analyses the policy change process in terms of ‘government and governance’:

*“...causes of change have consisted of external shocks (governance) rather than vertical impulses canalised through the democratic hierarchal chain (government). The mobilisation has been more monocentric (government) than polycentric (governance). Organisational borders have been blurred (governance) rather than distinct (government). The causes of participation have been both voluntariness (governance) and coercion (government). Working process methods have principally been of authoritative ‘command-and-control’-character (government), even though substantial learning with elements of deliberation and negotiations between equals (governance) also have been present to some extent. Finally, responsible politicians control strategies have resembled those of a ‘meta governor’; rather than using detailed directives, rules and results requirements (government) the politicians have tried to control the process by forming basic structures, identities and meanings within the policy field (governance)”.*

Sweden is one of Europe's leading forestry nations in terms of forested area, timber production and export of forest products, but its internal forest policy processes are mainly presented in the Swedish language, many of which are public print (Commission reports, Government law propositions, communications and reports from the NBF - National Board of Forestry). In two previous papers (Nylund & Ingemarson 2007 Nylund 2009), forest tenure and silvicultural legislation in Sweden since the 17th century are reviewed. The present paper examines the developments in Swedish forest policy after 1990 in detail. However, a broader evaluation of the balancing of environmental and production objectives introduced in the 1993 Forestry act and subsequent legislation falls outside the scope of this review, which aims at describing the factual process without further analyses. The report also does not cover the public discourse on environmental objectives and targets nor the ways of assessing and balancing the conservation objective in relation to the production in the 1993 Forest Act – subjects planned for future reports. The theses of Appelstrand (2007) and Beland Lindahl (2008) provide a useful analysis of some of these issues

## Major policy-related developments since 1990

### A BRIEF OVERVIEW

The 1993 Forestry Act, preceded by the work of a Parliamentary Commission and commented on in the Government proposition to Parliament, represents a turning point in Swedish forest policy. It introduced environmental objectives as equally important as production, and marked a retreat from the far-reaching regulation of forest operations in both private and corporate forestland. The 1993 Forestry Act was accompanied by a major redefinition of the remit of the then National Board of Forestry (NFB, Skogsstyrelsen), responsible for law enforcement and the silvicultural extension system. Reorganisation followed in 2005, when the English name of organisation was changed into Swedish Forest Agency (SFA). The reform coincided with changes in taxation and property acquisition legislation and a number of laws with consequences for forestry were revised.

The national environmental legislation has been developed since the 1980s, and result in a new integrated environmental code (Miljöbalken) in 1998. Specific provisions for forestry were left to the NFB to debate. The year after, the Parliament adopted fifteen 'environmental quality objectives'. One of them, 'sustainable forests' was taken as a starting point for the specification of environmental goals for forestry. Achievement of these objectives was assessed in 2003, and, more thoroughly, in 2007. Concrete area targets for 'protected forest', i.e. various categories of reserves and areas for habitat protection and other purposes, and for voluntary reserves on private land, were set in connection with the 1993 Act, and new more ambitious targets were formulated by the SFA in 2007. A major update of national environmental policy is being prepared for presentation in 2009 or 2010.

While the EU's Strategy (Council resolution of 15 December 1998), with Sustainable Forest Management (SFM) as a guiding concept, recommended the member countries to prepare National Forest Programmes (NFP), Sweden, as a result of the 1993 policy decisions in Parliament, refrained from elaborating an action-oriented programme. Instead, the NFB issued National Forest Sector Goals, initially on its own initiative (1994/95 and 1998), and then, in 2005 after a lengthy (and partly stormy; cf Sundström 2005) process, with stakeholder participation, albeit with NFB having the final word on contested issues. A preliminary evaluation of goal fulfilment was presented in 2006.

The effects of the legal reform were followed-up through field inventories in 1998 (Skogsstyrelsen 1998a), but the Government forest policy proposition to Parliament contained only a few minor adjustments. A major evaluation (SUS 2001), including a broad range of assessments and studies, was published by NFB in 2001 and 2002, and was followed by a (minor policy) declaration by the Government in 2003. A Commission was given the task of preparing recommendations for a wider forest policy update, which was completed in 2006. Based on this, the Government presented a policy proposition to Parliament in March 2008. While making only minor adjustments in the legislation, the Government announced an objective of intensified timber production without compromising environmental ambitions.

Besides the policy evaluations, the existing practice of publishing hundred-year timber production forecasts was continued with one (Skogsstyrelsen 98a) in 1998, an interim update catering for the new biofuel market (Skogsstyrelsen 2004a) in 2003, and recently, Skogsstyrelsen 2008 08, all including a reference scenario and alternatives based on different management options.

The introduction of voluntary certification programmes added a new dimension to the concept of forestry governance: an FSC scheme for Sweden was introduced in 1998, and a PEFC alternative in 2001, the latter revised in 2006.

Regarding European and international forest and timber trade related policy, Sweden has held a low profile considering its position as a world class forest nation. These aspects are not included in the present study, but are reviewed by Andersson 2007.

### **THE 1993 FORESTRY ACT AND ITS ANTECEDENTS**

Regeneration was the main concern in the first brief Forestry Act of 1903 and protection of growing forest was introduced in 1923. A full code covering the most relevant aspects of forest management was adopted in 1948, when economic sustainability was introduced as a guiding principle. The 1979 Forestry Act, including 1983 amendments and detailed management instructions issued by the National Board of Forestry (NBF), left forest owners with intensive timber production as the only option. The 1979/83 package set quantitative rules for regeneration, thinning, final felling (ages and areas), and even demanded restoration of unproductive stands, many of which were later identified as biodiversity nuclei. Management plans have been compulsory since 1975. Until then, public

policy related the development of the forest sector to the interests of the rural population - half of the forest land being in private, mainly farmer ownership, and the remaining public and corporate forest providing winter employment in areas with few employers. During the 1970s, timber supply in Sweden was strained, as little remained of the semi-natural old forests, and the systematic restoration work embarked on after World War II had resulted in well-growing but still young regenerations. For a few years, logging was higher than running growth and, as argued by Nylund (2009), the political focus successively changed from rural to industrial classes, and the long hegemony of the centre-left (Social Democrat Party and trade unions) found common interests with forest industry. Hence, the national objective of forestry became maximal timber production rather than economic viability of the countryside.

