

Forest in the bioeconomy transformation

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Forest in the bioeconomy transformation

- Swedish forest industries
- The forest industry production today
- The future
- Mistra Digital Forest

Swedish Forest Industries Federation

The Swedish Forest Industries Federation (SFIF) is the trade organization for the pulp, paper and saw mill industry.

The Federation represents

- some 50 pulp and paper mills in 23 groups /companies
- about 120 sawmills in about 60 groups / companies,
- and a number of companies with close ties to the pulp, paper and sawn timber.
- The Forest Industries included operations Swedish Wood.

The forest industry employs close to 60 000 people and exports to 132 billion SEK (2017). Directly and indirectly responsible industry for about 100 000 jobs.



Swedens climate vision and goal:


**One of the first
fossil-free welfare
states in the world
Fossil-free 2045**

Our vision

**The forest based
sector drives growth
in the global
bioeconomy**

A hand holding a small evergreen branch in front of a city street with flags. The background is a blurred city street with several flags (including the Union Jack, the Chinese flag, the US flag, and the Finnish flag) flying from a building. A person is visible in the lower left, and a string of yellow lights is on the right. A semi-transparent grey circle is overlaid on the left side of the image, containing the text.

Global warming
Population increase
Sustainability awareness
Growing middle class
New lifestyles



