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## **Europaforum North Sweden: views on European research and innovation in the forestry sector in a future Bioeconomy**

2012-08-30

Europaforum North Sweden is a partnership and network for politicians at local and regional levels covering the four northernmost regions in Sweden: Norrbotten, Västerbotten, Västernorrland and Jämtland.

The aim of the network is to strengthen knowledge and awareness of policies at the EU level, and above all to increase involvement in shaping EU policy on issues relevant for Northern Sweden.

Our views represent the standpoint of the political representatives of the four northernmost regions in Sweden. The views have been formulated in close collaboration between these regions.

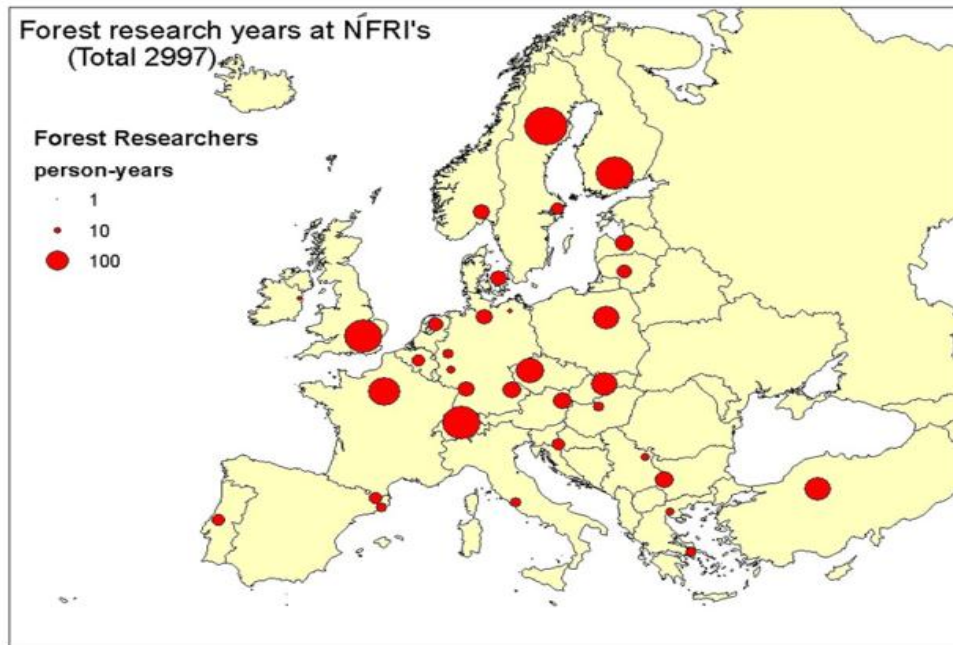
In the general positioning paper adopted by EFNS on 2012-03-30 with focus on Horizon 2020, one of the priorities was the development and marketing of forest use and the forest industry sector in the emerging bioeconomy as an area *“where the region has specifically strong research and business areas of strategic importance for NSPA (Northern Sparsely Populated Areas in Northern Europe), as well as for Europe as a whole”*.

The forestry sector is an area important to Sweden, where several Swedish regions and companies are world leaders in utilisation, development, supply and implementation. The area is therefore vital in maintaining and further developing a competitive regional and national industry. Sweden and Finland are Europe’s biggest exporters of paper, pulp and wood (number one in the world is Canada, followed by Sweden, the USA and Finland) and a sustainable bioenergy industry is being built up, based on by-products from forestry.

Today the world is facing a giant industrial shift. More and more developing countries are being industrialised, doing so through the purchase of state-of-the-art technology. Here it is important for Swedish and European companies through increased knowledge, competence, technological innovation and product development to defend their positions.

This sector represents a global market for Europe – with growth potential also for SMEs – who through business, university and institutional cooperation can grow by developing and commercialising innovations.

Europe's largest array of forest research expertise is centred on Northern Sweden (Figure 1).



The region is also a centre for Sweden's forestry statistics, and cooperates with other forestry countries within the EU to develop models for comparison between the countries.