However, when the 1979/83 policies were introduced, they were already outdated in relation to the next paradigm shift. Environmentalism had been stronger since the 1970s, and in the USA, the battles over old growth forest were fought in the 80s (Chase 1995). In Sweden, the 1970s were called “the decade of confrontation” (Enander 2007, p 246 ff.). Excessive clear-cut areas, soil scarification, herbicides in regenerations, forest fertilisation, felling of old growth and near-timberline forest and acidification were hotly debated issues, and were followed by a broader critic of the basic tenets of the current forest policy. Yet, a parliamentary forest policy commission, chaired by the Director-General of the Swedish Environmental Protection Agency, presented its results in 1973 and did not even mention conservation issues. In 1975, a paragraph on general [environmental] consideration was amended to the current (1948) Forestry Act, but only in the government proposition in 1979, was it officially recognised that ‘conflicts between conservation and forestry interest are getting more frequent’ (quoted by Appelstrand 2007, p. 227). As the 1979/83-forest policy was being enforced, both national and global awareness that it was not politically sustainable increased.

In 1990, the political scenario had changed in several respects. In a domestic perspective, three factors were prominent:

- Successful restoration of the nation’s forests to high productivity
- Environmentalism, continued decline in the number of forest farming units, and growth of urban population (a consequence of ‘urban values’)

- Continued resentment among private forest owners of the perceived 'straightjacket rule' of the 1979/83 legislation and accompanying Forestry Board instructions.

The dream of the 19th century foresters, that Sweden's forests would be restocked for sustainable timber production had been accomplished, but the current policy was not only criticised by forest owners. For example, logging in near-mountain forest caused local and European NGOs to threaten a boycott of Swedish forest products, and led to negative publicity abroad (Bäckström 2001). The general criticism caused the larger companies to adopt certification schemes that far exceeded legal requirements. In 1989, the Swedish University of Agricultural Sciences (SLU) initiated a panel on 'environmental adaptation' that included researchers, industry, forest owners' associations, and government authorities. This provided valuable input to the parliamentary forest policy commission that was set up in 1990 with the remit to formulate a new forest policy for the 21st century, and reported in 1992.

The report of the 1990 forest policy commission only briefly mentioned overseas developments, but forest laws were being revised throughout Eastern Europe because of the shift in political system and in Western Europe for ideational reasons. The EU created a Standing Committee on Forests in 1989, successively developing a Forestry Action plan (the first major revision in 1992). On a pan-European level, the Ministerial Conference on Protecting Forests in Europe held its first meeting in Strasbourg 1990, and at a second meeting in Helsinki 1993 a declaration containing three statements reflecting issues common to most policy revision in Europe was issued:

- principles on sustainable forest management
- principles on conservation of biodiversity
- a strategy for counteracting climate change.

Internationally, Rio Conference (1992), resulting i.a. in the Convention of Biological Diversity (CBD), and the formulation of Forest Principles, received wide attention and set the scene for future natural resources policy work.

There were no disagreements in the parliamentary committee over the basic policy change of putting the two goals, production and conservation, on an

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<sup>1</sup> SOU 1992:76

equal basis; the only conflict concerned the degree of relaxation of the silvicultural prescriptions, where the Social Democrat representatives thought the committee was too 'liberal'. In line with the commission recommendations, a thoroughly revised Forestry Act was passed by Parliament in 1993. As a consequence, the Instructions to forest owners/managers issued by the NBF were also revised.

The most prominent changes were the following:

- An initial paragraph stating that timber production and biodiversity (to be understood as environmental conservation) were to be given equal importance. In the previous, 1979 Act, timber production was the only goal, albeit under consideration for the environment.
- Regulations on management were relaxed from the previous level leaving the owners with more freedom to choose silvicultural methods, and the compulsory management plans were abolished and replaced with less exacting documentation. In the instructions from the National Board of Forestry, the regulations changed from operative to goal-oriented. However while advice and compulsory instructions on conservation were elaborated and more demanding than previously.
- State subsidies and correspondingly the 'silvicultural fee' (a tax on logging income that was recycled as targeted subsidies) were abolished. The forestry board organisation (a central National Board of Forestry) and semi-autonomous regional boards in charge of legal enforcement, general advice

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<sup>2</sup> The normal procedure for major legislation in Sweden starts with a commission appointed by the Government. It frequently includes a representative mix of Members of Parliament, top-level civil servants, major stakeholder interests, and consulting panels of experts. When issues are considered mainly technical, "one-person-commissions" may be appointed, such as the 2005 forest policy commission. The commission report, published in the official print series SOU, is then distributed for comment to pertinent authorities and stakeholder organisations, - and any citizen may submit a comment. Based on actual political preferences and any new input, the Government prepares a law proposition to the Parliament. Besides the proposed legal text, this normally comprises a lengthy introduction based on the report that provides a general background and principal targets, and motivates and explains the specific legal text, which in Swedish practice is kept brief. The Parliament then considers the proposition in a committee, agreeing on or modifying the legal text, after which there is a vote in a plenary session. Once the final act is approved, the Government may issue complementary ordinance, and/or an appropriate authority (e.g. the National Board of Forestry) issues operative instructions and general advice.

and specific services, was reduced in size, and private management consultancies were encouraged.

- The NBF extension service made strong efforts to introduce principles of “green management” among forest owners. Furthermore, the Parliament declared a long term (30-year) policy to reserve 5% of productive forest all over the country for free development.

- More importantly than the specific changes, all stakeholders had an impression of a new paradigm for forest management being introduced, concurrent with global developments towards more broadly understood sustainability and multifunctionality

### **ENVIRONMENTAL CONSIDERATION IN FORESTRY**

During the 1970s, both the Swedish Environmental Protection Agency (EPA) and the National Forestry Board kept a low profile in conservation issues (Frisén 2001). In 1975, the Forestry Act was amended, obliging forest owners to pay attention to “the interests of nature and cultural conservation interests”, but as Frisé highlights, the 1973 forest policy commission and the subsequent 1979 Forestry Act were in conflict with several conservation objectives, e.g.

the obligation to fell “over-aged” forest,

the obligation to restock “unproductive” forest, which could be old grazed mixed forest and other key biotopes,

government subsidies for replanting agricultural land, draining and fertilizing bogs and wetlands, construction of forest roads in road less land, special subsidies to ‘develop’ untouched northern forests.

