

The forest industry has long been the backbone of Finland's economy. Forest cover three-quarters of the country's land area. Thus, it is not surprising that forest research is strong in Finland. The largest research organisation is Metla, but there are several other actors that are described here.



Finnish forest research in brief

Metla – The Finnish Forest Research Institute

The Finnish Forest Research Institute (Metla), which has 800 employees, two research centres and seven research stations, is the key actor in forest research in Finland. Metla was established in 1917 and is accountable to the Ministry of Agriculture and Forestry.

The headquarter of Metla is located in Helsinki. It forms a part of the Vantaa *research centre*, and about half of Metla's staff work here. The unit in Joensuu was upgraded to a research centre in 2001. In addition, there are seven *research stations*, from Parkano and Punkaharju in the south to Kolari far north of the polar circle.

The organization also owns *research forests*, covering 90,000 ha, which provide research, conservation, recreation and nature tourism facilities.

The total annual research budget at Metla amounts to EUR 36 million, of which 70% is publicly provided. About 300 of the staff are researchers, and more than 100 hold a doctor's degree (PhD).

The research is organized into

problem-oriented projects, and the foremost of these are combined into wider research programs. Currently running programs cover topics such as: pools and fluxes of carbon, utilisation of wood in relation to wood product markets, forest management planning, and alternative silvicultural practices.

Communication is highly valued at Metla, and major efforts are put into disseminating research results to both other experts and the public.

An international journal, *Silva Fennica*, is published, in collaboration with the Finnish Society of Forest Science.

Read more: www.metla.fi

Metla's research centres (large symbols) and research stations (smaller symbols).



Biodiversity research. Determining epoxy species in decayed wood.

Photo: Metla/Erkki Oksanen



Joensuu – evolving centre in the east

Joensuu, the capital of Finland's easternmost region, Karelia, has become a vital centre for forest research. Not only for Finland, but also internationally through its ties with the European Forest Institute.

- The Forestry faculty at the University of Joensuu was established in 1982. The research it conducts is diverse, and mainly funded by external sources. The Academy of Finland has appointed one of the research groups at the university to join the "Centre of Excellence for Forest Ecology and Management". This is an association linking a network of scientists at several universities and institutes. In total, some 40 researchers and 50 PhD students are involved in the centre. Four research teams work within it, on topics such as ecosystem modelling, atmospheric impact and biodiversity.

- The Joensuu unit of Metla was formerly a research station, but was upgraded in 2001 to make it the second of Metla's two research centres. At that point, there were 30 researchers

and 40 other staff working in the centre. It is now expanding and will increase to around 100 persons by the year 2005. There are four priority research areas at the Joensuu research centre: Forest management planning; Silviculture; Forest technology and Wood Science.

- **The European Forest Institute (EFI)** is an association that is governed by its 141 member organizations, which are based in 39 countries: 29 inside and 10 outside Europe. The mission of the institute is to conduct, promote and co-operate in forest research at the pan-European level, and to make the results known to interested parties. Providing information for policy-making in Europe is an important objective. Results are disseminated through publications and events. EFI publishes scientific series and a newsletter, EFI News. EFI has been heavily involved in efforts to make



Joensuu campus

Photo: Ilkka Kontinen / University of Joensuu.

forest statistics comparable between countries by defining a common nomenclature. The statistics have then been used to create maps of forest resources in Europe. In 2002, 53 persons worked at the institute, which had a budget of EUR 2.9 million. One million was paid directly by the Finnish Government.

Read more: www.joensuu.fi, www.metla.fi, www.efi.fi

Helsinki University

The University of Helsinki has a strong forest research presence, based in the Faculty of Agriculture and Forestry at the Viiki campus. The forest departments are:

- the Department of Forest Resource Management, which conducts research in forest technology, forest

mensuration and management, wood technology and geoinformatics.

- the Department of Forest Economy studies the marketing of forest products and the economics of forest holdings

- the Department of Forest Ecology, which has research interests covering

a wide range of topics, including structure and dynamics of natural and managed boreal forests, forest ecosystem - atmosphere relations, land use and global change issues, wetland ecology, and ecosystem restoration.

Read more: www.helsinki.fi

Metsäteho

Metsäteho is a private research company that is involved in research and development related to wood procurement and wood production in all parts of the chain from the forest to the end user. The research is problem-oriented and often performed in close cooperation with the forest industry.

Active research areas include:

- Methods and economics of wood production

- Wood procurement and wood handling technology

- Operative planning

- Properties of raw material.

Environmental aspects have also become important, and Metsäteho works in areas such as Life Cycle Assessment (LCA) and Environmental management systems (EMS). Metsäteho has a staff of 25 persons and is located in Helsinki.

Read more: www.metsateho.fi

Finnish forest research cont.

Wood Wisdom

Wood Wisdom is a research programme that aims to facilitate the development of market-oriented production techniques and innovative forest products. It started as a Finnish programme, but has recently been upgraded to joint Swedish-Finnish cooperation.

The Wood Wisdom programme is a good example of a new way to cooperate on a broad front to achieve synergistic effects. The programme aims to raise the competitiveness of forestry and the forest industry. In the process, it seeks to obtain knowledge that will facilitate the development of market-oriented production techniques and innovative forest products that can compete in a changing environment.

Applied research

Wood Wisdom focuses on applied and basic research into key links in the production chain from the forest to the market, emphasising the importance of market-driven production and processing. The programme involves 30 research consortia with 120 ongoing projects and 350 researchers.

Wood properties

The biggest research task is to study how the raw material affects the properties of paper, wood products and composites, and ways that forest management, environment and molecular methods can help to mould these properties.

Wood wisdom will raise the value of Finnish wood. Photo: Mats Hannerz

Better paper

The second biggest field is pulp and paper research, focusing on methods to enhance the quality of printing paper. Other important research areas include mechanical wood processing, e.g. techniques to modify wood properties and avoid discoloration.

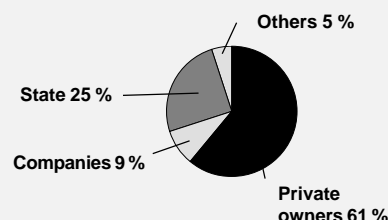
The first phase of Wood Wisdom ran from 1998 to 2001, and the total turnover for this period was EUR 35 million, of which 20 million was publicly provided. In the second phase, started in 2002, a joint Swedish-Finnish research programme is an important component (see News and Views 18.1).

Source: www.woodwisdom.fi

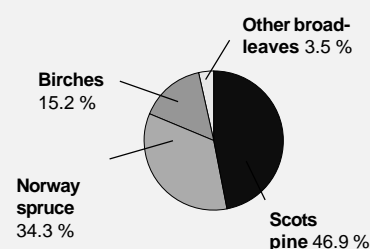


Finnish forests in figures

- Productive forest land: 20.1 million hectares
- Ownership of forest land area



- Number of private forest owners: 400,000 (If families are included, 1 million own forest directly or indirectly. Finland's total population is 5.1 million)
- Growing stock total: 2002 million m³



- Annual increment: 75 million m³
- Annual harvest: 60 million m³
- Annual wood imports: 13 million m³

Forest industry

- Sawnwood production: 13 million m³
- Paper and paperboard production: 13 million tons
- Total turnover: EUR 19 billion
- Export: EUR 12.5 billion (26 % of all Finnish exports, by value)

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