WWF for a living planet®

The Effects of FSC-Certification in Sweden

An Analysis of Corrective Action Requests

A study by the WWF European Forest Programme
Analysis - Peter Hirschberger, WWF Austria
February 2005
Contact: Helma Brandlmaier on hb@wwfdcp.org

Table of Content:

1. Summary:

Sweden's forests play an important role in the country's economic and socio-cultural life. In terms of net exports, forest sector is by far the most important economic sector in Sweden. Sweden's forests are mainly boreal, dominated by spruce and pine with in-mixing of species like birch and aspen. The nemoral forest type, dominated by the "noble" hardwoods, including beech, is found in the very southern part of the country.

Currently 22 FSC certificates are issued in Sweden covering a total forest area of more than 10 Million hectares. This study analyses 473 Corrective Action Requests (CARs) raised in main assessments and surveillance audits since 1997.

63% of Corrective Action Requests (CARs) were raised to cover ecological issues. The balance is almost equally distributed between social (17%) and economic (20%) issues.

Most of the **ecological CARs** improved the retention of trees with high biodiversity values as well as the quantity and quality of dead wood. This was achieved by instructions and training of the forestry staff as well as by specific requirements like the creation of standing dead wood through fresh cut high stumps when thinning. In some forests the extraction of fuel wood by the local communities created conflicts with the goal to preserve a sufficient amount of dead wood.

Certification according to FSC enforced the protection of biotopes and habitats by inventories and monitoring of key habitats and assessments of valuable natural features prior to forest operations. In addition, care-demanding patches, such as small habitats or buffer zones, edge zones and tree groups, have to be left in order to avoid larger treeless areas.
Most of the CARs regarding regeneration highlighted lacks in planning, documentation and monitoring. As a specific feature of the Swedish FSC standard, larger forest owners were requested to burn 5% of the regeneration area during a 5-year period in order to favour fire-dependent species

Another common request was the creation of at least 5% broadleaved dominated forests, and in the nemoral zone, the reduction of spruce dominated forests. On wet soils the dominance of deciduous trees had to be maintained or restored.
Larger forest owners had to implement landscape ecology planning and to develop ecologically suitable silviculture and felling methods. Their forestry operations have to be planned with a view to achieving a balanced age distribution. At present the lower age classes are overbalanced due to overcutting in the past.

Most of the **social CARs** requested additional training of employees and contractors on the general requirements of FSC as well as on specific issues like biodiversity trees, care patches or soil scarification. The training measures have to be documented.
The rights of Sweden's indigenous people, the Sami, are an important issue for forest companies situated in the northern part of Sweden. The forest owners have to conduct

and to document consultations with the Sami people. Their customary rights regarding reindeer herding have to be respected. Access to and conservation of older forests bearing arboreal lichens has to be guaranteed. In addition, the consultation and participation of other stakeholders was also improved.

The implementation of the safety and health requirements was enforced by regular controls. Contracts had to be updated so that entrepreneurs are required to have regular health-controls of their employees and other social requirements.

The conservation of ancient remains and historic monuments was enhanced by adequate instructions for the forestry staff as well as by documenting them in maps.

Most of the **economic CARs** requested an update of instructions and documentation in order to meet the requirements of the Swedish FSC standard. In compartment descriptions sites for preservation and restoration as well as areas with specific management requirements have to be separated.

The results of all forest management operations have to be monitored and documented. For this purpose some forest companies had to develop a monitoring system first. In addition, contracts for timber purchase had to be updated in order to exclude wood from controversial sources like high conservation value forests.

88% of the CARs, where verification in the following audit was available, were met and could be marked as completed by the certifier. 7% of the CARs were only partially met. 5% were not met at all and became Major CARs.
In total 49 Major CARs were raised which is 10% of all CARs. Most of them concerned the retention of dead wood and biodiversity as well as the conservation of habitats and biotopes.

2. Methodical Preamble:

This study is based on the data of public summary reports describing the assessment of each company certified according to FSC by a team of independent experts. Therefore a short description of the certification process is essential to understand the method of this study.

The Forest Stewardship Council is an international non-profit organisation founded in 1993 to support environmentally appropriate, socially beneficial and economically viable management of the world‘s forests. FSC’s governance structure ensures that FSC is independent of any one interest group by requiring an equal balance in power between its environmental, social and economic chambers as well as a balance between interests from the economic north and south. The FSC International Centre sets the framework for the development and maintenance of international, national and sub-national FSC standards based on FSC's 10 Principles and Criteria of responsible forest management.

FSC itself does not certify forest operations or manufacturers, but accredits certification bodies to carry out Forest Management (FM) or Chain of Custody (CoC) certifications. An owner or manager wishing to undergo certification selects a certifying body and then goes through a process of scoping or pre-assessment, a formal application, an audit and then certification. At the audit corrective action requests (or conditions) are raised. A **Major CAR** (or precondition) is a fundamental failing that must be addressed prior to certification or within a very short timeframe in order to keep the certificate.

A **Minor CAR** (or condition) is a partial failing that does not prevent certification, but must be addressed within an agreed timescale.

There is ongoing monitoring of the certified party with an annual surveillance audit over the term (5 years) of the certification.