**A growing forest binds
carbon dioxide...**



...which is stored
in the products

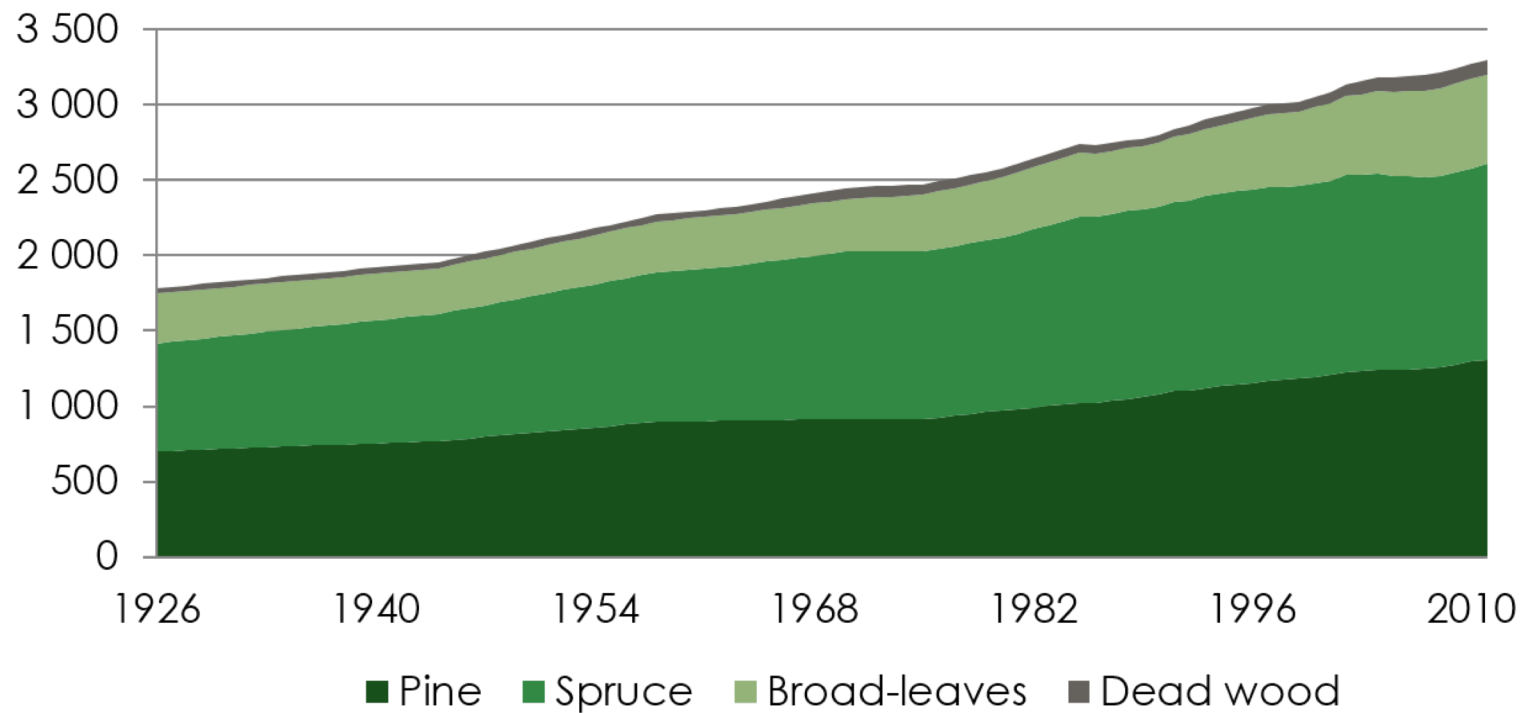


Our industry is essential for Sweden in reaching climate targets

- ✓ **Decarbonising heat and power**
 - ✓ Large producers of in-house renewable electricity and heat
 - ✓ Large sellers of biomass and waste heat for external use
- ✓ **Decarbonising transportation**
 - ✓ Growing contributors to more biofuels for transportation
- ✓ **Decarbonising materials**
 - ✓ Wood building fast track to climate mitigation
 - ✓ Wood fiber-based materials instead of plastics in packaging and clothes
 - ✓ Completely new materials

