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The Effects of FSC-Certification in Estonia

An Analysis of Corrective Action Requests

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1. Summary:

This study analyzes the environmental, social and economic benefits certification according to FSC can provide to a country in transition like Estonia. The study is based on the analysis of all corrective action requests (CARs) raised by the certifying bodies at the annual audits. The findings of these audits are listed in public summary reports, which are available on the webpage of the certifying bodies.

Today only two FSC forest management certificates are issued in Estonia. On the other hand the entire Estonian state forest with a total area of 1.063.000 hectare is certified, which is equal to nearly the half of the total forest area. The second certificate was issued to a private forest owner and covers 517 ha. The private forest owner is not representative for the private forest sector in Estonia as he is an experienced forester managing his forests in a way that even exceeds the requirements of the certification.

Altogether 28 CARs were raised. The majority of them affected the ecological sector.

11 CARs were met in the time limit given by the certifier; another 4 CARs were partially met. 3 CARs were not met in due time. No major CAR, that would lead to the suspension of the certificate if not fulfilled in time, was raised.

Ecological issues

The FSC certification required the identification and adequate protection of High Conservation Value Forests and woodland key habitats on unclaimed forestland with an area of more than 575.000 ha, where the State Forest Management Centre presently legally represents the owner. This provides the opportunity to create a network of conservation areas guaranteeing that particular species are able to migrate and colonise other sites while remaining viable in their current distribution. As it is planned to sell this land by auction the prior identification of High Conservation Value Forests and woodland key habitats will ensure adequate protection.

Certification according to FSC increased the amount of biotope trees and dead wood, habitat for many endangered forest species, and the quality by using preferably trees with a large diameter. In account of the large forest area of more than one million hectares these changes have also a positive effect on large and migrating species. A new report by WWF shows that a third of forest dwelling species are depending on deadwood and that deadwood is a key indicator for biodiversity. In account of the large forest area of nearly 450.000 ha affected by these changes this has also a positive effect on large and migrating species.

Biodiversity in managed forests was also enhanced by the increased use of noble hardwoods and the ban of exotic tree species. Although the Estonian Standard on Sustainable Forest Management does not ban clear cuts, the environmental impacts on tree composition, biodiversity, soil and water caused by these forest operations have to be avoided. In addition, the possibility to increase the area managed under continuous forest cover has to be examined, considering ecological and economic aspects.

Ecologically valuable wet forest site types and ecosystems in natural water bodies will be conserved and restored, as the certification according to FSC bans the construction of new drainage systems and limits the reconstruction of old ones. This is an important improvement, as wetlands cover about a fifth of the country and an extensive drainage network has been established in the forest during the Soviet time.

On an area of more than one million hectares the environmental and economic feasibility has to be assessed prior to the construction of new roads. The negative environmental impacts of these constructions have to be reduced.

Another important improvement through FSC certification is the “spring truce” which is a specific requirement of the Estonian Standard on Sustainable Forest Management. The aim of the restriction is to protect the forest fauna during nesting period and the soils in the fragile spring season. As the State Forest Management Centre fulfilled this requirement already before certification no CAR was raised on this issue.

Social issues

The implementation of the safety and health requirements on site level is a key issue as forestry continues to be one of the most hazardous sectors in most European countries sector. FSC certification improved the safety in the forest for employees and the public by requiring systematic controls of compliance and improved demarcations of hazardous areas.

Certification according to FSC increased also the transparency of the State Forest Management Centre by requiring the publication of management plans. The involvement of all relevant stakeholders and neighbours of the private owned forest was improved, although the owner had problems to fulfil this requirement due to rapid changes in land ownership.

Economic issues

Certification according to FSC improved sustainable forest management also in the traditional sense, as it reduced the risk of overexploitation on an area of more than one million ha. Both forest owners had to compile a long-term (not less than 20 years) estimation of harvesting levels, including the age and species distribution of the forest.

Illegal logging is one of the main problems in the Estonian forest sector. Certification according to FSC can not eliminate illegal logging, but the ability to trace more than 2.7 million m³ of certified timber from its origin will make illegal harvesting activities harder. It should be noticed that even illegally logged timber, which is recovered by the legal owner, cannot be sold as FSC certified.

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.