Each of the certifying bodies is obliged to publish a public summary of the main assessment and the annual surveillance audits of all certifications. These public summaries are freely accessible via the Internet. With each report is listed all the CARs raised.

3. Forests in Sweden

Sweden's forests are mainly boreal, dominated by spruce and pine. The nemoral forest type dominated by the "noble" hardwoods, including beech, is found in the very southern part of the country, but oak is found in mixed stands and have economic and ecological importance as far north as the river Dalälven. Birch and aspen is abundant over the whole country but mainly as a mixture in
conifer-dominated stands.
There are 22.7 million ha of productive forest and the annual gross felling is 85 million m^3 while the annual growth is 100 million m^3.
Large areas, mainly in the north consist of wetlands and the western mountain range bordering Norway is mainly above the tree limit, an altitude of around 600 m.

At the time this study was conducted 22 forest management certificates according to FSC were issued in Sweden. These certificates covered a total area of 10,098,042 ha which is equivalent to 45 % of Sweden's total productive forest area. The forest area of a certified company ranges from 275 ha up to 3.441.520 ha. Seven of the certified forests are privately owned, 6 forests are communal and 2 forests are state property. In addition, the forest area of the Swedish church is certified too. The remaining 6 certificates are issued to group schemes.

Due to changes in the organizational structure of the state forests the number of certificates issued in Sweden varied over the recent years. In 1997 and 1998 FSC certificates were issued to eight forest management regions of AssiDomän, a private forest company, although the Swedish state hold the majority of shares. In 2000 the 8 forest districts were merged into 2. In 2001, Sveaskog AB made a public offer to the shareholders in AssiDomän to acquire all the shares in the company that were not already owned by the state. The offer was accepted and the company Sveaskog AB is wholly owned by the Swedish state. Thus the forest divisions of AssiDomän are consolidated under the certificate of Sveaskog.

4. Overview:

The most room for improvements was found in the environmental sector, where 63% of all Corrective Action Requests were raised. 95% of the CARs were at least partially implemented.

A total of 473 CARs had to be addressed by the certified forest companies. 63% (294 CARs) of them affect the environmental sector, 17 % (78 CARs) the social and 20 % (94 CARs) the economic sector.[1] As 7 CARs (including one major CAR) address administrative criteria of group certification they have been neglected to get comparability with the non-group-certifications.

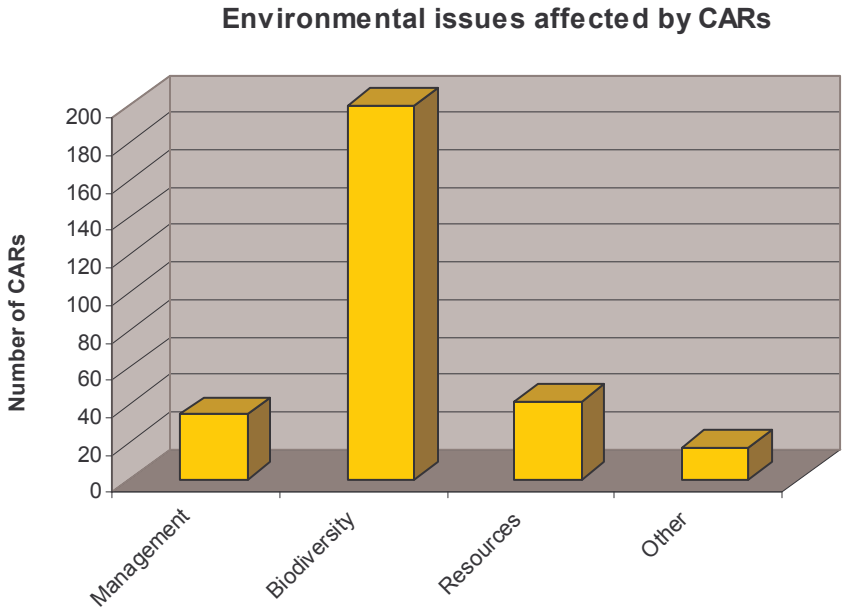
In total 49 **major CARs** were raised, which were implemented during or following the assessment to avoid suspension of certificates. 30 major CARs were raised in the environmental sector. Key issues were the retention of biodiversity trees and dead wood as well as the conservation of biotopes and habitats. In the social sector 8 major CARs were raised. Key issue was the training and qualification of forestry staff. Another 10 major CARs were raised in the economic sector. Main issues were the compliance of contractors with the requirements of FSC as well as an adequate documentation. One of the major CARs concerned formal procedures for group certification.
9 major CARs were still open at the time the study was conducted. One major CAR was met only partially, but could be downgraded to a minor CAR. The remaining 39 major CARs could all be fulfilled in the time set by the certifier.

The analysis of the effectiveness was done on the basis of 247 CARs where verification by the following audit was available. The other 226 CARs were still open at the time this study was conducted. 88% of the CARs could be fulfilled in the time given by the certifier; another 7% were partially met. 5% of all CARs were not done in time. Therefore, 9 of the 12 Cars not met were upgraded to major CARs. There is no significant difference in the implementation of environmental, social or economic CARs. The ecological CARs not met regard dead wood and biodiversity trees as well as habitats and biotopes. The social CARs not met regard involvement of local communities and training of forestry staff, while the economic CARs concerned documentation and monitoring.

