



Nordic forest research will be coordinated from Denmark

EFI-NORD will expand the bridges between the North-European forest research institutes. Photo: Oresundsbron

The European Forest Institute (EFI) decided to establish a regional center to coordinate forest research in northern Europe at its annual conference in September.

The new research center, EFI-NORD, will be coordinated from Forest & Landscape Denmark, based at Copenhagen University.

There are currently three Regional EFI-Offices: a Mediterranean located in Barcelona, Spain; a Central European located in Freiburg, Germany and Nancy, France and an Atlantic European, located in Bordeaux, France.

Eleven countries

The strong Nordic cooperation in forest research mediated by the Nordic Forest Research Cooperation

Committee (SNS) will now be expanded to include forest research institutes in Russia, Estonia, Latvia, Poland, Ireland and Wales.

At present, 18 institutes from 11 countries are expected to participate in the new center, sharing a budget of 5 million DKR.

Unique opportunity

Niels Elers Koch, director general of Forest & Landscape is quoted as saying, on the institute's website "With EFI-NORD we have a unique opportunity to add a European dimension to the successful cooperation that already exists between the Nordic countries",

More to come

In addition to the office in Copenhagen, opening in 2010, EFI is preparing for the launch of two more

regional offices: a Central-Eastern European and a South-Eastern European.

The role of SNS in the new EFI-NORD will be described in later issues of News and Views.

Read more: www.efi.int, www.sl.ku.dk

An interview with Risto Päivinen regarding EFI can be found in News and Views No. 4, 2008.

Acronyms for the Regional Offices

EFI-NORD North European

EFI-MED Mediterranean

EFI-CENT Central European

EFI-ATLANTIC Atlantic European

EFI-CEEC Central European (to be launched)

EFI-SEE South-Eastern European (to be launched)

Effects of afforestation – the Icewoods project

What happens to an ecosystem when land that has been formerly treeless is transformed into a forest? This question, which is highly relevant to Iceland has been tackled in a project called “Icewoods” .

The project was completed in 2008 and has provided new insights into the effects of large scale afforestation.

Sequences of plantations of various ages and containing diverse species were compared with treeless land, in order to characterise the changes that occur in terms of biodiversity, carbon dynamics and soil characteristics, over time, following afforestation.

Brynhildur Bjarnadottir of Iceland Forest Research has recently presented a doctoral thesis based on measurements taken in the



Brynhildur Bjarnadottir found that Icelandic forests play an important role in the sequestration of carbon.

Photo: Mats Hannerz

Icewoods projects. She showed that substantial carbon is sequestered in the young larch forests. Scaling up the data to cover the whole of Iceland, indicates that the carbon sequestered by the afforested land since 1990 is equivalent to ca. 5% of the annual carbon emissions of this country.

The Icewoods project also showed that with increasing age of the forest:

- The number of plant species and the productivity of the forest floor decreased.
- The numbers of bird and invertebrate species did not change significantly, but their density increased.
- The numbers and density of soil arthropods and fungi increased.

Forest researchers – check also NKJ!

There are many intra-Nordic organizations that are linked to forest research. The Nordic Joint Committee for Agricultural Research (NKJ) is a “sister organization” to SNS, with the mission to promote and support cooperation in agricultural research between the five Nordic countries.

The secretary of NKJ, Doctor Merja Veteläinen, attended the SNS board meeting this summer to discuss possible links between NKJ and SNS.

The last call for research projects within NKJ requested that they be submitted with a focus on climate change mitigation and improvements in adaptations of Nordic agriculture to new climatic conditions. The following research themes were prioritized:

- Greenhouse gas emissions from mixed livestock farming systems
- Adaptations of Nordic cropping systems to climate change
- Peatland management



NKJ secretary Merja Veteläinen holds a PhD in plant genetics, and currently serves as secretary in addition to her position as scientist at MTT Agrifood Research Finland. Photo: Mats Hannerz

- Spread of old and new animal diseases in the Nordic countries as a consequence of climate change.

These themes may also offer a starting point for forest researchers. In the years to come, conflicts between land use, such as forestry, agriculture and reindeer husbandry may emerge.

The members of NKJ are the five national research councils, or corresponding organizations.

NKJ serves as an advisory capacity on agricultural issues to the Nordic Council of Ministers. Its secretariat has been based at AgriFood Research Finland between 2006 and 2009.

Read more: www.nkj.nu

EFORWOOD approaches its final end

The 4-year, EU Integrated project EFORWOOD, held its final conference in Uppsala, Sweden in September 2009. Researchers, policy makers and practitioners from all over the world joined in discussing tools for sustainability impact assessments of the forest-based sector.

The main outcome of the EFORWOOD project was the dynamic sustainability impact assessment tool ToSIA (see below). The conference gave an opportunity for experiences and

expertise gained to be shared by participants in the project and counterparts involved in other EU Integrated projects. Projects such as SENSOR, SEAMLESS and PLUREL are also designed to develop similar tools to help researchers and policy makers reach decisions regarding land use problems, environmental and socio-economic issues and landscape planning.

The project will end in January 2010, but the development and implementation of ToSIA will continue.



