## TABLE OF CONTENT

**INTRODUCTION**
- FSC - HISTORY AND DEVELOPMENT
  p. 3
- FSC – CREDIBILITY ON THE MARKET
  p. 4
- FSC – THE STANDARDS THAT REGULATE
  p. 4
- PURPOSE OF THIS REPORT
  p. 5

**HARMONIZATION OF FOREST STEWARDSHIP STANDARDS**
- WHY HARMONIZATION OF FOREST STEWARDSHIP STANDARDS?
  p. 6
- THE HARMONIZATION PROCESS
  p. 7
- HARMONIZATION METHODOLOGY
  p. 9

**PRE CONDITIONS FOR COMPARISON**
- VEGETATION ZONES
  p. 10
- FOREST HISTORY
  p. 11
- STANDARDS COMPARED
  p. 12
  - National vs Frame Work Standards
    p. 12
  - Status of standards compared
    p. 12

**NATURE CONSERVATION & ENVIRONMENTAL FUNCTIONS**
- REFERENCE ECOSYSTEMS & HIGH CONSERVATION VALUE FORESTS
  p. 13
  - Reference ecosystems
    p. 13
  - High Conservation Value Forests (HCVF)
    p. 15
- SILVICULTURE & ENVIRONMENTAL CONSIDERATIONS
  p. 16
  - Felling methods
    p. 16
  - Regeneration Methods
    p. 17
  - Dead wood
    p. 19
  - Retension
    p. 21
  - Drainage
    p. 22
  - Forest fires
    p. 23
  - Hunting
    p. 24

**SOCIAL ASPECTS OF FOREST MANAGEMENT**
- PUBLIC CONSULTATION & GRIEVANCE RESOLUTION
  p. 25
  - Public consultation & grievance resolution
    p. 25
  - FOREST WORKERS AND CONTRACTORS
    p. 26
  - LOCAL COMMUNITIES
    p. 27
  - FOREST MANAGEMENT & THE SAMI PEOPLE
    p. 28

**THE FUTURE OF HARMONIZATION**
 p. 29

**LIST OF REFERENCES**
 p. 30

**HARMONIZATION OF FSC-STANDARDS**
 p. 31

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INTRODUCTION

FSC - HISTORY AND DEVELOPMENT
In 1990, a group of timber users, traders and representatives of environmental and human-rights organizations recognized the need for an honest and credible system for identifying well-managed forests as acceptable sources of forest products. This led to the founding of Forest Stewardship Council (FSC) in 1993 with the aim to develop a worldwide certification and accreditation system covering all kinds of natural forests and plantations. Hence, a market driven system was established making it possible for consumers to choose FSC-certified products and thereby supporting the environmentally appropriate, socially beneficial, and economically viable management of the world’s forests. The FSC system includes forest management certification (FM) and Chain-of-Custody certification (CoC) to ascertain the existence of a link between the forest and products reaching end markets (see figure 1).

Since the establishment, FSC-certification has had fantastic growth. The first five years of the 21st century, FSC FM-certification grew with more than 10 million hectares per year and with more than 700 new Chain of Custody certificates per year. In June 2006, the official FSC statistics stated more than 76 million hectares to be certified in 72 countries and 4,929 Chain of Custody certified manufacturers, importers, printers, etc in 73 countries.

Equally in the year 2000 there were only five endorsed national initiatives, three national forest stewardship standards, and six accredited certification bodies. In spring 2006 this had increased to 37 endorsed national initiatives, 24 national forest stewardship standards, and 15 accredited certification bodies.

FROM FOREST TO CONSUMER

Since the establishment, FSC-certification has had fantastic growth. The first five years of the 21st century, FSC FM-certification grew with more than 10 million hectares per year and with more than 700 new Chain of Custody certificates per year. In June 2006, the official FSC statistics stated more than 76 million hectares to be certified in 72 countries and 4,929 Chain of Custody certified manufacturers, importers, printers, etc in 73 countries.

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Figure 1: The link between FSC certified forest management to the consumer choice.
INTRODUCTION

FSC – CREDIBILITY ON THE MARKET
Currently, FSC is the only non governmental international organization that is truly engaging economical, social and environmental stakeholders to promote responsible forest management globally. The consensus based organization of FSC (see figure 2) does not go without challenges since it craves that stakeholders have to compromise to reach pragmatic agreements (e.g. Boström, 2006). However, FSC has shown to be flexible and robust enough to create a unique platform to accommodate the agreement between stakeholder groups. FSC is identified as one of the emerging global action networks in global governance (Wadell, 2003, Gulbrandsen, 2004). This creates an invaluable asset when communicating on the market, which makes FSC unique, compared to other forest certification systems.

FSC – THE STANDARDS THAT REGULATE
FSC stakeholders have agreed on international rules regarding the development of national and/or regional indicators for responsible forest management within the FSC-scheme. These rules are expressed in international FSC-standards, policies, and guidance documents. Two important standards regarding the development of forest management standards are FSCs Principle and Criteria for Forest Stewardship (FSC-STD-01-001) and Structure and Content of Forest Stewardship Standards (FSC-STD-20-002). These standards regulate the content of forest stewardship standards, for instance the different areas that need to be covered, the language that is to be used, the need for performance level indicators, adjustments to small scale forest management, etc.

THE HIERARCHY OF A NATIONAL/REGIONAL FOREST STEWARDSHIP STANDARD

FSCS PRINCIPLE & CRITERIA (P&C)
General international guidelines FSC P&C define which topics stakeholders have to focus on when developing indicators in national/regional Forest Stewardship Standards. P&C has to be an integrated part of every Forest Stewardship Standard that is to be accredited by FSC. It has to be used without changes in every national FSC-Standard.

INDICATORS
The primary guidelines developed by stakeholder on a national/regional level. Indicators define what responsible forest management is in a given forest type and region. During certification it is assessed if the forest management is in compliance to these indicators.

VERIFIER
The proof needed to be able to make a certification decision if forest management complies with an indicator in the standard.

EXAMPLE
(Indicators from the Danish FSC-Standard):

FSC PRINCIPLE 6: ENVIRONMENTAL IMPACT
Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest

PART OF FSC CRITERION 6.2
[NOTE: There are many more criteria and indicators under principle 6]
Criterion 6.3 Ecological functions and values shall be maintained intact, enhanced, or restored, [...]

INDICATOR:
Natural regeneration is used. Exemptions can be made where site conditions are not suitable.