[1] Please note that some CARs which are classified as economic are also linked to social aspects and management planning issues.

5. Ecological changes addressed through the CARs

The main environmental improvements by certification according to FSC were conservation and enhancement of biodiversity required by 68% of all environmental CARs. Key issues were the retention of dead wood and biodiversity trees as well as the adequate conservation of biotopes and habitats.



5.1 Landscape ecological planning:

On a total area of more than 5 million hectares certification according to FSC introduced ecological management planning on a landscape level and improved the quality of habitat by planning for balanced age class distribution.

Adequate management is the basic requirement for environmental protection. Large-scale forestry has an important impact on the landscape regarding ecological criteria as well as aesthetic aspects. To avoid negative impacts, forest management has to be planned on a landscape level.
A balanced age class distribution is not only important regarding a sustainable timber supply, but also from an ecological perspective. Many endangered species depend on forests of a specific age class, e.g. capercaillie. Due to extensive cleacuttings in the past, at present, the age-class distribution is in some parts of Sweden rather unbalanced with high levels in the lower age classes.

According to the Swedish FSC standard major landowners have to implement landscape ecological planning on the basis of local conditions, and further develop ecologically suitable silviculture and felling methods. In addition, they have to plan their forestry operations with a view to achieve a balanced age distribution for landscape ecology, with special consideration given to the proportion of older forest in the landscape with a scarcity of such forests (Criterion 6.7).

The 47 CARs on this issue concern 15 major forest companies, covering a total area of more than 5 Million hectares. The key issue was the implementation of landscape ecological planning which was required of 11 forest companies. 6 forest companies had to achieve a balanced age class distribution.

Certification according to FSC strengthened landscape planning approach in Swedish forestry. Impact of forest management is assessed on site level as well as on landscape level. Larger forest owners have to plan protection, restoration and set aside of valuable forests etc on the landscape level. A larger share of older forests has positive effects on the quality of habitat for many species. Thus, FSC certification reduced the environmental impact of forest management activities and improved ecology on a landscape level.

5.2 Biodiversity:

FSC certification enforced conservation measures for biological diversity in Sweden through an improved protection of habitats and endangered species as well as by specific measures in managed forests.

The conservation and enforcement of biodiversity is a key issue of sustainable forest management. Biological diversity includes diversity within species (genetic diversity), between species and of ecosystems. Forests with high biological diversity are usually more stable against outside influences than those with low biodiversity. Biodiversity can be improved by protecting endangered and rare species and their habitats as well as areas with a high biodiversity like high conservation value forests. Another approach is the enhancement of biodiversity in managed forests. The role of managed forests, and of sustainable forest management, is of vital importance for the conservation and enhancement of biological diversity. Biodiversity in managed forests can be enhanced by a broad range of indigenous tree species and the retention of biodiversity trees and dead wood with a broad range of species and diameters.

The Swedish FSC standard requires therefore that forestry is carried out with the specific aim of promoting the biodiversity values of the habitat (*Criterion 6.2*). In managed forests, biodiversity and a variation in the forest landscape is promoted by recreating or mimicking naturally occurring phenomena, structures and disturbance patterns (*Criterion 6.5*).

10 forest companies had to assess the biodiversity value on forest sites prior harvesting. An assessment ensures that no biological valuable forests and habitats are destroyed by forest management.

Even if corrective actions on the management of biodiversity in general were not required so often, the effects of certification on the improvement of biodiversity should not be underestimated, as many corrective actions were required in related issues like the protection and conservation of endangered species and their habitats, the retaining of dead wood and biodiversity trees and the tree species composition.

a) Habitats and biotopes:

The FSC certification required the identification and adequate protection of habitats over a total forest area of nearly 9 million hectares. This guarantees that particular species are able to migrate and colonise other sites while remaining viable in their current distribution.

Habitat loss is the main cause for species extinction. The protection of the habitat is therefore essential for the conservation of rare and endangered species. Protected areas per se focus on the conservation of biological diversity and the maintenance of natural ecological processes. Protected areas represent one of the oldest instruments for protecting nature and natural resources and are included as a main pillar in nature conservation laws in all European countries. As however only a small percentage of the world´s forests can be found in protected areas, additional measures are needed in managed forests.

The Swedish FSC Standard therefore requires that habitats shall be preserved and support the natural biological diversity of the habitat. Measures to promote outdoor activities may be taken on the condition that the biodiversity values are not harmed. At least 5% of the productive forest area is exempted from measures other than the management required to preserve and support the natural biological diversity of the habitat. Selection and demarcation areas shall be prioritized according to their importance for biodiversity and representativeness in the landscape (*Criterion 6.1*).

