Future Forests | Working Report

Forest governance

International, EU and National-Level Frameworks

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This working report is one in a series of ten reports which focus on external drivers that have a potential of affecting the Swedish social-ecological forest systems in the future. The drivers were chosen after discussions in Future Forests' Core Team of researchers and in Future Forests' Panel of Practitioners. The reports are essential inputs to the research program's scenario analysis of possible futures for the Swedish social-ecological forest systems. Other reports on *External drivers affecting Swedish forests and forestry* are:

- Wilhelm Agrell (2009). *Geopolitics. Competition, conflicts, and wars in the future international system.* External drivers affecting Swedish forests and forestry. Future Forests Working Report
- Gustaf Egnell, Ola Rosvall & Hjalmar Laudon (2009). *Energy as a driver of change.* External drivers affecting Swedish forests and forestry. Future Forests Working Report
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- Camilla Sandström & Anna Lindkvist (2009). *Competing land use associated with Sweden's forests.* External drivers affecting Swedish forests and forestry. Future Forests Working Report.

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Future Forests analyzes conflicting demands on forests systems
to enable sustainable strategies under uncertainty and risk

Content

1. Introduction: Forest governance in the context of Sweden's forests and forest sector

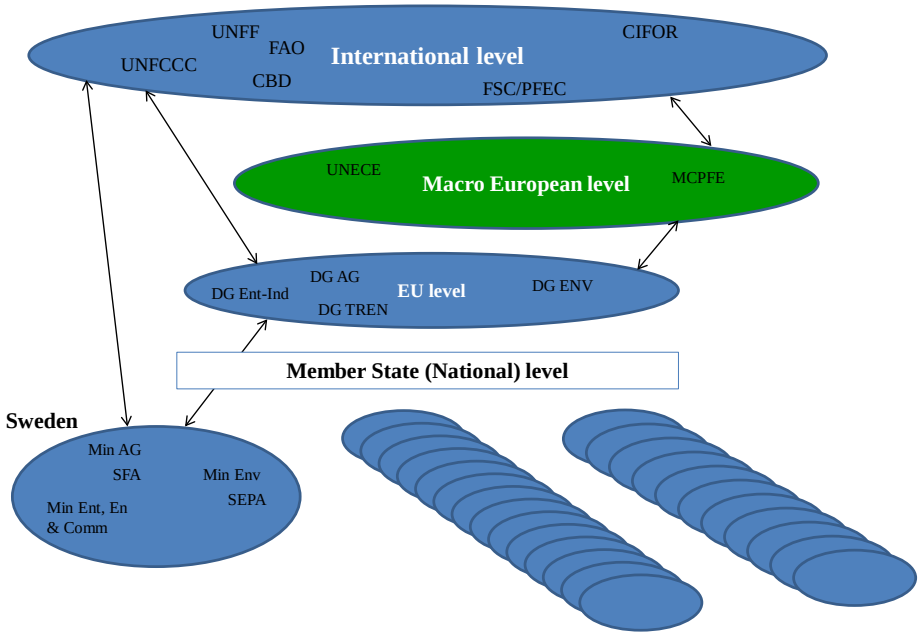
This paper aims to describe the international and national legislative, regulative and normative framework that can be seen as affecting forest use. In total, these include among other things directives on a European Union (EU) level (that are brought into law nationally); supporting regulation, and the large normative framework often on an international level that has become binding through state ratification. In addition, norms such as environmental and social measures in certification are agreed upon voluntary by forest companies, and then controlled by third parties. In total, this entire framework is referred to in this paper as "forest governance", where governance is seen as the way in which actions in a sector (here, forest use) are steered from multiple levels and by multiple actors. Whereas one usually thinks perhaps of the Forest Code as steering forest use for a forest manager, the entire framework is thus much larger and much more complex: few people would today, for instance, argue that certification or Natura 2000 environmental protection does not have an effect on the individual forest owner, although most may not be aware of the larger and developing array of EU directives that are implemented into Swedish national legislation and impact for instance zoning around watercourses and the like. Forest governance is thus an important factor for all forest use.

In this preliminary version of the paper, a focus has been placed on forestry as a forest use, even if some mention is included also of environmental protection and reindeer husbandry. Beyond these, a number of other forest uses of course exist. The description of forest governance on different levels in this paper will start from the international and EU level to describe how non-domestic areas impact Sweden, to then proceed to national level. The paper is mainly based on a literature survey of published literature as well as legislation. The international and EU level frameworks have previously been reviewed by several authors, in particular the work of Kankaanpää and Carter (2004), the Agriculture and Forestry Special Report from European Climate Change Program Working Group II (ECCP WGII, 2006) and most recently Glück et al (2009). Where not otherwise mentioned, this report draws upon these resources as well as from the websites of the various international organizations, conventions and the European Commission. This report extends previous discussions and provides some preliminary discussion of the degree of success of some of these policy efforts. On national level, the description of the national system is mainly based on legislation, including the Forestry Act, Environmental Code, and to some extent the Planning and Building Act and Reindeer Husbandry Act.

2. Looking back: The International, MCPFE/UNECE and EU level governance frameworks

The international and EU-level governance frameworks for forestry and forestry policy have developed to a large extent over the last few decades, increasing regulation in the forestry area. Forestry governance is ultimately distributed across multiple levels, enabling pathways for both top-down and bottom-up pressures on forests and forestry. As illustrated in Figure I below, multiple levels of forestry governance yield a relatively complex image of the types of interactions that can occur at various levels. States, for example, can interact directly with the international level through such international bodies as the United Nations Framework Convention on Climate Change (UNFCCC) or the Convention on Biological Diversity (CBD), or states can interact with the international level through the intermediary role of the EU. In the case of both the UNFCCC and the CBD, for example, the EU is primarily responsible for creating policies that fulfill its international obligations to the UNFCCC and the CBD, but individual countries are the signatory members of these conventions. The United Nations Forum on Forests (UNFF), on the other hand, interacts primarily with individual states and promotes the development of national forest programs (NFP's). Though the EU and the Ministerial Conference on the Protection of Forests in Europe (MCPFE), for example, support this framework, neither has voting power. On the other hand, both enjoy observer status in deliberations. Finally, forest owners participate directly in the workings of the Forest Stewardship Council (FSC) without either states or the EU providing a specific governance framework (though of course both can exercise influence on policy design within the FSC framework and implicitly grant authority to the FSC be recognizing and implicitly approving its policy orientation).

Fig. I: Governance Map
(International – EU – National Levels)



The EU can of course develop forest and forestry-related policy frameworks of its own that do not depend on the international level and are of course entirely independent of it. On the other hand, EU policy in general derives from the interests of its constituent Member states and thus evolves out of discussions with and is ultimately based on their approval. Finally—in particular because there is no *Community-level* forestry policy framework in the EU—Member states are ultimately free to develop and elaborate their own forestry goals and policies. However, the relatively rapid proliferation of individual policies at the EU and international levels means that forests and forestry are increasing affected by the police frameworks elaborated at these higher levels.

In principle, all levels (the international, the EU and the National level) are capable elaborating policy goals that are ultimately legally-binding on lower levels of governance. However, in principle this never occurs without the explicit approval of the signatory or Member states. Thus for example only Annex I countries to the UNFCCC's Kyoto Protocol have adopted any kind of legally-binding commitment to achieve an agreed target for CO2 emission reductions by the year 2012. In this sense, the principle of subsidiarity ultimately remains preserved: states are only bound by higher level agreements when they have elected to abide by them. Moreover, not all international policy frameworks attempt to impose legally binding frameworks on states. For example, the efforts of the UNFF and the FSC/PEFC (Programme for the Endorsement of Forest Certification schemes) promote guidelines which states can either choose to follow or ultimately to disregard.

Finally, the only level that does not really engage in legally-binding policy making at all is the Macro European level (distinguished in green in Figure I). Though the role of the MCPFE is important in defining and providing significant input into many European forest-related issues—for example the MCPFE has recently organized important conferences on forests and water (Turkey, May 2009) and bioenergy (Uppsala, June 2009)—it does not itself make decisions that are binding on states. The MCPFE can however promote guidelines that are later adopted and embodied in either EU or even international commitments. In important ways, the macro European level role played by the MCPFE or the United Nations Economic Commission for Europe (UNECE) is similar in purview and character to the role played by the Council of Europe and it addresses issues that affect the broader range of *European* countries—whether or not they are EU Member states. Thus, for example, the MCPFE serves the interests of 45 member states, plus the Vatican City and EU-level representation (by the EU Directorate General (DG) for Agriculture and Rural Development).

The role of the International and EU frameworks on forests, forestry policy and forestry governance has changed dramatically in the last few decades. Though initial starting points are difficult to discern, many point to the role of the so-called Earth Summit, the 1992 United Nations Conference on Environment and Development (UNCED) in Brazil and responsible in particular for the publication of Agenda 21. Of course, the Earth Summit was preceded by the 1987 Brundtland Report Our Common Future from the UN World Commission on Environment and Development (WCED), which first gave international voice to the concepts of sustainability and sustainable development.

The International Framework

The international forestry policy framework can at least be traced back to the Earth Summit and the formal "Statement of Forest Principles" that emerged. Forestry issues are also discussed in chapter 11 of Agenda 21. These documents make many of the first international formal commitments to sustainability in forestry practices, for participatory governance in the implementation and planning of forest policy, the promotion of a supportive international economic environment and the establishment of the goal of re-(af-)forestation, forest conservation and of maintaining or increasing total forest cover and productivity. The Earth Summit also established the United Nations Commission of Sustainable Development (UNCSD), the principle

institution responsible for promoting and ensuring the elaboration and implementation of Agenda 21 goals.

The Forest Principles

From the perspective of forest governance, the most essential international document is probably the Forest Principles from 1992. The principles were adopted at the Rio conference and are defined as: "non-legally binding authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests" (A/CONF.151/26 (Vol. III) Forest Principles). The principles are said to "reflect a first global consensus on forests" (ibid., preamble (d)).

The overarching objective of the agreement is to contribute to a sustainable forest development with a starting point in the multiple function and uses of forests; all aspects involving forests shall hence be considered in a holistic manner within the overall context of environment and development (A/CONF.151/26 (Vol. III) Forest Principles, preamble (c)).

To begin with, the Forest Principles confirm that States have the sovereign right to exploit their own forest resources, pursuant to their own environmental laws and policies. Thereafter a number of issues regarding e.g., the right to participation, the particular rights of indigenous peoples, women's role, energy supply and matters related to developing countries are brought to the table. A large part of the principles also deal with environmental and sustainability issues—among these the need for ecological, social and economic sustainability—as well as with the subject of biological diversity.

The Forest Principles thus cover a very wide range of issues and are frequently referred to as representing a global consensus on forest matters. Many of the areas comprised by the principles have moreover been covered by international as well as national laws and policies.

Agenda 21: Chapter 11

In conformity with the Forest Principles, Agenda 21 is morally and politically rather than legally binding. The guidelines laid down in chapter 11 are thus not expressed in terms of legal measures. Nevertheless many of the recommendations have legal implications since the implementation of the guidelines often require institutional changes.

Chapter 11 in Agenda 21 primarily deals with measures against deforestation, including issues regarding national and international measures in the area of forests and forestry. Chapter 11 is divided into four programme areas that are in keeping with the Forest Principles. The areas are:

A. To sustain the multiple roles and functions of all types of forests, forest lands and woodlands.

B. To enhance the protection, sustainable management and conservation of all forests and the greening of degraded areas, through forest rehabilitation, afforestation, reforestation and other rehabilitative means.

C. To promote efficient utilization and assessment to recover the full valuation of the goods and services provided by forests, forest lands and woodlands.

D. To establish and/or strengthen capacities for the planning, assessment and systematic observations of forests and related programmes, projects and activities, including commercial trade and processes.

The basis for action (background), objectives, activities and means for implementation are established for all four programme areas. The basis for action for area A. for example is that the policies and measures implemented to support and develop the multiple functions of forests are inadequate. To improve forest policy, planning instruments, the legal framework, public participation etc. on the national level, in order to ensure sustainable forest development, more effective methods are often required. The objectives for this programme area are therefore e.g., a) to strengthen the national institutional frameworks governing forests and to increase the efficiency in the forest management related activities; and b) to improve and build up the knowledge and capacity to enhance the implementation of policy on all levels. Important activities in this respect are for example to rationalise administrative structures, decentralize decision-making processes and to ensure coordination and communication across relevant sectors (Agenda 21, Chapter 11).

UNFF and other forest-related governance measures

The commitments arising out of the UNCED meetings in Brazil also give rise to a number of other important initiatives related to forestry. For one, the United Nations Forum on Forests (UNFF), preceded first by the International Panel of Forests (IPF, in 1995) and then the Intergovernmental Forum on Forests (IFF, in 1997) can be seen as an outcome of the UNCED meetings. All three of these organizations have had the explicit goal of promoting the Forest Principles established at the Earth Summit and promoting the development of National Forest Programs (NFP's). NFP's are described as "participatory, holistic, inter-sectoral and iterative process of policy planning, implementation, monitoring and evaluation to further promote sustainable forest management". However, there is no legally binding framework for the promotion of NFP's and individual states in Europe and elsewhere have chosen multiple strategies for pursuing forest policy, some elaborating NFP's while others have chosen to elaborate and extend existing forest management strategies. The UN's Food and Agricultural Organization (FAO) is also involved in advising countries on the development of NFP's.

The UNFF has the principal goal and responsibility of promoting and enhancing the commitment of individual nation states to the goals of sustainable management, use, conservation and development of all types of forests. In addition, the UNFF attempts to further promote the implementation of actions agreed internationally and to foster greater cooperation and coordination between organizations, less and more advanced countries and between the public and private spheres.

Further direct outcomes of the UNCED meetings in Brazil are the Convention on Biological Diversity (CBD) and the UNFCCC. The CBD was signed at the Brazil meetings and went into effect the following year (1993). The specific goals of the convention are 1) the conservation of biological diversity, 2) the sustainable use of the component elements of biodiversity and 3) the fair and equitable sharing of the benefits of biodiversity. Signatories to the CBD are expected to develop national strategies, to integrate conservation and sustainable use, to adopt measures to avoid adverse impacts and to protect and encourage use of biological resources within the larger participatory framework envisioned by Agenda 21.

Though forests themselves are not specifically an entity in the CBD, they arise in several different contexts in the convention. Moreover, forests are considered to represent some of the richest biological areas on the planet and hold the majority of the world's terrestrial species. A number of CBD Conference of the Parties decisions relate directly to forests and the biodiversity they contain (see IX/5, VIII/19, VII/1, VI/22, V/4, IV/7, III/12, II/9). Though cause and effect are difficult to evaluate, the EU's Biological Diversity Action Plan introduced in 2006 (a previous action plan was introduced in 2001), is seen as a direct outcome and fulfillment of the EU's CBD responsibilities.

In January 2000, the CBD was extended to include the *Cartagena Protocol on Biosafety*. The protocol is an attempt to protect existing biological diversity from the threats posed by *living modified organisms* created by today's modern biotechnology. The protocol establishes and *advance informed agreement* (AIA) procedure for providing information, as well as a *Biosafety Clearing-House* for improving informational exchange.
The UNFCC agreement on climate change was originally initiated at the Earth Summit in 1992 and immediately ready for signature in June of that year. The agreement formally entered into force in 1994 and at this writing (May 2009) has 197 signatories. The so-called Kyoto Protocol, signed in 1997, is a narrower agreement under the framework of the UNFCCC. To date, only 41 countries have signed the Kyoto Protocol as Annex I countries and 150 have signed as Non-Annex I countries (Annex II countries include Annex I countries who are OECD members but typically fall outside the category of "economies in transition"). However, not all signatories to the Kyoto Protocol have ratified the agreement or completed other steps in the process. Thus, for example, the US signed the Kyoto Protocol as an Annex I country in December 1998, but never ratified the agreement and it has not formally entered into force in the US. This means that the US has never adopted any formal Kyoto target for CO_2 reductions and has so far not initiated any national level strategies for achieving emission reductions.