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 Estonia

Estonia belongs to the northern part of the sub-belt of the nemoral coniferous, i.e. mixed, forests of the forest belt of the temperate zone of the northern hemisphere. Typical forest communities include spruce forests with birch, pine and to a lesser extent also lime, aspen and oak. Forests cover 2.249.000 ha of the country's territory, which is approximately 47% of the land area. Most of the woodlands are covered by pine (*Pinus sylvestris*) stands, whereas silver birch (*Betula pendula*), swamp birch (*Betula pubescens*), spruce (*Picea abies*), grey alder (*Alnus incana*) and aspen (*Populus tremula*) are other tree species, that are of importance. Stands where dominant tree species are black alder (*Alnus glutinosa*), larch (*Larix decidua*), oak (*Quercus robur*), ash (*Fraxinus excelsior*) and some other species are less significant.

Today only two FSC forest management certificates are issued in Estonia. On the other hand the entire Estonian state forest is certified covering a total area of 1.063.000 hectares. This is equal to nearly half of the total forest area. The state forest is managed by Estonian State Forest Management Centre, a profit-making state agency established under the Forest Act in January 1999. The company is divided into five regions and 74 forest districts. Besides normal forest management activities, RMK has a recreational division with 3 recreational regions consisting of 12 hunting districts and 9 recreational districts.

The second certificate was issued to a private forest owner and covers 517 ha. The private forest owner is not representative for the private forest sector in Estonia. He is an experienced forester who worked as Head Forester at the local collective farm before the independence and had therefore been involved in the management of some of his current areas prior to the privatization. Immediately after the independence in 1991, the collective farm system was given up and he decided to establish his own business as private forest manager. Even though the owner now has adjusted the management practice to the market economy and manages the forest areas as a private business, the management intensity is still low compared to the situation on many other private forestlands.

4. Overview:

The most room for improvements was found in the environmental sector, where half of all Corrective Action Requests were raised. The implementation of the corrective actions was most difficult in the social sector. The number of CARs raised in an audit decreases with the years a company is certified.

The number of CARs raised is very low. A total of 28 Corrective Action Requests (CARs) had to be addressed. 23 of all CARs regard the Estonian State Forest Management Centre, 5 CARs the private forest owner.

Half of the 28 CARs affect the environmental sector, 21 % (6 CARs) the social and 29 % (8 CARs) the economic sector.

No major CAR, which has to be implemented during or following the assessment in order to avoid suspension of the certificate, was raised.

The analysis of the effectiveness is done on the basis of 19 CARs where verification by the following audit was available. The other 9 CARs were still open at the time this study was conducted.

The implementation differs between the sectors. While all the CARs affecting the economic sector and the social sector were implemented, 38 % of the environmental CARs were not realized in time. The requirements to reduce the scale of clearcuts, to increase the use of noble hardwoods and to conduct an environmental impact assessment prior to building new roads and restoring drainage systems could not be fulfilled in time by the Estonian State Forest Management Centre.

In total 11 CARs were met, 5 CARs were partially met and 3 CARs were not met in the time frame given by the certifier.

5. Ecological changes addressed through the CARs

Certification improved the retention of dead wood and biodiversity trees as well as the protection of natural resources like soil and water. Activities are planned in a more strategic way and controlled during their implementation. The share of noble hardwoods and the forest area managed under continuous forest cover was increased. High conservation value forests and key habitats on unclaimed forestland managed by State forestry are checked and managed appropriately. The use of exotic tree species is restricted.

A specific requirement of the Estonian Standard on Sustainable Forest Management is the “spring truce” which bans forest work during animal’s breeding season in spring and summer in order to allow them to pup or nest undisturbed. As the Estonian State Forest Management Centre successfully applied the concept and cancelled most of the forest works for this period, the “spring truce” concept is not mentioned by any CAR. Nevertheless it has broad public support, appearing as headlines in prominent newspapers, and created a positive image for State Forest Management Centre.

5.1 Habitats, High Conservation Value Forests (HCVF) and Conservation Zones:

The FSC certification required the identification and adequate protection of High Conservation Value Forests and woodland key habitats on unclaimed forestland with an area of more than 575.000 ha at the time the CAR was raised¹. This provides the opportunity to create a network of conservation areas allowing 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 Estonian Standard on Sustainable Forest Management requires that the forest owner applies all conservation measures of forest ecosystems based on the endangered status of species or communities and other criteria for high conservation value. The forest owner has to be aware on the conservation value of his forests. The protected objects and areas have to be indicated in the FMP. The assessment to determine the presence of the attributes consistent with high conservation value is carried out in accordance with management intensity. To ensure the protection of nature objects agreed for conservation the list of specific management methods and measures to maintain conservation values for relevant areas have to be included in FMP by forest owner.

