

Network title: Scandinavian Society of Forest Economics 2025, N2025-02

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Preamble: The network (SSFE) emphasis fostering Nordic knowledge exchange and scientific partnerships in emerging topics within forest economics; ranging from theoretical economics to highly applied topics related to the role of forests in fulfilling the sustainable development goals and bioeconomy targets. It is important for SSFE to offer opportunities to young scientists and doctoral students to present their ideas and network in an encouraging atmosphere.

The Forest Tightrope: Balancing Wood, Carbon, and Life in a Changing Climate

Forests have transitioned from being seen merely as timber factories into the front line of the global **Ecological Crisis**. We are currently moving through a policy era where forests must simultaneously serve as critical carbon sinks, reservoirs of biodiversity, and sources of renewable raw materials. Managing these competing demands is like walking a tightrope where every step toward one goal can create a wobble in another.

Choosing the Right Path: Management Strategies

The way we manage our woods is changing. For decades, traditional clear-cutting was the standard, but today, **Continuous Cover Forestry (CCF)** is gaining traction as a way to enhance carbon sequestration and protect soil carbon. While CCF offers ecological and social benefits, research shows it generally produces slightly lower wood volumes per hectare than traditional methods.

To navigate the three roles of forests, managers are exploring **Climate and Biodiversity Smart (CBS)** forestry, which integrates conservation directly into mitigation efforts. Synergies exist; for instance, leaving retention trees during harvests is a widely used practice that supports biodiversity while keeping carbon on the land. However, the trade-offs are real—prioritizing timber production often leads to a decline in biodiversity indicators, while strict conservation can limit the economic yields that support local livelihoods.

Adapting to a Warming World

Climate change isn't just a future threat; it is already changing the face of our forests. Stakeholders report an increase in damages from drought, fire, and storms. One of the most significant adaptation challenges is the rise of pests like **bark beetles**, which are expected to become more severe as the Boreal region warms.

Research suggests that moving toward “**mixed forest management**”—rather than single-species plantations—is a powerful adaptation tool to reduce risks from insects, fire, and storm damage. Furthermore, high-tech solutions like **big data from logging machines** are now being used to detect root rot in real-time, allowing for more precise and resilient management.

The Global Leakage Paradox

Perhaps the most complex challenge is the risk of **harvest leakage**. When the European Union introduces strict regulations like the **LULUCF Regulation** or the **Biodiversity Strategy 2030** to increase domestic carbon sinks and protected areas, it can cause a sudden drop in local timber supply.

This often forces wood-consuming industries to look elsewhere. Projections suggest that for every reduction in harvest in Europe, a significant portion of that production shifts to regions like North and South America. This "spillover" can inadvertently increase pressure on biodiversity-rich tropical forests, highlighting that true sustainability must be addressed on a global, not just regional, scale.

Tools for a Nature-Positive Economy

To solve these puzzles, new digital and financial tools are emerging. Geospatial platforms allow landowners to simulate complex trade-offs, balancing timber yields against carbon sequestration and biodiversity credits. This data-driven approach helps bridge the gap between traditional management and new markets.

On the financial side, **Green Bonds** are being used by major forestry companies to fund reforestation and biodiversity conservation. Schemes like **Payments for Ecosystem Services** (PES) are also being developed to compensate landowners for the "lost opportunities" when choosing conservation over harvesting. Some models even suggest "stacking" these payments, e.g. paying for both water quality and carbon storage on the same plot of land, to make conservation as profitable as timber production.

A Shared Responsibility

Ultimately, the future of the forest depends on understanding that citizens prioritize **clean air and water** above all other services. Whether through high-tech simulation, alternative harvesting, or international policy coherence, the goal is the same: creating a resilient forest that can breathe, grow, and provide for generations to come.



Learning about next generation forest based biofuels at Silva Green Fuel demo plant at Tofte, Norway. Photo by Per Kr. Rørstad. Taken at the network meeting, May 2025.



Forest certification scheme like PEFC is one way to take multiple ecosystem services into account in forestry. Representative from PECF Norway and forest owner organization Viken Skog SA demonstrate how this is done. Photo by Per Kr. Rørstad. Taken at the network meeting, May 2025.

Instructions for SNS popular science piece (PSP)

Please submit your answers as a word (.docx) document. Use max 700 words in total. The popular science piece should have emphasis on application of results and benefits for the Nordic society. Please note that your answers can be rewritten and used by SNS for information in various channels.

Here are some tips when you write a popular science piece:

- Imagine that you write/explain to a person who is not an expert in the subject
- Write simply and briefly and right to the point
- Limit the use of technical terms, or explain them if you use them
- The style can be more personal; using personal pronouns as "we" and "you", making use of metaphors, concrete examples and thought experiments.
- Formulate a catchy title
- Arouse interest! Talk about the most important and interesting things first

The popular science piece should contain:

Title (short, interesting, heading indicating the main message)

Network title

Contact person (name, phone number, email address).

Preamble: Use two sentences to explain the absolute core of your activities.

The main text:

The results, conclusions, consequences, activities presented in a popular manner, with emphasis on application of results as well benefits for the Nordic Society.

Photos

Please add one or more pictures from your project and submit them as separate files (.jpg), do not include them in the word document. The resolution should be at least 72 pixels, more preferably 300 pixels. The size should be at least 500x500 pixels, preferably more.

Please tell us what or who the picture shows, where and when it was taken and the name of the photographer. Please state if the pictures cannot be used by SNS on other occasions.

Please note that all people who are recognizable in the photo must be asked for permission to publish the photo before adding it to the PSP.