The essential difference between the UNFCC convention and the Kyoto Protocol is that the convention *encourages* countries to stabilize emissions while the Kyoto Protocol—in particular Annex I participants—provides a framework for formal *commitments* to emission reductions. A total of 37 industrialized countries have committed to reducing their CO_2 emissions by an average of 5% below 1990 levels over the 5-year period from 2008-2012.

There are essentially two ways in which forests and forestry are relevant in the UNFCC and climate change framework. On the one hand, both forests and *harvested wood products* (HWP) have great potential as carbon sinks. Thus the *formal* inclusion of forests and forest-related products in Kyoto mechanisms could potentially provide a significant boost to current efforts to reduce CO_2 and the broader range of greenhouse gases (GHG's) (see Anger and Sathaye, 2008; Petersson et al, 2009).

On the other hand, UNFCC and Kyoto Protocol mechanisms—including the burden-sharing agreement at EU level—will have a significant impact on the promotion and attractiveness of renewable energy resources. For the forests and forestry sector, the principle impact will be on the demand and supply of bioenergy resources (biomass and biofuels). This more *informal* mechanism—while not explicitly targeting forests and land use practices more generally—will have a decisive impact on future use.

In this sense, of existing international conventions, the UNFCCC will most likely have one of the greatest future impacts on forests, forestry and forest-related industries all at once. Although forests and many of the industries that produce CO2-relevant HWP's were not specifically included in the Kyoto emission trading mechanism,[1] as the climate debate continues and the degree of urgency concerning global warming and climate change continues to rise, it becomes increasingly likely that forests and forest-related industries will eventually become part of the convention and future post-Kyoto protocols. For the time-being, however, forests are only marginally included in the agreement (see below) and HWP's are not included.[2]

[1] Several energy intensive forest-related industries—in particular the pulp and paper industries—are of course more directly affected by the Kyoto Protocol and emission trading schemes.
[2] In 2006, the IPCC established new Good Practice guidelines for the inclusion of harvested wood products in UNFCC accounting practices. However, it remains to be decided which of four IPCC procedures or additional newly proposed guidelines for HWP will be used under UNFCC procedures.

The *formal* inclusion of forests and forestry in the UNFCC agreement and the Kyoto Protocol is problematic. Though individual countries are permitted to count removals and emissions from land use, land use change and forestry (LULUCF) in their national accounting, the EU does not allow the trading of LULUCF removals (or emissions) in the EU's Emission Trading Scheme (EU ETS). The impact of this decision is potentially significant, since it potentially provides far fewer incentives to individual countries to promote greater levels of re- and afforestation and may reduce the efficiency of the trading market overall (since in the EU, only specific high-emitting industries and the power sector are part of the EU ETS and are eligible to buy and sell carbon allowances on that market).

The flexibility mechanisms in the Kyoto Protocol are also of considerable interest with respect to forests. There are three flexibility mechanisms: 1) emissions trading, 2) the clean development mechanism (CDM) market and 3) joint implementation (JI). LULUCF removals are eligible for RMU's and can be bought and sold on the wider Kyoto Protocol market. On the other hand, firms from Annex I countries can invest in carbon sink projects in non-Annex I countries in the developing world and use these investments to reduce their domestic obligations. However, they are only permitted to do this on a very limited basis.[3] However, due to size restrictions and the time it took to approve the CDM mechanism (the final decision on forests in the CDM market was not made until 2005), the *voluntary carbon offset market* far outpaced the CDM market in forest-based carbon sink development.[4]

Apart from these two major mechanisms, UNFCCC signatories formally committed to a number of efforts regarding forests. Art. 2 (ii) of the agreement notes that signatory states will promote the "protection and enhancement of sinks and reservoirs of greenhouse gases" and will further promote sustainable forest management practices, afforestation and reforestation. All member states are further committed to reporting emissions by sources and removals by sinks related to agriculture, forestry and re- and afforestation.

The UN Convention to Combat Desertification (UNCCD) was also a direct spinoff of the *Earth Summit*. However, desertification has been under discussion as a serious problem since well before 1992. As early as 1977, a UN Conference on Desertification (UNCOD) adopted a Plan of Action to Combat Desertification (PACD), but ultimately met with little effective output or control of the problem of desertification. The 1992 UNCED supported a new integrated approach to the problem of desertification, in particular emphasizing the promotion of sustainable development at the local level. The UNCCD was signed in 1994 and entered into force in December 1996. By 2002, the UNCCD had 179 signatory countries. Though the UNCCD does not specifically target forests, it recognizes the important role that forests can play in preventing the process of desertification. Thus the UNCCD attempts to protect forests in view of their role in preventing desertification.

Beyond these mainly forestry-related means, a number of measures also exist on the international level that deal with other land uses taking place in the same areas as forestry. With regard to the Swedish situation, this includes in particular ILO Convention No. 169, which concerns indigenous peoples' right to land and has so far not been ratified by Sweden. A number of state commissions have been undertaken in order to assess among other things Saami historical land use in Sweden and the areas that would be affected by any ratification.

Forest Certification Systems (FSC and PEFC)

[3] Under the terms of the Kyoto Protocol, CDM projects in forestry cannot exceed 8 kilotonnes of CO2e (see the LULUCF stipulations under the CDM: http://unfccc.int/methods_and_science/lulucf/items/4137.php).

[4] Bull estimates that the total value of the carbon offset market grew to 60 billion USD in 2008 and reach 1 trillion USD by the year 2020 (see: "Global Carbon Markets", 2008). Other estimates from 2008 put the total world value of the carbon offset market at approximately 64 billion USD with the majority share dominated by Europe (see: "Can Carbon Credits Slow Global Warming?" *FastCompany.com*, June 23rd, 2008).

Forest certification systems that attempt to ensure that forestry is pursued in a more sustainable fashion are pursued on an entirely voluntary basis by the forestry sector/industry in association with two internationally organized certification regimes. Since affiliation with the Forest Stewardship Council (FSC) or the PEFC (Programme for the Endorsement of Forest Certification schemes) is entirely voluntary, some countries have either developed their own certification systems—in particular Finland[5]—while the forest industry in many other countries has no affiliation with these organizations. Forest owners have a potential interest in FSC or PEFC certification because timber certified through these organizations can typically seek a higher price on the market—in particular where consumers are willing to pay higher prices in order to ensure that forest resources are managed sustainably.

Given the fact that not all forest industries cooperate with either the FSC or the PEFC, the EU's FLEGT program (discussed below) now attempts to encourage developing countries to develop their own strategies for promoting sustainable forest management. In the context of the REDD initiative, the World Bank's Forest Carbon Partnership Facility (FCPF) likewise attempts to ensure that forests in the developing world are managed sustainably. There are some differences however in how strict these different programs are and how they are organized. For example, the FSC regime is generally thought to be stricter than the PEFC regime. The FCPF regime has been criticized by some for not requiring the involvement of the relevant stakeholders in initial consultations before arriving at an initial REDD agreement.[6] Whether or not this criticism is the driver, in 2009 the FCPF organization issued a statement promoting the advantages of including stakeholders in the negotiation and decision-making process.[7]

REDD

The REDD (Reduced Emissions from Deforestation and Degradation) initiative was introduced at the 11th Conference of the Parties (COP11) Montreal meeting in December 2005. Its main focus, as the name implies, is to reduce the impact of deforestation on global emissions. In 2007, the IPCC estimated the total impact of deforestation on world emissions at 5.8GtCO_2 per annum in the 1990's.[8] With total world CO_2 emissions at approximately 24GtCO_2 in 2000, this amounts to almost a quarter of total world CO_2 emissions (and approximately 17.5% of world GHG emissions).[9] According to the IPCC, reducing or preventing deforestation is the carbon mitigation option with the single largest potential impact.

The main focus of REDD is to find ways to encourage developing countries to reduce emissions from deforestation and degradation. The UNFCCC encourages countries to follow the guidelines established by the IPCC for reporting LULUCF emissions and removals, thereby encouraging all countries, but in particular developing countries, to include forestry in their reporting practices. In a sense, this is an indirect way of encouraging countries to think more carefully about the impact of deforestation. Reporting the impact of deforestation would raise awareness of the rate of emissions and the loss of carbon removals resulting—in particular from the lack of sustainable forestry management strategies and illegal logging. Better UNFCCC accounting practices might also make some countries more aware of the potential for carbon removals to balance or compensate their emissions in other sectors.

[5] The Finnish forest certification system (FFCF) reportedly has even stricter guidelines than the FSC.
[6] See e.g. FERN's *Avoiding Deforestation and Degradation* Briefing Note 05 (March 2009): "Is REDD Undermining FLEGT?"
[7] See the FCPF statement on "National Consultation and Participation for REDD" (May 6th, 2009).
[8] See the UNFCCC's background discussion of the REDD initiative.
[9] The world total CO2 emissions was taken from the EIA's World Carbon Dioxide Emissions database. Total world GHG emissions were taken from the World Resource Institute data (cait.wri.org).

The REDD program produced its first 'action plan' in 2007 as part of the Bali Action Plan (Decision 2/CP.13). The main focus of this plan was to promote efforts to find different ways of strengthening mechanisms that will help reduce the rate of deforestation in developing countries. In this context, current discussions focus on strengthening modalities for greater conservation, sustainable management of forests and the promotion of forest-based carbon stocks or sinks.

The World Bank's FCPF is a key player in the REDD process. The FCPF strategy is ultimately aimed at creating a Carbon Fund and a Carbon Finance Mechanism that can be used to make payments to countries that are able to achieve "measurable and verifiable emission reductions". Eventually, this program will cover and pay for emission reduction efforts from a small, select group of countries. Thus far, the plan envisions financing emission reductions in a group of five countries that successfully complete the first stage of the process, the "Readiness Mechanism". To-date, 37 countries—based on the submission of "Readiness Plan Idea Notes" have been selected into the Readiness Mechanism. These countries will be assisted by an FCPF "Readiness Fund" and will focus on the development of Readiness Plans, the goal of which is to create better capacity for estimating national forest stocks and related emissions, as well as calculating the potential advantages from REDD type interventions.

ITTA, Ramsar, CITES and World Heritage

Apart from those conventions that grew more or less directly out of the 1992 *Earth Summit* in Brazil, there are also a number of other conventions with a longer heritage that are of some relevance to forests and forestry. In particular, the International Tropical Timber Agreement (ITTA), managed by the International Tropical Timber Organization (ITTO) can be traced back to an earlier ITTA agreement signed in 1983. The current 1994 agreement should soon be superseded by the 2004 ITTA but, at this writing (May 2009) it has still not gone into effect.

The framers of the ITTA agreement essentially believed that one key to creating the potential for sustainable development in forestry was to create the conditions for a "flourishing trade in tropical timber". Trade in timber would not only provide a valuable income in foreign currencies and employment, it would also help to protect a valuable natural resource from "destruction, degradation and excision". According to the ITTO website, the final ITTA agreement was as much an agreement about forest conservation and development as it was about trade. The 2006 agreement extends the terms of previous agreements and focuses primarily on developing the trade in timber and ensuring proper forest management.

The *Ramsar convention* (the *Convention on Wetlands of International Importance*) focuses on wetland ecosystems as the source of fresh water. The strategy adopted is one "integrated river basin management" (IRBM). The convention has been around for a considerable amount of time. Signed in Ramsar, Iran in 1971, it is one of the oldest conventions affecting forests. Thus far, 159 countries have signed the Ramsar convention and 1846 site have been added to the List of Wetlands of International Importance. Since wetlands are seen as critical to the natural functioning of natural ecosystems such as forests, they are important for forestry as well.

Both the 1975 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the 1972 World Heritage Convention have likewise been around for many years. Since the level of trade and exploitation of some plant and animal species is very high, it can lead to habitat loss in other parts of the world. Thus CITES attempts to regulate safe trade in plant and animal species. The World Heritage Convention on the other hand protects a broad range of sites of cultural and natural importance. Thus some forested regions and national parks figure on the World Heritage list.

In addition to the above conventions and regulations, there are a number of international organizations and research bodies that play an important role in protecting forestry interests.

Among these are the Collaborative Partnership on Forests (CPF) under the Food and Agriculture Organization of the United Nations (FAO). The International Union for Conservation of Nature (IUCN) is, according to the website, the world's oldest and largest global environmental network and embodies a large number of governmental and non-governmental member organizations. Several IUCN projects focus on forests. Of particular interest is a recent study on the relationship between forests and water balance.

Role of the MCPFE, the UNECE and other Broader European Organizational Framework

With respect to the broader European framework on forests and forestry, clearly the most important organization is the Ministerial Conference on the Protection of Forests in Europe (MCPFE). Starting with the 1990 meetings in Strasbourg, over its brief lifetime the MCPFE has held five ministerial conferences in Europe (Strasbourg 1990, Helsinki 2003, Lisbon 1998, Vienna 2003 and Warsaw 2007) and adopted some 19 resolutions. The first ministerial conference in Strasbourg was initiated by France and Finland and was attended by some 30 European countries and several intergovernmental organizations. The MCPFE currently boasts approximately 45 member countries (plus DG AG and the Vatican City).

The MCPFE has played an important role in the European context, often setting the forest-related agenda for the broader European and EU arena. Following up on the 1992 UNCED *Earth Summit* and the work of the IPF and later the IFF, the MCPFE has generally attempted to aid the implementation forest-related issues in Europe. The 1993 Helsinki conference, for example, began the work of putting the development of Sustainable Forest Management (SFM) into effect by creating the basic set of definitions (revised and improved at the 2003 MCPFE conference) that are still in effect today. The MCPFE—building upon the guidelines established by the CBD in 2002 and the UNFF in 2003—has also been one of the central actors attempting to integrate the so-called "ecosystem approach" with SFM. The MCPFE has observer status in the meetings of the UNFF and contributes generally to the formulation of strategies to fulfill UN conventions.

The UNECE more generally acts in the larger European framework much like the UNCED in the larger global context. Part of the functions of the UNECE focus in particular on the environment.

The EU Framework

At the EU level, policy on forestry and forest use is addressed in a broad multitude of EU strategies and programs. Though the EU formally has no mandate to address forest policy—forests or forest policy are not mentioned in the Treaty of European Union[10]—forests and forestry policy have been increasingly incorporated into the EU policy framework. Forestry policy in the EU ultimately has a relatively long history and can be traced back at least to 1964. With the introduction of an EU Forest Strategy in 1998 and the adoption of an EU Forest Action Plan in 2005, the EU is on the path to developing a somewhat more harmonized approach to forestry and forest use.

At the same time, three general problems arise repeatedly in the literature with respect to forestry and forest use. First, EU level competence is broadly distributed and ultimately fragmented across multiple institutions. This may ultimately be an effect of the lack of an unambiguous EU mandate—supported by relevant clauses in the Treaty—to regulate forestry and forest use at the EU level. Second, existing institutional features intended to further integrate forestry policy at the

[10] This point is frequently mentioned in the literature. See for example Kankaanpää and Carter, 2004: 28; MCPFE 2007: 122.

EU level—in particular the *Inter-service Group on Forestry* introduced in 2002—are not clearly successful in their goal. Third, further attempts to improve the institutional framework for forestry policy at the EU level have thus far not been successful.

EU forest policy is both tremendously diverse and broadly distributed across several EU-level Commissions (or Directorate Generals or DG's in EU parlance). As illustrated in Table I (see below), competence on forests and forest-industry related issues is distributed across several major institutions. Principal responsibility for various aspects of forestry policy is shared across at least four major EU level Commissions (DG Agriculture, DG Enterprise and Industry, DG Transport and Energy, and DG Environment). At the same time, however, anywhere from eleven to thirteen different DG's have a stake in EU forest policy and participate in the workings of the *Inter-Service Group on Forestry*.