Development of the Swedish Standing of Timber

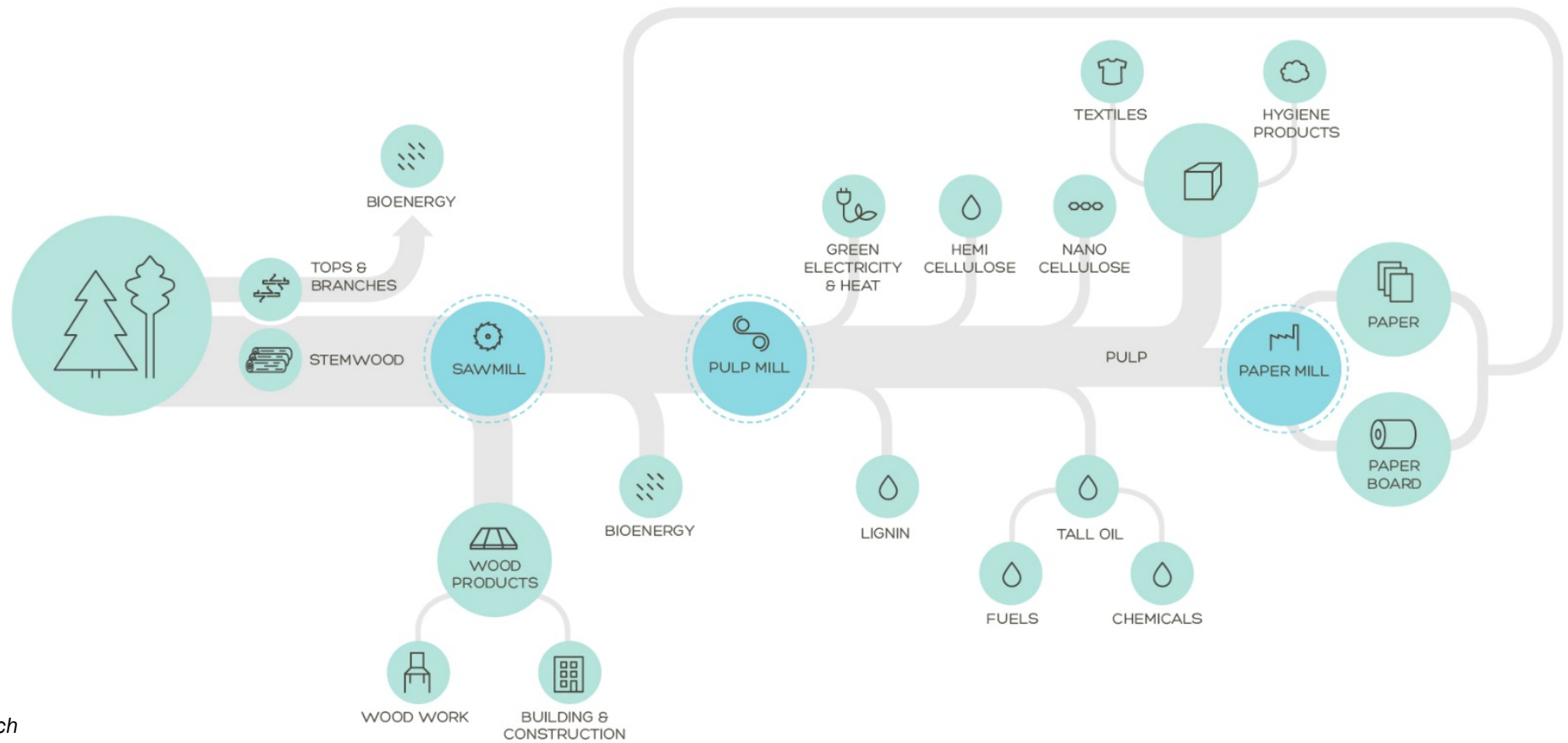
Million m³sk*



* m³sk = Forest Cubic Meters

Source: The Swedish Forest Industry

The whole tree is being utilised



Principal sketch

Buildings in wood



Vallastaden, Linköping
Treet, Norge
Photos: David Valldeby/Svensk

Paper



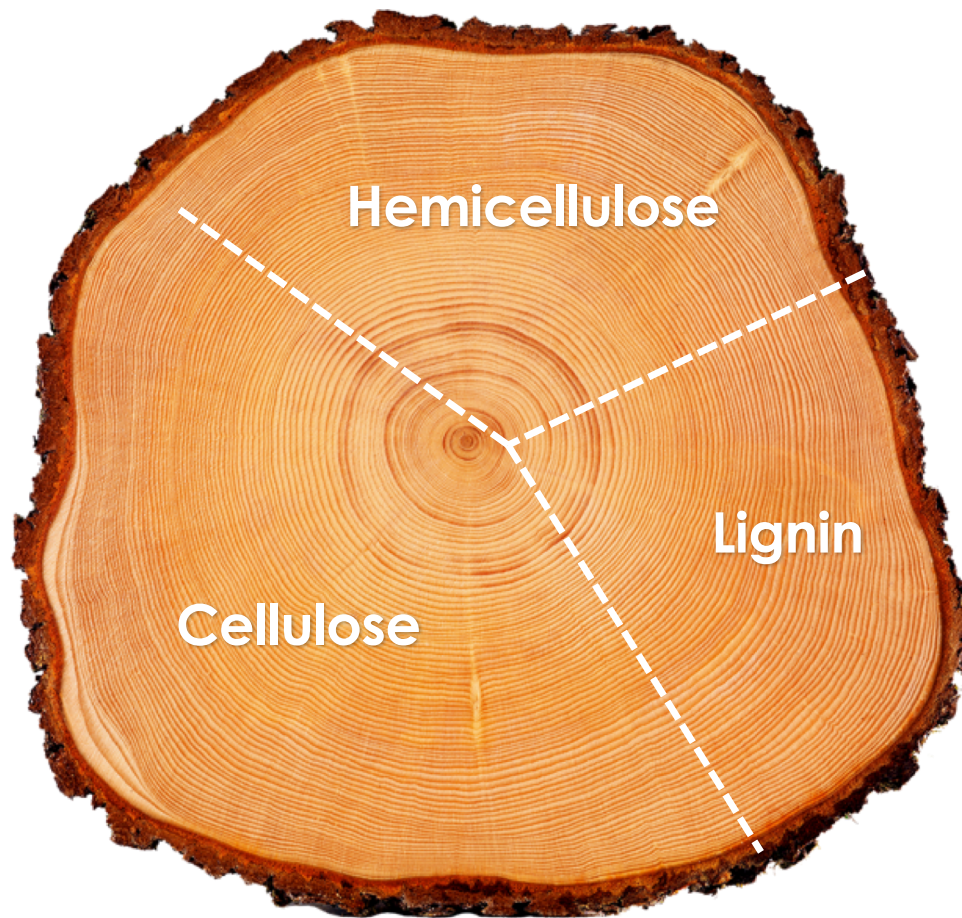
Packaging



How about the future?