With this positioning paper on the forestry industry the EFNS therefore wants to contribute to a strengthened position for the forestry sector in Horizon 2020 within:

**Excellent Science**, with focus on “*collaborative research to open up new and promising fields of research and innovation through support for Future and Emerging Technologies (FET)*”.

**Industrial Leadership**, with focus on: “*leadership in enabling and industrial technologies, (as support for support for ICT, nanotechnologies, advanced materials, biotechnology and advanced manufacturing and processing), while also providing support for cross-cutting actions to capture the accumulated benefits from combining several Key Enabling Technologies; and provide Union-wide support for innovation in SMEs*”.

**Societal Challenges**. The forestry sector will for example contribute to meeting challenges such as:

- *European bioeconomy (replacing the fossil-based economy)*
- *Secure, clean and efficient energy*
- *Smart, green and integrated transport*
- *Climate action, resource efficiency and raw materials.*

**International cooperation**, where for example ”The Swedish Model” for sustainable use of forest raw materials is in increasing demand in a global perspective and thereby also constitutes a market where *“Activities at the international level are equally important to enhance the competitiveness of European industry by promoting the take-up and trade of novel technologies, for instance through the development of worldwide standards and guidelines, and by promoting the acceptance and deployment of European solutions outside Europe”*. (H2020)

### European research and innovation in the forestry sector

Climate change, globalised trade in forest products, changed consumption patterns and a growing bioenergy market will lead to increased pressure on our forestry resources. The challenge is to be able to intensify forestry to extract more timber, paper, energy and other products while at the same time safeguarding biodiversity, water quality, recreation and other eco-system services. In order to achieve a balance between different claims, there is a need for scientifically based land usage strategies which can provide "more of everything". In a future characterised by increasing uncertainty and risk, there is a great and increasing need for knowledge in prioritisation processes, administrative models and risk management.



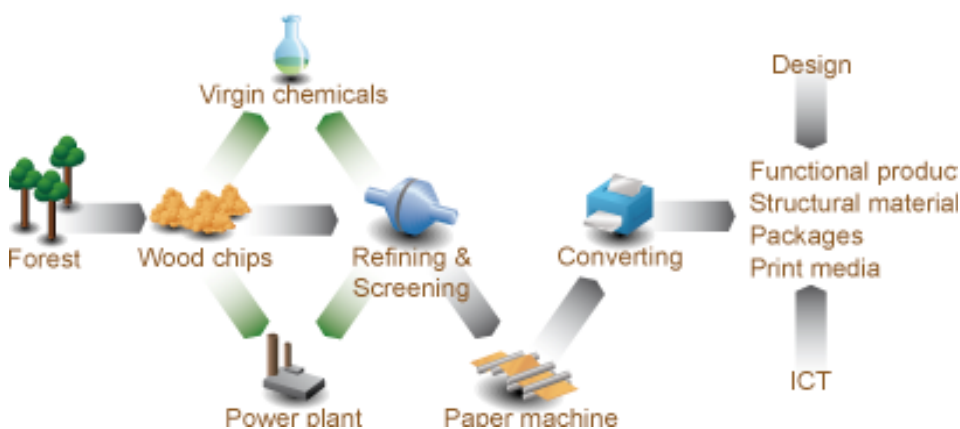
Northern Sweden today possesses Europe's greatest and most important array of expertise and research on the different aspects of using forestry resources in close collaboration with both regional and international players and companies (the Domsjö plants, Processum, Solander Science Park, etc.), SMEs (The Forestry Technology Cluster), university (UmU, LTU, SLU, MIU) and the community – among other things within the framework of the major research programme “Future Forests”, financed by the forestry industry and Mistra.



## Biorefinery, bioeconomy, and bio- and forestry technology

In Sweden, the biorefinery industry based on forest material is very strong and constitutes the major part of the total development in this industry. (20 per cent of Sweden's total net export revenue comes from forest-based industry). The challenge from the globalised world around is stiff competition, but at the same time gives opportunities for forest related industry and its suppliers. The Swedish forestry industry is among the foremost in the world, employs over 70,000 people and has exports amounting to 129,000 million SEK (2010).