In addition to the lack of a clear mandate defined in the EU Treaty, the broad distribution of powers across multiple EU-level institutions is potentially the greatest weakness of EU forestry policy and may ultimately be the principal factor leading to the fragmentation of policy goals. As illustrated below, considerable divisions exist across the different actors in EU forestry policy and these divisions appear to be reinforced by parallel institutional divisions at the EU and potentially also the national level.

Table I: European Commission Competence in EU Forest Policy

DG Agriculture and Rural Development	**DG Enterprise and Industry**	**DG Transport and Energy**	**DG Environment**	**Joint Research Council (JRC)**	**EEA**
CAP and Rural Development Bioenergy Afforestation Natura 2000/biodiversity Competitiveness forestry EU Forest Strategy Forest Action Plans (FAP's)	Competitiveness forest industries Trade and forest industries Innovation and forest industries	Climate Strategy Renewable Strategy Bioenergy Biofuels Forest sinks Renewable Energy Roadmap	Biodiversity Adaptation WFD Natura 2000 Floods Directive Forest Fires (+WGFFP) LIFE+ Birds Directive Habitats Directive Invasive Species	EFFIS EFDAC Inforest Action (?)	UNFCCC GHG Inventories Adaptation Bioenergy Water Forests Environmental Assessments Biodiversity
DG Dev	**DG Regio**	**DG RTD**	**DG Health and Consumer Protection (SANCO)**	**DG Internal Market and Services**	**DG External Trade**
FLEGT	Regional Policy European Solidarity Fund Structural Funds	Research EU-Medin EU AgriNet COST Actions	Seeds and Plant Propagating Material Standing Committee on SPPM		Trade and forest industries

The EU-level *Inter-service Group on Forestry* ("established in 2002 to facilitate cooperation and coordination of forestry-related work between relevant Commission services") is technically responsible for insuring that forestry policy is coordinated across some 11-13 EU-level DG's. Chaired by DG Agriculture, this body has two main purposes: to ensure the flow of information and to seek agreement across departments. There is also an Inter-service Group on International Forestry Issues responsible for the preparation of Commission positions on international issues. To what extent the general Inter-service coordination strategy is successful is controversial. Birdlife International argues, for example, that the work of the *Inter-Service Group on Forestry* as well as DG Agriculture's *Standing Forestry Committee* (SFC) should ultimately be opened up to NGO's. According to Birdlife International, the power and position of DG Environment should be elevated in order to more successfully introduce forestry issues.[11]

[11] See for example the communication from Birdlife International on the Commission Draft on EU Forest Action Plan (Apr. 7th, 2006).

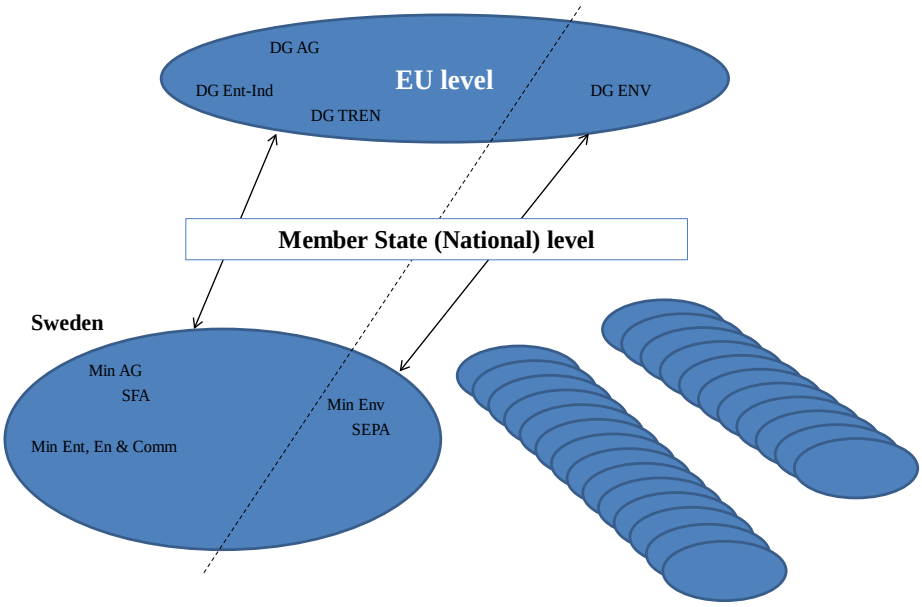
The modalities for greater integration of forestry policy at the EU level have ultimately been raised and addressed on multiple occasions by various actors. In addition to the above comments, the Commission also raised the question of potential reforms in the interest of creating greater coordination across the different elements of EU forestry policy in the framework of its reporting on the EU Forest Strategy.[12] The Commission's position on re-organization appears to be relatively resolute. The Commission has responded to requests for a separate legal basis for forestry in the EU framework and both greater "vertical" and "horizontal" coordination.

The Commission argues that a stronger legal footing for forestry policy in the EU is not feasible without greater interest from the Member states. The Commission responds to requests for greater "vertical" coordination—in particular in a single EU-level directorate general (DG)—by noting that a new unit has recently been established in DG Agriculture and Rural Development that is responsible for creating a stronger focus on forests and the forest industry. This unit—Unit AGRI F.6: Bioenergy, biomass, forestry and climate change[13]—addresses the combination of forestry and climate issues and was specifically responsible for coordinating work on the EU Forest Action Plan. Further, with respect to "horizontal" coordination, the Commission points again to the role of the *Inter-Service Group on Forestry* and argues that this body has been "an effective tool of coordination and is working satisfactorily."[14]

As suggested above, there is a fairly strong divide across industry-related forestry issues and the interests expressed by the EEA, the European Court of Auditors (ECA's) and by NGO's like Birdlife International and FERN. These organizations repeatedly insist that many of the more environmental issues—in particular those related to biodiversity and Natura 2000 goals—are being neglected by EU policy. The division of interests outlined here suggests there is a balance of power across EU-level of institutions that is presumably duplicated at the national level. The diagram in Figure II below attempts to represent this graphically and is presented for conceptualization purposes.

[12] See the European Commission's communication, "Reporting on the Implementation of the EU Forestry Strategy", COM(2005) 84 final.
[13] This Unit appears to have been renamed to Unit H.4. Bioenergy, Biomass, Forestry and Climate Change at some later point in time. The newer Unit H.4. was responsible, among other things, for writing the "Report on Implementation of Forestry Measures Under the Rural Development Regulation 1698/2005 for the Period 2007-2013", (European Commission, 2009).
[14] See for example the "European Parliament Resolution on the Implementation of a European Union Forestry Strategy", (Feb. 16th, 2006: 3).

Fig. II: Political Power Poles?



Generally speaking, there appears to be a strong coordination of interests around two poles: on the one hand the agricultural, energy and industry oriented Commissions/Ministries appear to favor strategies related to bioenergy, biomass and afforestation, while on the other hand environmental ministries, the EEA and environmental agencies (such as the Swedish Environmental Protection Agency (SEPA)) tend to favor more environmentally oriented goals such as biodiversity and the promotion of Natura 2000 natural conservation areas.

The Principal Elements of EU Forest-Related Policies

Attempting to discern which elements of EU forest-related policy are the most important or have the greatest effect is no simple matter. The existence—on paper—of EU policies related to forests and forestry is by no means an indication that policies have been implemented at national level or have any real impact on national level policies and strategies.

The EU Forest Strategy

In theory, the EU Forest Strategy is specifically focused on two main goals: 1) *sustainable forest management* (SFM) and 2) the "multifunctional role of forests". Both of these terms have a specific history in the development of EU and international forestry goals. The commitment to sustainable forest management arises in part out of the *Forest Principles* agreed at the UNCED Earth Summit in 1992. The commitment to apply the Forest Principles in European practice arose out of the 1993 Helsinki *Ministerial Conference on the Protection of Forests in Europe* (MCPFE) conference and the basic definition of SFM currently adopted in Europe was defined at those meetings:

> *'The stewardship and use of forest lands in a way and at a rate that maintains their, biodiversity, productivity, regeneration capacity, vitality and their potential to fulfill, now and in the future, the relevant ecological, economic and social functions at local, national and global levels, and that does not cause damage to other ecosystems.' (MCPFE, 1993: Resolution H1).*

The principles of SFM have been further refined and developed, in particular, in the context of the MCPFE meetings in Lisbon (1998) and Vienna (2003). The concept of the 'multifunctional role of forests' has witnessed a similar trajectory, from the UNCED's statement of Forest Principles, to the 1998 Lisbon summit of the MCPFE (explicitly dedicated to "Recognizing the Multiple Roles of Forests"), to the EU's adoption of the Forest Strategy. The concept of the multifunctional role of forests essentially recognizes that forests have multiple potential uses and that forest policy must address the broad range of potential uses.

EU forest measures are broken down into four principal categories or what are referred to as "axes". Axis 1 is focused on improving the long term competitiveness of the forest sector as well as increasing the sustainability of forest products, goods and services. Axis 2 focuses on improving and protecting the environment. Within this context, the Forest Action Plan (FAP) elaborates specific strategies for coming to terms with climate change and biodiversity issues. Axis 3 is intended to contribute to quality of life issues, in particular by promoting the "social and cultural dimensions of forests and forestry". Axis 4 is intended to help improve coordination and communication by addressing climate change and biodiversity issues, the protection of forests and working to improve the European Forest Monitoring System.

Since 2000, the principal funding mechanism of the European Forest Strategy has been the Rural Development pillar of the EU's Common Agricultural Policy (CAP). Previously, afforestation was funded through the CAP. Over the period 2000-2006, an average of approximately 9.7% of rural development expenditure (again a small share of the total CAP budget) was allocated to forestry measures including afforestation. Forestry measures supported by DG AG's European Agricultural Fund for Rural Development (EAFRD) spending mechanism for the 2007-2013 framework period focus essentially on the first three axes. Axis 1 is focused on improving the competitiveness of the agricultural and forestry sector, Axis 2) is focused on improving the environment and the countryside, and Axis 3) focuses on improving the quality of life in rural areas and diversification of the rural economy.

Some areas of EU forest-related policy have clearly had a significant impact on the behavior and strategies of Member states. In particular, the EU afforestation strategy has had a significant impact on afforestation efforts and a smaller impact on the conversion of farmland to forests. Though this program has been promoted through the Rural Development mechanism of the Common Agricultural Policy since 2000, the strategy of afforestation goes back considerably before this and was previously incorporated directly under the CAP framework. Various sources report different statistics. For example, the Commission's White Paper on Adaptation from 2009 notes that over the past 15 years, forest area in Europe has increased by some 13 million hectares (European Commission, 2009a: 81). Afforestation efforts across Europe account for an important share of this increased forest cover.

An early report from the European Climate Change Program working group on forest sinks (ECCP WG FS, 2002) suggests the cost of afforestation in Europe is quite high—approximately 1,554 Euros per hectare. However, the final report issued by the working group in 2008 came instead to a different conclusion, arguing the cost-effectiveness of forest carbon sinks was difficult to analyze systematically (ECCP WG FS, 2008: 4). Part of the problem here, however may arise from the fact that the greatest "cost" of afforestation policy in the EU comes from the *income support* category of afforestation projects (see e.g. ECA report 9/2004). Moreover, the ECA suggests that farmers typically saw the policy as an opportunity to gain income support (suggesting that applicants were less interested in afforestation *per se*). The result of course is that estimates of the "costs" of afforestation are highly skewed. The ECA report likewise argues that the afforestation strategy is "inefficient" and could be executed more "effectively".[15]

[15] Some argue the cost of carbon mitigation related to the development of forest-based carbon sinks is potentially very cost efficient (see e.g. Anger and Sathaye, 2008). Thus the introduction of a carbon price on forests is a potential

The ECA critique of the EU forest strategy and its emphasis on afforestation ultimately led the European Commission to propose the development of an "EU Forest Action Plan on Sustainable Forest Management" (FAP on SFM) to address some of these failings. Though the commitment to SFM was ultimately dropped from the title of the Commission's published FAP in 2006, the commitment remains evident in the many references to SFM throughout the document. Moreover, the FAP opened the way for a potentially stronger integration of biodiversity and Natura 2000 goals in the 2007-2013 Rural Development Framework Perspective. Despite the fact that some countries will be phasing in the measure over time and that only 15 programs take advantage of the measure right from the start of the funding period, some 400,000 hectares will receive support under the Natura 2000 category (compared to 890,000 hectares under the afforestation framework) (European Commission, 2009b: 7).

EU Climate Policy

As noted above in the section on the UNFCCC, climate strategies are likely to have one of the biggest long-term impacts on forestry and forest-related industries. However, what role forests and forest-related industries will play and how is, in important ways, still being decided. There are several "engines" both *formal* (direct) and *informal* (indirect) that will or may eventually have a big and long-lasting impact.

First, the potential inclusion of forests and eventually also harvested wood products (HWP) in a future emission trading scheme would represent a very significant change in EU policy. Currently, this is not the case. The EU Emission Trading Scheme (EU ETS) only covers high-emitting firms and the power sector and thus excludes land use, land use change and forestry (LULUCF) from the mechanism. As such, there are currently only mild incentives to engage in CDM-related forestry offsetting projects in Non-Annex I countries, though as noted above the potential scale of such projects is greatly limited by UNFCCC regulations. Moreover, the future potential for doing this is limited by the degree of uncertainty over whether any future post-Kyoto agreement be agreed and what it might look like.

On the other hand, the EU has added a degree of flexibility into the new scheme from 2013-2020 that allows for EU Member states to trade emission reductions in the non-EU ETS sector (which includes buildings, transportation and LULUCF). Precisely what impact this will have on forestry and afforestation remains somewhat unclear. Sweden, for example, has currently decided not to include LULUCF in its accounting of total GHG emission reductions. The somewhat artificial division of the EU emission trading scheme into ETS and non-ETS segments is likely to negatively affect the overall attempt to take advantage of emission trading as a tool and—if most of the more cost-effective emission reductions lie outside the ETS sector (as many believe)—this division will impede investments in the most cost effective emission reductions and thus will likewise impede more rapid reductions in emissions or higher rates of GHG removals through LULUCF.

The second big impact on forestry and forest-related industries comes from the role played by bioenergy in the pursuit of emission reductions. The biggest impact will clearly be on the use of biomass for electricity and heating and biofuels. Both the Renewable Energy and the Biofuels Directive (now combined into one Directive) encourage significant increases in the use of biomass and biofuels. In the new Directive (which replaces two previous Directives), the share of

alternative strategy to EAFRD funding for afforestation. On the other hand, one problem may be that carbon prices are currently much too low to effectively support this strategy—harvesting forests brings in significant revenues while carbon prices remain comparatively low. See for example: "Can Carbon Credits Slow Global Warming?" (*FastCompany.com*, June 23rd, 2008).

renewable energy use should be raised by 20% by the year 2020 and the use of biofuels by 10% by the year 2020.

These directives will lead to national-level incentive systems (already in place in most countries though tremendously varied from country to country) to encourage the use of renewable energy. Depending on the strategies chosen at national level, the use of biomass could be tremendously encouraged. The impact of the biofuels directive is more complicated, since much depends on the source of biofuel. The emphasis placed on "second generation" biofuels in the final agreement should raise demand for forestry-based products, but may also raise demand for land conversion for agricultural purposes in order to produce more biofuel raw material.

A third big impact on forestry and forest-related industries will come from the price effects of the EU ETS system. First, the ETS system will raise prices for energy based on fossil fuels, thus effectively lowering the price for energy generated from renewable sources. As one of the more competitive sources of renewable energy, biomass will be strongly favored. Second, the ETS system should likewise progressively raise the price of steel and cement over time as firms are required to go from having to purchase 20% to 100% of their carbon allowances over the period from 2013-2020. Though this part of the Directive has been modified somewhat, reducing the share of carbon allowances high-emitting firms are required to purchase, the impact of this modification should not be as strong in the more advanced EU Member states. Raising the prices of steel and cement will tend to favor harvested wood products (HWP), thus raising demand for these products.