The Government proposition (1978/79:110) presenting the 1979 act to the Parliament noted that “conflicts between conservancy and forestry interests are getting more frequent ... [because of] the public’s growing environmental awareness ... increasing demands on productivity ... and changes in silvicultural and logging methods”. Yet, the push for intensified management was given priority in the proposition. The 1983 amendments to the Forestry Act resulted in new Forestry Board instructions being issued, along with the introduction of some ambitious rules for conservation. However, in an evaluation, Eckerberg (1987) determined in 50% of the cases, environmental consideration at logging was below the minimum legal requirements, and that the measures taken were principally aesthetic in character (cf. discussion in Appelstrand 2007, p. 235 ff.). A Forestry Board evaluation of the period 1989-1991 recorded an improvement, but the focus was still on visual qualities, in which regard 90% of the sites qualified, and

only 56% fulfilled the legal requirements regarding biological aspects (Ekelund and Hamilton 2001, p. 91).

Environmental legislation rapidly developed around 1990. The Government proposition 1987/88:85 declared that all sectors in society had responsibility for its own nature and environmental conservation; prop. 1990/91:90 stated maintenance of species and environment diversity to be of prime importance to the conservation work (including provisions for biotope protection); and, prop 1993/94:30 reflected on the CBD agreement in the form of a national strategy for CBD work. The formulations in the first paragraph of the 1993 Forestry Act ('biodiversity' where 'environmental consideration' could be expected) should probably be understood in light of the previous one-sided emphasis on aesthetic aspects, and of the CBD process. In 1993, it was also agreed by the EPA to allow NBF to handle issues related to biotope protection in the forest. A revised set of Board rules and instructions was issued regarding 'general environmental consideration' in production forest. In 1995, the EPA presented biodiversity actions plans, and in 1996, the NBF presented their biodiversity actions plans, these were followed by a Government proposition 1997.<sup>3</sup>

To handle the reservation targets expressed in relation to the 1993 Act, the existing commission on environmental conservation was given an additional remit in 1995 (reported in SOU 1997:97), which included among other things to formulate specific environmental objectives. This was followed up by a special assessment, SOU 1998:95, sorting out technicalities, various forms of biotope protection, etc.

In 1998, the Government presented a revised set of environmental legislation, "Miljöbalken" (prop. 1997/98:45). Miljöbalken did not enter into details concerning forestry, but established general principles only, and left the regulative work to the NBF. The same year, a set of fifteen national environmental objectives was passed by the Parliament (prop. 1997/98:145). One of these, "Living forests", became a platform for environmental work in forestry. An additional objective, specifically mentioning biodiversity, was introduced in 2003. The work on environmental goals has continued; the latest major input was the Government proposition<sup>4</sup> in 2005 named "Swedish environmental targets". This work was evaluated and presented in 2006 (Skogsstyrelsen 2007), and is discussed in the next section.

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<sup>3</sup> Prop.1996/97:75

<sup>4</sup> Prop. 2004/05:150

## TAXATION OF FOREST INCOME

Taxation and accounting rules are easily forgotten when forest policy is discussed. Yet, for family forestry, whether farms which have been handed over from generation to generation, or smaller properties managed by non-farming owners, property and inheritance taxes and taxes on forest income are extremely important in determining long and short term business behaviour. The 2001 policy evaluation, SUS 2001 (see below), reviewed past and present forestry taxation (Skogsstyrelsen 2002, Ch. 4.3). The present account is based on that report.

*Depreciation of land purchase.* The owner may write off part of the price paid for forestland: 50% for a private person, 25% for a legal person. When timber is sold, 50% of stumpage income or 30% of felled timber may be deducted from the proceeds. If property is acquired as a part of areal rationalisation (consolidation into larger property or management units), twice the amount may be deducted during the first 5 years. However, when a property is sold, its acquisition price is correspondingly reduced by the amount. This arrangement compensates for the forest owner being unable to write off the cost of the property in the way another producer can write off costs for buildings and machinery. The system favours the private owner and provides a disincentive to frequently changing ownership. The present rules were introduced in 1991, and facilitated real estate affairs in the forest, whereas, the previous rules took the starting point that farms with forestland were passed on from generation to generation.

*Forestry account.* Since the beginning of the 1950s, private owners may deposit part of the forest revenues in a particular account, the income being taxable only when withdrawn. Since 1992, 60% of stumpage and 40% of other revenues may be deposited, and withdrawal must take place within 10 years. The purpose is to distribute the proceeds between the years, and is particularly important for smaller holdings with long intervals between final felling. For revenues related to calamities (storm, etc.), the rules are more generous.

*Accounting reform and tax reductions.* A major tax reform in 1991 provided lower rates of taxation and flexible (accounting) principles for forest income. Further reforms in 1994 made the conditions for private firms similar to those already applying to stockholding companies. These rules also applied to forest enterprises including private properties.

*Property sales, gifts, and inheritance.* A property is not considered 'sold' when transferred as inheritance or gift, and consequently no taxation of

possible capital gains is incurred. In 2005, all gift or inheritance taxes in Sweden were abolished, reducing the need for tax planning in relation to inheritance. The tax rate on capital gains is lower than on proceeds from forest operations. This reduces the attractiveness of felling before selling a property. Prices paid for forest properties are closely related to the value of the total standing stock.

*Wealth tax.* Working capital is not liable to wealth tax; this also applies to capital invested in agriculture and forestry. In consequence, forestland is an attractive investment opportunity, even if the proceeds from the forest operations provide a modest immediate return.

The policy evaluation report, SUS 2001 (Skogsstyrelsen 2002; see below), discusses the consequences of these reforms in detail, but is unable to demonstrate increased logging volumes or farming forest owner incomes. However, all the combined changes provide incentives to stable ownership, areal rationalisation, and economically rational management. Prices paid for forestland have steadily increased over the 2000s. Investment in forestland by high-income, non-traditional forest owners is attractive, albeit less so because of high prices at the end of the period.