VERIFIERS:
• Management plan/management policies
• Field inspection
INTRODUCTION

The certification of forest management is regulated by FSCs accreditation standards, which certification bodies are to comply to when certifying. The international standards of FSC are the core of the FSC-system, since they express the function of the system as agreed by the stakeholders. The certification of forest management is regulated by FSCs accreditation standards, which certification bodies are to comply to when certifying. The international standards of FSC are the core of the FSC-system, since they express the function of the system as agreed by the stakeholders.

PURPOSE OF THIS REPORT

The aim of the development of national/regional forest stewardship standards by stakeholders worldwide is to get standards which are applicable in very variable national/regional circumstances but are in line with international FSC standards (P&C) so that they can be used for certification of forest management in respective countries. As mentioned above these stakeholders have to follow certain international rules. One major aspect is that all forest operations certified within the FSC framework are recognized with the same trademark world wide. The message is that all FSC certified forests are equally "well managed". Hence, there is need for a consistent use of FSCs Principles and Criteria (P&C) worldwide. This consistent use is to be achieved by consistent interpretation of P&C in national standard setting processes and by consistent implementation by forest owners which are assessed by certification bodies. As an organic result of different national standard setting processes under different national prerequisites, there are sometimes differences in national standards. As part of the system, FSC requires to reduce existing differences between national FSC-Standards to a minimum through harmonization exercises by those developing national Forest Stewardship Standards.

This report is – as a result of a Baltic project - attempting to tackle the issue of harmonization of Forest Stewardship Standards by:

- building on earlier experience and develop further guidelines on how harmonization as a process can be achieved
- comparing forest stewardship standards (accredited & draft standards) in countries around the Baltic Sea (Baltic countries)
- allowing Baltic stakeholders to meet and discuss Forest Stewardship Standards and certification
- communicating to stakeholders what harmonization is, how it can be achieved and their role
- highlighting to stakeholders similarities and potential differences in forests stewardship standards being used/developed in Baltic countries

We hope that this information can be used by stakeholders to develop further cross boarder discussions and collaboration.

The following countries have participated in this harmonization exercises: Russia, Poland, Estonia, Latvia, Germany, Denmark, Sweden and Finland.
HARMONIZATION OF FOREST STEWARDSHIP STANDARDS

WHY HARMONIZATION OF FOREST STEWARDSHIP STANDARDS?
The development of forest stewardship standards within FSC are results of political negotiation processes, but which also need to comply with international FSC-regulations. It is important that negotiating stakeholders have knowledge of the rules that they have to comply to. To achieve the balance between the compliance to FSC-rules on the one hand and the need to reach a political compromise on the other hand, is truly a difficult task. However, it is also an intriguing learning process, which in itself opens the minds of stakeholders, not only in respect to the national context, but equally in respect to international issues. The success in such a process is also very much dependent on the degree of openness among the people and organizations participating.

In standard development, NIs are to initiate/participate in harmonization exercises (FSC NI manual, 1998). The reason for this is that all FSC certified forests are supposed to be equally “well managed”. Hence, interpretation of FSCs P&Ss in the development of national/regional indicators should not differ without having been scrutinized. Differences between standards should be explainable in regards to legislation, socio-economic or ecological conditions, the prevailing forest structure, or the priorities of affected stakeholders. The process of identifying differences and explaining these is achieved through the harmonization process (see figure 3).

It is important to see harmonization of standards as long-term processes. In fact, harmonization should be seen as a tool to make stakeholders aware of differences/similarities, so that they can use this knowledge in their standard negotiations in ongoing standard development and/or future standard revisions.

THE HARMONISATION PROCES

Discussion with Stakeholders

Figure 3: Harmonization should be seen as a long term process of only having explainable differences between forest stewardship standards (moving to inner circles).
THE HARMONIZATION PROCESS

As mentioned earlier, there is no defined one process for harmonization of forest stewardship standards within FSC. This leaves it open for different opportunities to tackle it, but perhaps more frequently, it leaves stakeholders with confusion on how to proceed. In this chapter we describe ways on how to proceed forward, which are based on the experience within the FSC network so far.

When initiating harmonization the following steps are recommendable:

1. Inform the stakeholders on the reason for harmonization and get their support and participation. Invite people from the accreditation part of the FSC international office who are responsible for the accreditation of FSC standards in your region.

2. Survey the FSC network for information regarding prior harmonization processes. There are documents and people that can help! There have been FSC harmonization processes in Europe (Workshop in Spain, 2000), in Latin America (Workshop on Brazil Nut standards, Brazil/Peru/Bolivia, 2001), between Canada, Sweden, and Finland (Boreal Standards, 2003), and now lately this current project involving countries around the Baltic Sea.

3. Assess which standards in what countries/regions that you should try to harmonize with. If you need information on endorsed standards or standards under development you can contact Accreditation Service International. Priority should be on countries/regions which have similar forest ecosystems and socio-economic conditions. This is not too difficult, since these are often neighboring countries and regions. You should take into consideration that there are national framework standards that cover many regions, e.g. the Russian and Canadian Boreal standard. These often have less of thresholds/performance levels, but may refer to the need of development of regional indicators. Hence, it may be more valuable to harmonize with an existing regional standard.

4. Take contact with representatives in each country/region that has been identified in the assessment. Develop a project plan on the harmonization process, e.g. methodology, meetings, workshop, etc.

5. Funding for the process may be needed. It is probably easier to find funding regarding harmonization of standards than for many other projects. It is very much aligned with the political rhetoric’s of today, e.g. sustainability, globalization, stakeholder participation, etc.
When starting a harmonization process, it is important that the people participating understand the indicators in the Forest Stewardship Standards compared and are able to explain this to other participants. Although the meaning and the level of performance of indicators in a forest stewardship standard is to be clear to a reader (see 3.10, FSC-STD-20-002 available on www.fsc.org), there may be implications that are difficult to understand for a non initiated person, especially for someone from another country. One should also respect that all stakeholders do not have a background in, for instance, natural sciences or economic bookkeeping.

There are different levels of difficulty in harmonizing standards which are related to the political agreement that is reached by national/regional stakeholders. It is likely to be politically easier to agree on where to put what indicator into the Principle & Criteria structure of FSC than to harmonize the performance level of a specific indicator, e.g. countries deciding on a fixed % set aside (see figure 4). Long term harmonization results on a performance level should not necessarily be reflected in each and every indicator, but rather be on an overall standard level. Again, using the example of set aside, the % set aside of forest area should reflect the overall need to preserve/develop natural intact forest in a specific country and possibly also the type of forest management being performed in the country. This craves the understanding of country specific situations and harmonization as a process aimed at increasing this understanding.