"The toolkit"



Lignin



Acceleration by collaboration

Åsa Håkansson , Preem
Katarina Ohlsson, RISE
Photo by Johan Olsson

Carbon fibre



Nanocellulose

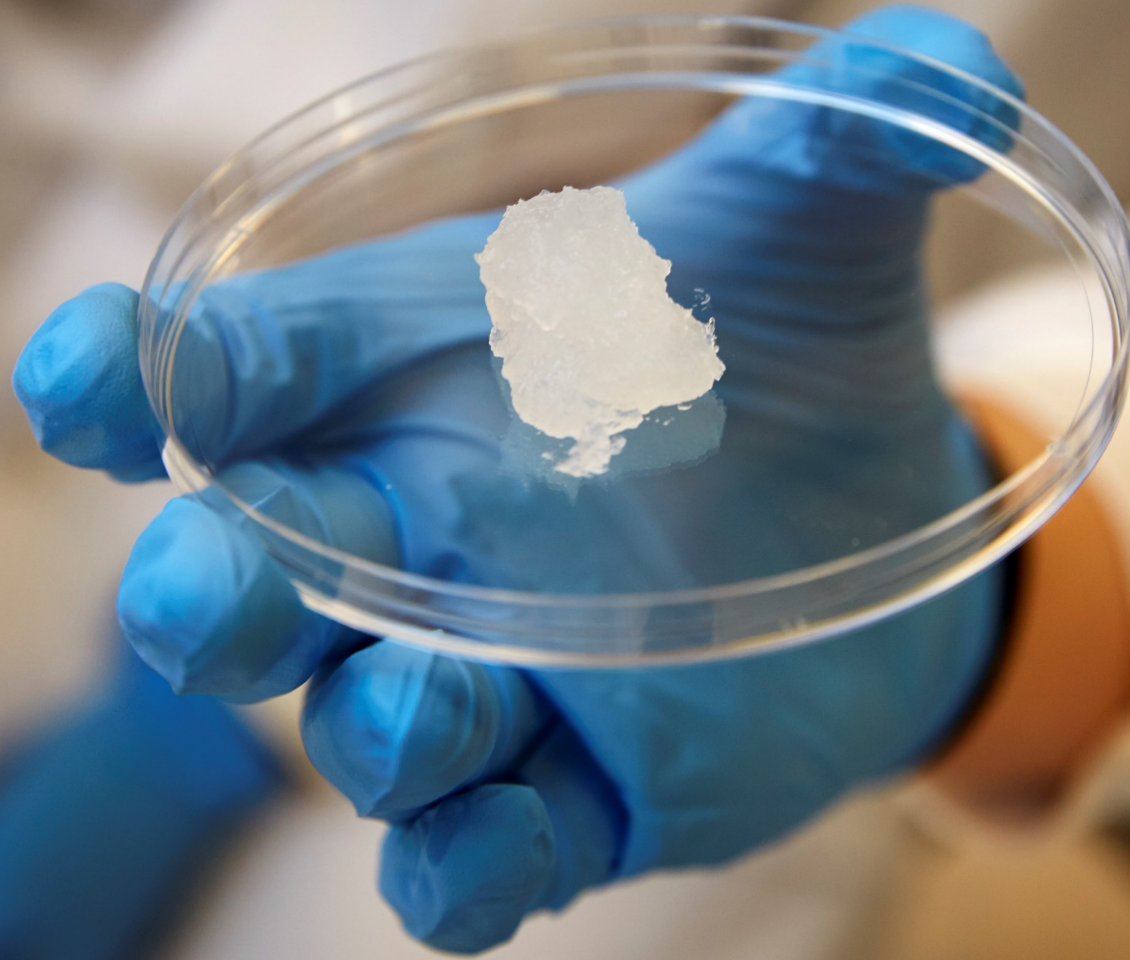


Photo by Johan Olsson