Professor Kaj Rosén at Skogforsk in Sweden has been leading EFORWOOD. "We are discussing a network for managers and user groups of ToSIA,

and the tool will also be further developed in other ongoing and planned projects",

Read more: www.eforwood.com

The EFORWOOD project is also described in News and Views No. 2, 2008 and No. 3, 2005.

What is the ToSIA tool?

The Decision Support Tool ToSIA (Tool for Sustainability Impact Assessment) is the main product of EFORWOOD. It represents a dynamic model for sustainability impact assessment model to analyse environmental, economic, and social impacts of changes in forestry-wood production chains, using a consistent and harmonized framework from the forest to end life of final products.

ToSIA will be applied to datasets from various regions, which have been collected within the EFORWOOD project – e.g. the **Baden-Württemberg Case Study** which focuses on increased demand for forest-derived bio-energy in the future, and the **Scandinavian Case Study**, in which different technological scenarios have been assessed.

The results give a holistic picture of the current status of the value of the region's forest chains, in terms of factors such as employment figures, production costs and CO₂ emissions. It also make it possible to evaluate the impact of potential

developments in the future, arising from increasing demand for forest bio-energy, on sustainability.

Some specific examples in which ToSIA could be used are in predicting effects of restrictions, such as limiting the size of clear cuttings or setting limits on the amount of toxic waste released by industries.

The tool may also be used to study the impact of external factors, such as changes in the concentrations of greenhouse gases in the atmosphere.

The difference between ToSIA and other similar, previously available tools is that none of the others address all three parameters of sustainability (environmental, economic and social) along the whole Forestry-wood Chain (FWC) in a well-balanced way.

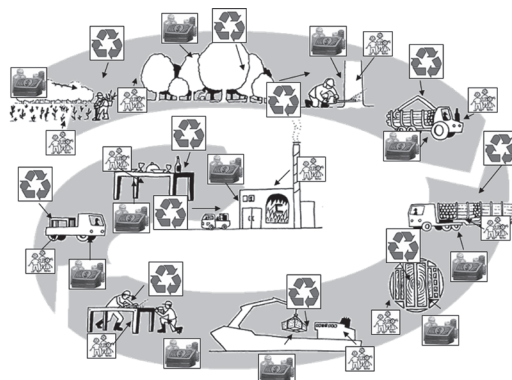
ToSIA is designed primarily to give answers to WHAT IF? -type questions, such as:

- What if the EU introduces new policies on aspects such as energy, transport, recycling and habitat protection?
- What if the use of wooden frames in houses is doubled?
- What if the global market changes?
- What if the oil price doubles?

ToSia will be able to:

- Assess the impact of changes in a FWC, caused by external and internal factors, on sustainability.
- Assess material flow along a FWC.
- Assess indicator values (economic, social and environmental) for processes defining a FWC.

The tool is available as an open source model, but expert aid will be necessary to run more advanced analyses. A user-friendly demo version will also be available on the internet at the end of the project (January 2010).



A Forestry-wood Chain

Undisturbed old-growth forests maximizes carbon storage

Absence of wildfire and some traits of dominant plant species that promote underground carbon (C) accumulation are the most important determinants of C sequestration in boreal forests.

Swedish University Agricultural Science (SLU) researchers Micael Jonsson and David Wardle studied 30 forested islands in northern Sweden which differed greatly in fire frequency and their plant communities.

The main factors affecting forest carbon storage were the direct effects of fire through combustion, and its indirect effects on vegetation types.

Their analyses showed that as forests age less carbon is stored above the ground, but substantially

more is stored below ground. The overall effect is that old undisturbed forests can store much more carbon than their younger counterparts since there is a large increase in carbon stored in the soil. Moreover, this extra underground carbon may remain locked up for thousands of years.

These results are consistent with a growing volume of data worldwide showing that natural old-growth forests can often serve as important carbon sinks, and that conservation of old-growth forests may, therefore, be important for carbon storage. However, the conservation of natural old growth forests is not recognized as a central component of current carbon accounting schemes such as those related to the Kyoto Protocol.

*Source: www.slu.se. The study was presented in *Biology Letters* in 2009.*

Fire reduces underground carbon.

Photo: Yvonne Aldentun



National Key project expands to Norway

Swedish and Norwegian fauna och flora key projects collaborate.

There are many gaps in our knowledge of Sweden's approximately 60,000 species of multi-cellular organisms. Sweden is the first country to undertake a project aimed at describing its entire native species in a book entitled 'The National Key to the Flora and Fauna of Sweden'. This is the largest Swedish publishing project ever.

It was initiated in early 2002, when the Swedish Species Information Centre at the Swedish University of Agricultural Sciences (SLU) was commissioned by Parliament to describe all of Sweden's animals, plants, and fungi. The

aim <<<<was to make information about the indigenous species available to the people of Sweden, while at the same time the project gave a boost to researchers.

The project has now expanded to Norway in an agreement signed by the environmental ministers of Norway and Sweden in September. The signing coincided with the opening of two new marine national parks on each side of the national border (Koster Sea and the Outer Hvaler National Park).

In January 2009 Norway started its own species project and now more formalized collaboration between the two countries has been initiated.

Read more: www.svenskaartprojektet.se News and Views No. 4, 2007.

The Norwegian and Swedish ministers for the environment, Erik Solheim and Andreas Carlgren sign the agreement.

Photo: Gunnar Seibold/ Regeringskansliet.



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