Finally, and perhaps most importantly, the EU has left open the potential for a future decision on including LULUCF in emission trading schemes. One reason for doing this is to wait and see what happens at the international level. Should LULUCF ultimately be included in an international emission trading scheme, the current decision allows the European Commission to go back and make recommendations about the inclusion of LULUCF in the EU framework. However, the EU strategy also allows the Commission to go back and reconsider the possible inclusion of LULUCF in the ETS mechanism even if no international agreement is concluded. In the long run, this essentially means that the EU has simply postponed a final decision on this one potential feature of the EU Climate Package. This means, however, that a great deal of uncertainty currently remains about the future of LULUCF in the climate policy framework.

The Biodiversity Action Plan and Natura 2000

The EU Biodiversity and Natura 2000 program is based on the Habitats (1992) and the Birds Directives (1979). However, this program is likewise a response to the EU's commitment to the UN CBD. The basic goal of the Biodiversity and Natura 2000 program is to establish an EU-wide network of nature protection areas (SPA's and SAC's).

As parties to the Convention on Biological Diversity, the EU Member States have decided to bring the losses in biodiversity to an end by the year 2010. Accordingly, a communication from the commission entitled: "*Halting the loss of biodiversity by 2010 – and Beyond. Sustaining ecosystem services for human well-being*"[16] was adopted in May 2006. The decision stresses the importance of conservation of biological diversity as a means towards a sustainable development and sets out an action plan with the purpose to intensify the efforts to halt biodiversity losses (The EU Biodiversity Action Plan).

The action plan identifies four main policy areas: 1) Biodiversity within the EU; 2) The EU and global biodiversity; 3) Biodiversity and climate change; 4) The knowledge base. To these policy

[16] COM (2006) 216 final

areas, ten overarching objectives have been established, here among (The EU Biodiversity Action Plan):

- *Safeguarding the EU's most important habitats and species* (objective 1). This calls on the EU Member States to e.g., take on a greater responsibility to designate, protect and effectively manage Natura 2000 areas.
- *Conserving biodiversity in the wider EU countryside* (objective 2). A key activity pursuant to this objective is to prevent both intensified use and abandonment of high nature valued agricultural and forest land.
- *Integrating biodiversity into land-use planning and development* (objective 4). To prevent, minimise and compensate the negative environmental impacts of territorial development, the action plan calls for sounder spatial planning policies in the Member States. It is therefore important that all plans and programmes are put through a strategic environmental assessment (SEA) and an environmental impact assessment (EIA) that take full account of the effects on biological diversity. By lifting the biodiversity issue at an early stage in the planning process, an increased conformity with the biological diversity can be achieved.
- *Strengthening international governance* (objective 6). To strengthen the effectiveness of international governance for biodiversity the action plan calls on the Community to e.g., work for a worldwide implementation of the CBD and other international biodiversity related agreements.
- *Supporting biodiversity adaptation to climate change* (objective 9). This objective calls on the Community and the Member states to e.g. a) recognize the central role played by biological diversity in the mitigation of, and adaptation to climate change; and b) make sure that climate change mitigation and adaptation measures do not have a negative impact on biodiversity.

In short, the decision to halt biodiversity losses thus implies strengthened ambitions with respect to the existing Natura 2000 network, and increased coordination between biodiversity and other environmental objectives, like climate change, for example via the planning system.

Natura 2000 and Biodiversity Protection

One of EU's oldest and most important laws in the area of nature protection is the Birds Directive from 1979.[17] The directive identifies habitat loss and degradation as the most serious threats to the conservation of wild birds and hence creates a scheme for the protection of all wild birds occurring in the Union, as well as the habitats for endangered and migratory species, mainly via the establishment of Special Protection Areas (SPAs). Accordingly, the directive prohibits activities that threaten birds (killing, capturing, destroying nests etc.)[18], and calls on all Member States to designate SPAs within their territories.

The Birds Directive has in part been replaced by the Habitats Directive[19] according to which various species and their habitats shall be protected as so called Special Conservation Areas (SCAs). The directive presently protects more than 1000 species and over 200 habitat types, including special types of forests and wetlands (http://ec.europa.eu/).

[17] Council Directive 79/409/EEC.
[18] Note that hunting is not generally prohibited, although it is subject to various restrictions regarding which species that can be hunted, in which Member States and during which periods. See further the directive's Annex II.
[19] Council Directive 92/43/EEC.

Together, the designated SPAs and SCAs across EU create the comprehensive Natura 2000 ecological network. In Sweden, the specific protection for the Natura 2000 areas is regulated in the Environmental Code and discussed below.

In general, the EU Natura 2000 program has a troubled history. Despite the goals of the current Biodiversity Action Plan published in 2006 to halt the loss of EU biodiversity by the year 2010, EU member states have not made significant progress in establishing special protection areas (SPA's) and special areas of conservation (SAC's) and thus have generally failed to implement the Natura 2000 program of the Habitats and Birds Directives. According to the *Natura 2000 Barometer*, for example, the most recent issue of which is from December 2007, only a very small number of states have successfully implemented the policy. For example, under the Birds Directive, only 7 of 27 EU Members states have "largely completed" the introduction of "*special protection areas*". Under the Habitats Directive, only five Member states have "largely completed" the introduction of "*sites of community importance*". [20] Though only one country obtained the designation "*notably insufficient*" (Romania, for its failed implementation of the Bird's Directive), the original passage of the Habitats Directive foresaw the establishment of special protection areas and sites of community importance, along with all the necessary national level legislative framework within approximately 12 years from the entry into force of the Habitats Directive (completed in 1992).[21]

Despite the fact that the 2007-2013 Framework perspective witnessed the firm integration of Natura 2000 goals and funding mechanisms into the EAFRD (see also above), NGO's such as BirdLife International and FERN continue to argue that farm lobbies are favored over biodiversity and environmental concerns. These organizations note the potential advantages presented by the EU's rural development framework and the generally sound "conceptualization" of the EU Forest Strategy. On the other hand, both FERN (2008) and BirdLife International (2009) remain strong critics of EU afforestation and the EU Forest Strategy more generally. The principal criticism concerns the failure to address biodiversity issues and to spend adequate resources on the development of Natura 2000 sites. In addition, both FERN and BirdLife International argue that national rural development plans tend to completely ignore national forest programs (NFP's)—where these exist—and to ignore widely accepted principles of sustainable forestry where NFP's have not been elaborated in individual Member states.

More recently, European Environment ministers, based in part on a recent internal assessment of implementation performance in the establishment of Natura 2000 protected areas, expressed "deep concern" about the current state of EU biodiversity loss and argued the EU was unlikely to be able to fulfill its 2010 commitment. The Commission's internal assessment pointed out, for example, that "50% of all species and 80% of habitat types in need of protection in Europe have 'unfavorable conservation' status".[22]

Though in many ways one can argue EU Member states have made significant progress toward improving the quality and degree of biodiversity protection,23 at the same time most EU Member

[20] The most recent data is available from DG Environment's *Natura 2000 Barometer* webpage: http://ec.europa.eu/environment/nature/natura2000/barometer/index_en.htm.

[21] The precise period is somewhat more difficult to calculate since there is some room for interpretation. According to the Habitats Directive, Member states were required to submit a list of potential habitat areas within 3 years from the entry into force of the Directive. Based on a draft list of sites agreed between individual Member states and the Commission, official sites should be designated by the Member states within 6 years from entry into force. Member states then had an additional 6 years to establish national priorities and measures to protect the designated sites.

[22] See; "Ministers 'Deeply Concerned' by Biodiversity Loss", (*Euractiv.com*, June 26th, 2009).

[23] The EEA's Core Set of Indicators Data (CSI data) suggests many EU Member states have done relatively well in fulfilling some of their basic commitments to the Habitat and Birds Directives. For example, a broad set of EU countries have at least "proposed" sites that would be sufficient to protect habitats and species. Moreover, the total amount of surface area dedicated to species and habitat protection in Europe has multiplied some 6- or 7-fold between approximately 1996 and the present (see e.g. the CSI 008 Assessments, various years).

states are still quite far from achieving the ultimate goal of 'halting biodiversity loss by 2010', the goal of the EU's Biodiversity Action Plan launched in 2006. In the words of Jacqueline McGlade, executive director of the European Environment Agency (EEA), designating relevant areas across Europe for the goal of habitat and species protection "is only the first step". McGlade points out that only a small share of Europe's habitats and species are currently in acceptable condition. Most are in "unfavourable conservation status" and are potentially in need of "ecological restoration"—in particular agricultural habitats.[24]

In this context, the EEA essentially argues that Europe has not yet fully grasped the importance of biodiversity. In order to maintain biodiversity and ecosystems, these must be more fully integrated into key sectors—in particular into agriculture, forestry and fisheries.[25] More and more use is currently being made of the term "*ecosystem services*" in what appears to be an attempt to change the language of the debate on biodiversity and the importance of forests.

The EEA and European environmental ministers are currently promoting an *ecosystem services approach* to handling biodiversity that is likewise promoted by a relatively broad range of other European and international actors (the IUCN, IUFRO, and the MCPFE). The EEA and European environmental ministers are pushing for "ecosystem goods and services" to be better integrated into the national and EU-level frameworks, seeing this as one strategy for improving the degree of biodiversity protection in the EU (and measuring the drivers of biodiversity loss). The concept of the ecosystem approach was first introduced in the framework of the CBD (2002) and the UNFF (2003). The MCPFE has been one of the principal organizations attempting to integrate the ecosystem approach with SFM in Europe.

The ecosystem services approach essentially attempts to place a market price on the use of ecosystems and the goods and services they provide. Thought the price and cost of ecosystem use is of course very difficult to assess, the EEA's current project on the Economics of Ecosystems and Biodiversity (TEEB) may potentially provide some initial estimates of these costs and their potential conversion into pricing systems.[26] A similar process is in fact already underway with regard to the Water Framework Directive (see below). Pricing systems for the use of national level water resources are supposed to be introduced by 2010. A proposal for a Swedish pricing system is currently being elaborated.

The EEA is likewise developing a set of biodiversity indicators that are more compatible across a broad range of European countries—including the current 27 EU Member states. The so-called SEBI indicators program, Streamlining European 2010 Biodiversity Indicators, was initiated in 2005 with the aim of, "ensuring consistency between biodiversity indicator sets at the national and international levels". The SEBI program involves the work of 120 experts and covers some 53 European countries.[27] The EEA published its first evaluation of the SEBI indicators in May 2009. The overall EEA assessment was not very encouraging and is reflected in many of the comments made above.[28]

The EU Forest Action Plan

As a follow up on the Council Resolution on a Forest Strategy for Europe[29], a Forest Action Plan for the EU was adopted in 2006. The overall objective of the Forest Action Plan is "to support and

[24] See in particular McGlade's speech on the "Status of European Biodiversity" at the Athens conference on "Biodiversity Protection—Beyond 2010", (Apr. 27th, 2009).
[25] See: "Europe Must Grasp the True Value of Biodiversity" (EEA Highlight, Apr. 27th, 2009).
[26] See again McGlade's speech on the "Status of European Biodiversity".
[27] See again "Europe Must Grasp the True Value of Biodiversity".
[28] For the EEA reports based on the SEBI Indicators, see EEA Reports 4-5/2009, "Progress Towards the European 2010 Biodiversity Target".
[29] OJ C 56, 26.2.1999.

enhance sustainable forest management and the multifunctional use of forests." The formulation of the overall objective is thus very much in keeping with the objective of the Forest Principles, which also seems to be the general idea considering the principles underpinning the objective: *firstly*, that national forest programmes is the suitable framework for carrying out "international forest-related commitments"; *secondly*, that "the increasing importance of global and cross-sectoral issues in forest policy, calls for "improved coherence and coordination"; *thirdly*, that there is a "need to enhance the competitiveness of the EU forest sector and good governance of EU forests". *Lastly*, the objective of the Forest Action Plan is based on the principle of subsidiarity. (The EU Forest Action Plan, p. 2).

The Forest Action Plan furthermore acknowledges the need for different approaches among the Member States due to the very different cultural, economic and natural conditions between the countries, as well as the important role played by forest owners when it comes to the possibilities for sustainable forest management (ibid.).

In conformity with the Biodiversity Action Plan, the Forest Action Plan is divided into four main action objectives that in turn have been translated into eighteen key-actions. The action objectives subscribed by the plan are expressed as follows:

- "to improve long-term competitiveness
- to improve and protect the environment
- to contribute to the quality of life; and
- to foster coordination and communication." (The EU Forest Action Plan, part 3.1-3.4)

Among the key actions can be mentioned for example: *Key action 4*: "to promote the use of biomass for energy production"; *Key action 6*: "facilitate EU compliance with the obligations on climate change mitigation of the UNFCCC and its Kyoto Protocol and encourage adaptation to the effects of climate change"; and *Key action 7*: "contribute towards achieving the revised Community biodiversity objectives for 2010 and beyond." The key actions are to be implemented jointly during the period 2007–2011. (The EU Forest Action Plan, part 3.1-3.4)

The objectives as well as the key actions of the Forest Plan, demonstrates coherence with overarching forest agreements, like the Forest Principles and the Agenda 21, but also with the internal EU policies as regards the conservation on biological diversity.

The Protection of Forest Wetlands

Lastly on the subject of international law and EC-law with particular relevance for forest governance, and strongly connected to the national area protection, is the protection of forest wetlands. Wetlands are protected under the Ramsar Convention[30] whose "mission" is "the conservation and wise use[31] of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world" (www.ramsar.org). With reference to forests, the convention is mostly directed towards marshy forests, mangrove and coastal forests.

Ratification of the Ramsar convention implies a commitment to: a) designate suitable wetlands for the List of Wetlands of International Importance (the so called Ramsar List) and ensure their effective management; b) work towards the wise use of all wetlands through planning, policies,

[30] The Convention on Wetlands (Ramsar, Iran, 1972).
[31] The wise use of wetlands is defined as "the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development". (http://www.ramsar.org/)

legislation, management actions and public education; and c) cooperate internationally as regards transboundary wetlands, shared wetland systems, shared species and development projects that may affect wetlands.

With "suitable" wetlands to be added to the Ramsar List are intended wetlands that are of international importance with respect to their ecological, botanical, zoological, limnological or hydrological characteristics. Additional criteria for the identification of such wetlands are provided by *The Ramsar Criteria for Identifying Wetlands of International Importance* which divides the areas into two groups: A and B. Group A includes areas that comprise representative, unusual or unique wetland types, and group B areas of international importance for the conservation of biological diversity. The criteria for group B can in turn be based on: a) species and ecological communities; b) specific criteria based on waterbirds; c) specific criteria based on fish; or d) specific criteria based on other taxa (www.ramsar.org/key_criteria.htm).

Sweden has a total of 51 Ramsar areas which account for more than 500,000 hectare. In accordance with the principle of wise use, Sweden is expected to manage the Ramsar sites in a way that preserves the areas' ecological character and ensures that the essential ecological and hydrological functions are maintained. The ecological character of an area is thus an indication of the areas status or health (i.e., how well it is preserved), and unnatural changes can therefore be an important signal that the area is not managed in a sustainable manner. (Strategic Framework for the List of Wetlands of International Importance, edition 2009, part III).

The protection of the Swedish Ramsar sites is rather strong, not least as a result of national legislation. All the areas are of "national interest" and around 85 percent are part of the Natura 2000 network. Many of the areas are moreover designated as national parks or nature reserves (www.naturvardsverket.se). The specific regulations for the different types of area protection are examined below.