OnSkin – An innovative concept for wound healing

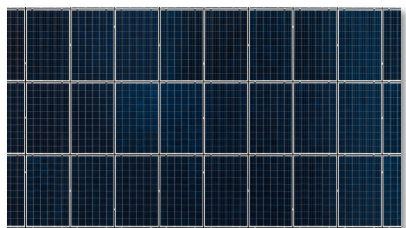


Textiles made from paper



Bild från Högskolan Borås

New innovative materials & products



**Energy storage
applications**



**Light weight
materials**



Bioplastics



Biofuels



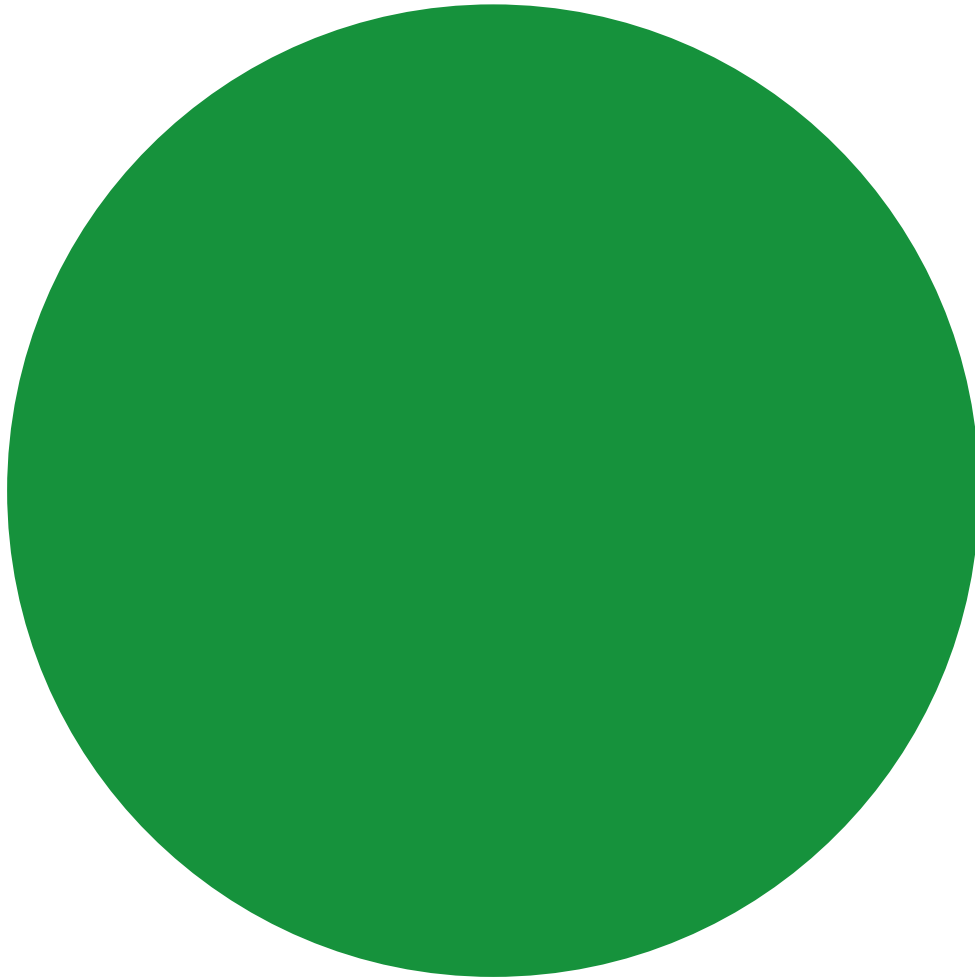
Smart packagings



Medical products

Mistra Digital Forest





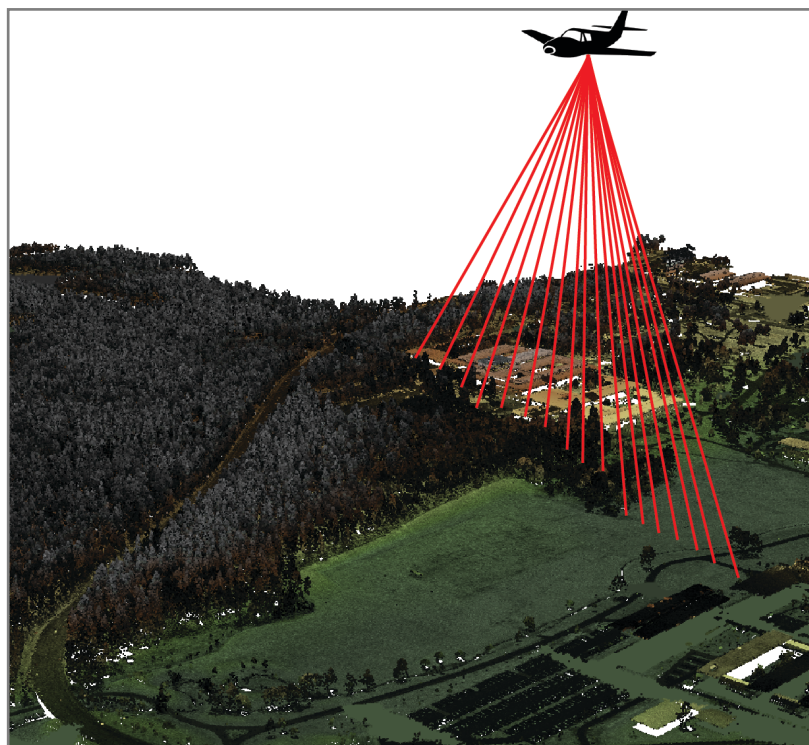
Vision

*Digital solutions in a sustainable