This issue was mentioned by 64 CARs regarding 18 forest companies. 7 forest companies had to conduct an inventory of key habitats located on their forest area first. A strategy to protect habitats had to be developed. The policy of habitat protection had to be implemented in forest management plans. A specific issue were care-demanding patches. These are small habitats with special biodiversity value or buffer zones adjacent to habitats with special biodiversity values. Care-demanding patches, edge zones or tree groups have to be left clear cut areas in order to avoid larger treeless areas. Two times a habitat was unintentionally harvested. In order to avoid this in the future, habitats had to be marked on the forest sites.

The FSC certification improved the identification and adequate protection of key habitats over a total forest area of nearly 9 million hectares.
In addition, instructions for forestry staff were developed regarding endangered, red-listed species in order to ensure their protection.

b) Regeneration and tree species composition:

Biodiversity in managed forests was enhanced by setting a minimum quota of broadleaved dominated stands and by burning a minimum amount of regeneration areas in favour of fire dependent species. This ensures survival of endangered species on an area of more than 8.2 million hectares.

Species diversity and dynamics of forest and other wooded land ecosystems depend considerably on the composition of tree species. Multi-species forests and wooded land are usually richer in biodiversity than mono-species forests and wooded land.
Natural regeneration contributes to conserving the diversity of the genotype and to maintaining the natural species composition, structure and ecological dynamics. However, it has to be considered, that natural regeneration is not always feasible to reach adequate management and conservation goals. In boreal forests forest fire is a common phenomenon. The ecosystem is adapted ton this natural calamity. For the regeneration of specific tree species fire is essential. On the other hand forestry has to avoid uncontrolled forest fires, as they carry economic losses and a risk for humans and nature.

The Swedish FSC standard requires that natural regeneration, for example under shelter wood and seed trees, is used where this method will result in good regeneration of tree species suitable to the site and to management goals. If their natural presence allows, broadleaved trees are to be protected when cleaning and thinning so that they make up at least 5-20% in the stand depending on region, soil conditions, site quality and the total proportion of broadleaved trees on the forest holding. Favourable conditions are created with a significant proportion of broadleaved trees. In the nemoral zone, outside the natural range of spruce, the proportion of spruce is limited with the long-term aim of achieving less than half of the productive forestland area consisting of spruce-dominated stands (*Criterion 6.5*). Owners of larger landholdings are to take all reasonable measures to burn an area corresponding to at least 5% of the regeneration area of dry and mesic areas during a 5 year period. Preferably, earlier fire-affected land should be chosen. Naturally burned forest and forest burned for conservation purposes may be included here. Felling and burning are to be planned so that fire-dependent species are favoured (*Criterion 6.4*).

The 58 CARs raised on this issue regard a total forest area of more than 8.2 million hectares. A key issue was the burning of at least 5% of the regeneration area. Another important issue was to ensure that at least 5% of the forest stands are dominated by broadleaved trees. The share of spruce was criticized just once, as most of the forest companies are not situated in the nemoral zone. In addition, adequate planning, monitoring and documentation of the regeneration were required.

FSC certification led to an increase in the share of broadleaved trees. This is essential for the survival of endangered species depending on deciduous trees as habitat. An uncontrolled natural calamity like a forest fire has to be fought, but this is at odds with the aim to conserve fire depending species. A minimum share of regeneration area burnt after felling is carried out, ensures their survival. As these measures are carried out on an area, that is equal to 36 % of Sweden's total forest area, it has also a positive impact for nature on a national level.

c) Dead Wood and Biodiversity Trees:

Certification according to FSC increased quantity and quality of dead wood and biodiversity trees. Thus, the quality of habitat for up to a third of forest species, including many rare and endangered species, was improved over an area of more than 8.5 million hectares.

Individual biotope trees and dead wood are essential for the conservation of biodiversity. Biotope trees fulfil special functions like nesting sites or habitat for rare epiphytes, insects, mushrooms and other organisms living on old trees. Deadwood in form of snags (dead standing trees) and logs (dead lying trees) is a habitat for a wide array of organisms and after humification an important component of forest soil. Many species are dependent, during some part of their life cycle, upon dead or dying wood of moribund or dead trees (standing and fallen), or upon wood-inhabiting fungi or other species. It provides even a source of food for large mammals like bears. Because of lack of deadwood many of the dependent species are endangered. In addition to the total amount of deadwood a broad range of diameter and dead tree species is an important factor, as some of these species are dependent on a single tree species or specific diameters[2].

The Swedish FSC standard requires that trees with high biodiversity value should be protected and not felled. Cleaning and thinning have to be carried out in a way that protects to a reasonable extent potentially high biodiversity value trees. When felling for regeneration, enough wind-resistant trees of various species with good chances of developing into large, old trees during the next rotation period should be left, with the aim of incorporating at least 10 such trees per hectare into the next generation of forest. Dead wood, except for smallwood felling residue, is to be protected from forestry measures unless there is a documented risk of the mass reproduction of pest insects. In forests close to populated areas, measures may be taken to enable accessibility and to improve safety. Standing dead wood, such as high stumps, of common deciduous and coniferous trees should be created when thinning and regeneration felling. Some fallen trees representative of the stand may be left per hectare, either actively or passively, during the regeneration phase (*Criterion 6.5*).