### **ACQUISITION OF FORESTLAND**

Modern ownership concepts, referring to all kinds of forest and agricultural land, were introduced stepwise, definitely so in 1805 (Nylund and Ingemarson 2007). For a century, landed properties could be freely sold by and to any physical or legal person. As forestland became increasingly valuable, company acquisitions escalated at the end of the 19th century, threatening to create a landless rural proletariat in some areas, a situation contrary to what the Government had tried to create through systematic settlement of the forested North. In 1906, companies were prevented from buying land owned by physical persons in the North: in 1923, this rule was applied to the whole country (legal persons were and continue to be free to acquire land from each other, and to exchange land with private owners in order to rationalise management). In 1945, further restrictions were introduced to secure that productive land remained in the ownership of the farmers: in 1955, 1965 and 1979 legal provisions were accommodated to favour agricultural rationalisation.

National agricultural policies were thoroughly revised by Parliament in 1990, leading to a market economy with a minimum of government interference. At the same time, the forest policy was subject to revision, and the property acquisition legislation was considered ready for reform. Any

agricultural or forest property deal still required authorisation by the competent authority, but the rules were relaxed. The “company ban” was maintained, but relaxed to the extent that a woodworking company could now acquire forest to ensure its own local timber supply. Private buyers were given more freedom in sparsely settled regions: permits could be conceded if the buyer had been resident in the municipality for at least six months before the acquisition, or made a commitment to take residence on the property within a year after the acquisition and remain resident for five years.

This resulted in a category of new owners with scant knowledge of forestry, which considered the land as an investment free from capital tax. Even worse, unscrupulous buyers were reported to illegally fell most of the forest, ignoring regeneration, and reselling the property before legal action could be taken. Neither past nor present (1993) legislation was designed to cope with such a situation. The 1998 forest policy evaluation estimated that about one tenth of all open market acquisitions, or 100–150 cases per year, were of an exploitative character (Prop. 2004/5:53).

As a consequence, in 2005, the conditions for acquisition permissions were again tightened, requiring one year of residence before acquisition. The other possibility, a commitment to reside on the property, was substituted for the statement: ‘if the buyer can make it credible that he will take permanent residence on the property, or that the acquisition will favour long-term employment in the area’.

From the forestry perspective, the consequence was an increased impetus in the long ongoing development towards a more diversified ownership. In area terms, destructive logging of newly acquired properties was not a major problem, but was considered highly offensive to land stewardship morality. The 2005 reform has not yet been evaluated in this respect, but is perceived as efficient. For purposeful offenders, the sanctions of the 1993 Forestry Act, including up to six months in prison, are judged efficient.

### **INSTITUTIONAL REARRANGEMENT: THE NATIONAL BOARD OF FORESTRY, THE STATE FOREST SERVICE, AND COMPANY FOREST OWNERSHIP**

As detailed by Nylund (2009), an organisation for law enforcement and extension was established in connection with the 1903 Forestry Act. This consisted of County Forestry Boards (Skogsvårdsstyrelse) and, later, a coordinating National Board of Forestry (Skogsstyrelsen). The Board organisation combined several functions: elaboration of instructions to forest owners on law application; pure law enforcement work, including

compulsory management recommendations (lagråd) to owners; information and counselling work; administration of state subsidies; and, services-on-demand, such as timber marking and management planning at (affordable) fees. The period from 1979 to 1992 marked the zenith of the Board work, with heavy obligations on forest owners, compulsory management plans, and large subsidies to operations. The management of state forestland, about 30% of the productive area, mostly in the North, was entrusted to a business-oriented State Forest Service (Domänverket), managing its own revenue and paying the profit to the Treasury.

Many observers (Stiernquist 1973, Ekelund and Hamilton 2001) consider the Board system a key contributor to the success of the Swedish forestry model. When the Government formulated the terms of reference for the 1990 Forest Policy Commission, it foresaw a need to reformulate both the remit and structure of the Forestry Board organisation. Thus, the commission produced a separate report<sup>5</sup>, proposing a number of changes. Some of these changes were implemented immediately, but the report laid a foundation for a continuing reform process, culminating in a new administrative structure in 2005, and a new English name, the Swedish Forest Agency. The immediate reform resulted in a shrinking of the organisation and reduced individual counselling. In 1997, the 24 county boards were amalgamated into 11 regional boards; staffing was reduced, and the amount of individual counselling dropped. The budget was cut with one third, and the number of employees was reduced from 3000 to 1000.

Meanwhile, the management of the state forests passed through a turbulent period, because of political disagreements and shifting Parliament majorities – an exception to the rule of (relative) broad majorities for fundamental policy shifts. The State Forest Service was initially fused with the state-owned industry, Assi, into a public but state-owned company, AssiDomän. Later, its industry assets were separated and privatised on the Stock Exchange, and the land was transferred to a new state-owned company, Sveaskog. A large amount of low productive land rested heavy on Sveaskog's accounts; consequently, wide tracts were transferred to the National Property Board, now managing about 14% of Sweden's total land, much of it mountain wilderness, but also including 1.1 M ha productive forest. Sveaskog currently owns around 3.5 M ha of productive forest. The State currently has no investment in the pulp & paper industry, but has minority ownership in saw milling (Setra). Sveaskog operates as any corporate owner, assumes special responsibility for sustainable management

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<sup>5</sup> SOU 1992:111

of the land, and is obliged to sell land to private owners in need of rationalising their holdings. The whole process was later bitterly criticised by the public opinion as short-sighted, and for the lack of cooperation between political actors. For the establishment of forest reservations, land compensation may now have to be bought from Sveaskog at market value, while strategic land reserves could at the beginning of the reshuffling have been set apart from the State Forest Service that operated without such restrictions.