The Water Framework (WFD) and the Groundwater Directives

The Water Framework and the Groundwater Directives are likely to progressively affect forestry and land use practices and their management. Forests are increasingly seen as important sources of clean water and water purifying ecosystem mechanisms. Though the WFD recognizes emphasizes the necessity for clean water, it does not do a very good job of recognizing the role of forests in water purification. A quick search through the text of the WFD, for example, only turns up one minor occurrence of the word "forests" (in the context of estimates of land use patterns). No mention of the potential relationships between forests, forestry and water is made. In a similar vein, an in-depth report from the European Environmental Agency (EEA) on Europe's water resources notes only that increasing water scarcity can have an impact on the dying of forests, but says absolutely nothing about the role of forests in improving water purity, protecting against floods and ultimately increasing potential available water supply (groundwater).

However, a recent IUCN (2009) report points to the importance and role of forests related to groundwater and several new studies are progressively unraveling the role and importance of forests and ecosystems with respect to the water balance (Sheil and Murdiyarso, 2009; and Schwärzel et al, 2009). In this respect, the WFD may be somewhat underdeveloped and behind the times. Future versions of the WFD are likely to focus more and more strongly on the role and importance of forests and forestry for improving the water balance, water purification and flood control.

Perhaps the clearest indication that forests will play a more and more important role emerges in the Commission's own report on the Implementation of Forestry Measures:

> *Forests and forest management have an important role in the protection of water resources. The Fifth Ministerial Conference on the Protection of Forest in Europe (MCPFE: 5-7 November, 2007, Warsaw, Poland: "Warsaw Resolution 2 Forests and Water") stressed the role of forests and forest management in protecting water quality, managing water resources for the quantity of all waters, flood alleviation, combating desertification and soil protection as well as the importance of mountain forests in the reduction of landslides, erosion and effects of avalanches" (European Commission, 2009b: 10).*

The 2007 Warsaw Resolution on Forests and Water makes a number of broad commitments on the part signatory countries to further investigate the relationships between forests and water and to improve the sustainable management of forests in relation to water.[32] In its first follow-up to the Warsaw resolution, the MCPFE held a conference on Forests and Water in Antalya, turkey (May 12th-14th, 2009).[33] Finally, a similar approach is also being stressed in the framework of the UNECE's Water Convention.

In general, the WFD specifies that the Member states shall devise strategies that both ensure the purity of existing bodies of water and prohibit the degrading of water quality. The EU strategy sets a timeline for the implementation and development Member state water strategies. All Member states were supposed to identify district water authorities and complete the transposition of the WFD into national legislation by 2003. Sweden managed to complete transposition of the WFD by 2004. Descriptions of river basins were scheduled for 2004, monitoring networks and the initiation of public consultations were to be established by 2006, and draft river basin management plans were to be completed by 2008. Finalized river basin management plans were due in 2009. Upcoming deadlines include the introduction of water pricing policies (2010), the introduction of operational measures (2012), meeting environmental objectives and the end of the first management cycle (2015). Second river basin and flood risk management plans are also due in 2015. The Second management cycle ends in 2021 and the third in 2027. 2027 is also the final deadline for meeting all water framework directive objectives.

Problems with the implementation of the WFD have occurred in Sweden. For example, the Swedish Forestry Agency and others argue that the current definition of a body of water employed by the Water District Agencies (WDA's) in Sweden is too broad.[34] Thus, while larger bodies of water are covered under the current national level legislation designed by the WDA's, many argue that the definition should include 'all bodies of water'. Room for such an interpretation of the EU level legislation was presumably provided by the EU version of the WFD, which defines a, "'Body of surface water'[as] a discrete and ***significant*** element of surface water" (WFD, Art. 2.10, our emphasis). Similar problems occur in the definition of groundwater sources ("***distinct*** volume of groundwater", Art. 2.12. our emphasis). This leeway in the legal framework may ultimately explain why the Swedish legislation does not cover all relevant bodies of water. Organizations such as the Swedish Forestry Agency argue that Swedish legislation should cover "all bodies of water" irrespective of size.

A second problem in the Swedish context arises from the fact that the Swedish Forestry Act itself limits the potential financial impact on Swedish forest owners of measures intended to protect the environment. Thus, for example, the Swedish Forestry Act limits the potential cost impact on forestry of legislation to 10% of 250,000 SEK turnover, 5% between 250,000-2,000,000 SEK turnover, and 2% +2,000,000 SEK turnover. The only way to introduce legislation that goes beyond these limitations is to find ways of compensating forestry owners for any potential lose

[32] See in particular, "Warsaw Resolution 2: Forests and Water" (MCPFE, 2007).
[33] Much of the documentation discussed at this conference is available here.
[34] Some of the information here on the problems of the Water Framework Directive in Sweden rely heavily on an interview with a representative of the Swedish Forestry Agency (June 12th, 2009).

revised legislation would impose. But this apparently is difficult to do. Thus, for example, increasing the size of required buffer zones around streams is problematic, since forest owners can write off the increased buffer size as a loss. If it exceeds the above amounts, this ultimately requires compensation. Thus, relevant proposals for revising existing legislation must also propose frameworks for providing compensation. Without this, it is not possible to revise existing legislation. However, it is also difficult to find sources for funding compensation.

A third area of potential problems concerns the general interest in promoting increased use of forest-related bioenergy. The practice of forestry itself is frequently considered one of the central problems confronting water quality, in particular in the more remote regions of Sweden where forestry and logging form the principal economic activities. Current efforts to promote more intensive forms of forest use, including the in

Finally, one area likely to result in significant future problems is the integration of the role of climate change and the requirements of adaptation into the existing WFD framework. Currently no efforts exist to encourage the incorporation of adaptation considerations, though it is likely that various elements of current and future policy initiatives will affect water quality. For one, the interest in *intensive forestry*—whether this is based simply on greater forest productivity or fertilization—is likely to have significant implications for water quality (some 60-80,000 hectares of Swedish forests are currently fertilized and this amount is likely to increase). For another, a number of likely forecast climate impacts (shorter winters, reduced snow cover and reduced spring flooding, earlier thaws, and increased precipitation) should all have some impact on water and water quality. But thus far, there is no framework for discussing or incorporating these into current legislative efforts.

The Floods Directive

The Floods Directive (formally the Directive on the Assessment and Management of Flood Risks) is one area where EU policy both significantly lags climate change and the requirements of adaptation and is likewise significantly ahead of the game. Though this may seem contradictory, the floods directive is both "*responsive*" (as opposed to "*anticipatory*") since it was introduced well after several major floods had occurred in Europe and "*anticipatory*" since it is one of the few EU policies to attempt to incorporate and include measures that are more or less directly linked to climate change and thus essentially qualify as adaptation measures. The Commission notes that a large number of major floods between 1998 and 2004 caused significant damage and in particular severe floods in 2005 forced the temporary relocation of almost a half million people and resulting in damages totaling as much as 25 billion Euros in insured losses. Although the Commission notes that floods are "natural phenomena", it likewise points out that, "the coming years are likely to see a higher flood risk in Europe." [35]

The basic goal of the floods directive to require Member states to assess the threat of floods and to develop strategies for managing flood risks. Though forests are no-where mentioned in the actual directive, forests are more and more frequently seen as one mechanism that potentially help control flooding by helping to reduce the frequency and severity of flooding. Preliminary assessments of flooding risks are due in 2011, flood risk maps by 2013 and flood risk management plans addressing all aspects (prevention, protection and preparedness) are due in 2015. A second round of flood risk planning is envisioned for 2018, 2019 and 2021.

The floods directive intersects with the Water Framework Directive in that the *river basin management plans*—which must be completed ahead of time for the WFD (Art. 14)—are also directly relevant to the floods directive (and are also mentioned in the Floods Directive). However floods and flood risk planning are not directly mentioned in the WFD Directive. Both of these

[35] See the Commission Flood's Directive website: http://ec.europa.eu/environment/water/flood_risk/index.htm.

goals are seen as part of "*integrated river basin management*" and thus Member states are encouraged to consider them in this way. In fact, Member states may fully integrate flood risk management into their river basin management plans under the WFD (Art. 9.2., Floods Directive).

In some ways, however, it is curious that the Floods Directive does not more clearly encourage Member states to make use of the potential role of forests in controlling floods. This point could be further explored.

Forest Fire Protection

The attempt to protect forests against fire has been a part of EU level legislation since at least 1986. This strategy was first introduced in order to provide a Community framework for helping Member states deal with the problem of forest fires. Though the policy has, in particular, benefitted the Mediterranean countries (Spain, France, Portugal, Greece and Italy), other countries have also received some funding from this program (in particular Germany, the Netherlands and the UK).

Forest fires are for the most part a specifically Mediterranean problem. While they do of course occur in other regions, they are more frequent, more intense and tend to cause more damage in the Mediterranean region. In 1986, the policy focused on complementing national level measures and on providing financial support for the "techniques, equipment and products required for prevention", as well as the "harmonization of techniques and equipment" by establishing close cooperation across Member states and the Commission. The program also provided support for setting up data collection centers and the coordination of research.

The Forest Focus Regulation provided for forest monitoring and forest fire protection measures from 2003-2006.[36] For the period 2007-2013, forest and forest fire protection measures have been subsumed under the LIFE+ program, though co-financing is not guaranteed under the new system.[37] EFFIS, the European Forest Fire Information System, established by the European Commission's Joint Research Council (JRC) and DG Environment is currently managed by the JRC. The current forest regulation, in addition to promoting the construction and expansion of infrastructure to prevent forest fires (e.g. forest roads, firebreaks) and the construction of forest fire monitoring facilities and communication equipment, also provides resources for restoring forestry potential in areas that have been previously damaged by natural disasters and fires.

Impending Action on Invasive Alien Species

The European Union is still in the early stages of introducing actions to handle the problem of invasive species. Perhaps the most advanced part of European action on invasive species is the DAISIE project funded with a grant from the EU's 6th Framework Program. The DAISIE project essentially attempts to catalogue/inventory all existing "biological invasions" in Europe and to provide information on the prevention and control of such invasions, as well as assessing the ecological, economic and health risks of such invasions. The DAISIE website also provides information on almost 1600 researchers who work on alien species. The DAISIE project has thus far catalogued more than 11,000 species that are alien to Europe. Approximately 10-15% of these species represent potential threats in economic and/or ecological terms. Though the emphasis of the EU's efforts on invasive alien species focuses primarily on protecting European "biodiversity", invasive species are potential threats to both flora and fauna throughout Europe. Forests too can be laid waste by the invasion of alien species. In North America, the mountain pine beetle has laid waste to more than 16 million hectares of forest—an area more than twice the size of Ireland.[38]

[36] Council Regulation EC No 2152/2003.
[37] See Requardt, Schuck and Köhl (2009).
[38] See, "Beetles, Wildfire: Double Threat in Warming World", (*Associated Press*, Aug. 23rd, 2009).

To-date, although the EU and individual countries have legislation in place that is intended to protect national and European level biodiversity, thus far no harmonized EU level approach has been put into place for monitoring and controlling invasive species and the effect of these on European biodiversity. Current efforts from the European Commission have thus far focused on the development of a European-wide "early warning and information system" focused on reporting new and emerging species. Additionally, the Commission has proposed expanding the current list of banned species to cover other newly discovered invasive species. Other considerations include the development of legal measures for handling invasive species and the potential establishment of an independent agency.

The second stage in the EU process was to assess the views of stakeholders. This occurred between March and May, 2009. In general, there was strong support for EU efforts on invasive species and for the development of an early warning system.

Most recently, the Environmental Council of Europe issued a statement on invasive species and drew attention to the potential importance of Natura 2000 regions for the preservation of European biodiversity.[39] The Commission has been called upon to develop a strategy to respond to the issue of invasive species by 2010 and to continue to develop inventories on invasive species. Such inventories could be based either on the current DAISIE project, or also on the NOBANIS project, another European level project on invasive species.

FLEGT, the Broader EU Consensus on Development and EU Intervention in the Global Framework on Forestry

In 2005, the EU set out its policy approach on intervention in the global framework with its publication of the *EU Consensus on Development*. The two principal goals of this program are to assist in reducing poverty in the developing world and to promote development based on the Europe's democratic values. At the same time, the third focus of this program recognizes the principle of sovereignty by noting that developing countries are primarily responsible for making their own developmental choices. The EU has pledged to raise its overall spending on developmental aid to 0.56% of Gross National income by 2010, with the eventual target of achieving the UN proposed 0.7% by 2015.

Within the framework of this larger EU Consensus on Development, the EU has established 9 different areas for intervention.[40] Under the category of intervention on environmental matters, the EU program on Forests and FLEGT is one of 4 programs addressing environmental issues in the developing world.

The basic FLEGT (Forest Law Enforcement, Governance and Trade) plan was adopted in 2003 and involves an effort to reduce the role of illegal logging in developing countries and to reduce trade in illegally logged timber. The principal FLEGT tool for promoting change in developing country practices is the "voluntary partnership agreement" (VPA). To date, the EU has signed VPA's with Ghana and the Republic of Congo. The EU is further negotiating agreements with five other countries (Cameroon, Malaysia, Indonesia, Liberia and the Central African Republic). The basic intent of the VPA's is, while taking specific national characteristics of countries into account, to define "legal timber" and verify compliance with this definition. VPA's also attempt to

[39] See the Council conclusions on the EU Biodiversity Action Plan and the development of an EU Strategy on Invasive Alien Species, June 25th, 2009.

[40] These areas are as follows: trade and regional integration, the environment, infrastructure, water and sanitation, energy, rural development, debt relief, governance and fragility, migration and development, peace and security, and human development. Further information on these areas of intervention is available here.

establish mechanisms for the monitoring and auditing of the timber trade in order to ensure that it fulfills these criteria.

According to the Commission, some of the advantages of the FLEGT program and the negotiation of VPA's include the opportunity to address difficult governance issues, clarify the legal framework and improve technical systems. Negotiations also attempt to involve stakeholders in the policy making process and thus help to foster greater understanding between stakeholders and governments. Bilateral negotiations may also give local governments a sense of "owning the results" of such bargaining.

The Commission has also launched a proposal for a "due diligence system" in 2008 with the basic goal of minimizing the potential import of illegal timber into the EU. The due diligence systems would require importers to determine whether or not imported timber is the product of illegal logging and to determine the original country of origin of imported timber. Finally, importers would be required to determine whether or not the timber has been harvested according to the respective laws of the country of origin.

While in general there appears to be widespread support for the FLEGT initiative, some organizations have raised the concern that the REDD initiative in the UNFCCC context (and the related FCPF process through the World Bank) may potentially create problems for FLEGT negotiations. As the REDD process is generally seen as less demanding, FERN, for example raises the concern that countries will opt to put more effort into achieving REDD goals and thus neglect to negotiate FLEGT agreements. The second criticism concerns the fact that the REDD initiative does not require the same kind of negotiation and participatory decision-making involving stakeholders as required under FLEGT VPA's.[41]

Other areas that may be of importance include the Proposed Soil Framework Directive, and the Nitrate Directive.

[41] See e.g. FERN's *Avoiding Deforestation and Degradation* Briefing Note 05 (March 2009): "Is REDD Undermining FLEGT?"

3. Looking back: National level forest governance

Law on Land Use and Physical Planning

Physical planning regulates and impacts the use of all types of land and water areas, including forests. Physical planning in Sweden is first and foremost regulated in the Planning- and Building Act. Connected to the Planning and Building Act are the Basic and Special resource management provisions in chapter 3 and 4 in the Environmental Code. The resource management provisions were originally established as guidelines for physical planning on the *national* level in the beginning of the 1970s. The guidelines were adopted by the parliament in 1972 and subsequently applied in planning matters, but they were not laid down in law until 1987. The provisions are of substantial character and contain guidelines for the use of land- and water areas (conflict solving function) as well as more specific rules in relation to certain types of areas and activities. The Planning and Building Act as well as the resource management provisions are accounted for next.