53 CARs were raised on this issue covering a forest area of more than 8.5 million hectares. A weak point was the quantity of dead wood. Sometimes the goal to retain dead wood is at odds with the extraction of fuelwood by local citizens. A specific issue was the request to leave fresh cut high stumps during thinning and to raise the share of broadleaved dead wood. At 3 forest companies trees with high biodiversity values were cut. To improve the retention of dead wood and biodiversity trees, adequate instructions for the forestry staff had to be developed.

As FSC certification required to increase the quantity and quality of dead wood and biodiversity trees, the quality of habitat for up to a third of forest species, including many rare and endangered species, was improved on an area of more than 8.5 million hectares, equal to 37% of the total Swedish forest area. In addition, the increased amount of deadwood maintains the forest productivity and stabilises the forest.

[2] WWF; Dead wood – Living Forests; 2004

5.3 Protection of resources

Awareness on the need to protect water and soil seems to be well established in Swedish forestry. In individual cases certification according to FSC still found room for improvement.

a) Soil:

Soil condition is the basic source of ecosystem stability. Acidification and changes in chemical soil properties directly or indirectly affect the crown condition and species composition. Soil compaction reduces the pore space and therefore the intake capacity for water available for the trees. This leads to a higher surface run-off and in some cases to erosion, while plants suffer from water shortage. The main cause for soil compaction is the use of heavy machinery, especially on wet soil.

The Swedish FSC standard requires that forestry management is carried out in ways that aims to maintain the natural processes of forest soil and its long-term production capacity, and to avoid harm to other ecosystems and biodiversity. Soil scarification has to be limited to sites where this measure is required to achieve good regeneration. This work has to be site-adapted and carried out with care. Intermittent methods have to be used on moist land. Continuous soil scarification has to be carried out in a way that minimises erosion and leaching, and to ensure that the mineral soil is not affected more than is necessary for good regeneration.

21 CARs were raised on the issue of soil protection regarding a total forest area of more than 4.6 million hectares. A key issue was soil scarification, especially on wet ground. Three times harvesting operations caused soil damage. In order to avoid this, a strategy for a system of machine tracks had to be developed. On wet soils broadleaved trees had to be favoured.

b) Water Pollution Control, Chemicals and Toxics:

Water is an essential resource for life. Well-managed natural forests provide benefits also to local populations in terms of high quality drinking water[3].
However, forest operations carry the risk of water pollution e.g. through mineral oil. Also the inappropriate use of chemicals and toxics can lead to water pollution. Furthermore these toxics may contaminate the soil and accumulate in the food chain beyond their intended use.

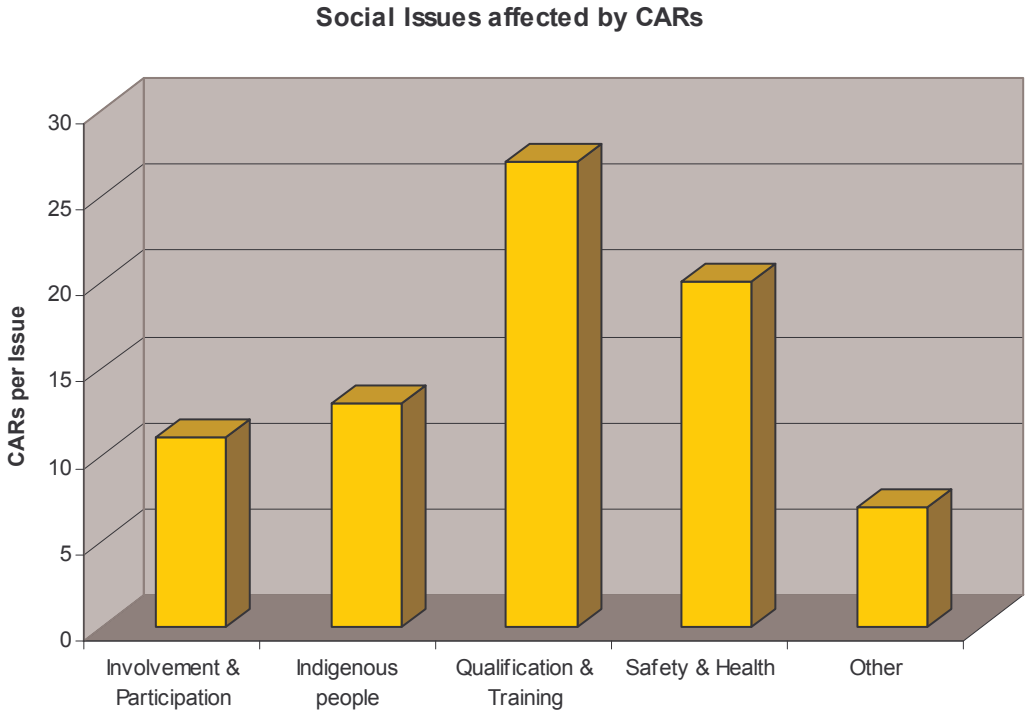
According to the Swedish FSC standard forestry shall give particular consideration to the importance of the water for biodiversity. New ditches shall not be dug on previously un-ditched forestland. Measures relating to watercourses and open water areas are normally planned on land while not snow-covered, and carried out in a way that avoids damage. Roads across watercourses shall be constructed and maintained to preserve in the long term the natural level and function of the riverbeds. As a rule, no new road ditches should flow directly into watercourses. Forestry measures close to watercourses and open water areas shall promote continuously forested, if possible layered, transition zones in accordance with topographical, hydrological and ecological conditions (*Criterion 6.3*). Forest management should strive to use input and consumable goods that are adapted to the environment and ecological cycles, as well as technology that is not harmful to nature or humans (*Criterion 6.8*).