**DIFFICULTIES WITH HARMONIZATION**

<table>
<thead>
<tr>
<th>Level of difficulty</th>
<th>Structure</th>
<th>Topics</th>
<th>System approach</th>
<th>Levels / Thresholds</th>
</tr>
</thead>
</table>

Figure 4: Levels of difficulty in reaching agreement in setting Forest Stewardship Standards and harmonization exercises.
HARMONIZATION METHODOLOGY

As mentioned above, there is probably more than one way to achieve harmonization. However, whatever method is chosen harmonization probably always has to include:

A. A structured way of comparing and identifying possible similarities and differences
B. A way of communicating the results to affected stakeholders
C. A more in depth analysis and discussion between stakeholders on potential differences that can lead to either a justification or to a conclusion of need to harmonize specific indicators.

One method to fulfil step A is by what some call the Traffic Light Approach. It is quite simple and it gives an opportunity to get a good overview of potential similarities and differences between standards. An analysis is made to see how each of FSCs Criteria is met with indicators in each standard in the comparison. This produces a table according to FSCs P&C, where at each criteria it is indicated if no significant differences were found (Green light), where there are potential differences (Yellow light) and where there are significant differences (Red light) between the standards compared. When significant differences are identified further processing will be needed to either explain or modify indicators.

Following this exercise, communication is needed to all affected stakeholders. This report is one way of communicating to stakeholders of similarities and differences found between the Forest Stewardship Standards in the Baltic region.

What then should follow is the recognition amongst stakeholders to use this information in discussions, collaborations, and negotiations. Eventually, this can lead to that non explanatory differences between standards being removed and result in a more consistent interpretation of FSCs P&C. It is important to repeat that one condition for getting a Forest Stewardship Standard accredited is that harmonization has taken place.

In this report you will find little pictures of traffic lights which indicate at the end of each chapter what level of difference s, if any, were found between the Baltic standards. This is illustrated in the table below.

- A green light indicates that no significant differences were found between the standards compared
- An orange yellow light indicates that there are potential differences which may need harmonization.
- A red light indicates that significant differences were found that should either be harmonized or explained
- Question marks indicate that it is difficult to assess if there are any differences and that further guidance is needed from international level
Forests are dawned by ecological conditions and historical activities. When regulations are set, whether it be laws or voluntary certification standards, such pre conditions have to be considered. We will describe some different pre conditions in the forests discussed in this report and which are mirrored to a certain extent in the Forest Stewardship Standards set. It should be clear to the reader that we have no intention to describe the whole complex picture of how today’s forests in Europe have been dawned, but will merely attempt to give a glimpse.

As a result of the harmonization exercise within this project, we will in the chapters thereafter, highlight similarities/differences between Forest Stewardship Standards in the Baltic region in respect to the pre conditions of the forests.

**VEGETATION ZONES**

Countries around the Baltic Sea cover a number of vegetation zones (see figure 5).

Northern conifer dominated forests (boreal forests or Taiga) in Europe stretch over most part of Norway, Sweden, Finland, European Russia and continue into the Asian part of Russia. Temperatures in these forests vary from -50°C to 30°C throughout the whole year, with 8 or more months of temperatures averaging below 10°C. The deciduous dominated forests (nemoral or temperate) stretch over middle Europe, with at tip of Norway and Sweden, and is characterised by a climate with mild frost free summers and moderately cold winters with a long break between growth periods. Temperatures in summer are usually not above 30°C and in winter not below -20°C. In between these zones is a broad transition zone called the boreonemoral zone. Estonia and Latvia are the only countries completely within the boreonemoral zone. Apart from temperature, a number of other factors differ between the zones and within the zones, e.g. precipitation, soil fertility, species composition, history, etc.
FOREST HISTORY

Utilizing wood from forests in Europe has a long history, but its intensity and character has varied and still varies by region countries. Although the forest cover has in fact increased in middle Europe during the 20th century, little is left of the ancient deciduous woodlands that once covered the nemoral zone. Big parts of the boreonemoral forests areas were deforested during the 18th and 19th century for agricultural purposes but also for other commercial activities like ship construction, vodka burning, tar, and potash production. As an example of a very regional phenomenon, in the south west parts of Sweden, large areas of oak and beech forests were cut, from the 13th century up to the mid 19th century, for the production of barrels for herring and later for export of wood to Holland. Wide spread heathy land replaced these forests, which then from the second half of the 19th century was afforested with mainly spruce. Through the influence of human activity, spruce is today the dominating tree cover in this region.

In European Russia industrial logging started as early as the 18th century, but the intensity picked up dramatically during the 20th century and is still continuing. Today in European Russia about one-tenth of the boreal forest can be considered intact (old-growth) forests, while in countries like Finland and Sweden this level is lower. In all of Russia, still around one-fourth of all boreal and boreonemoral forests are intact (Aksenov et al., 2002). In addition some of the forests that are being cut today grow in circumstances where forest management operations can be detrimental to the whole forest ecosystem, e.g. taiga forests on permanently frozen soils (Pozdnyakov, 1986). Many forest operations in parts of Russia are today in fact illegal. Wood products exported from Russia with illegal origin are estimated to be in the range between 20 and 30% (Morozov A., 2000; WWF, 2005).

Overall the use of forests as wood resource has resulted in a historical degradation regarding biodiversity in forests of Europe (e.g. D. Aksenov et al., 1999; Hallanaro and Pylvanainen 2002) and has caused disputes regarding social values, e.g. with the indigenous people the Sami or local communities. Modern industrialised forestry itself has in many cases not been able to face these challenges and is still creating problems regarding the loss of biodiversity, cultural heritage, and community integrity.
STANDARDS COMPARED

National vs Framework Standards
As described above some countries cover many vegetation zones over a large geographical area, resulting in a range of pre-conditions for forest management. Within FSC, this has resulted in that some countries develop national framework standards, which then needs the further development of regional standards and indicators.

Framework standards often have less of defined performance levels, but focus many times more on the need of presence of systems, procedures, etc. for regional assessments and development of regional thresholds. National standards, i.e. those not being framework standards, often have more defined performance levels/thresholds and include if needed national regional considerations.

Hence, it is difficult to compare national framework standards vs. national standards because of the difference in the level of detail. Therefore national standards should be compared with applicable regional developed indictors that are developed according to framework standards.