The Planning and Building Act

The objectives and main principles of the Planning- and Building Act are expressed in the introductory chapter. The purpose of the provisions is: "[t]hat with regards to the freedom of every individual, promote a social development including equal and good living conditions and a good and long-term sustainable living environment for the people of today as well as for future generations." The Planning and Building Act is valid alongside with the Environmental Code and the overall objectives of the Act are therefore expressed in line with the overall objective of the Code, that is, to promote a sustainable development.

The provisions in the Planning- and Building Act are concretized via the physical *plans* which are primarily carried out by municipal planning authorities. *Overview* plans shall indicate the future use for a specific area, for example that it shall be used for buildings, energy production or that it shall be preserved. According to chapter 1, s. 3, every municipality shall have an updated overview plan that comprises the whole municipal area. The plan is however not legally binding (ibid.) and is therefore important mainly as a basis for subsequent decisions on land use. This implies that other use of the area than what has been indicated in the overview plan may well be possible. In practice, the guidelines set out in the overview plans often have bearing on individual decisions (for example in the trial for the location of windmills). However, since the law does not provide any instrument to see to that the municipality actually has an (updated) overview plan, the overall impact of this planning instrument must be considered as weak.

Detail plans and *area provisions* are legally binding. In principle this implies that land use that is contrary to the purpose of the plan or provisions are prevented by the planning instruments.[42] However, detail plans and area provisions only regulate the use of land related to buildings and installations; they cannot regulate forest activities like afforestation and reforestation, only prevent such activities by planning for other activities.

The Planning and Building Act also includes some rules vis-à-vis the overall use of land, i.e., consideration rules. On the whole, however, these rules provide a substantial freedom of choice with regard to the balancing between different interests which implies that the municipalities to a very large extent control the use of land. Among the few exceptions to this "regime" can be

[42] It shall thus be noted that although the detail plan as well as the area provisions *steer away* from use that is contrary to the plan, *not towards*. Hence the instruments do not assure implementation of the plan/provisions.

mentioned the presence of Environmental Quality Standards, which as a main rule hinder the adoption of a plan that implies that the standard is violated.

The Basic Resource Management Provisions

The basic resource management provisions in chapter 3 starts out with a general assessment rule, stating that "land and water areas shall be used for the purposes for which the areas are most suitable in view of their characteristics, their location and the existing needs. Priority shall be given to use that promotes good management from the point of view of public interest." Section 1 thus gives directions for the assessment of conflicts of interests and although no specific interests are mentioned, it can be drawn from the legal text that that a combined use of the areas always shall be considered; that public interests take precedence over private such, and that the use of land and water areas shall be considered from a long-term (i.e., sustainable) perspective.

The general assessment rule is connected to forest governance in the sense that areas of interest for other uses, such as for example wind power development, may be forested, in which case an assessment of which use will best promote a long-term management of the resource will be undertaken (roughly speaking).

In addition to the general assessment rule, different types of land and water areas are regulated in s. 2-9. The provisions in s. 2-9 aim to look after specific interests that are connected to certain areas by reason of quality or suitability. These areas shall "to the extent possible" be protected against: a) activities that may *significantly affect* (s. 2) *significantly damage* (s. 6), or damage (s. 3) for example the character of the areas, or b) activities that may be *prejudicial to* (s. 4, 7 and 8), *significantly interfere with* (s. 5) or *detrimental to* (s. 9) the interests appointed in the legal text.[43]

The basic resource management provisions are furthermore only applicable to new (or changed) use of land or water areas. Activities in progress are thus in principle not affected by these rules (Prop. 1997/98:45, part I, p. 240).

Of special interest in the context of forest governance are the provisions in s. 4, according to which areas of importance for the forestry industry shall – to the extent possible – be sheltered from activities that may be prejudicial to a rational forestry (s. 4, paragraph 2). The function of the rule is thus that it steers away from use that may be harmful to the forestry.

The Special Resource Management Provisions

The special resource management provisions aim to protect land and water areas that are of national interest as a result of their natural or cultural values. The areas are defined geographically and protected against exploitation activities and other interferences in the natural environment. The legal classification of the areas as national interests imply that the balancing in relation to other interests has already been made and that, in a competitive situation, precedence shall be given the national interest (Prop. 1985/86:3, p. 171).

Exploitation activities may only be undertaken in these areas if: a) it meets no hindrance by the area provisions in s. 2-8, and b) it does not significantly damage the protected values (s. 1, paragraph 1). In the assessment of whether an activity is likely to cause significant damage to the protected interest, the *total* natural and cultural values in the area shall be considered, implying that in order to be prevented, the activity must cause significant damage to the entire area (Prop. 1985/86:3, p. 171).

[43] With *significantly* is intended *not trivial*, which, according to the preparatory statements imply that only such actions that may cause long-lasting negative impacts or temporarily substantial impacts in relation to the interest are aimed at. Prop. 1985/86:3, p. 155

In relation to forest governance, one provision is of particular interest, namely s. 5, according to which the unexploited mountain areas, in principle defined by the absence of roads and railroads, are protected. In these areas, exploitation activities may only be undertaken if "they are necessary for the purposes of the reindeer husbandry, the resident population, scientific research or outdoor recreational exercise."

The 2008 Forestry Act

The Swedish Forestry Act asserts that the forest is a valuable asset and a renewable resource. The basis for the management of the Swedish forest is twofold; "it shall be managed in such a way as to provide a *valuable yield* and at the same time *preserve biological diversity*." (s. 1, emphasis added). The two objectives are to be considered as *equal*.

For the purposes of the Forestry act, *forest land* is defined as: land within a closed connected area where the trees have a height of more than five meters and a crown-closeness (kronslutenhet) of more than ten percent or that have the capacity to reach this volume without production increasing measures (s. 2, item 1).

Productive forest land is furthermore defined as: forest land that according to the established principles for assessment can produce an average yield of at least one cubic metre wood per hectare and year (s. 2, item 2). According to the preparatory works *productive forest land* is such land that can produce at least one cubic metre wood per hectare and year and that is not used for other purposes or interests than what can be referred to as trees and vegetation (Prop. 2007/08:108).

Forest wasteland (skogligt impediment) is defined as unproductive forest, tree- and bush land (s. 2, item 3), that is to say, land that is not productive in accordance with the definition above. The concept "tree- and bush land" was introduced in the 2008 Forestry Act and follows the definitions of FAO. The concept includes land that is not wooded at the moment, for example as a result of natural disasters such as the storm "Gudrun", but that is expected to be so in the future. Included in the concept of forest wasteland is also land that used to be referred to as protective forest (skyddsskog) and that has a production level of less than one cubic metre forest per hectare and year. The amendments are not expected to have any practical consequences, other than that re-growth measures no longer can be required.

Areas that primarily are used for agricultural activities, or belongs to buildings or constructions, or are used for other purposes than those related to trees and vegetation shall not be considered as forest land (s. 2 a). Such areas thus fall outside the definition of forest land. The Forestry Act does furthermore not prevent the use of productive forest land for *other purpose*s than the production of wood (s. 3). If this is the case, the provisions in the Forestry Act regarding the founding of forests, afforestation measures and disforestation shall not be applied.

Consideration and Management Rules

In addition to the objectives and the definitions, the Forestry Act also holds general rules on the consideration and management of forests. The rules are

In *section 6* it is stated that "the establishment of new forest stands shall be carried out using methods that are necessary to assure a *satisfactory* stand density and composition." (Emphasis added). And furthermore that: "[R]egulations governing the methods of regeneration, scarification, sowing, planting, tending of young stands, and other measures to meet general aims, are issued by the Government, or public authority designated by the Government." I.e., The Swedish Forest Agency.

Section 7 states that, where it is required for silvicultural reasons, regulations prohibiting or conditioning the use of "forest reproductive material of indigenous or foreign origin in establishing new stands, as well as trading with such material", may be issued. [44] Regulations aiming to promote, assure and verify authenticity and quality with respect to production and trade with forest reproductive material may furthermore also be issued.[45]

As for the use of foreign tree species, s. 9 the Ordinance on Forest Management (Skogsvårdsförordning (1993:1096)) prescribes that such species only may be used as forest reproductive material in *exceptional cases* (s. 9, paragraph 1), and not at all in forests close to the mountains (fjällnära skog) (s. 9, paragraph 2). Exceptions from the second paragraph can be made if that is necessary for important scientific purposes (s. 9, paragraph 3).

The use of foreign tree species is thus – as a main rule – not permitted. Nevertheless, it has been generally permitted to plant certain foreign tree species (i.e., contorta pine) in some (specified) parts of Sweden (The Swedish Forest Agency's regulation (1993:2) to s. 7 in the Forestry Act).

Section 10 and s. 11 deal with the conditions for felling on productive forest land. Accordingly, felling shall be performed to promote the establishment of new stands, or to enhance the development of an existing stand (s. 10, paragraph 1). The felling shall, in other words be *appropriate*.[46] Furthermore, with the purpose to protect young forests (and fulfil the requirements of paragraph 1), regulations regarding the felling of trees under a certain age, as well as how felling may be conducted, may be issued (s. 10, paragraph 2).

In order to promote an even age distribution of the forest stand, prescriptions specifying the maximum allowable percentage of the productive forest land that may be felled during a certain time period may be issued. The provision is however only valid for large forest holdings; with regard to other holdings, it may be prescribed that felling to the extent that *more than half* of the productive forest land will comprise clear-felled areas and young stands may not take place (s. 11).

Regulations regarding *environmental consideration* in connection with forest management may furthermore be issued. Accordingly, s. 30 states that regulations "on the degree of respect to be extended to nature conservation and cultural heritage preservation interests in connection with forest management" may be issued. The regulations may concern:

- The form and size of felling areas;
- Regeneration methods;
- The retention of individual trees and groups of trees;
- Fertilization[47];
- Drainage; and
- The routing of forest roads

[44] With forest reproductive material is intended: seeds, seedlings, transplants and other forms of regenerative material that is intended to be used for the establishment of new forest stands (s. 7, paragraph 3).
[45] Exceptions from section 6 may in special cases be granted by the Forest Agency (s. 9).
[46] Exemptions from s. 10, paragraph 1 may under certain circumstances be granted in order to facilitate experimental activities or to preserve and develop nature and cultural values (s. 10, paragraph 3).
[47] The concept of fertilizing includes partly traditional fertilizing (i.e., kväve, askåterföring, slamspridning) and partly other forms of compensation and vitalization fertilizing. A condition for all types of forest fertilization is that the activity is beneficial for the forest. Other than in the Forestry Act, fertilization is also regulated in chapter 12 and 9 in the Environmental Code: if the fertilization may significantly change the natural environment, a notification for consultation in accordance with chapter 12, s. 6 in the Code is required. Fertilization is furthermore classified as an environmentally hazardous activity (chapter 9, s. 1) and may hence require a permit in accordance with chapter 9, s. 6.

To satisfy nature conservation and cultural heritage preservation interests, regulations that prohibit felling and "other forestry measures" on forest wasteland may furthermore be issued, just as regulations concerning measures to be taken in the event of non-compliance with regulations issued in accordance with paragraph one. The powers granted in paragraph one and three may however not be "so extensive as to severely handicap current land use." (s. 30, paragraph 4). It is thus not possible to issue regulations that imply that the current use of the land becomes impracticable, for example by substantially altering the routing of a planned forest road.

Section 31 focuses on forest management measures vis-à-vis the reindeer husbandry. Accordingly, measures that concern the form and size of felling areas, the establishment of new stands, the retention of tree groups and the routing of forest roads shall consider the reindeer herding activities (to the extent that this is obviously required). In the planning and implementing of the forest management measures it is furthermore desirable that sufficiently large and cohesive grazing areas, as well as a necessary amount of vegetation in areas used for reindeer corralling, migration and resting, are made available for the concerned Saami villages.

The government (or a government authority) may prescribe that the environmental impacts of new methods for forest management and new forest reproductive material shall be subjected to an environmental analysis (s. 32). Accordingly, the Swedish Forest Agency has prescribed that such an analysis shall be conducted if the activity is somewhat substantial (pågå i nämnvärd omfattning) or is to be undertaken in a sensitive environment (s. 31, Ordinance on Forest Management). The actual content of the analysis will be decided by the Agency on a case-to-case basis (ibid., s. 32).

The Protection of Forest Land

Aside from the provisions on forest management, the Forest Act does not contain rules on the protection of forest land, nor does it make a formal division between protected and unprotected forest land. According to the preparatory works, the reason for this order is that such a division would reduce the clearness and the correlation with other classification systems. The starting point is therefore that all forest land is "unprotected" and that protection instead is achieved via authoritative decisions in accordance with provisions in other laws, like the Environmental Code, the Planning- and Building Act, or via nature conservation agreements etc.[48]

About three percent, or 0,75 hectare of the productive forest land in Sweden is subject to some sort of protection. The largest part consists of national parks and reserves (approximately 700 000 hectare), followed by nature conservation agreements (20 000 hectare) and habitat protection (16 000 hectare). The protected areas are primarily forest areas close to the mountains (fjällnära skog).

[48] Hence it follows that protected forest land for the most part involve areas that to a significant extent are "used" for other (public) interests. Consequently the areas are – by definition – used for "other purposes than what can be referred to as trees and vegetation in accordance with the Forestry Act. (See further Prop. 2007/08:108, p. 38). If forest land becomes subject to some sort of protection, and thus considered to be used for other purposes in keeping with s. 3 in the Forestry Act, the provisions regarding e.g., the establishment of new stands, forest management measures/methods and felling in s. 5, 6 and 19 will not be applicable. The reason for this is that the new definition of forest land implies that *only* the land that is used to meet other interests than what can be referred to trees and vegetation falls outside the definition of forest land, and therefore outside the provisions' application area. Thus, to make sure that protected forest land does not become subject to these provisions, consequential amendments to the Act were made (see further s. 5 and 11). (Prop. 2007/08:108, p. 38).

Next, the legal basis for the most common protection types is examined.

Forests as National Parks

Chapter 7 in the Environmental Code deals with various types of area protection. Accordingly, to preserve a large contiguous area of a certain landscape-type in its natural state or essentially unaltered, land or water areas that belong to the state may be designated as national parks (chapter 7, s. 2). There are about ten national parks in Sweden with the purpose to protect forest areas.[49] Rules concerning the management of the national parks (including restrictions) may be issued by the government (or public authority appointed by the government) (chapter 7, s. 3).

According to s. 4 in the Ordinance on national parks (1987:938) the Environmental Protection Agency shall issue regulations on: the management of the national park by adopting a management plan (skötselplan); the right to use land and water as well as the right to move and be located in the area; and the general order to be upheld in the area.

As protection type, the designation as national park is rather strong; to preserve an area in its "natural state or essentially unaltered" imply that the area in all probability is protected against e.g., exploitation activities. The decisive factor will however be the purpose and regulations for the individual area.

Nature and Culture Reserves

A forest area can also be designated as a *nature* reserve with the purpose to preserve the biological diversity, to protect and preserve valuable natural environments, or to satisfy the need for areas for outdoor life (chapter 7, s. 4, the Environmental Code). With the purpose to preserve valuable cultural landscapes it is furthermore possible to designate areas as *culture* reserves (chapter 7, s. 9). A decision to found a nature or culture reserve shall account for the restrictions in land use that are considered necessary to fulfil the purpose with the reserves, for example, prohibition against cultivation, ditching, planting, deforestation, use of insecticides etc. The regulations are set out in management plans for the reserves. If it is considered necessary in order to uphold the protection, further restrictions may moreover be laid down later on. (Chapter 7, s. 5).