During the same period, the (private) forest industry underwent rapid structural change, and resulted in only a few big corporate landowners. Stora, merged with Finnish Enso, and transferred its Swedish forestland (1.6 M ha) to a separate management company, Bergvik, also comprising of the much smaller lands (0.3 M ha) from the Korsnäs company. SCA owned 1.6 Mha and Holmen 1.0 M ha. These three corporate owners operated with the restrictions set by national legislation, shareholder interest, and global markets. Furthermore, Sveaskog was required to operate as a model actor. Hence, the private forest holdings, accounting for half of the land and two-thirds of the timber production, were the principal object of public forest policy. Ongoing developments in private ownership structure are discussed by Nylund and Ingemarson (2007).

### **CERTIFICATION OF FOREST**

The appearance of voluntary standards for sustainable forest management, “forest certification”, adds a new dimension to forest policy, and illustrates the distinction between policy and governance. The objective of certification is to set standards higher than those judged in the political process as reasonable for all forest owners. During the certification processes, state agencies and political actors are intentionally excluded, and negotiations over national standards offer a new discourse platform for previously opposed parties, environmental NGOs and the ‘forest sector’

The process in Sweden up to 2002 is analysed by Boström (2002, 2003), with emphasis on FSC. Two years later, a critical report (FERN 2004) compared the different existing systems on a worldwide scale. In a recent paper, Schlüter et al (2009) discuss the Swedish certification process from a governance perspective.

After preliminary work, a constellation of the major forest companies, large wood consumers such as IKEA, the major environmental NGOs, the Forest Owners’ Associations, and the Forest and Forest Industries Unions, agreed on a certification model based on FSC. A preliminary standard was launched

in 1996. Other stakeholders joined, and in 1998, the first national standard in the world was launched. Currently, 10 MHa, 46% of productive forestland, is certified under FSC.

However, neither the Forest Owners Associations (FOA) nor Greenpeace joined. The FOA considered the procedural rules of FSC unwieldy for small owners, and instead joined the competing PEFC system, developed by forest owners themselves. The actual difference in standards in Southern Sweden is minor, although PEFC is less stringent in the north (FERN 2004). The FSC concept was first designed to suit actors with wide holdings, and as FSC has more market recognition than PEFC, co-association arrangements between FSC and PEFC are currently being developed for small owners. Currently, 7.7 MHa are certified under FSC, and due to difficulties with FSC procedures, Sveaskog offers “umbrella certification” under FSC for small owners.

However, the adaptation of certification systems involves compromises between different stakeholder groups. The FERN report (2004) criticises all schemes, except FSC, for being partisan in principle; i.e. set up and defined by forestry actors rather than by independent organisations. On top of this, there is a disagreement in Sweden over both systems, as environmental interests consider the standards weak; complaints have also been filed due to unsatisfactory observance by corporate forest owners (SSNC 2008). In May 2008, SSNC decided to formally leave the FSC board, although remains a member of the organisation.

In the current discourse, certification is claimed to be a market driven process, in contrast with legal regulation that is slow and subject to political compromises (Nylund & Ingemarson 2007). However, the real driving forces can be questioned. FSC was not created as a response to market demands, but as a means for environmental NGOs to gain influence in a process previously monopolised by the political system (government, parliament, political parties). The system was successful because the political system was by-passed. However, markets were not consulted, rather the industry and NGO stakeholders jointly felt a need to market the system and make certification known among customers. Under domestic Swedish conditions, where such a large proportion of the forest is certified, certification does not make a product more competitive, but is a tool for enhancing corporate credibility in public discourse and policy making (a point stressed by Boström 2002). The NGOs, on the other hand, face a difficult choice if dissatisfied with actual observance of the certification rules. As certification is accepted and expected by the consumers,

withdrawal from the regulating bodies may only reduce their influence on standards and enforcement. Protests that are too vocal in a purist spirit would only damage the system and make forest owners reduce their ambitions to match the legal minimum standards.

Present developments tend to make certification a first link in a chain of custody. The final customer should be assured that a product is made from legally cut, certified wood, environmentally friendly, produced under satisfactory labour standards, honestly marketed, technically safe, etc.

## Evaluations and ongoing policy processes

### FORMAL EVALUATIONS

#### Production

The reorientation of the forest policy was seen by all parties as an experiment, and the government proposition<sup>6</sup> foresaw close monitoring and evaluation. A first report was prepared by the National Board of Forestry in 1998 (Skogsstyrelsen 1998a) and presented assessments of various silvicultural parameters related to regeneration, felling and environmental consideration. This report contained a timber production forecast under two different scenarios. However, the report stated that the introduction of the new policy had already been anticipated by forest owners; therefore, the baseline for comparison already reflected changing practices. Furthermore, the reforms coincided with a notable low in the business cycle, which influenced owner behaviour more strongly than the reform package. A policy reversal or other changes were not recommended. In a subsequent proposition<sup>7</sup> to the Parliament, the Government agreed to make only minor adjustments in the 1993 Act.

In 2001, the National Board of Forestry presented a new evaluation, called SUS 2001 (Skogsstyrelsen 2002), this time examining all aspects of forest policy and not only the effect of the 1993 Act on forestry operations. The findings of this report are presented and discussed in the concluding section of this report. The Government's response was presented in a report to Parliament<sup>8</sup>, again leaving the policy unchanged. The observations of SUS 2001, with relevant updates, were used by the 2004 forest policy commission, which reported on the Forestry Board's continued reorganisation<sup>9</sup> in 2005, with a main report in 2006<sup>10</sup>.

#### Environment

The 1993 Forestry Act clearly stated environmental goals were of equal importance to timber production, but concrete targets for implementation and evaluation were lacking. Board instructions and a program for public and voluntary private reservations were issued, but much of the 1990s were required for formulating concrete environmental targets for Sweden's

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<sup>6</sup> Prop. 1992/93:226

<sup>7</sup> Prop. 1997/98:158

<sup>8</sup> Skr. 2003/04:39

<sup>9</sup> SOU 2005:39

<sup>10</sup> SOU 2006:81

environmental policy. A revised environmental legislation and specific national objectives were formulated around 1998. One of the latter, “Living” or “sustainable forests”, was made a Leitmotif for further work. To date, two formal evaluations have been presented. One is a relatively deep analysis (Skogsstyrelsen 2007) in which a series of quantitative targets are examined, and the prospects of fulfilling them discussed. The most critical and controversial issue concerns the quantitative targets and strategies for establishing forest reserves managed exclusively or mainly for environmental purposes. However, the report recommends no basic policy changes.