Of the participating countries in the current project, Russia was the only identified country having a national framework standard, which consequently will need further development of regional indicators. All other participating countries had national standards, which should not need further regional development.

Some areas for future collaboration and discussion in standard development;

- In the development of Russian regional indicators, harmonization exercises/results should be included and future revisions of other national standards, e.g. Finnish or Swedish, should consider Russian regional indicators.

Status of standards compared
The standards compared in this report have different status. There were seven national standards and one generic standard developed by the certification body Smartwood. There were four draft standards of which one was a draft revised standard. In regards to harmonization, this is a positive aspect since it should be easier to adjust unexplainable differences in draft standards. However, it also makes comparisons somewhat more difficult, because other changes may be made to draft standards which may not have been considered within this project. In any respect, harmonization should not be a one time exercise, but should rather be an ongoing cross border dialogue. At the end of this brochure we give an overview on estimated timelines when standards will be developed or revised in the participating countries (see standard setting timetable). National standard setting bodies should consider how and when information best can be exchanged between countries when developing Forest Stewardship Standards.

PRE CONDITIONS FOR COMPARISON

FOREST STEWARDSHIP STANDARDS COMPARED:
1. Sweden – Draft of revised standard (sent in for accreditation, 1st standard accredited in 1998)
2. Finland – 1st accredited standard (accredited during project)
5. Poland – Draft 1st standard (sent in for accreditation)
6. Russia – Draft 1st standard (sent in for accreditation)
7. Latvia – Draft 1st standard
8. Estonia – Smartwood generic standard
   (SW-STD-EST-2005-06)
NATURE CONSERVATION & ENVIRONMENTAL FUNCTIONS

REFERENCE ECOSYSTEMS & HIGH CONSERVATION VALUE FORESTS

Reference ecosystems

Criteria 6.4

FSCs criterion 6.4 states that “Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources”. This idea has been well known for many years. Already in the 1930’s leading Polish foresters (Jedlinski, Paczowski) postulated the need to establish set aside areas within managed forest as “reference ecosystems”. In Czech Republic the first strictly protected forest was established in 1830 (Peterken 1996)

Today, increasing pressure on forests only confirm the need for such reference areas within the forest landscape. Apart from contributing to biodiversity, set aside reference areas are of value for research on the natural dynamics of forests and may be found to be an invaluable inheritance for future generations. Setting aside forest for protection should be seen as an ecological debt or interest that has to be paid against negative ecological impacts caused by any kind of forestry.

The Forest Stewardship Standards around the Baltic have similar indicators under criterion 6.4, but with slight differences. According to the Swedish and Finnish standards, each landowner has to exempt a minimum 5% of the productive forest land area from commercial management. In Sweden this has resulted in that today more than 500,000 hectares are voluntary set aside for biodiversity in a landscape that has lost a lot of biodiversity...
during centuries. In Sweden and Finland there are also so-called unproductive forested areas which are not commercially managed by the landowner and therefore cannot be included in the percentage set aside area. The Polish standard also has a 5% target set aside of the forest area, but it is unclear if all forested land can be included, e.g., unproductive bog forests. In Estonia 5% set aside areas are demanded for large forest management operations. The Danish and Latvian standards have somewhat higher levels of non-commercial set asides, 10% and 7% respectively. In Denmark, at least half of the 10%, i.e., 5%, shall be non-intervention areas and the remaining 5% can be areas that are managed with focus on the protection of biodiversity. The percentage set aside in the Swedish standard may also include forest areas which crave certain management to maintain or strengthen the natural biological diversity of the habitat. Similarly in Estonia the management of set asides is in Estonia for conservation purpose (mowing, selective logging). The German standard is somewhat different from the other standards. It also includes a threshold of 5% of the certified forest area as set aside, but this only refers to public forests with more than 1,000 ha size. In addition, it is possible to refer to already legally protected areas in a region as a set aside (also possible in Estonia and Latvia). Private owned forests are exempt from this indicator. Being a framework standard, the Russian standard does not prescribe a target for set aside.

Some areas for future collaboration and discussion in standard development

- There is potentially different thinking behind the interpretation of criterion 6.4. In some standards the idea of strict non-intervention set aside is declared, while in other standards set aside targets may include areas that need certain management to maintain a defined biodiversity.
- The percentage % targets differ in the compared standards but these should be further explored in the light of different aspects, e.g., productive forest land, legally protected areas, the overall forest management, etc.
- Some standards, e.g., Polish, have indicators adjusted to the size and scale of the land holding (Small and Low Intensity Managed Forests = SLIMF, see www.fsc.org/SLIMF) and some have not, e.g., Swedish. The need to develop SLIMF indicators in relationship to criterion 6.4 should be explored.
High Conservation Value Forests (HCVF)

Principle 9

The HCVF concept was developed and introduced within FSC in 1999. Although the idea of preserving values in more natural intact forest ecosystems were at hand prior to 1999, HCVF introduced a new way of thinking for many stakeholders. Under Principle 9 are criteria which prescribe the need to develop indicators and verifiers regarding the identification, management and monitoring of HCVF.

The aim of FSC is not to prohibit forest management in these forests, but to allow the forests to be managed in a responsible way so that the values identified can be maintained or enhanced. Hence, HCVFs can under FSC-certification either be managed or treated as set asides, depending on the management objectives which have to preserve the values that have been assessed. In Baltic countries identification of above categories is still at initial stages, but it is visible that countries within the boreal/boreonemoral zone (Sweden, Finland, Estonia, Latvia, Russia) tackle the issue differently from countries within the nemoral zone (Germany, Poland, Denmark).

The main challenge to tackle is that the concept of HCVF seems to be understood differently. In most of the standards, the FSC classification of HCVF is not used at all. The differences, perhaps, refer to what the problems have been historically, how they were solved or unresolved, and what data is available. Detailed prescription exist only for particular cases: intact forest landscapes or WWF Global 200 eco-regions (Russia), Mountain coniferous forests and virgin-type forests (Sweden), HCVF as defined in Forest and Nature Conservation Act (Finland), cultural or historic sites (Denmark), Endangered Species and Conservation zones or list of rare, threatened, or endangered ecosystems (Germany, Estonia), Natura 2000 sites (Germany, Estonia), relatively large concentrations areas of woodland key habitats, specially protected forest habitats, or noble hardwood forests (Latvia), but not for all categories of HCVF. It may be that some sensitive issues are avoided in the standards, perhaps because of lack of understanding and guidance.

