



Metla's employees in the Vilppula experimental area, summer 1958. Photo: Reino Saarnio, Metlan kuva-arkisto, Luke and Pixabay (flag).

Both the nation of Finland and Finnish forest research celebrated their 100-year anniversaries in 2017. The forest research institute, which would become known as Metla, started off by delivering research to the traditional forest sector, but has, over the years, broadened its scope to many aspects of bioeconomy. Jaana Laine, researcher at the University of Helsinki, summarises a century of forest research in Finland.

## Metla 1917-2014 – the history of Finnish forest research

### Metla's history can be divided into three periods according to the main research focus and societal demand for knowledge.

During the interwar period Metla produced valuable information on national forest resources. After World War II Metla's duty was to ensure enough timber for the forest industry, which in practice directed the research on forest improvement. From the 1980s onwards Metla attempted to balance between the forest sector and environmental activism, and gradually forest research became more responsive to the ecological and cultural values. During the last decades biodiversity and bioeconomy have formed an essential part of its research programmes. From the beginning of 2015 forest researchers have been working within Luke.

### Activities started in 1918

In October 1917, the Senate of the Grand Duchy of Finland passed the Law on the Finnish Forest Experimental Institute (later known as Finnish Forest Research Institute, Metla). However, the beginning of research activities was postponed until the summer 1918 due to the outbreak of civil war in January 1918. For the first years, there were only three professors undertaking research on silviculture, forest mensuration and inventory, and soil science. From this modest start, Metla developed into one of the most respected forest research institutes.

### Need for knowledge and timber

After WWII, in consequence of the war indemnities and reconstruction, the pressure to intensify the use of

forest resources grew. Large clear cuttings, especially in Lapland, highlighted the importance of research into silvicultural practices and the regeneration of forests.

In the late 1950s scarce forest resources seemed to limit the growth of the forest industry, and the expected shortage of timber resulted in the launch of two major national actions. First, export of round wood and household consumption were reduced to secure industry's timber procurement. Secondly, at the beginning of the 1960s nationwide forest improvement programmes were implemented. The state offered private forest owners financial support and loans e.g. for forest regeneration, fertilisation, ditching and forest roads.

During this so-called *MERA-*





Periods of forest research: National forest inventory in the early 1950s (photo: Luke); Forest tree breeding in Ruotsinkylä research forest 1973 (photo: Veikko Koski, Luke); Climate change research in Pallastunturi, Lapland 2006 (photo: Erkki Oksanen, Luke).

period Metla's research had two aims: in the beginning, to increase timber production, and later, to evaluate the economic profitability of forest improvement. The importance of profitability grew when the oil crisis of the 1970s forced the state to consider more carefully the funding of different forest improvement activities.

### Acid rain and demand for energy

Due to the oil crisis, research was focused, from the late 1970s to the mid-1980s, on wood energy production. This so-called *PERA* research programme developed the energy use of stumps and crown biomass and cultivation of energy willow; that is the wood material not needed in forest industry production.

This enthusiasm for wood energy was abruptly interrupted when new threats were literally falling from the sky, namely forest destruction caused by pollution and acid rain. At the same time Metla was challenged by environmental activism, which pushed research towards the multiple use of forests.

### Conflicts and decision-making

All in all, this was the beginning of several conflicts with environmental activists but also with forest industries and private forest owners. Private

forest organisations expected Metla to offer unambiguous research results on silvicultural issues which could be formulated into guidance for private forest owners. Both forest industries and the state administrative organisations demanded current information on forest resources.

Interest groups stressed the need for quick answers to research problems, but they partly ignored the natural tempo of forest research. Biological research takes time, particularly in forests with nearly hundred-year long rotations.

Policy-oriented applied research gained more ground within Metla from the 1990s onwards and the Ministry of Agriculture and Forestry expected research results to support political decision-making. These demands grew partly as a result of membership of the European Union, but also due to ongoing globalisation and the increasing number of international commitments.

### Towards bioeconomy

Biodiversity and bioeconomy shifted Metla towards interdisciplinary research. This is apparent, for example, in the National Forest Inventories, for which more and more ecological information has been gathered. For investigating global warming, researchers have benefited

from the long history of Metla; for instance, experimental plots established from the 1920s onwards and forest litter samples collected from the 1950s have offered valuable information about environmental changes.

Nowadays, forest researchers face more complex issues which require broad environmental and socio-economic knowledge and co-operation with other disciplines and research organisations. From the beginning of 2015, Luke (Natural Resources Institute Finland) has offered forest researchers an inspiring and multidisciplinary working environment.

*Text: Jaana Laine*

**Reference:** Laine, Jaana. 2017. *Metsästä yhteiskuntaan: Metsäntutkimuslaitos 1917–2012. Metsäkustannus, Helsinki. [From the Woods to the Society: Forest Research Institute Finland 1917–2012]*

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## 4 networks will strengthen wood science collaboration

The SNS board has decided to support four networks in the field of wood science, including wood processing and utilisation.



The currently highest wooden house Brock Commons at University of British Columbia, Vancouver, is 18 storeys and 53 meters high. Norway has started building an 80 meter high WOODEN HOUSE. Photo: University of British Columbia.

### Nordic wooden houses stretch to the sky

The world's tallest wooden building is currently 18 storeys high, but one of 24 storeys is on the way and the record is broken on an almost yearly basis. The Nordic countries are well in the frontline of this race, particularly Norway, where an 80 meter high building is in the offing. One of the drivers for the focus on wood as a construction material is climate change, another is the facilitated building process. The Nordic forest industry with its vast forest resources has an advantage but technology and production capacity need to be continually developed to keep pace with international competitors.

The network will assemble stakeholders from the building sector, technical institutions and universities with the aim of identifying challenges and benefits of tall wood buildings.