21 CARs were raised on the issue of water protection. A key issue was the establishment of buffer and transition zones adjacent to water bodies. Three times culverts and road ditches were installed inappropriately. In individual cases a road too close to a watercourse and damage caused by driving through a creek were criticized. The use of pesticides has to be controlled, especially at nurseries and plant suppliers. Instructions for this had to be developed.

[3] WWF / World Bank: Running Pure, 2003

6. Social changes addressed through the CARs

The main social improvements through certification according to FSC were the training of forestry staff according to individual competence development plans requested by 35% of all social CARs. Another 26% did enforce implementation of safety and health requirements, especially regarding precautionary health controls. In forest companies located in northern Sweden consideration of the rights of indigenous people, the Sami, was required by 17% of all social CARs. In addition, another 14% required involvement of local communities and stakeholders in the planning process.



6.1 Safety and Health:

The implementation of the safety and health requirements on site level is a key issue in the social sector and was enforced by systematic controls of compliance. In addition, FSC certification limited occupational illnesses by precautionary health controls including forestry staff of contractors.

Forestry continues to be one of the most hazardous sectors in most European countries. The prevention of occupational accidents and occupational illnesses of the forestry workforce is an important social aspect of sustainable forest management.

According to the Swedish FSC standard the enterprise is responsible for ensuring that the employees have a good working environment, and for the prevention of physical, mental and social ill health. The current regulations for internal control of the working environment shall be followed. In choosing work methods and work organisation, and in the procurement of equipment, the best overall solution shall be selected, with due weight being given to working environmental, outdoor environmental and economic considerations. The outdoor environment shall not be given priority at the expense of the working environment. Forest owners and contractors have to comply to collective agreements for employed workforce.
Employees shall have access to an occupational health service, which offers a broad range of competence. Where available, an occupational health service with particular knowledge of this sector and a high degree of efficiency is to be chosen. The enterprise is to offer an appropriately organised adaptation and rehabilitation service. If assignments are allocated to subcontractors or others, the relevant parts of the criteria listed above shall also apply (*Criterion 4.1*).

Mentioned by 20 CARs, safety and health is an important issue in the social sector. The forest companies had to develop satisfactory safety routines for forestry staff and ensure the implementation on site level by enforced controls. Contracts for subcontractors fix the duty of entrepreneurs to carry out regular health controls for their staff. In an individual case a certificate for handling of fuel tanks was required.

6.2 Indigenous peoples' rights:

Certification according to FSC strengthens the right of Sweden's indigenous people by consultations and considering Sami interests in forestry. Thus, FSC certification enforced the implementation of legal requirements and recommendations on this issue set in the Forest Act and goes further in requiring clear recognition of Sami rights and consideration towards Sami reindeer herding.

A major social issue faced by forestry in northern Sweden concerns the Sami people's traditional rights to reindeer grazing. The Sami are the native inhabitants of northern Scandinavia. The Sami country, Lapponia or Sápmi, is divided between Finland, Norway, Sweden and Russia. There are about 70,000 Sami in Scandinavia, in Sweden about 17,000. The traditional picture of the Sami is closely connected with reindeer herding. All Sami were not reindeer herders even in historic times, and today only a small part of the Sami population in Sweden (10-15%) work in the reindeer herding industry. Reindeer herding is still one important source of livelihood in the traditional Sami areas and it carries a strong symbolic value for most Sami. Reindeer keeping is by Swedish law reserved only for Sami people. There is an eastern limit in this region regulating summer grazing in montane areas and winter grazing in lowland forestland. The Swedish Forest Act regulates the relationship between forestry and Sami people too. Sami communities concerned by harvesting operations shall be given the opportunity to participate in joint consultations with larger forestry companies to address such issues. Forest management measures which concern the form and size of felling areas, the establishment of new stands, the retention of tree groups, and the routing of forest roads, have to take account of essential reindeer husbandry requirements. When planning and implementing forest management measures, it is desirable that the Sami village concerned be given annual access to both a sufficiently large and cohesive grazing area, and an ample amount of vegetation in those areas used for reindeer corralling, migration and resting. Nevertheless conflicts do arise and basic traditional Sami rights are have a very unclear legal status in parts of Sweden which has created a lot of conflicts between especially some groups of private forest owners and Sami reindeer herders.