The State Forest Management Centre had to assure, that forest management activities are not carried out on unclaimed forest lands until a forest inventory is completed, the area checked for Woodland Key Habitats and High Conservation Value Forests and appropriate management plan prepared. The only exceptions from this rule are the cleaning of wooded vegetation under power lines and, along roads on behalf of the state, based on documented requests from electricity companies and road authorities, cleaning up storm damaged sites, according to documented forest pathological assessment and based on management prescription issued by the forest pathologist and representing the state in case of identified illegal logging, including informing the police, selling confiscated wood, cleaning up illegally logged sites and regenerating the area.

Although this CAR refers only to the unclaimed forestland, where the State Forest Management Centre presently legally represents the owner, the effects should not be underestimated. The unclaimed forestland covers an area of more than 575.000ha. As it is planned to sell this land by auction the prior identification of High Conservation Value Forests and woodland key habitats will ensure the adequate protection. Together with the High Conservation Value Forests in state property these sites provide the opportunity to create a network of conservation areas allowing particular species are able to migrate and colonise other sites while remaining viable in their current distribution.

¹ Currently the area of unclaimed land is 200 000

5.2 Regeneration, tree species composition and exotic species:

Biodiversity in managed forests was enhanced by the increased use of noble hardwoods and the ban of exotic tree species. Environmental impacts caused by forest operations like clearcuts have to be avoided.

Species diversity and dynamics of forest and other woodland ecosystems depend considerably on the composition of tree species. Multispecies forest and woodland are usually richer in biodiversity than monospecific forest and woodland. Natural regeneration contributes to conserving the diversity of the genotype and to maintaining the natural species composition, structure and ecological dynamics.

According to Principle 6, Criteria 3 of the Estonian Standard on Sustainable Forest Management the forest management has to guarantee the forest renewal and consistency of its plant communities, the genetic and species variety, age range and ecosystem diversity and the persistence of natural processes that affect the productivity of forest ecosystems. Written guidelines have to be prepared and applied to avoid and control erosion, to minimise the forests damage during harvesting and to protect water resources. A technological map, where areas with extended erosion risk and needing special attention are described shall be drawn prior to felling (Principle 6.5). Alien species of trees shall not be cultivated on forest land (Principle 6.9).

The State Forest Management Centre had to develop a strategy for increasing the use of noble hardwoods natural to Estonia, examining the possibility of increasing the area managed under continuous forest cover. This strategy should provide specific management and regeneration guidelines for these species for different stand conditions (e.g. stands with different composition of noble hardwoods). A second CAR required developing a strategy for increasing the area managed under continuous forest cover, especially on wet sites rich in nutrients, based upon analysis of both economical and ecological implications of continuous cover. As both CARs were not met in the time line given by the certifier a new CAR was raised that is still open.

Furthermore another CAR required amending its forest regeneration guide to establish the ban on exotic species. This CAR was met and could be closed.

Also the private forest owner had to ensure that the total area planted with exotic species does not exceed 0.1 pct of the total forest area. This CAR was met but is ongoing.

Although the Estonian standard does not regulate specifically the size of clearcuts, it restricts the negative environmental impacts caused by large-scale clearcuts. Thus the certifier has the possibility to require a continuous forest cover on sites where nutrients may be washed out. In addition, the forest management has to ensure the species variety in regeneration on such sites. An analysis of the economical and ecological implications of continuous forest cover may lead to reduction of clearcuts, even if Estonian foresters and forestry scientists often cannot accept forestry without clearcuts².

The increased use of noble hardwoods on more than one million hectares of state forests will have a very positive effect for the biodiversity as a third of Estonia's forests are pure stands of pine and spruce. Also the ban or the strict limitation of exotic tree species has a beneficial implication on biodiversity as the planting of exotic tree species has a long tradition in Estonia.