FROM FSCS PRINCIPLE & CRITERIA (FSC-STD-01-001)

High Conservation Value Forests are those that possess one or more of the following attributes:

A) forest areas containing globally, regionally, or nationally significant : concentrations of biodiversity values (e.g. endemism, endangered species, refugia); and/or large landscape level forests, contained within, or containing the management unit, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance

B) forest areas that are in or contain rare, threatened, or endangered ecosystems

C) forest areas that provide basic services of nature in critical situations (e.g. watershed protection, erosion control)

D) forest areas fundamental to meeting basic needs of local communities (e.g. subsistence, health) and/or cultural or local communities’ traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).
SILVICULTURE & ENVIRONMENTAL CONSIDERATIONS

Felling methods

As explained earlier it is important to consider the different pre conditions in countries when developing indicators according to FSC’s Principle and Criteria. This will be reflected in the Forest Stewardship Standards produced. One overall issue is how the management is viewed in respect to the pre conditions. The biggest human impacts in forests are generally made by the felling methods used and what consideration that are made as a consequence.

Comparing the Forest Stewardship Standards around the Baltic, one can easily see the distinction of two overall methods for wood extraction. In the standards from Sweden, Finland, Russia, Estonia, and Latvia clear felling as a final felling method is allowed with restrictions (The term is somewhat misleading since the restrictions are to prevent the area cut to be clear). All these countries are within the boreal or boreonemoral vegetation zones (see figure 5) which are more prone to have natural forest fires and natural forests with a high proportion of species with pioneer characteristics, e.g. aspen, birch, and pine. In fact, one main argument for this felling method, besides economic, is that in certain aspects mimics natural dynamics of these forests, facilitating regeneration, and the provision of microhabitats for disturbance dependant flora and fauna.

Denmark, Germany, and Poland are within the nemoral vegetation zone where the natural disturbance is less common. Natural forests consist more on shade-tolrant species without big succession areas of pioneer tree species. These forest naturally regenerating by gap disturbances with small gaps (in natural temperate forests 0.5-2% of the area every year). As a result, the standards in Denmark and Germany only allow clear felling as an exception. Instead these standards prescribe harvesting through felling of single trees or selected groups (German standard) or similarly by the employment of selective logging, group-wise regeneration, and planting under shelter trees (Danish standard). The Polish legislation and standard only permits clear felling areas of up to 3 hectares on poor and dry mixed pine stands. In broadleaved mixed forests, clear felling methods are prohibited by law. The Latvian standard does not include extra restrictions regarding clearcut size, so forest managers should follow legal acts, what usually maximum clearcut size determines up to 5 ha.

The differences in strategies of extracting wood from the forests will also be reflected in indicators referring to regeneration, retention of trees, site preparation, etc.

Some areas for future collaboration and discussion in standard development

- There is a need to explore the choice of felling methods in standards in relation to research data. To what extent do the methods mimic natural dynamic and to what extent are they simply a result of a political compromise? What are the benefits and drawbacks?
Regeneration Methods

As mentioned, the choice of regeneration methods is interdependent on the choice of felling methods. When increasing the size of the area cut in forests and when leaving no or only few trees, natural regeneration becomes increasingly difficult and the need for planting seedlings increases. From an economic point of view, a quick establishment of a new forest after felling is essential. Years of growth loss can be viewed as an economic loss in the future.

On dry and poor soils in the boreal forest, pine is usually the dominating species. Here it is common to leave so-called seed trees when felling such stands. Hence, although a larger area may be cut, natural regeneration is frequently used. However, on more fertile soils, usually more mixed forests have been established, with spruce, pine, and birch. When using clear felling methods in these forests, remaining trees are more prone to be windthrown, especially when leaving older spruce trees. Spruce is often considered the most commercially important tree species in these stands. To establish a stand with natural regeneration also takes certain time and on more fertile soils this increases the risk of competing grasses. Hence, planting is practiced to get a quick establishment of spruce. Planting of seedlings does have certain advantages, but also creates disadvantages, e.g. need to find ways to protect against herbivorous insects. The end result of a planted forest is usually a forest dominated with the species that was planted. The importance is to try to develop management methods to attain a certain mixture of trees and species that naturally would occur in the forest. The degree of mixture in such forests can, to a certain extent, be targeted through silvicultural methods, such as thinning.

In the nemoral zone, where broadleaved mixed forests are more prone to natural gap dynamic and contain a higher degree of diversity and complexity, the use of selective logging systems, group or tree selection systems, and shelter wood felling in combination with natural regeneration methods are more preferred, e.g. Germany and Denmark. In Latvia some guidelines for wet forest management are included – during such stand management natural regeneration should be favored.

Selective felling in an oak forest in Germany. Trees are marked individually. Felling of trees avoids major damage in existing natural regeneration that rebuild future oak forests.
The FSC-standards in the Baltic region generally promote the use of selective logging methods followed with natural regeneration and aim to increase broadleaved trees depending on site conditions. This is also true for the standards applicable for boreal forests. However, the standards are often quite vague in prescription, i.e. making it difficult to assess clear performance levels. Although not clearly stated in the standards, planting is likely to be the dominating regeneration method in FSC-certified boreal and boreonemoral forest management.

Frequently soil scarification is used to promote the establishment and growth of natural regenerated and/or planted seedlings. The Swedish and Finnish standards have indicators regarding site adapted soil scarification techniques and limitations regarding the use. The Danish and German standards prescribe more limited use of soil scarification in combination with natural regeneration. The Russian, Latvian, Polish, and Estonian standards do not address soil scarification.

Some areas for future collaboration and discussion in standard development

- As already mentioned in the chapter on felling methods, there is an overall need to further explore and explain the economic, social, and environmental reasons for choosing felling and regeneration methods. There are clearly justifications for using clear felling methods in combination with planting. However, indicators are not clear enough when and when not this should be allowed.
- Soil-scarification, as a mean to increase the survival of planted and/or natural regenerated seedlings, is not addressed in all standards. This needs to be explained.
Dead Wood

Dead trees, both standing and fallen, are key substrates for many forest-living species. In unmanaged Central European forests dead wood usually comprises up to 25% of the entire volume of wood in the forest (Bobiec et al. 2005). More than 25% of forest species are dependent on the availability of dead wood. The amount of dead wood varies due to factors such as fertility, frequency of natural disturbance, and decomposition rate. An intact boreal forest can have between 19 m up to 145 m of dead wood (see references in Swedish Environmental Protection Agency, report 5413). In the Swedish forests, the amount of hard dead wood was in 1995 on average about 1.9 m³ per hectare, but increased and amounted to about 3 m³ of hard dead wood per hectare in 2001 (Swedish National Forest Inventory). Including decomposing dead wood the amount is on average about 6.5 m³ per hectare in Swedish forests. Estimations indicate that to secure many of the species connected to dead wood in Sweden, 10-30% of the forest landscape should have ≥20 m³ dead wood per hectare, while the rest of the forest landscape should have on average 10 m³ per hectare (Swedish Environmental Protection Agency, report 5413). Dead wood has in fact been identified as a key feature for preservation of threatened species in the boreal forest (Ranius et al. 2003 and references therein).