Unlike what is the case for national parks, which are always owned by the state, the title to the land in a nature or culture reserve may belong to private persons. The designation typically implies restrictions in the owner's right of disposition to the land, but he or she will still have some freedom to use the estate. Like with national parks, the degree of protection in the reserves will ultimately depend on the purpose of the area protection and the individual regulations[50], but in general the degree of protection for reserves may be defined as a little weaker than for national parks.

[49] These are: Muddus, Pieljekaise, Sånfjället, Töfsingdalen, Hamra, Norra Kvill, Dalby Söderskog, Tiveden, Björnlandet, Tyresta och Trestickla nationalpark. See further the Ordinance on National Parks, Nationalparksförordning (1987:938), s. 1.

[50] Exemptions from the regulations for nature and culture reserves require special reasons (särskilda skäl) and may also be subsequently altered, however only if particular reasons (synnerliga skäl) are at hand, for example if the area has changed significantly. However, since the overall intention with nature and culture reserves is to provide an unquestionable protection for the area, deviations are likely to be allowed only in exceptional cases. (Prop. 1997/98:45, p. 75).

Forests as Habitat Protection Areas (biotopskyddsområden)

Smaller land or water areas that constitute habitats for endangered species (animals as well as plants) may be designated as habitat protection areas. There are two types of habitat protection: A- and B-habitats. A-habitats consist of certain types of habitats, mainly connected to agricultural land, that are listed in the Ordinance on Area Protection in accordance with the Environmental Code (s. 5 and Annex 1). All A-habitat areas are subject to a general protection regardless of their location. Also the B-habitats are listed in the Ordinance (s. 6-7 and Annex 2), but, unlike the A-habitats, they must also be designated (by the Swedish Forestry Agency) for the protection to be valid. The B-habitats can be located on forest as well as agricultural land.

The legal protection for the habitat areas is generally constructed; within a habitat protection area it is not allowed to undertake activities or measures that may damage the natural environment (chapter 7, s. 11, the Environmental Code). For habitats located on forest land, the Swedish Forestry Agency may issue regulations regarding the right to "be" (färdas och vistas) in the area (www.skogsstyrelsen.se), but other than that, no specific rules for the individual areas (as is the case with national parks and reserves) are formulated. The basis for the protection is "just" the legal text, that is, that activities that may damage the natural environment are prohibited.

A habitat area is typically in the range of two to five hectare. The area must be marked and the protection is valid indefinitely. Decision about habitat protection does not affect ownership or hunting rights (although activities that may damage the area are not allowed). Land-owners whose use of the area is restricted by the protection may be entitled to compensation that corresponds to the reduced value of the property (www.skogsstyrelsen.se).

Nature Conservation Agreements (Naturvårdsavtal)

A nature conservation agreement is a voluntary agreement between the state (represented by the Swedish Forestry Agency) and individual land-owners that are interested in nature conservation. The purpose of the agreement is to preserve, develop or create areas with high natural values and is therefore suitable for areas that either already comprise high values, or that have qualifications to develop such, for example as a result of a certain management.

A nature conservation agreement does not affect ownership or hunting rights in the area. The land-owner however gives up parts of his or her "user right" within the area, for example the right to felling, planting, fertilizing etc. The agreement may moreover provide the state with certain "management rights", like a right to cut trees to create "högstubbar". The land-owner is compensated for the restrictions in the user right, either as a one time amount of yearly. The amount of compensation does however not fully compensate the voluntary encroachment (Forsén, 2004). The nature conservation agreement is a usufruct, or a right of use (nyttjanderätt) that may be registered in accordance with chapter 7, s. 3, the Real Estate Act (Jordabalken). (Naturvårdsverket, report 5753: Vägledning för länsstyrelsens arbete med naturvårdsavtal).

The agreements normally run for 50 years and cover an average area of 6 hectare (although there are agreements that cover up to 100 hectare). The long contract period is considered necessary to fulfil the purpose of the agreements (www.skogsstyrelsen.se).

A forest area that is subject to a nature conservation agreement with the purpose to preserve, develop or create an area with high natural values is presumably protected from e.g., far-reaching exploitation activities. It is however the regulations and management of the individual area that decides how and from what the area is protected. Unlike the designation of national parks, reserves and habitat protection areas, the nature conservation agreements are voluntarily instruments. This typically implies that the agreement may be cancelled if the parties so agrees. If the land-owner alone violates the agreement it may entitle the state compensation (if economic damage can be

shown). As a result hereof, the voluntary agreements provide less of a protection than does, for example, the nature reserve.

Forest in Natura 2000 areas

Across the European Union, a large number of "special protection" and "special conservation" areas have been founded under the so called Natura 2000 network. The legal basis for the protection of the areas is the Bird Protection Directive (79/409/EEG) and the Habitat Directive (92/43/EEG). Under Swedish law, the directives are mainly implemented via provisions in the Environmental Code (chapter 7).

The government, or public authority appointed by the government, is thus responsible to continuously list areas in Sweden that *should be protected* or *has been protected* as special protection or conservation areas in accordance with the directives above (chapter 7, s. 27-28).

To undertake activities and measures that may significantly affect the environment in the areas listed in accordance with s. 27, a permit is required (chapter 7, s. 28 a). A permit may in turn only be granted if the activities or measures do not harm the natural habitats in the area, or expose the protected species for disturbances that endanger the preservation of the species in the area (chapter 7, s. 28 b).

The protection for the Natura 2000 areas is thus rather strong and does not only cover the actual area; also activities and measures *outside* the areas that risk to damage or disturb the protected values are included in the permit requirement. A protected habitat may for instance be damaged by leakage of fertilizers from cultivations nearby. The protection does also include *cumulative* effects, which implies that even an activity in itself would not imply significant damage, it shall be included in trial for permit if it does so in conjunction with other activities or measures.

Regardless of the provisions in s. 28 b, permit may however still be granted if the following criteria are met (chapter 7, s. 29):

1. There are no alternative solutions
2. The activity or measure must be undertaken due to imperative public reasons
3. Measures necessary to compensate for the loss of environmental values are undertaken so that the purpose of the protection is still fulfilled.

Observe that *all* the criteria have to be met for a permit to be granted contrary to the provisions in s. 28 b.

Environmental Considerations: The Environmental Code

The overarching objective of the Environmental Code is to promote a sustainable development (chapter 1, s. 1). The concept of sustainability as it is expressed in the Code implies that present as well as future generations have the right to a good environment, and that the right to make use of natural resources brings with it a responsibility to manage resources well. The objective of the Code thus emphasises the need for a long-term perspective and wise management of natural resources; s. 1, paragraph 2 states that the Code "*shall be applied in such a way* as to ensure that --- reuse and recycling as well as other management of materials, raw materials and energy are encouraged with a view to establishing and maintaining natural cycles."

The objective of the code is not directed to individuals, and has therefore no immediate legal affect on them. Instead, it is said that the provisions in the code shall be applied with the sustainability objective *in mind* (Prop. 1997/98:45, appendix 1, statute comment, p. 8). This means that, if a situation occurs where an assessment in accordance with substantial rules in the Code (e.g. the resource management provisions) is not sufficient to solve, say, a conflict about land use, the alternative that best comply with a sustainable development shall be selected.[51] Hence it follows that although s. 1 has no direct legal effect, it is a very important starting point for the application of the code and as such it may till be used, for instance, as a balance tool, or to strengthen a particular line of reasoning.

The Code's very broad application area implies that it is relevant also in the context of forest use. Of particular importance are the general rules of consideration.

General Consideration Rules and Forest Governance

The general rules of consideration are the backbone of the Environmental Code. The rules lay down obligations for activities and measures vis-à-vis the environment, and are applicable in connection with, for example, issues relating to permissibility, permits and supervising in accordance with the Code (s. 1). The rules are also applied in proceedings pursuant to chapter 32, s. 12, according to which private persons can take legal action against activities that do not require a permit, in order to prevent the activity, or to enforce the operator to take precautionary measures.

Anyone who wants to pursue an activity has to demonstrate compliance with the obligations that follow from the consideration rules, for example, that the precautions necessary to protect peoples' health and the environment from damage and nuisances from the activity are undertaken. It is, in other words, the operator that carries the burden of proof (s. 1).

The consideration rules set out obligations that aim to prevent or reduce negative effects on the environment. The first obligation concerns knowledge; the operator is obligated to obtain the knowledge necessary to carry out the planned activity without causing environmental damage (s. 2)

The chief provision related to precautionary measures is s. 3, which states very broadly that protective and precautionary measures shall be implemented "to prevent or hinder damage or detriment to human health or the environment." In fact, s. 3 covers all precautionary measures in s. 2 and 4-6, which therefore may be regarded as specifications of s. 3 indicting what is especially important to consider. With reference to professional activities, s. 3 furthermore requires that the best possible technology is used in connection with, for example, construction, design, operation, liquidation and so forth.52

Section 4 reflects the principle of substitution and thus stipulates that using or selling chemical products or biotechnical organisms that imply risks for human health or the environment shall be avoided if the products have substitutes. A requirement to conserve and "wherever possible" reuse and recycle natural resources and energy is laid down in s. 5.

[51] Unless the situation is covered by an EC Directive, in which case the EC-law takes precedence.

[52] According to the preparatory works "the [best possible] technology should, from a technical and economic viewpoint, be industrially possible to use within the branch in question." (Prop. 1997/98:45 part II, p. 17) The assessment of what in fact is the best possible technology, thus include two explicit criteria: 1) that the technology is in fact *available*, which implies that, to qualify as "the best possible" the technology has to be *functional* in the sense that it cannot exist merely on the experimental stage; and 2) that the costs associated with the use of the technology are bearable from the point of view of the activity *in general*, which means that the branch in question *typically* shall be able to meet the expenses of using the technology (Prop. 1997/98:45 part I, p. 232).

Section 6 deals with the choice of location. The basic requirement is that the site shall be selected as to achieve the purpose of the activity with least possible damage or detriment to human health and the environment. Since more than one location might be suitable for a particular development and the location rule requires that the best site from the point of view of the environment is selected, alternative locations must be presented. Based on the reversed burden of proof, s. 6 consequently obliges the developer to undertake an objective assessment of the alternative sites for the activity (See further Prop. 1997/98:45 part II, p. 19-20).

In accordance with s. 7, the obligations that follow from s. 2-5 and s. 6, paragraph 1 are applicable unless compliance with them is "deemed unreasonable"; the benefits of the preventive and protective measures required shall thus be viewed in relation to, for example, their costs. The rationale for the assessment is thus basically that there is a point where the marginal benefits of a protective or preventive measure simply not balance the costs of that measure and hence the requirement shall be considered unreasonable (Prop. 1997/98:45 part I, pp. 231-233). The obligations may however not be set too low; all "meaningful" measures in relation to the objectives of the Code shall be undertaken; the starting point is, after all, that operators and others are obligated to comply with general consideration rules (ibid, p. 232).

Draining/Ditching

From a forest management perspective there is a difference between taking up new ditches (nydikning), protective ditching (Skyddsdikning) and cleaning of ditches (dikesrensning). Taking up new ditches simply means making a new ditch. The activity typically requires a permit in accordance with chapter 11, s. 13 in the Environmental Code (as a water operation). Protective ditching is made in connection with felling and does not require a permit. The main difference between protective ditching and taking up new ditches is that the latter primarily aims to "permanently improve an estate's suitability for a certain purpose" (chapter 11, s. 2, the Environmental Code), for example to ditch a wetland to plant new trees (Michanek and Zetterberg, p. 295). Due to the environmental value of certain wetlands it is prohibited to take up new ditches in some parts of the country. Exemptions can however be granted if special reasons are at hand and increased forest production may qualify.

With protective ditching is intended a more shallow ditching aiming to lead away excess water that may arise as a result of felling (no trees to drain the ground). Protective ditching must be notified six weeks prior to the ditching (s. 14, the Forestry Act).

Cleaning of ditches takes place when ditches are overgrown. The procedure does not qualify as a water operation and hence does not require a permit in accordance with the Environmental Code. If, however, the ditch has become so overgrown that a "new natural condition" (nytt naturtillstånd) have occurred, a permit will as a main rule be required (Prop. 1997/98:45, part II, p. 137).[53]

Law on Genetically Modified Organisms

The contained use and deliberate release of genetically modified organisms (GMO) are regulated in chapter 13 in the Environmental Code. GMO:s are defined in s. 4 as "an organism in which the genetic material has been altered in a way that does not occur naturally by mating or natural recombination." With reference to forest governance, the regulations regarding GMO:s mainly come into play in connection with the planting of genetically modified trees. Such deliberate release[54] of GMO:s is subject to a general permit requirement in accordance with s. 12 and shall be

[53] The issue of taking up new ditches (nydikning) has recently been investigated by the Swedish Forestry Agency, see further: Dikesrensningens regelverk, Skogsstyrelsens meddelande 1:2009.

[54] Deliberate release is defined as "any intentional introduction of genetically modified organisms into the environment without containment." (Chapter 13, s. 6, the Environmental Code)

preceded by an investigation regarding the potential health and environmental damages that may be caused by the release of the organisms (s. 8). A permit to release *forest related* GMO:s is tried by the Swedish Forestry Agency and "shall only be granted if the activity is justifiable on ethical grounds." (Chapter 13, s. 13). To be permitted, the release must also be in compliance with the general consideration rules in chapter 2, the Environmental Code.[55]

Rules on the Use of Pest Control Agents in Forests

Forest activities sometimes require the use of *chemical* or *biological* pest control agents defined in the Environmental Code as chemical products/biotechnical organisms[56] that are "intended to prevent or deter animals, plants or micro-organisms, including viruses, from causing damage or detriment to human health or the environment or to property." (Chapter 14, s. 5 and 6).

As for the application of pest control agents, s. 18 states that such products shall not be used in such a way as to damage human health or the environment, nor may they cause other nuisances. Measures to prevent that the pest control agent is spread outside the designated area of application must furthermore always be taken.

Chemical or biological pest control agents used for the purpose of controlling deciduous brush (lövsly) must not be applied over forest land, nor is it allowed to treat individual tree-trunks with such agents (s. 19).

Exemptions from the prohibition to apply pest control agents to defeat deciduous brush may however be granted under certain circumstances, namely: 1) if it is considered necessary for scientific experiments (s. 19, paragraph 2), and 2) where the requirements in s. 6 in the Forestry Act on the subject of forest regeneration cannot reasonably be satisfied by mechanical clearing methods. In the assessment, the nature of the forest land, the composition of the forest stands and the effects of the application on wildlife and other public interests must be taken into account (s. 20, paragraph 1). Municipalities have the right to decide that exemptions pursuant to paragraph 1 may not be granted if the area in question is of importance for outdoor recreation, nature conservation, the well-being of the local population of for some other local interest (s. 20, paragraph 2).

With reference to the handling and use of pest control agents, chemical or biological pest control agents from countries outside the EU may not be imported, released on the market or used without *approval* (chapter 14, s. 13). Approval, in turn, requires that the product is "acceptable from the point of view of health and environmental protection". To be approved, the product must also be *required* for the control purposes established in s. 5 and 6 (above) (s. 14).[57] Products that have not been approved accordingly may only be used as pest control agents if it is obvious that it does not imply risks for human health or the environment (s. 17).

[55] Deliberate release of GMO:s is also regulated under EC-law, in Directive 2001/18/EG of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms. The purpose of the directive is to – in view of the precautionary principle – harmonise the Member States' legislation regarding deliberate release of GMO:s for other purposes than to put them on the market (Art. 1). The directive is thus a so called market directive, which means that the possibilities to deviate from its requirements are limited. Hence it follows that a permit for deliberate *market* release of GMO:s is not required if the product has been permitted in another EU-country (Michanek and Zetterberg, p. 311, footnote 25).