### **THE GOVERNMENT FOREST POLICY PROPOSITION 2008: A NATIONAL FORESTRY PROGRAMME?**

The political actors (i.e. Government, Parliament and political parties) did not wish to elaborate further on forest policy goals beyond the unifying formulations in the 1992 commission report<sup>2</sup> (Sundström 2005), most likely as such initiatives would have revealed diverging positions that were difficult to reconcile. However, in 1994/95 and 1998, the National Board of Forestry presented two such documents on its own initiative. Meanwhile, the European Union was elaborating a Forestry Action Plan. A main component in this work was a remit from the Commission to all member countries to elaborate National Forest Programmes and expected to implement principles such as multifunctionality and sustainable management. Such a document was supposed to be elaborated in a participatory manner. In 2002, an advisory ‘National forest sector council’ was formed, with major stakeholder groups represented, and a document more elaborate than the previous ones was published (Skogsstyrelsen 2005: for a detailed account of the policy formulation process, see Sjöberg 2005). The three documents of 1994/95, 1998, and 2005 set up concrete goals for silviculture and management-related work, but made no analysis of means required to reach them, nor set quantitative targets for timber production or discussed the wood using industry and its provision with timber. The majority of the goals formulated cover environmental consideration and multifunctionality. The timber production forecasts (e.g. Skogsstyrelsen 2008) indicate differences between management alternatives are relatively small; in an open and market-driven economy such as Sweden, both political and commercial actors appeared to agree that no special production policy was required. An interim assessment of goal accomplishment was published as a Forest Agency working paper in 2006 (Skogsstyrelsen 2006).

However, global attention on climate change and the peak oil discussion resulted in renewed attention to Sweden’s potential for forest fuel

production. Up to 2007, the market for sawn goods, pulp, and paper was strong. The 2008 timber production forecast (Skogsstyrelsen 2008) calculated with a stable production level for the first half of the 21st century and only a minor increase thereafter. In 2008, the Government presented a forest policy proposition<sup>11</sup>, based on the 1996 commission report<sup>9</sup>. As with previous minor propositions, it upheld the basic tenets of the 1993 reform, proposed minor adjustments in the legal code, and advocated ambitious long-term targets for timber production thorough intensified silviculture, albeit without sacrificing environmental and social values. The proposition can be seen as a new policy initiative. The Swedish Forest Agency and some research actors were given remits regarding concrete intensified management issues, although no action plan or budgets for reaching the new goals were presented. In the authors' opinion, the most striking feature is its failure to address the question of how to mobilise the private forest owners, a group that is rapidly changing socially, and is notably affected by the drastic cuts in the Forest Agency extension services. As with all previous policy making, the proposition does not deal with the forest industry.

In these regards, this policy document, just as previous ones, contrasts strongly with Finland's operational National Forest Programmes, prepared by wide stakeholder participation and with the status of Government Resolutions (Anon. 2008), and unlike in Finland (Niskanen et al. 2008), the forest industry's development is not considered in any forest policy document. In a report to the EU commission in 2004 (Skogsstyrelsen 2004 b), it was argued that the policy processes including commission reports, government propositions and the Sector Goal formulation was the Swedish way of establishing a National Forest Programme. Formally, neither the Sector Goals nor the 2008 Government proposition appear to serve as such. However, for Sweden, being a top performer together with Finland, the lack of a NFP does not appear to have hindered the development of the forest sector in the country.

The Forest Agency, in collaboration with the Environmental Protection Agency, published a much-debated working paper in 2005, which set out ambitious targets for protected forest. This strategy was considered a proposal on how to attain the overarching goals previously formulated, and was considerably more ambitious than the now over ten-year-old targets presented by the 1990 forestry commission.

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<sup>11</sup> Prop. 2007/08:108

## Consequences and forecasts

### TIMBER PRODUCTION FORECASTS

The Swedish Forest Agency and the National Forest Inventory at SLU regularly make long-term forest production forecasts based on simulations (Hugin software) of a large number of existing stands. The latest, SKA 08 (Skogsstyrelsen 2008) covers ten decades up to 2110 and has four main management alternatives and some sub-scenarios. The Reference (R) scenario is based on the 1993 Forestry Act and observed forest owner behaviour i.e. the level of general environmental consideration is high. The Environment (E) scenario differs in the larger areas of forest reserves and 'land managed with special consideration'. The Production (P) scenario assumes the measures presented in the 2008 proposition are realised, allowing for intensive management on a minor part of the forestland, and the Environment & Production (E&P) scenario combines E and P scenarios into a consistent model.

With R, total growth would be 111-114 million m<sup>3</sup>/year for the 2010-2030, assuming 10% of the productive forest under protection, and consequently unavailable for commercial logging. Under E, total growth would be the same, but with 20% unavailable, in reserves. After 2030, growth would start increasing, above all due to climate change, which in most of Sweden favours timber production. Under P, growth would further increase, initially only marginally, but with 12 M m<sup>3</sup> after 2030, stabilising at 20 M m<sup>3</sup> after 2060. Therefore, intensified production would compensate for all existing and proposed reserves, etc, but not yield more than total exploitation of all forest and no intensification of management. Up to 2039, the logging potential (taking reserves and age structure into account) would be 90 M m<sup>3</sup> with scenario R and 85 M m<sup>3</sup> with E, after which it would increase. With scenario E, 1 M ha are supposed to be "managed with special consideration", producing 5 M m<sup>3</sup> annually during the decade 2010-2019. In 2110. The difference in logging potential between scenarios E (min.) and P (max.) after 50 years would be 27 M m<sup>3</sup> annually. Assuming full use of the logging potential, the standing stock on productive land (~1800 M m<sup>3</sup> in 1926, 2140 M m<sup>3</sup> in 1953: quoted in SUS 2001) would, despite the high projected logging intensity, increase from 3100 M m<sup>3</sup> in 2010 to 4500–5300 M m<sup>3</sup> a century later. For the first two decades, this increase would take place mainly in protected forest, etc., but then stabilise due to accelerating natural drain (trees dying from old age). Spruce would increase at the cost of pine, particularly in the South. Broadleaf tree admixture increases under all scenarios.