The circumstances in Sweden and Finland differ, however, from Russia. In Russia, even in managed forests, the proportion of dead wood is remarkably higher compared to Sweden or Finland, although the exact figures are absent. This is of course also related to the higher amount of intact natural forests in Russia with high levels of dead wood.

The amount of dead wood in managed forests, i.e. excluding protected areas, depends on the understanding among the foresters of the importance of dead wood in the natural cycle of a forest ecosystem. Guidelines need to be developed and implemented to secure a certain amount of dead wood in managed forests. Hence, indicators are developed in Forest Stewardship Standards regarding the promotion of dead wood. Generally speaking these indicators do not only highlight the need to leave dead wood in the forest, but also in creating new dead wood, e.g. creating high stumps, and the retention of living trees in fellings that in the long term will add to the amount of dead wood.

Both the Swedish and Finnish standards prescribe that existing dead wood is to be left in the forest and that fresh dead wood, e.g. high stumps, is to be created during felling operations. This is in line with the deficit of dead wood in the boreal forests in Scandinavia and is supported by research as a conservation method. Computer simulations indicate that the long-term amount of coarse dead wood in Sweden will triple due to certified operations, reach-
In the Russian FSC-standard dead wood is not emphasized due to its relative abundance in the forest. However, the Russian standard stress the need of retaining more dead wood as snags and future dead wood as old deciduous and defected coniferous trees in managed forests. As already mentioned, the Russian FSC-standard is a framework standard. Due to the large regional differences in Russia regarding the existence of dead wood in the forests, it has been found not feasible to set national targets. A high regional level of dead wood will make it more important to preserve the natural dynamics that have created it, e.g. by protection or adjusting management in high conservation value forests, whilst the need to create new dead wood will be more important in regions where the natural dynamics are less intact. Hence, it is expected that indicators regarding dead wood will be developed according to the assessed needs in different regions of Russia.

The Polish standard has probably the highest defined threshold for dead wood, prescribing that dead wood should exceed the level of 5% of the compartment’s standing volume.

Some areas for future collaboration and discussion in standard development

- Although standards are quite similar, there are some slight differences. It could be of interest, to assess standard indicators in relation to national differences regarding the existence of dead wood in the forests and the scientific knowledge on minimum levels of dead wood to preserve biodiversity.
- The level set regarding dead wood in the Polish standard should be further explored in relation to the thresholds in the other Baltic standards.
Retention

Criteria 6.3

We have discussed about dead wood, but also the retention of living trees is of great importance for biodiversity in the general landscape. Trees that are left will age, die and become dead wood, decompose, and be part of a natural cycle. At every stage different species can benefit from the tree. In addition, felling may become more appealing to the eye.

When selective or group cutting is performed, the need to leave trees becomes naturally part of the cutting regime, at least for a limited amount of time. Such systems usually demand more frequent cuttings over the rotation period of one tree. This may in fact lead to the extraction of all trees over time without leaving any single tree to die and decompose. In clear felling management systems, it becomes of course obvious that if no living trees are left, there will be no older trees in the new younger stand.

All compared Forest Stewardship Standards prescribe some retention during felling operations, however, there are differences. The Swedish, Estonian, and Latvian standards all have very similar thresholds, with leaving a minimum 10 trees per hectare and possibly more if there are trees of special biodiversity value. The German and Danish standards differ, which can be explained by their emphasis on selective or group felling. The German standard prescribes the retention of damaged trees with no exceptional value because of a general restriction for clear felling, while the Danish prescribes that 3-5 trees should be left per hectare to die and decompose. The Finnish standard simply states that 10% of the forest area should be permanently left outside final felling operations. This threshold may include set aside/reference areas. In Finland in each harvesting operation, at least 10 large living trees per hectare shall be preserved. These trees shall not be removed in future harvesting operations.

The Russian standard stated the need to leave biodiversity trees, which are not economically valuable; nor do they create a risk of, for example, a pest outbreak (individual noble hardwood trees, snags, old deciduous, and defected coniferous trees) when cutting, but not surprisingly, being a framework standard, it does not define any threshold.

All standards also prescribe the need to have buffer zones along water.

Some areas for future collaboration and discussion in standard development

- The standards seem to be quite similar, but differ in relation to the felling regimes preferred in respective country. It is, however, somewhat difficult to penetrate and compare the actual sum of retention in each standard, excluding reference areas. This is because different indicators are related to each other, e.g. retention trees, biodiversity trees, consideration areas, buffer zones, etc. It would be of value to assess the total impact of retention indicators in each standard.

- Retention of trees with biodiversity and/or cultural value is mentioned in some standards. This could be an area for future discussion and collaboration, to increase the understanding of regional differences.
Drainage

In all Forest Stewardship Standards the general concept is to manage forests in a site adapted manner that mimic natural forests dynamics. This also includes the use of management systems that minimize the negative impacts on soil and water conditions.

Similar to agriculture, forest management has for decades or even centuries created drainage systems to change the natural conditions for forest production. Draining wet or moist forests increases the access of oxygen in the soil which increases the microbial activity causing a release of organic stored nutrients which benefit forest growth. However, generally ditched forests on more fertile soils are considered to be a net source of greenhouse gases (release of carbon dioxide and nitrous oxide), even when considering the increase in forest growth uptake (uptake of carbon dioxide) and that drainage may lower releases of methane. In addition, ditching changes the water storage in the soil and the chemical composition of surface waters. This can have detrimental effects on the water quality in springs, rivers, lakes, and eventually even the Baltic Sea. It is clear that artificial drainage does not mimic natural forest dynamics. This should be reflected in the Forest Stewardship Standards.