The Swedish FSC standard has specific requirements to ensure that the rights of Sami are respected, listed in criterion 4.2. The forest owner has to accept and to give consideration to the Sami people's reindeer husbandry carried out on his land holdings as set out in the Forestry Act and its recommendations if it is within the area designated as a reindeer husbandry area (year-round and winter grazing land). In reindeer husbandry areas each forest manager must consider in his planning: access to older forest bearing arboreal lichens, leaving edge zones bordering on bogs, streams and water courses and, when felling trees with arboreal lichens, save stands in the clear-felled area as areas from which lichens may disperse. In the reindeer husbandry area, the forest manager shall take into consideration and respect, in co-operation with the Sami, places identified as being of special cultural, ecological, economic or religious importance to the Sami people. These are old dwelling places and other Sami cultural relics, migration paths, natural gathering

places, overnight resting places (grazing), difficult passages, particularly important arboreal lichen areas, work paddocks and calving places.

13 CARs were raised on this issue in relation to 8 forest companies, including 5 forest regions of AssiDomän, which are now part of Sveaskog. The key issue is the conservation of a sufficient area of forests bearing arboreal lichens as these are places of special importance for reindeer husbandry. To fulfil this requirement, Sami people had to be consulted on a regular basis. Complaints have to be documented.

Thus, certification according to FSC strengthens and recognises the right of Sweden's indigenous people, the Sami. FSC certification improves the consideration of Sami interests by developing solutions through consultations.

6.3 Involvement and Participation:

The involvement of all relevant stakeholders and the participation of local communities in the planning process of forest activities were improved by certification according to FSC.

Due to its various social functions, forest management is also an important issue for local communities. Along with the timber supply, forests provide other invaluable protective functions. In addition, forests are also important to human well-being for their spiritual, inspirational and recreational values. Therefore the interests of local communities and relevant stakeholders should be taken into account and incorporated into forest management planning.

The Swedish FSC standard requires that forest management shall maintain or enhance the long-term social and economic well-being of forest workers and local communities. Particular attention shall be paid to the recreational values of forest environments for the local population (*Criterion 4.4*).

11 CARs equal to 14% of all social CARs were raised on this issue concerning 9 forest companies. Two of them are now merged in the certificate of Sveaskog. The key issue was adequate communication with stakeholders and local communities. Therefore a list of all relevant stakeholders had to be produced as well as a summary report to inform the public about forest management measures and results.

Certification according to FSC led to an increased participation of stakeholders and local communities. The public has to be informed of planned forest management to give them the chance to demur before harvesting starts.

6.4 Qualification:

The implementation of the requirements of FSC certification on site level was ensured by additional training on relevant aspects. Qualification of forest workers was strengthened by individual competence development plans.

An adequate qualification of forest workers and contractors is essential that the quality of work carried out in the forest is according to the FSC standard. As forestry is one of the most hazardous sectors, an adequate qualification is vital for the safety and health of the forest workers. Regarding the changes in forest management practices required by certification according to FSC an additional training also of experienced forest workers may be necessary, e. g. on the issue of biodiversity trees and dead wood.

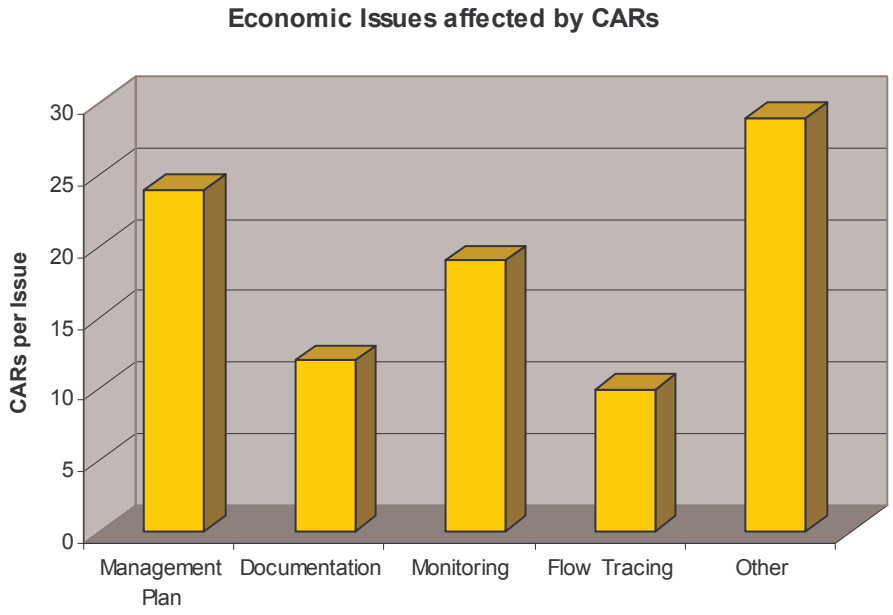
According to the Swedish FSC standard, only employees shall be employed who have the required competence in the area of work in question, both in production and the environment.
A high degree of competence in employees is an important pre-requisite for coping with the working environment, meeting external environment goals, but also for profitable production.
In co-operation with the employees, the enterprise shall produce individual competence development plans for subjects related to forestry. Knowledge corresponding to the level of the upper-secondary natural resources management programme shall serve as a guideline. New staff is appropriately recruited from people who have completed the upper-secondary course on natural resources management, post upper-secondary forestry management training, or in some other way acquired corresponding knowledge and confidence. If assignments are allocated to subcontractors or others, the relevant parts of the criteria listed above shall also apply (*Criterion 4.1*). This is important as a major part of both logging and silviculture in Swedish forestry nowadays is performed by contractors and their employed forest workers.