After fifty years, the differences between production and reserved forest would be accentuated. With scenario P, standing stock in the production forest increases, but with almost no forest older than 100 years, a negative consequences for biodiversity. This would place demands on management and require a landscape perspective when establishing reserves. With scenario E, another 500 000 ha are calculated to be set aside as reserves and other conservation. When and where this is done has consequences for the calculations. In the report, this is supposed to be done rapidly and cover the remaining old growth forest. A long-term estimate requires about 2 MHa forest (slightly less than 10%) to be set apart from commercial production: half of the area totally reserved, and the remainder managed with restrictions. With the current debate on 'continuity management', i.e. without clear felling, the study, based on available data, considers 50% of long-term logging potential would be lost compared to current clear-felling (with or without seed trees) practices.

The report underlines the lack of reliable information on management practices for protected forest and stresses the necessity for large investments over a long period to reach the P scenario target of an extra 20 M m<sup>3</sup>. The Government proposition 2008/08:108 does not discuss means of attaining the long-term goal of 25-50% increase in logging in ten to fifty years (section 6.2).

### **FOREST MANAGEMENT**

The SKA 08 forecast (Skogstyrelsen 2008) takes actual, i.e. post-reform private, corporate and public management practices as a starting point for its modelling work. The reference scenario figures do not differ from the previous forecast, SKA99; the difference lies in the alternative scenarios, the presumptions of which reflect current policy processes. However, did the reforms change owner behaviour? This was followed closely through the Forest Agency's (then the Forestry Boards') field inventories in an exercise called Polytax. The broad reporting in SUS 2001 (Skogstyrelsen 2002) provides the most recent data on the effects of the new policy. However, observed changes may not have only been caused by the legal and institutional reforms. First, the pre-reform baseline may be misleading, as forest owners adapt their management to contemporary developments such as multifunctionality and more broadly understood sustainability. Furthermore, the early 1990s were marked by a deep recession, particularly notable in Sweden and Finland. This was interpreted in the SUS report as the main reason for less efficient regeneration practices: deregulation was considered to have a minor role. In addition, in the Russo-Baltic neighbourhood, the breakdown of the communist political order, and central

economic planning changed timber market conditions. As the business cycle in the later 1990s turned into one of the longest booms of the post-war period, markets and timber prices started to recover, boosted by the emerging biofuel market. Meanwhile, the ideational landscape was changing, causing widespread acceptance of (some) conservationist ideas originally perceived as radical. The findings of SUS 2001, in relevant cases with updated information, were as follows:

- Ownership: while the number of holdings did not change much between 1990 and 2000, the number of holdings with non-resident owners rose from 22 to 34%: in 1990, 34% had more than one owner and 41% in 2000. These changes were due to general social processes, and a growing, but in absolute numbers relatively small, number of property acquisitions had wealth management as an important motive (Ingemarson 2004).
- Employment: Rationalisation characterises the entire period after 1950. In 1975, 32 M work hours were reported in public and corporate forest management, with 10.3 M in 1992 and 5.7 M in 1999; simultaneously, output has increased. Contractors are taking over traditional forest workers, but their own increasing efficiency makes the increase small – 7.15 M work hours in 1993, 8.86 M in 1999. However, machine occupation per year increased from 1600 hours per unit in 1993 to 2400 in 1998. This development is considered independent of the reform work.
- Management plans. When management plans were made compulsory in 1983, half of the private forest owners already had one. In 1993, the obligation was cancelled. As SUS 1998 revealed that half of the owners lacked an updated plan, a compromise between the old style plan and the deregulation philosophy was introduced: ‘SMÖR’, a basic documentation of timber and environmental resources of the holding. ‘Green management plans’ were devised by the Forestry Boards as a commissioned service. In 2006, SOU 1996:81 recommended the obligation to be cancelled, repeating the motivation of the Forest Agency, that SMÖR was too shallow a document, while a full management plan was considered too costly an obligation for smaller owners, larger owners would have one anyhow. No data were presented on the actual share of owners having either document. All obligations were removed in 2008.
- Standing stock, growth and logging: In the period covered by SUS 2001, the total standing stock (outside reserves) increased by 85 M m<sup>3</sup> over 9 years, while new reserves withdraw 0.5 Mha from production. The mean stock per ha in production forest rose by 5%, from 119 to 125 m<sup>3</sup>/ha. The area of ‘old’ forest (>120 years) had declined up to 1990, due to the obligation to log. Ten years later, there was an increase from 2.9 Mha to 3.2

Mha. About 200 000 ha were logged annually, with no notable changes from 1990 to 2000. However, the size of the logging sites was reduced; the number of areas larger than 20 ha was reduced from 35% in 1980 to less than 10% in 2000; the trend started well before the policy reforms. Felling in submontane forest was drastically reduced over the ten-year period 1990-2000. The relaxation of rules regulating minimum ages and proportions of holdings to be clear felled appeared to have no effect on owner behaviour. Over a longer period, the annual logging volume increased by 35% between 1990 and 2007, to 92 M m<sup>3</sup> (Skogsstyrelsen 2007). This reflects both market situation and larger logging potentials. Despite this increase, standing stock continued to increase and the potential will remain stable for some decades.

- Environmental consideration at clear felling. In 1990, 52% of all logging/regeneration sites did not meet the standards set by the Forestry Board. Despite stricter criteria, only 19% were substandard in the 1990/2000 inventory.

- Regeneration success. During the years of economic downturn after 1990, natural regeneration (seed trees, soil preparation) was relied on even if not biologically suitable and replanting was delayed. However, when SUS 2001 was published, regeneration through plantation was increasing, reaching 130 000 ha/year: later controls (reported in SOU 2006:81) verified that owner behaviour in this respect was satisfactory. However, an assessment of seedling density revealed 80% of the regenerated area was satisfactory in the early 1990s, compared with only 40% in the 70s, after which, a minor decline was observed, a result of the economically motivated omissions a few years earlier.