² Ahas, R., Hando, H., Mardiste, P; Forest Certification in Estonia, 2004

5.3 Dead Wood and Biodiversity Trees:

Certification according to FSC increased the amount of biotope trees and dead wood, habitat for many endangered forest species, and the quality by using preferably trees with a large diameter. Given the large forest area of more than one million hectares affected by these changes this has also a positive effect on large and migrating species.

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 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.

The Estonian Standard on Sustainable Forest Management requires a minimum of 5 solid metres of fallen timber per hectare to be left laying in different stages of decomposition, preferably trees with a greater diameter. Additionally standing dead and preserved trees, as well as trees of high biological value have to be left with a minimum volume of 15 solid metres per hectare. Windfall is only to be cleared in cases when the volume exceeds 5 solid metres per hectare. Only in cases when potential danger of massive parasite attack has been documented, all timber has to be removed. Removal of stumps and branches can only take place in cases that aim at the diversification of forest management and are approved by experts.

To achieve FSC the State Forest Management Centre had to develop retention guidelines for biologically important trees, dead trees, snags and dead wood on felling sites. Specific guidance had to be provided with respect to workers safety. Additionally, they had to develop specific guidelines for measuring dead wood, in consultation with FSC. This CAR was only partially met. So a new CAR required developing a methodology for measuring deadwood and revising existing harvest monitoring systems to include assessment of deadwood volumes and distributions.

The Estonian standard is very specific regarding the retention of dead wood and exceeds the international FSC standard in the requirements on maintenance and removal of dead and decaying wood. To fulfil these requirements detailed guidelines for foresters and forest workers are essential. For older foresters the retention of dead wood is connected to a lot of myths against deadwood. Local residents also secretly go to the felling sites to collect firewood from left over material without understanding why this is not allowed. Therefore a clear and standardized methodology for measuring deadwood is vital to control the adequate implementation.

Through FSC certification the amount of dead wood and biotope trees was increased on a total area of more than 1 million ha. This means a significant improvement of the quality of the habitat for up to a third of forest species including many rare and endangered species. In addition the increased amount of deadwood maintains the forest productivity and stabilises the forest.

5.4 Protection of resources

a) Soil and water:

Ecologically valuable wet forest site types and ecosystems in natural water bodies will be conserved and restored by the ban of new drainage systems and by limitations of the reconstruction of old ones.

Undisturbed nutrient and water cycles are vital for the stability of the ecosystems. The eluviation of nutrients leads to depletion of the soil and pollutes the water resources. In addition the contamination with nitrate is one of the biggest problems of the drinking water supply.

Drainage of forest land is a main topic in Estonian forestry as wetlands cover about a fifth of the country. As these wet sites are difficult to manage and the tree species growing there are less valuable, during the Soviet period an extensive drainage network has been established in the forest. This amelioration damaged almost all ecologically wet forest site types and has negative implications on forest ecology and biodiversity. In addition the nutrient-contaminated drainage water has a severe impact on the ecosystems in natural water bodies.

Thus the Estonian Standard on Sustainable Forest Management requires that new drainage systems will generally not be established and the reconstruction of old drainage systems has to be justified in the forest management plan. An environmental impact assessment shall be conducted prior to the construction of new drainage systems (*Principle 6.11*). Written guidelines have to be prepared and applied to avoid and control erosion and to protect water resources. (*Principle 6.5*)

The State Forest Management Centre had to conduct an environmental and economic feasibility study prior to initiating major restoration of old drainage systems. Measures have to be applied to minimize associated negative environmental impacts. Steps should be taken to reduce negative environmental impacts. New drainage system must not be established on sites that have not been drained before. This CAR was not met in the time line given by the certifier. So a new CAR was raised, that is still open. Another CAR required that the State Forest Management Centre had to standardize and implement guidelines for buffer zones left when harvesting forests adjacent to open landscapes, roads and water bodies. This CAR was only partially met and replaced with a more focused CAR requiring the integration of landscape planning principles in forest management planning. In addition another CAR required further investigations about the use of an oil absorbent kit for machinery working within the forest - limiting potential oil leakage. This CAR is still open.