35% of all social CARs were raised on this issue regarding 17 forest companies including 7 forest regions of AssiDomän, which are now part of Sveaskog. The key issue was the training of staff on the requirements of FSC certification. Specific aspects of training were biodiversity trees, care patches and soil scarification. The individual competence had to be assessed by monitoring and controls. Individual competence development plans had to be produced. The training had to be documented.

The implementation of the requirements of FSC certification on site level was ensured by additional training on relevant aspects. A high individual competence safeguards also the job of the forest worker as well as his health.

7. Economic changes addressed through the CARs

The main economic improvement effected by certification according to FSC was the enhancement of the quality of forest management plans, including an appropriate documentation and monitoring. This was requested by 59% of all economic CARs. Another important issue was the tracing of timber products. Especially in case additional timber is purchased, forest companies have to exclude controversial sources.



Other issues were mentioned by 29 CARs. Most of them required to fix all relevant FSC requirements in contracts for subcontractors[4] and for the sale of standing timber. Thus FSC relevant aspects are also ensured in the case management operations are not carried out directly by the forest owner or his staff.

[4] This can also be counted as social improvement

7.1 Management Plan and Harvesting Volume:

Certification according to FSC improved long term sustainable forest management planning, including appropriate documentation of the measures carried out and monitoring of the results.

In view of the large areas and the long production periods, an appropriate forest management plan is essential to ensure the sustainability of forest management. The management plan has to include the management objectives, the description of the current state (inventory) and the determination of the forest management measures. Monitoring of the results of all management activities carried out is a key issue in order to detect and to avoid negative environmental or social impacts. The results have to be documented and included in the forest management planning. For this purpose an adequate documentation is essential.

In the Swedish FSC Standard the requirements on a forest management plan and documentation are listed in Appendix 2. It regulates the initial documentation, the management plan and other documentation during the period of the plan, which are available for public scrutiny, as well as production and financial details in the plan that need not be made available for public scrutiny.

Altogether 59% of the economic CARs were raised with regard to management planning and the related issues of documentation and monitoring.
14 forest companies, including 6 forest regions of AssiDomän, which are now part of Sveaskog, had to produce a management plan that conforms to the requirements of FSC. Specific issues were an adequate description of compartments, the integration of ecological landscape planning and the consideration of open edge zones. 10 forest companies, including 4 forest regions of AssiDomän, had to improve their documentation. A key issue was the documentation of training programmes for the forestry staff.
Specific issues were the mapping of care areas, records of origin of seed and seedlings as well as a documentation of external complaints. 12 forest companies, including 3 forest regions of AssiDomän, had to implement or to improve their monitoring system. The key issue was monitoring the quality of operations carried out in the forest. Specific issues were the samples to be monitored and monitoring of the part of the regeneration area that was burned in favour of fire depending species.

Thus, certification according to FSC enhanced the appropriate consideration of ecological and social aspects in long term forest management planning on a landscape level, based on appropriate documentation and on the results of monitoring.

7.3 Flow Tracing:

Certification according to FSC does not allow purchasing timber from controversial sources like old growth forests or illegal logging.

The identification and marking of certified forest products, including appropriate accompanying documents is essential to trace each certified product from its origin and to prevent fraudulent use of the FSC logo. Therefore a comprehensible chain of custody is vital for the credibility of FSC Swedish forest companies imports huge volumes of timber are imported from the Baltic States and Russia, where up to 50% of the timber is harvested illegally. In addition, also Scandinavian timber may origin from old growth forests and other High Conservation Forests.

According to the FSC standard the forest manager has to provide a documentation to enable monitoring and certifying organisations to trace each forest product from its origin, a process known as the "chain of custody" (*Criterion 8.3*).

The 10 CARs raised on the issue of tracing forest products concerned 6 forest companies. 3 of them had to ensure - by adapting contracts - that no timber from controversial sources is purchased. The other three companies had to enter the certification code in invoices and transport documentation as well as to inform the certifying body, if the range of products on offer is enlarged.

Forest companies certified according to FSC and producing certified products are not allowed to purchase timber that origin from controversial sources. It should be kept in mind that also timber purchased from non-controversial sources can not be sold as certified, if it does not stem from a forest certified according to FSC. Excluding timber from controversial sources is an important issue especially for wood processing enterprises, which produce products with a certain percentage of FSC certified timber.

8. References:

FERN; Behind the logo; 2001

FSC International Standard; 2004

Jeffreys, S.; An Analysis of all Forest Management Certification Corrective Action Requests in the United Kingdom; 2002

MCPFE; Improved Pan-European Indicators for Sustainable Forest Management; 2002

MCPFE; Background Information for Improved Pan-European Indicators for Sustainable Forest Management; 2003

The Swedish FSC-Council; Swedish FSC Standard for Forest Certification; 1998

WWF; Forests for Life: Working to Protect, Manage & Restore the World's Forests; 2002

WWF; Dead wood – Living forest; 2004

WWF / World Bank; Running Pure, 2003