The biorefinery sector in the region is under constant development and the region today is a leader in the field. For example the Domsjö plants today control almost 30 per cent of the world viscose products market. Biorefineries and the bioeconomy are well established on the EU arena within for example European Technology Platforms (ETP) such as “Forest Based Sector TP” and in collaboration with other ETPs have formed the Star-COLIBRI cluster, whose aim is to create synergies with other TPs in the biorefinery field. One of the main Star-COLIBRI projects is in the regionally based but nationally financed initiative Bio4Energy, which is a cooperation project between the three northernmost universities in the region where recently and internationally based school of research was planned, SHIFT2BIO. Other strategic national initiatives in the region include TC4F (Trees and Crops for the Future) – whose aim is to reinforce the national and regional resource base from above all forestry for the future bioeconomy, the Berzelii Centre at Umeå Plant Science Centre and FSCN research centre for forestry research and fibre technology – whose goal is to increase process efficiency in the pulp and paper industry in order to achieve a greater return from a smaller input of raw materials and energy, and alongside a shift to more environment friendly chemicals to develop new advanced highly processed products, among other things through the combination of cellulose fibre with other materials.



In order to meet the increasing demand for bio-based raw materials and to further develop the future bio-based economy, the excellent, internationally acknowledged research on forest biotechnology carried out at “Umeå Plant Science Centre” (UPSC) is of paramount importance.

Basic research is not only a base for more applied research in the long-term but can also directly contribute to regional development. One example is the company “SweTree Technologies” which is a knowledge-based company directly developed from activities at UPSC. This type of “hive off” company from research environments will be of increasing importance to the future development of the region and it is therefore important to develop and support innovation processes in the region.

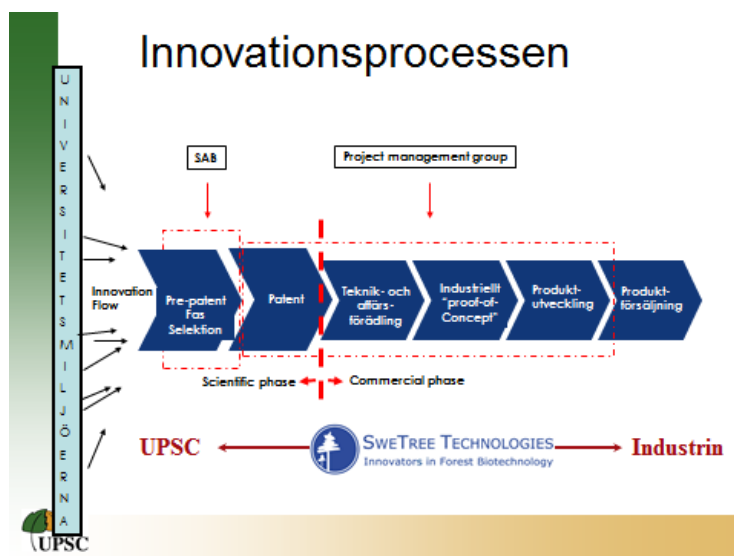


Figure 2. The innovation process from excellent research to applied use

There is a strong forest engineering cluster based in the region in Vindeln. The cluster is a world leader in its field and with close cooperation with the process industry it forms a basis for the development of new competitive products.

### European bioeconomy centre based on forestry biorefinery

In the opinion of EFNS, the region in collaboration with players in Europe and internationally can take a leading role in strengthening European research and innovation in a bioeconomy based on forestry products, and the biorefinery industry within the framework of Horizon 2020, and can contribute to the European reorientation from a fossil-based dependence to a sustainable bioeconomy, which will strengthen the region's international competitiveness.



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Therefore we propose an agenda for Europe to:

- establish a European leadership and a European collaboration platform for biorefineries based on forest products
- coordinate projects and networking activities in collaboration between the European and international forestry sector and industries (incl. SMEs) and research and innovation environments
- coordinate and carry out joint skills development initiatives with both business and research partners
- coordinate regional, national and European initiatives and programmes in the field in collaboration with international environments for research and innovation, and support the development of leading research into the many forest resources and the priorities that need to be made between different interests and needs in a future characterised by globalisation (energy reorientation) and climate change