The ban of new drainage systems is essential to conserve the last ecologically valuable wet forest ecosystems. An environmental and economic feasibility study may reduce also the old drainage systems as many experts say that in Estonia drainage is hardly economical and can only be carried out if subsidized¹. Regarding the large area where the drainage is limited by FSC certification this will have a significant benefit not only for the wet forest ecosystems, but also for the ecosystems in natural water bodies. In addition, FSC certification reduced the risk of soil erosion by requiring buffer zones when harvesting operations are carried out adjacent to open landscapes, roads and water bodies. The precautionary entrainment of oil absorbing kits for machinery usage reduces the risk of soil and water contamination.

b) Roads and trails:

On an area of more than one million hectares FSC certification requires an environmental and economic feasibility study prior to the construction of new roads and the reduction of negative environmental impacts.

An appropriate system of roads and trails are essential for the effective forest management and minimizes the risk of soil compaction when heavy machinery is used in harvesting operations. On the other hand roads facilitate the accession to the forest and may lead to disturbances of wildlife and create opportunities for illegal logging activities. In addition on terrain which is prone to slip constructions have to be well planned to avoid erosion.

The Estonian Standard on Sustainable Forest Management requires to prepare and to apply written guidelines to avoid and control erosion and to minimise the forests damage during road construction. (*Criterion 6.5*)

The State Forest Management Centre has to conduct an environmental and economic feasibility study prior to building new roads. Steps have be taken to reduce negative environmental impacts

As the illegal logging rate in Estonia is estimated to be as high as 50% the most important environmental impact of road constructions is the easy access to remote forest sites which creates opportunities for illegal activities in the forest. Assessing the environmental impacts prior to road constructions provides the chance to choose the alternative with the lowest impact. Analysing the economic feasibility may even lead to the conclusion to abandon the construction and to leave the forests intact.

6. Social changes addressed through the CARs

Social improvements by certification according to FSC were the implementation of the safety and health guidelines at site level and the involvement of all relevant stakeholders and the participation of local communities in the planning process of forest activities.

Altogether the social sector was mentioned by 6 CARs.

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 training and monitoring of the compliance.

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

The Estonian Standard on Sustainable Forest Management requires therefore that in any situation related to work, the following of requirements of workers health and safety have to be guaranteed (*Criterion 4.2*).

The State Forest Management Centre had to develop and implement procedures to ensure that all workers at forest sites including its own staff, contractors and staff working for companies that have purchased standing timber in auctions, use relevant safety equipment. Furthermore they had to implement procedures that ensure that warning signs are put up when logging takes place along public roads.

The implementation of the safety and health requirements on site level is obviously a major problem in forest management. While guidelines for the safety and health requirements exist they are not or only partially realized by workers and contractors. The certification according to FSC required additional training of the forest staff and an enforced and systematic control of the compliance with the forest worker's health and safety requirements, including the adequate demarcation of hazardous areas to protect the public. This improves the work safety on a total forest area of more than one million hectares of state forests.

6.2 Involvement and Participation:

Certification according to FSC increased the transparency of the forest management by requiring the publication of summaries of the management plans. The involvement of all relevant stakeholders was enforced, but is sometimes difficult due to rapid changes in land ownership.

Forest management is 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 Smartwood interim standard for the Baltic region requires consultation with people and groups directly affected by management operations (*Criterion 4.4*). Furthermore the forest manager shall make publicly available a summary of the primary elements of the management plan (*Criterion 7.4*).

The State Forest Management Centre had to compile a standard public summary of each new management plan produced for next ten years and to make it publicly available for each forest district. The private owner had to elaborate and maintain a list of known neighbouring landowners and other stakeholders affected by major management activities. Prior to major management activities such as clear cutting, concerned stakeholders should be notified and their input considered. Both CARs were only partially met and two new similar CAR were raised.

Certification according to FSC made the state forest management more transparent by requiring the publication of new management plans. The information of the public will lead to an increased understanding of the purpose of some management operations and support sustainable forest management.

Due to the rapid changes in ownership among neighbouring properties the private forest owners had difficulties to identify the neighbouring landowners and establish a long-term relationship with them. Further the certifier stated that several examples of highly unsustainable forest management practices could be seen in adjacent forest areas. Nonetheless it is important that a FSC certified forest owner sets a good example and gives the known neighbours at least the chance to be consulted.

7. Economic changes addressed through the CARs

In the economic field certification according to FSC strategically improved planning of forest management activities in the long term. Prior to certification most activities were carried out spontaneously. Even the private forest owner, who impressed the certifier with his commitment to a high quality of forest management and his deep understanding of ecological, social and long-term aspects of forest management, had a lack in management planning and monitoring.