[56] A chemical product is defined in chapter 14, s. 2 as "a chemical substance or a preparation of chemical substances". A biotechnical organism is defined in s. 3 as "a product that is produced specifically as a control agent or for any other technical purpose and which, wholly or in part, consists of or contains living micro-organisms, including viruses, nematodes, insects or arachnids

[57] Approval may also be granted if the pest control agent is in accordance with Council Directive 91/414/EEC of 15 July 1991 concerning the placing of plant protection products on the market (chapter 14, s. 14, paragraph 2).

Protection of the Cultural Environment and Ancient Relics

Another type of protection that may impact the use of forests and forestry is the protection of the cultural environment and ancient relics.

According to the Law on Ancient Relics[58], the protection for the cultural environment is an issue of national importance; everyone, authorities as well as individuals, are therefore obliged to show consideration and care for the cultural environment. Damages to the cultural environment shall "to the extent possible" be avoided or limited. (Chapter 1, s. 1).

The protection for ancient relics (fornminnen) is rather strong: permanent relics[59] (fasta fornlämningar) may not be relocated, removed, taken out, covered or by other means (e.g., building, planting etc.) changed or damaged without permission (chapter 2, s. 6). Permit may be granted by the County Administrative Board, but only if the relic implies an obstacle to the planned activity or measure that is out of proportion in relation to the relic's significance. It is however unlikely that an activity such as the establishment of a new forest stand would outweigh the importance of the relic, since the forest stand could be established on another location (the activity it is not "site specific").

To a permanent relic is connected a land or water area large enough to secure the protection of the relic. The size of this "relic area" will depend on the character and significance of the particular relic (chapter 2 s. 2).

The Reindeer Herding Act

The reindeer herding right belongs to the Saami people; only a person of Saami origin has the right to use land and water for subsidence for themselves and the reindeer.[60] The reindeer herding right is however a *collective* right which implies that it can only be exercised within a Saami village; to be a reindeer herder you must thus be member in a Saami village (s. 1, para. 3).
The Reindeer Herding Act establishes some basic rights related to Saami villages, reindeer husbandry and the use of land, here among forests.[61] For example:

- The whole pasture area of the Saami village may be used collectively as pasture for the reindeers (s. 15)
- The Saami village has the right to move the reindeer between different parts of the Saami village's pasture area (s. 23)
- The Saami village may, within the pasture area, install fences, enclosures slaughterhouses etc. that is necessary for the reindeer husbandry (s. 16).
- On outlying land within the pasture area, the Saami village, or a member of the village, may build cottages (renvaktarstugor), cots (kåtor), storehouses etc. that are necessary for the husbandry (s. 16, para. 2).

[58] Lag (1988:950) om kulturminnen m.m. (Kulturminneslagen).
[59] Permanent relics are defined in chapter 2, s. 1-2. Here is mentioned for example graves, graveyards, other burial places, ruins of castles, monasteries, churches etc.
[60] The right as such is based on immemorial prescription (urminnes hävd) and is therefore valid also in the absence of statutory recognition (s. 1, para. 2) (see further Allard, 2007, p. 329).
[61] See Allard, 2006, p. 330.

- If wood is required for the buildings or constructions mentioned above, the Saami village has the right to fell trees in the areas of the pasture area that belongs to the Lap areas (Lappmarkerna), the mountain pastures (renbetesfjällen) and the areas in Jämtland and Dalarna that used to belong to the state (s. 17).

- Members of the Saami village has the right to hunt and fish on outlying land within the parts of the village's pasture area that belongs to the mountain pastures (renbetesfjällen) and the Lap area (Lappmarkerna), *if* reindeer herding is allowed there (s. 25). This right is valid also for members of other Saami villages that temporarily stay within the area for purposes related to reindeer management. The visiting Saami may however only hunt and fish for subsistence (s. 25, para. 2). Members of a Saami village that temporarily stay within the area of another Saami village may also take fuel for household needs (s. 19).

- If it is absolutely necessary for the purpose of feeding the reindeer, Saami villages may fell lichen covered (lavbevuxna) trees within the pasture area. This type of felling shall if possible be guided by the land-owner or user (s. 20).

- Compensation does not have to be paid for the felling of trees that *are*, or – by the end of June 1992 – *were*, located on Crown land (kronomark) and belong to the state. The same is valid for deciduous trees on the Lap areas, the mountain pasture areas and in the areas in Jämtland and Dalarna that used to be reindeer pasture areas. For all other felling of trees, the Saami village must pay compensation corresponding to the value of the timber (rotvärdet).

Swedish environmental objectives

In addition to the legal framework, there are also non-binding aims in the form of the Swedish environmental quality objectives. Sweden has adopted 16 environmental quality objectives, which are aimed to be achieved by 2020 (see figure). Two of these are "Reduced climate impact"[62] and "Sustainable forests". The sustainable forests goal is to safeguard biological production, biological diversity, cultural heritage and recreational assets. "By 2020, the area of productive forest land of high conservation value that is excluded from forest production will amount to 1,600,000 ha with formal protection and 1,000,000 ha subject to voluntary conservation" (Swedish Environmental Objectives Council, 2008, p. 366). The volume of hard dead wood will increase by at least 30 million cubic metres standing volume nationwide, the area of young forest will be maintained, and the area of mature forest increase by at least 10%. In addition, "[b]y 2015, compared with 2010, the number of other cultural remains that are damaged annually in conjunction with forestry operations will be halved" (Swedish Environmental Objectives Council, 2008, p. 367). With regard to forestry operations' impact on water, run-off into watercourses will be avoided from 2010 and at least 90% of water courses will have buffer zones. The natural bed of watercourses will be preserved and no migration barriers created when watercourses are crossed.

In 2008, the Environmental Objective's Council assessed that more than half of all of the environmental objectives will be difficult to achieve until then. The environmental objectives are dependent on large changes within Sweden as well as in the surrounding world. The Environmental Objective's Council suggests that interim targets for achieving the objectives must be made more stringent and clear, and that the responsibilities for achieving the objectives need to be clarified, for instance, strengthening regional as well as local and business sector

[62] The reduced climate impact goal is to stabilise greenhouse gas emissions in such a way that "human activities do not have a harmful impact on the climate system". For the period 2008-2012, Swedish emissions will be 4% lower than in 1990, with no allowance for carbon sinks or flexible mechanisms.

implementation of the objectives. The Sustainable forests criterion was not judged as possible to attain by 2020, and it was noted that there are several opposing trends such as biological diversity decreasing and forest use being increasingly intensive (Swedish Environmental Objectives Council, 2008). To attain the sustainable forests target over long term, it was suggested that the Swedish Forest Agency should see to that existing sector councils particularly at local level are developed further and that provisions of the forestry act (especially section 30) are developed and the possibility for sanctions assessed.

The forest act should also be more strictly enforced, among other things through giving the Swedish Forest Agency greater responsibility for enforcement in one or a few trial counties. Advice on sustainable forestry should also be provided to forest owners, and the Swedish Forest Agency should by 2012 formulate a target for continuity forests. Soil preparation and forest machinery with little impact should be developed by the forest industry. Cultural and natural assets should be inventoried through increased monitoring, and GPS and digital maps including these assets used to a higher extent. In addition, "[c]entral government should develop new forms of agreement with landowners to complete present forms of agreement" (Swedish Environmental Objectives Council, 2008, Appendix 1, p. 91). The concept of forest land worthy of production, among these voluntary preservation, should be developed, as should economic instruments to encourage management of voluntary preservation. The Water Directive should also be fully implemented, and functioning water councils in line with the directive should be established. (See figure below from the Swedish Environmental Objectives Council, 2008, p. 92)

Will the environmental quality objectives be achieved?

OBJECTIVE	Forecast for 2020	Trend	Factors that have affected the assessment
1. Reduced Climate Impact*			To meet the goal, global greenhouse gas emissions must begin to fall within 10–15 years, be halved by 2050 and be near zero by 2100. Globally, emissions have grown by 70% in the last 35 years, and are expected to go on rising for the next 20–30.
2. Clean Air			Causes of air pollution include old vehicles, increased traffic, wood-fired heating and studded tyres. In 2020, pollutants will still have adverse effects on health and the environment. The trend towards better air quality in towns has not been maintained.
3. Natural Acidification Only			Land-based sulphur and nitrogen emissions in Europe have fallen sharply, but not enough. Factors behind the fall in Sweden include the sulphur tax and vehicle exhaust standards. Shipping emissions are rising. Growth in forestry could add to acidification.
4. A Non-Toxic Environment			Diffuse releases of dangerous substances from products and processes will be hard to tackle by 2020. Production volumes are rising, especially in countries with limited regulation of chemicals. REACH is a major step forward, but further action is needed.
5. A Protective Ozone Layer			For the first time, this goal is judged achievable. Sweden's phase-out of ozone-depleting substances is going as planned, but substances are still present in some products. Levels in the upper atmosphere are falling, thanks to successful global action.
6. A Safe Radiation Environment			Emissions of radioactive substances are limited. Changing human behaviour so as to reduce the incidence of skin cancer is difficult. But the target for electromagnetic fields is now judged to be met, as risks are being studied and addressed.
7. Zero Eutrophication			Swedish emissions of phosphorus compounds and nitrogen compounds, including ammonia, have fallen. The majority of nutrient inputs to seas and forest soils originate in other countries. Recovery of natural ecosystems will take a long time.
8. Flourishing Lakes and Streams			Better stewardship is needed in farming and forestry. Conservation of cultural and natural environments must be stepped up. Conditions for ecological restoration have improved. Water supply plans are often lacking. Many species are threatened. Alien species are a problem.
9. Good-Quality Groundwater			Groundwater is affected by farming, towns, roads, contaminated land, over-abstraction etc. Monitoring is inadequate. Many water sources lack adequate protection. Water authorities' programmes of measures are expected to help meet this objective.
10. A Balanced Marine Environment, Flourishing Coastal Areas and Archipelagos			Nutrient inputs are falling, but abatement of eutrophication is less clear. The status of cod and eel stocks is critical. Coastal and offshore development pressures are growing, as is the risk of oil discharges. The area protected is gradually increasing.
11. Thriving Wetlands			Wetland conservation and restoration are progressing slowly. Environmental stewardship must improve, especially in forestry. On the plus side: a revised Mire Protection Plan and continued progress on Natura 2000, water management and threatened species.
12. Sustainable Forests			Conflicting trends can be seen. Several key factors for biodiversity are improving, e.g. dead wood, large trees, mature forest. But forests of high conservation value are being felled, and cultural remains damaged. Use of forest resources is intensive.
13. A Varied Agricultural Landscape			Natural and cultural assets are threatened by both scrub encroachment and intensification of farming. Agri-environment measures and business and rural development are major factors affecting the prospects of achieving the objective.
14. A Magnificent Mountain Landscape			Reindeer grazing is needed to maintain the unique values of the mountain landscape. Reindeer numbers have fallen. Damage due to off-road vehicles has increased slightly. More of these vehicles are now quieter. Mountain cultural heritage is inadequately protected.
15. A Good Built Environment			Buildings and urban structures have long lifetimes, so existing problems will persist, making it hard to meet the objective by 2020. Noise and poor indoor environments are major health problems. Cultural heritage is inadequately protected.
16. A Rich Diversity of Plant and Animal Life			Despite the action taken, loss of biodiversity (both species and ecosystems) continues. Several common species, e.g. farmland birds, are declining. The status of threatened species has worsened. Many biological resources are not being used sustainably.

* Target year 2050, as a first step

4. Looking forward: conclusions and take-home messages

Given this situation, a number of potential trends could be perceived. We will concentrate on three potential development paths, which are not excluding each other but may occur in parallel. Given the complexity of the forest governance framework, these are mainly speculative.

The analysis above mainly illustrates that the forest governance framework is developing quickly and towards a potential increased integration between both sectors (through the increasing integration of for instance protection and social aims in production) and levels (for instance, by the increasing role of the EU for Sweden since 1995, where potential development toward an even stronger EU could be possible in the future). Given the developments described above, a number of development paths could be seen as possible:

1. Increased regulation and potential conflicts limiting regulation or moving it into softer means

2. Increased conflicts between protection-production and other interests

3. Increased impact from new issues requiring increasing coordination between policy areas

1. Increased regulation of the type described above, which forwards existing aims along proceeded development paths for instance in the case of the FLEGT or other, can to a large extent be seen as likely. One open question is the extent of development given states' diverging aims, as well as the extent of implementation. Certification developed to some extent as a result of the inability to develop an international forest regime in UN attempts in the early 1990s, and constituted a measure whereby NGOs were able to forward some aims for controlling logging especially in rainforests within a market framework, instead of in the legislative framework which moved slowly (rather, halted) given the requirement for agreement among diverse states. However, certification has since diversified into different types, where some movement towards the less environmentally stringent PEFC version can be seen (at the same time as this is also moving closer to the FSC system due to criticism). In the future, regulation may beyond increasing the integration of production, protection and multi-use aims as can be seen above, thus also take softer voluntary paths where difficult issues are regarded. A problem with such voluntary systems is, however, that they cannot be assured to stay with, for instance, initial stringent versions but are liable to change: however, it may also be that the acceptance of control in some areas (even if voluntary) make the institutionalization of legislative measures in the area more acceptable and thus more likely.

2. Given that forests are asked to provide an increasing number of goods (for instance, both materials and energy), conflicts over forest use may also increase. While protection interests could be seen as likely to increase given the increasingly limited areas of old forest, the number of demands on forestry are similarly increasing. This can be seen empirically in a number of areas, and may also provoke conflicts between other land uses (such as, increasingly forestry and reindeer husbandry). As a result of such demands, forestry as well as other land uses could be seen as moving towards other practices or even systems than we are used to seeing today. The step from intensive to plantation forests for energy or other uses, and with increasing fertilization may place increasing focus on water protection and on modifying the forest governance framework to deal with these new stresses. Reindeer husbandry may also shift into other systems as infrastructure development (a development parallel to that of forest use, but also impacting forest areas and the availability of forest land) and forestry change the character of the forest land and make existing practices difficult.

3. Forest use will also need to deal with a number of challenges from other such concurrent developments “external” to the system, among which climate change is one. Given the relatively novelty of development of agenda-setting politically on this issue, a large development in regulation could be expected to deal with climate change mitigation and adaptation, the integration of different issues that impact forest with regard to issues made relevant especially by climate change, and the inclusion foremost of issues with a long-term scope. Climate change actualizes many of the issues previously treated under headings such as sustainable development and ecological modernization, where a focus has been placed on integration between issues (and sometimes on the technical and procedural development to accomplish this within the current system) and on development that takes a longer timeline into account. One line for research will include how adaptation is developed to link a number of issues and actors, both as a specific policy area and as becoming integrated into other policy areas.

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Brundtland Report (*Our Common Future*): www.un-documents.net/wced-ocf.htm

CBD: www.cbd.int

CITES: www.cites.org

CPF: www.fao.org/forestry/cpf/en/

DAISIE Project: www.europe-aliens.org

EEA: www.eea.europa.eu

EU Biodiversity Action Plan:

ec.europa.eu/environment/nature/biodiversity/comm2006/index_en.htm

EU Floods Directive: ec.europa.eu/environment/water/flood_risk/index.htm

EU Forest Strategy: ec.europa.eu/agriculture/fore/forestry_strategy_en.htm

FCPF: www.forestcarbonpartnership.org/fcp/

FLEGT: ec.europa.eu/development/policies/9interventionareas/environment/forest/forestry_intro_en.cfm

FSC: www.fsc.org

Invasive Alien Species: ec.europa.eu/environment/nature/invasivealien/index_en.htm

ILO: www.ilo.org

ITTO: www.itto.int

IUCN: www.iucn.org

MCPFE: www.mcpfe.org

Natura 2000: ec.europa.eu/environment/nature/natura2000/index_en.htm

NOBANIS Project: www.nobanis.org

PEFC: www.pefc.org

Ramsar Convention:	www.ramsar.org
UNCCD:	www.unccd.int
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UNECE:	www.unece.org
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