Most Baltic standards promote a long-term shift in forest management regarding drainage. However, because of long traditions and the potential economic impact in forestry, it is addressed in various ways in different FSC standards. In the German and Polish standards no new or existing drainage systems can be constructed or maintained (temporary drainage of calamity areas is possible to enable forest regeneration in Poland). In Sweden, Denmark, and Estonia new establishment drainage systems are generally not allowed and the maintenance of ditches is restricted in different ways. The Finnish standard prohibits drainage in protective zones for ground water and any new drainage systems shall take environmental impact assessments into account. In Russia, drainage of forests has not been in use for the last 30 years by economical reasons. However, the standard prescribes that such practice is undesirable in a managed forest. Drainage is not addressed in the Latvian standards.

Some areas for future collaboration and discussion in standard development

- It should be considered to address drainage in the Latvian standards.
- In the standards where drainage is addressed, the level of performance seems to vary. Future standard development and harmonization processes should consider drainage in relation to the overall goal of FSC and to the Baltic context.
Forest fires

Boreal forests are prone to forest fires as part of their natural dynamic. In Sweden and Finland the long history of forest management has resulted in a dramatic decrease of this natural disturbance with the consequence that species depending on fires decrease or even become extinct on a national level.

In contrast to Scandinavia, forest fires are still common in Russia, partly because of the high amount of natural forests containing great quantity of fuel material (needle litter, dead wood, etc.), but also because of an increase of human induced fires and bad management practices (widespread agricultural burns, careless behaviour of people in the woods, on-purpose starting of fires for criminal reasons). This allows forest fires to develop and continue for days and even weeks. According to the Russian Federal Forestry Agency in the 1990-2000s, the area annually affected by wildfires in Russia ranged from 0.5 to 2.5 million hectares compared to approximately 0.6 million hectares that was cut annually. In fact, currently catastrophic forest fires in Russia are considered to be a serious threat to both the unique biodiversity of boreal forests and the global carbon balance (Karpachevskiy, M., 2004).

In the nemoral region, forests fires play a decreasing role in natural dynamics. Therefore, it is not addressed in the related FSC-Standards.

Controlled burning in a boreal forest in Sweden.

Three-toed woodpecker (Picoides tridactylus) dramatically increases in areas where prescribed burning is implemented (Hegendüs et al. in print)

The differences in frequency in forest fires between countries are also reflected in the Baltic boreal FSC-standards. The Swedish and Finnish FSC-standards prescribe that larger forest owners are to burn 5% of the regeneration area. Since the occurrence of forest fires is high in Russia there is no special need to stimulate prescribed burning in Russia. At the same time, since fire fighting is limited by the absence of roads and effective national fire suppression system, forest managers should take measures to control a situation with large scale natural and semi-natural forest fires in the Russian standard.

Some areas for future collaboration and discussion in standard development

The Swedish and Finnish FSC-standards differ in certain aspects regarding to prescribed burning:

- The limit for large land holders differ (Sweden >5000 ha, Finnish >1000 ha).
- The Finnish standard prescribes a level of wood left on the area to be burnt (at least 20 m3 large timber, DBH > 20 cm, per hectare shall be left) and allows a flexibility to reduce that burnt area if more wood is left on the areas that are burnt. There is no such mechanism in the Swedish standard.
Hunting
Wild life in the forest has different values and impact to social, economic and environmental interests. Hence, it can be disputed under which chapter it should be placed in this report.

On the one hand, hunting can have an immense positive social and economic value for local people. Wild game can also add to the biodiversity of forests directly or indirectly, e.g. contributing to the spreading of plants. However, a too large population of animals can cause huge detrimental effects on forestry, e.g. feeding on seedlings and destroying regeneration, and potentially also on biodiversity, e.g. intense feeding causing certain species to disappear. In the development of FSC standards, there is an opportunity to balance these interests.

Hunting is approached differently in the Baltic standards, which may be partly explained by cultural and historical reasons, but perhaps also by stakeholder participation. Whereas some standards focus on the protection of birds and rare mammals (Poland, Estonia, Latvia) others also refer to the legal regulation of hunting (Finland, Denmark, Russia, Sweden). Due to weak hunting legislation, the German standard also refers to the need of a wildlife management system that prevents the damage on forests by deer.

Some areas for future collaboration and discussion in standard development

- Overall there are different approaches in the FSC-Standards around the Baltic regarding wild life and management of game populations, but the overall performance level is not expected to differ dramatically. However, it could be of interest to assess if the different approaches actually reflect different conditions in the countries.
Public consultation & grievance resolution

Within the FSC-system, public involvement is strongly recommended, promoted, and even required. This is expected to happen at every level, i.e. international/national standard development, certification, auditing, and implementation of Forest Stewardship Standards. It includes both active consultation and management of complaints received. To make this possible each level need to have guidelines on how this is achieved. To assure an effective system, it is also vital that this is transparent to a general public on request. This is regulated, for example with certifiers, in the accreditation standards, e.g. Standard on Stakeholder consultation for forest evaluation (FSC-STD-20-006).

For certified forest management, this should be regulated in the Forest Stewardship Standards under criteria 4.4 and 4.5. Consultation and dispute management should cover all relevant environmental, social, and sometimes economic aspects of the standard. Forest managers should strive to reach agreement with other parties and the outcome should be verifiable to the certifier.

Comparing the Baltic standards at their current status, they showed quite a bit of variation. The Finnish, German, and Danish standards were the most prescriptive, while the Swedish standard (Draft 050907) was considered to be vague. The other countries were in between regarding transparency in requirement for consultation, management of dispute, and resolving grievances.

Some areas for future collaboration and discussion in standard development

- This should be an area of high priority regarding future development. In fact there is little reason why Baltic standards should show great variation regarding criterion 4.4 and 4.5. The Swedish standard (Draft 050907), does require further development regarding these criteria.

- Public consultation may need stronger emphasis in central and Eastern European countries which have quite recently regained democracy.
FOREST WORKERS AND CONTRACTORS

Most forest activities in Baltic certified forests are undertaken by contractors or seasonal hired forest workers. This is true for both private and state owned forests. During audits they are often interviewed by FSC auditors during certification procedure not only to assess the conformity with criterion 4.1, 4.2, 4.3, and 4.4, but also to assess that the work they do complies with any relevant indicators of the standard. Hence, forest workers unions and contractor organizations are usually active stakeholders within the FSC-system and members of the National Initiatives.

FROM FSCS PRINCIPLE & CRITERIA (FSC-STD-01-001)
in regard to forest workers rights.

4.1) The local population are offered opportunities for employment, training, and other services.

4.2) Forest management meets or exceeds the relevant laws and/or regulations covering health and safety of employees.