- Cleaning and thinning. The subject of a long running debate in Sweden, cleaning and pre-commercial thinning increased steadily from the 1950s and 1980s, but dropped dramatically to previous levels with deregulation; thereafter, remaining on a level too low for optimal stand productivity, according to the written standard. However, SUS (p. 146) states that the present level corresponds to the owners' own standards, and that the previous high levels were achieved through intensive counselling combined with state subsidies. With increasing biofuel prices and new technology, pre-commercial thinning is less costly, and consequently more frequent. The areas of (commercial) thinning have remained constant over a longer period, but in 2000, 700 000 ha were considered overstocked. Hardwoods and dead trees were left after thinning to a higher extent than before, favouring biodiversity.

- Road construction. Subsidies and participation by Forestry Board professionals supported a wide network of forest roads that were established by joint efforts (a mean of 13 participants per project in 1990). Around 2000 and as incentives were cancelled, the projects became single-owner activities: road penetration is generally satisfactory, but too high from a conservation perspective.
- Forest fertilisation. This activity reached a peak around 1990, and then dropped to only 20% of the previous level, mainly a result of environmental concern. At the same time, nitrogen deposition stopped increasing, although in the South West of the country, where deposition was heaviest, many stands show signs of nitrogen saturation.
- No negative consequences of the deregulation on management or timber production have been recorded. However, attitudes in both society and among forest owners have changed to becoming a driving force rather than an effect of the reforms. In an enquiry by the SUS study, 85% of (private) forest owners wanted to manage their land in ways favourable for biodiversity, 50% wanted to map their own conservation objects, and 22% would consider making voluntary reserves without compensation. Ingemarson (2004) studied owners according to management objectives, and determined that 70% had a positive attitude to conservation objectives, as formulated by the study.

While hunters' interests and game management were not an aspect of the SUS evaluation, the high level of elk and roe deer damage on regeneration and saplings was noted. This was repeated in the Government proposition 2007/08:108. Certification rules also demand control of browsers to secure natural regeneration of several broadleaf species as well as herbs. SUS 2001 notes (p.141) that current legislation and authorities have no tools to balance the interests of forestry and hunting; this is particularly so as hunters and owners show a large overlap.

## Conclusions

The reform process was a result of a general paradigm shift in society, and was supported by most actors. The broadening of the concept of sustainability and the abandoning of a management concept exclusively focusing on maximal production of industrial raw material were global processes. The gradual shift from government to governance, prominent in the discourse but outside the scope of this paper (Sjöberg 2005), can be seen as a process of societal change, not as the result of specific policies.

In three respects disagreement among key actors occurred. The first concerned the degree of relaxation of management regulation, where the political centre-left feared that the reform would seriously affect regeneration and pre-commercial thinning among private forest owners. Far-reaching regulation had been on the agenda since the 1950s. For half a century, the centre-left had cooperated with Sweden's large companies to create a strong industry sector, and its concern that deregulation would weaken the forest industry's supply of feedstuff was genuine. Hence, the effects of the reform were watched closely, although no long-term negative effects have been noted. However, the reduction of the Forest Agency's advisory services led to profound changes in the technical support to private forest owners, and has yet to be analysed.

Secondly, there is an ongoing, (mostly) low-key conflict between forest companies and the environmental movement regarding the extent of "general consideration" in production forest. Company people claim, in informal communication, that up to 10% of the volume production is 'sacrificed' to make their operations conform to legal and certification standards, while environmental organisations (e.g. FERN 2004) are highly critical of company performance. While all parties accept the general objectives of sustainability and multifunctionality, the quantification is a matter of values and opinions. The political system has been wary of presenting any kind of instrument to assess the balance between production and conservation stated in §1 of the 1993 Forest Act. The author considered the political actors are content to see the negotiated standards of forest certification setting the de facto norm for environmental and other considerations in production forest.

The third area of disagreement concerns the amount and type of production forest to be set-aside for environmental purposes. While the 1990 parliamentary commission set a target of 5% of the productive area to be protected under various schemes, the Forest Agency has later advocated a doubling of this, and calculates the SKA2008 forecast with 10% in the

standard scenario and 20% in the “Environmental” scenario. The industry claims that at these levels, and particularly if new protection areas are concentrated in mature forest and not spread over all age classes, this would strongly affect logging opportunities.. This paper does not further consider these issues, only draws attention to the conflicting opinions.

However, after 1990, the sharp reorientation of policies, from high-regulation-low-environmental-concern to the opposite, passed with no complications, besides value-based conservation issues. The first years after the Forestry Act reform represented a ‘bust’ period for forest industry, followed by more than decade of boom, with increasing timber demand, market conditions appear more important to forest owner behaviour than changes in silvicultural legislation.

The “new” policies launched in 2008 considered ways of stimulating timber production without sacrificing environmental values, and should be seen as a response to the growing demand for timber during the previous decade, supported by a rapidly growing forest biofuel market. It remains to be seen whether the present crisis, particularly affecting pulp and paper industry in neighbouring Finland, will have long-term effects on timber demand. A Finnish forecast (Niskanen et al., 2008) suggests that industry may change but forest produce will have a steady demand in the future. In one respect, the political field has changed. The centre-left of 1950 to 1990 favoured production and industrial development, leaving rural policies and the emerging green movement to non-socialist parties. Today, the Green, Social Democrat, and radical Left parties are united on a relatively radical environmental platform, while the centre-right parties place heavier stress on both industrial and rural development. The message from the Forest Agency’s timber production forecasts (Skogsstyrelsen 2004a, 2008) is the slowness with which different policy options affect future logging opportunities. Ownership structure and non-timber forest use may change, and the extent of reservations may increase or remain unchanged, but the basic resource, the growing forest, remains after a century of dedicated restoration work and owner education.

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- SOU 1997:97 Skydd av skogsmark - behov och kostnader [Protection of forestland – needs and costs]
- SOU 1998:95 Förstärkt skydd av skogsmark [strengthened protection of forestland]
- SOU 2005:39 Skog till nytta för alla [Forest for the benefit of all]
- SOU 2006:81 Mervärdesskog [added value forest]
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