During 2018, workshops will be held in Denmark, Sweden and Norway, and new projects in a broader context (COST action and Horizon2020) will be planned for.

**Network title:** Nordic network for tall wood buildings.

**Coordinator:** Peder Fynholm, Danish Technological Institute, [pfy@dti.dk](mailto:pfy@dti.dk)

### Wood decay – an obstacle and an asset

Decaying wood is a problem in construction materials, and sometimes a reason for using substitutes with higher climate impact. In this case, decay is a drawback, but decay can also be beneficial. Biorefining is based on biotic degradation of wood in order to convert it to a spectrum of bio-based products (food, feed, chemicals, materials) and bioenergy (biofuels, power, heat).

The purpose of this network is to improve the collaboration between scientists working on wood decay from different perspectives. It will strengthen the collaboration between wood laboratories in Sweden (Lund), Denmark (Copenhagen) and Norway (NIBIO), all with different expertise areas and equipment.

The support from SNS will cover workshops, a PhD course and research visits. One of the planned outcomes will be a COST action, involving experts from other European countries.

**Network title:** Better biomass utilisation through improved understanding of decay mechanisms in wood.

**Coordinator:** Lisbeth Garbrecht Thygesen, University of Copenhagen, [lgt@ign.ku.dk](mailto:lgt@ign.ku.dk)

### Cooperation on forest inventory continues

The Nordic Co-operation Group for Forest Inventory was established in the 1970s, and has, over the years, received funding for bi-annual meetings. The group helps to build bridges across disciplinary boundaries of forest inventory, forest planning and forest management.

In August 2018, a two-day meeting will be held in Denmark. The goal of the meeting is to discuss simulation of future forest resource availability based on National Forest Inventory data, and how such simulations can be used to assess the role of forests in climate change mitigation. The meeting will be co-organised with the CARISMA network, which works on remote sensing.

**Network title:** Nordic Co-operation Group for Forest Inventory.

**Coordinator:** Thomas Nord-Larsen, University of Copenhagen, [tntl@ign.ku.dk](mailto:tntl@ign.ku.dk)

### Healthier houses with wood in the interior

A new CEN-standard on building products is soon to be implemented - *prEN 16516*. The standard requires all building materials exposed to indoor air to be tested for dangerous substances – a challenge for wooden materials, since they naturally release volatile organic compounds. Some of the compounds emitted from wood have a positive effect on human health, but they are still treated as toxic. This is only one of the problems to be tackled by this network.

The network will assemble experts to document and communicate results about wood interior products and their role with respect to health and indoor climate. The application states that: “Wood has been considered a safe and healthy material. But belief is not sufficient. There is a need for documentation and thereafter information dissemination.”

Besides organising workshops, the network aims to write an EU-proposal within the ForestValue-net.

**Network title:** Wood interior: Health impact and indoor air using wood interior.

**Coordinator:** May-Linn Sortland, Norwegian Institute of Wood Technology, [may.linn.sortland@treteknisk.no](mailto:may.linn.sortland@treteknisk.no)

## SNS at COP23



Lennart Ackzell (Nordic Forest Owners Association), Mimmi Blomquist (SNS) and Torfi Jóhannesson (Nordic Council of Ministers) presented a new brochure on climate benefits.  
Photo: Mia Smeds, Nordforsk.

The UN Climate Change Conference, COP23, took place in November in Bonn. SNS was present, and secretary Mimmi Blomquist describes the activity in a blog statement: *"The Bioeconomy day at the Nordic pavillion was filled with inspiring talks, workshops and networking activities about how pressing environmental issues can be addressed in a Nordic setting across sectors such as forestry, agriculture and fishery."*

The day also included the release of a new brochure explaining the climate

benefits of the Nordic forests. SNS was also invited to join a session called "Everything you always wanted to know about bioeconomy – speed date an expert".

Read more about the conference:  
<https://cop23.unfccc.int>

Mimmi Blomquist's blog text on [www.nordicforestresearch.org](http://www.nordicforestresearch.org)

Download the brochure *The climate benefits of the Nordic Forests*.

## Large grant to Wood Science Center

The WWSC, Wallenberg Wood Science Center, is a cooperation between KTH, Chalmers, Linköping University and the forest industry. The center has been granted 400 million SEK for the period 2019-2028. The forest industry contributes with another 100 million SEK. The mission of WWSE is to create knowledge and build competence that can form the basis for an innovative future value creation from forest raw material. The new grant will secure the continuation of WWSC.

Read more [www.wwsc.se](http://www.wwsc.se)

## Apply for scholarship

NordGen and SNS has announced a call for scholarships available for young students or professionals working with forest management.

Read more on SNS webpage,  
[www.nordicforestresearch.org](http://www.nordicforestresearch.org)

## New chairman of SNS

From January 2018, Norway will chair Nordic Forest Research SNS. The new chairman is Ivar Ekanger, director at the Ministry of Agriculture and Food, Norway.



Chairman Ivar Ekanger. Photo: Mats Hannerz.

## Wallenberg Foundation 100 years

Knut and Alice Wallenberg Foundation celebrated 100 years in 2017. It is one of the largest private research-funding sources in Europe. Knut Wallenberg was a banker, politician and philanthropist who succeeded his father André Oscar Wallenberg as president of Stockholms Enskilda Bank (today Skandinaviska Enskilda Banken, SEB).

He was also foreign minister of Sweden during the first world war. The Knut and Alice Wallenberg Foundation started with an initial endowment worth 20 million SEK, which has now grown to assets worth 90 billion SEK. It has over the years awarded 24 billion SEK to excellent basic research and education in Sweden, preferably in life sciences, technology and natural science.

Read more: [www.kaw.wallenberg.org](http://www.kaw.wallenberg.org)

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