4.3) The rights of the staff to organize and voluntarily negotiate with the employers are guaranteed according to Conventions 87 and 98 of the International Labour Organisation (ILO).

4.4) Findings of negative social impact on employees and forest users will be incorporated in the forest management plans and the resulting measures. If necessary, consultations will be maintained with people and groups directly affected by management operations.

The FSC standards around the Baltic are characterized by very similar approaches regarding criterion 4.1, 4.2 and 4.3. All Baltic standards require local access to forest services, rights to organize trade unions and voluntary negotiations with employees, etc. There were, however, some differences in the prescription regarding minimum salaries and local employment.

Some areas for future collaboration and discussion in standard development

- It is not made clear in some standards on how conformity to indicators is assured when using subcontractors.
- There are differences in the prescription regarding minimum salaries and the use of local employment.

Forest workers with safety equipment
LOCAL COMMUNITIES

Criteria 4.1, 4.5, 5.2 and 5.5

People that live in communities close to forest may depend on a range of services and opportunities that the forest can provide. They may find recreation, commercial opportunities, such as tourism or berry picking, or they may be employed by a forest company or some other company utilizing the products from the forest. The forest may play a significant role in their daily lives.

Consequently, FSC-certification requires that the needs of local people are considered. Forests Stewardship Standards within the FSC-system are to have formulated indicators that are to comply to criteria 4.1 (local employment), 4.4 (consultation), 5.1 (forest’s diversity of products), 5.2 (local processing) and 5.4 (strengthen & diversify local economy), 5.5 (enhance the value of forest services). Regarding indigenous communities also criteria under principle 3 apply.

On a first glimpse these consideration may seem obvious and straightforward, however, when developing these indicators a number of questions and obstacles are likely to occur. For instance, terms used like “local” may be interpreted in a number of ways by different stakeholders. Who can represent local communities in the negotiation process of setting standards? The difficulties of setting these indicators while still considering “free market conditions” become apparent. The issue of local communities and -economy is politically difficult, but must be dealt with in one way or the other when developing a Forest Stewardship Standard.

The difficulties mentioned above also become apparent when comparing the Baltic standards. All prescribe free access to the forests for collection of berries or mushrooms or for other recreational activities as long as the forests are not damaged. In Poland, local communities also have certain access to wood for their private use, such as wood for heating or construction. However, there are some areas where the standards differ quite considerably.

The indicators under criteria 4.1 regarding local employment were quite vague in the Swedish and Danish standards. In addition the Swedish standard did not have indicators addressing compensation of legal and customary rights (4.5). Local processing of forest products, according to criteria 5.2, was not considered adequately addressed in the Swedish, Finnish, Estonian, German, or Polish standards. Under criteria 5.5, the differences in indicators developed, indicated a wide range of understanding amongst national initiatives on how to interpret “the enhancement of forest service”.

Some areas for future collaboration and discussion in standard development

- It is clear that a more common understanding has to be developed regarding certain terms, e.g. “local”, “processing”, “forest services” and how this is to be related to strengthening, diversifying, and enhancing values connected to these terms.
- Furthermore, some standards do not fully comply with certain criteria (4.1, 4.5 & 5.2). Indicators have to be complemented.
- The issue of representation of local interests when developing standards possibly needs strengthening.
FOREST MANAGEMENT & THE SAMI PEOPLE

Principle 3

Under Principle 3, Forest Stewardship Standards are to define how certified forest management is to occur in regions with indigenous people. In northern Norway, Sweden, and Finland, the indigenous people are the Sami people. In European Russia there are also Sami but also others indigenous people, e.g. Veps and Nenets. In the other countries around the Baltic there are no identified indigenous people.

The Sami lived in these areas long before the Swedes, Finns and Russians started to settle in the 16th-17th century. The Sami had by then established a migrating culture, moving with the reindeers as they found new grazing areas according to the seasonal changes. They lived off the meat and furs from the reindeers, combined with hunting and fishing and had developed a vivid culture, including languages. As new people moved in from the south, their culture and way of living was being suppressed, often with the support of the governments.

In Sweden, for instance, the Sami children were forbidden to speak their own language in schools into the 1950s. Today the Sami in Sweden are integrated into Swedish society, but still many of their legal and customary rights, e.g. reindeer herding, are not adhered to. Sweden, Finland, and Russia are countries that have not ratified ILO 169, i.e. the Indigenous and Tribal Peoples Convention of ILO/UN (see http://www.ilo.org/ilolex/english/convdisp2.htm)

In these countries, FSC becomes a tool that can strengthen the rights of the Sami. According to FSCs Principle 3, the legal and customary rights of indigenous people are to be recognized and respected. The consideration to the Sami people are dealt with in a similar manner in the Swedish, Finnish, and Russian FSC-standards. The standards put great emphasis on consultation between representatives of the forest manager and the Sami communities. Examples of issues that are to be dealt within these consultations are management considerations to important lichen areas for reindeer grazing, migration routes, and cultural/historical sites.

The comparison of Swedish, Finnish and Russian FSC-standards has been estimated to lead to similar performance levels in FSC-certified forest management, but should be scrutinized further.

Some areas for future collaboration and discussion in standard development

- The level of control of the forest management by the Sami people in agreements should be explored. The Russian and Finnish standards indicate a stronger need to get Sami approval prior to forest management. These standards also have indicators regarding compensation, which is lacking in the Swedish standard.
The globalization of industry and consumer markets will crave more and closer collaboration across country boundaries. This is true for the management of our forests as it is for many other areas. We hope that this project and report is just one out of many that may increase the understanding and strengthen stakeholders in their arguments within the network of FSC.

We face tremendous challenges on how to use the forest resource wisely in the future. Climate change may lead to ecological shifts which will need the adjustment of the management of the forests. In the attempt to mitigate climate change, the use of bio-fuel from forests is strongly emerging. The need to take out more biomass, e.g. tops, branches and even stumps, from our forests is being amplified. More intense management methods are being proposed. In some regions social aspects are becoming pronounced. The need of foresters learning how to consult and communicate with local people and vice versa is increasing.

The changes that we face will need further adjustments in the Forest Stewardship Standards that are accredited or under development. Future collaboration and harmonization across country boundaries will not only be an interesting learning experience, but will be essential if globalization is not meant only to benefit a few. FSC is a strong tool to achieve this regarding the management of the world’s forest resources.
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## HARMONIZATION OF FSC-STANDARDS

Standard-development and standard-management table for the Baltic States

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* Small and Low Intensity Managed Forests
ACKNOWLEDGMENT

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