The Estonian Standard on Sustainable Forest Management puts much attention on the forest management plan due to the need to compensate a fairly soft state legislation and the need to fight illegal logging.

As illegal logging in Estonia is high and even organized crime activities can be found in the forestry sector, the ability to trace certified wood is of special importance. Therefore a correct use of the FSC logo and the certification code as well as an appropriate documentation is essential.

7.1 Management Plan and Harvesting Volume:

Certification according to FSC improved sustainable forest management also in the traditional sense, as it reduced the risk of overexploitation on a forest area of nearly 1.4 Million ha. Before certification the data of forest inventories were of varying quality and not always accurate, although this data is essential to estimate the sustainable annual harvesting volume.

In view of the large areas and the long production period, appropriate forest management plans are 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. Forest inventory is a key issue in sustainable forest management as accurate forest data is essential for long-term management. Appropriate knowledge of the standing volume and the annual increment is the basis to define the annual allowable cut and to avoid unsustainable exploitation. The determination and justification of the annual allowable cut is the basic requirement of sustainable forest management.

According to Principle 7 of the Estonian Standard on Sustainable Forest Management the forest owner is obliged to manage the forest according to the Sustainable Forest Management Plan. A Sustainable Forest Management Plan has to be drawn up, considering the positions of all interested groups.

The State Forest Management Centre had to develop an analysis for projecting age and species distribution of the forest. This projection has to correspond to the next 20 year period. This CAR was met. Furthermore they had to assure, that forest management activities are not carried out on unclaimed forest lands until a forest inventory is completed and an appropriate management plan prepared. This CAR was also met.

The private forest owner had to elaborate revised management plans, including a description of the management objective based on long term goals, a description of the silvicultural system, harvesting system incl. equipment, as well as monitoring procedures, a long-term estimation of harvesting levels, guidelines for harvesting, reforestation, inventories, monitoring as well as management of watershed, sensitive soils, sensitive habitats and protected areas, a formalized process for recording and monitoring of rare and endangered habitats and species through mapping, summaries of stand and growth data covering all the land units. The management plan also has to include a description of how exotic species will be used, as well as mitigations to minimize negative environmental impact. This CAR was only partially met and a new similar CAR was raised that was met.

Certification according to FSC enhanced the long term prediction of sustainable harvest levels by requiring a projection of age and species distribution. All unclaimed forest lands managed by the State Forest Management Centre have to be covered by an appropriate forest management plan. As mentioned before, unclaimed forest land covers an area of more than 575.000 ha, which is more than a quarter of the total forest area in Estonia. Adapting the forest management plan to the requirements of FSC will ensure the long term and systematic integration of environmental aspects in forest management planning.

7.2 Product Flow Tracing:

Illegal logging is a key problem in Estonia where the illegal logging rate is estimated to be as high as 50 %. Certification can not eliminate illegal logging, but the ability to trace more than 2.8 Million m³ of certified timber from its origin will make illegal harvesting activities harder.

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. This is an important issue for Estonia, where most of the private forests are not well managed and illegal logging is as high as 50% of the total harvesting volume.

According to the Estonian Standard on Sustainable Forest Management the forest manager has to provide 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*). In order to avoid suspicions the chain of custody code and the FSC logo have to be used in the correct way.

The State Forest Management Centre had to ensure that wood that has been illegally harvested is kept separate from certified wood, and not sold as FSC certified. The CAR was met but is ongoing. In addition, the State Forest Management Centre is not allowed to sell timber harvested from unclaimed forest land added under its management before notifying the certifier of the land additions. This CAR is still open.

Another CAR required including the FSC certification code on invoices, way bills, sales contracts of standing wood and other relevant documents. This CAR was met.

A third CAR required approval by the certifier prior each use of FSC logo. This CAR was also met.

The identification of the products leaving the forest including recovered timber, that was illegally harvested, was improved at State Forestry. Considering the market power of the Estonian State Forest Management Centre this improvement ensures the supply of a variety of credibly certified forest products from Estonia. It should be noted that the State forest is not allowed to sell recovered timber that was illegally cut as certified, even if the State Forest is the legal owner.

As the Estonian government decided to entrust State Forest Management Centre with management of historical private forest lands which were not claimed by former owners, the compliance of forest management with requirements of FSC has to be assured before timber originating from this forests can be sold as certified.

8. References:

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