and effecient forestry based
bioeconomy*

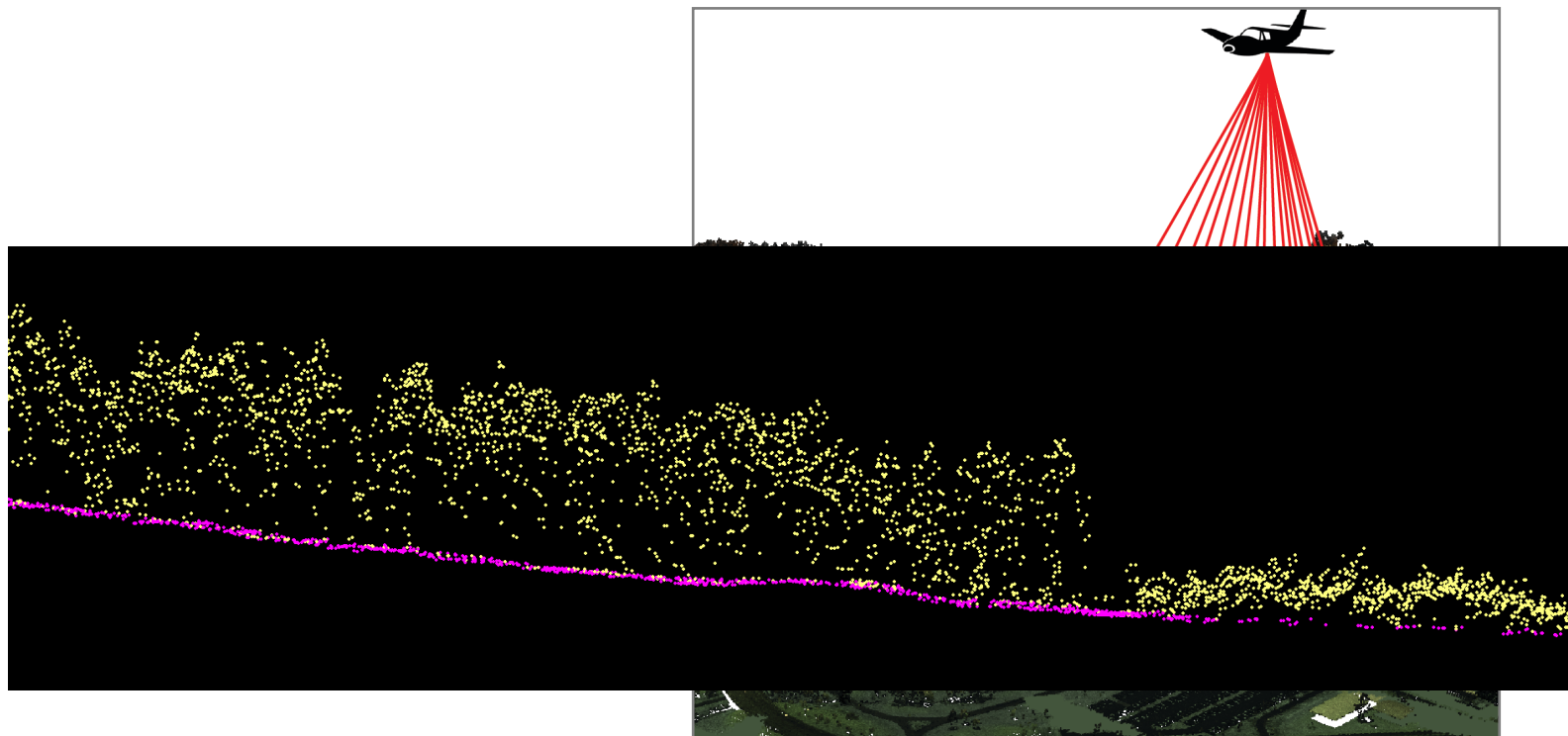
Mission

*Investigate and make a digital
forestry based value chain
possible.*

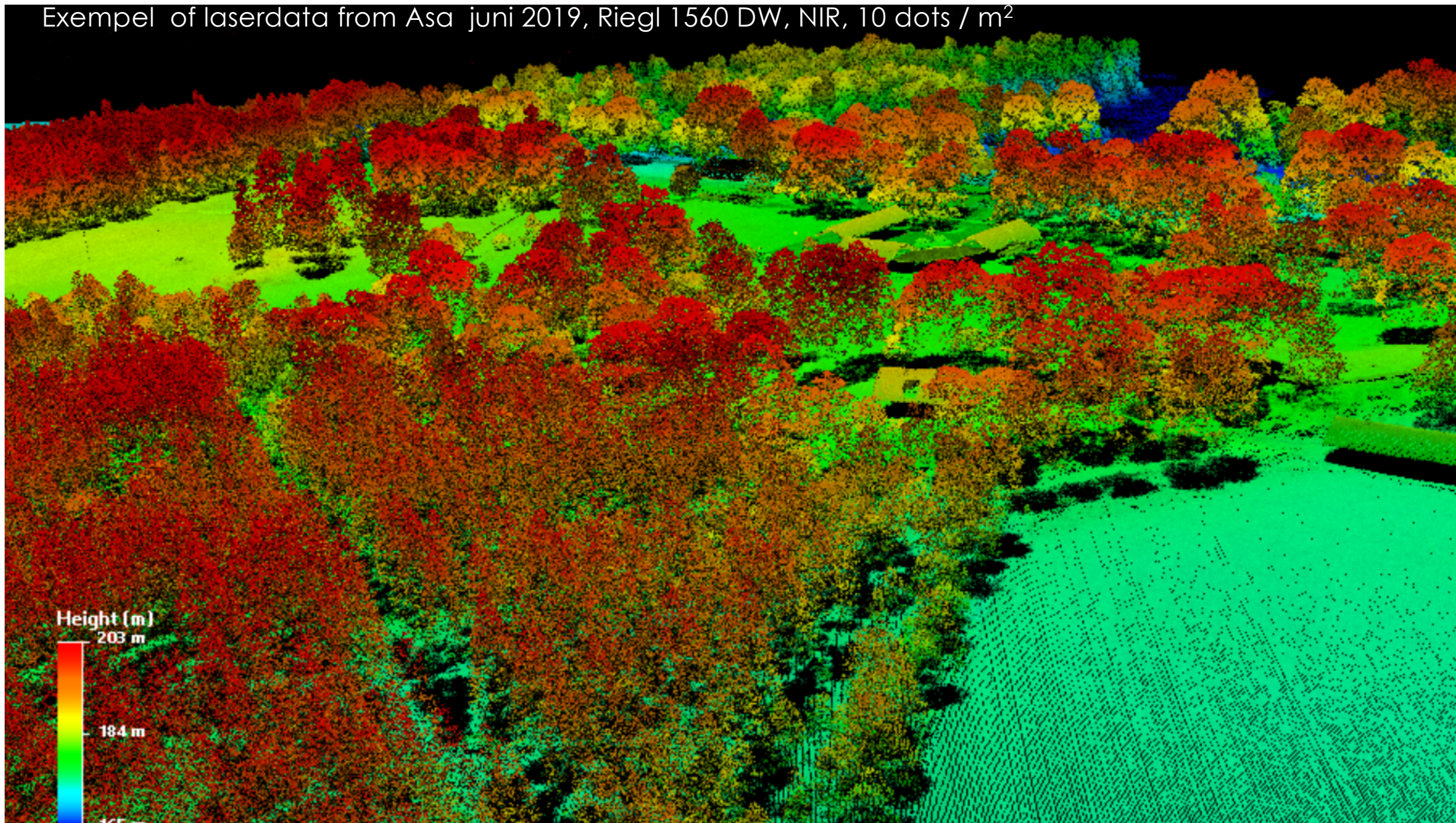
Laser scanning of forests

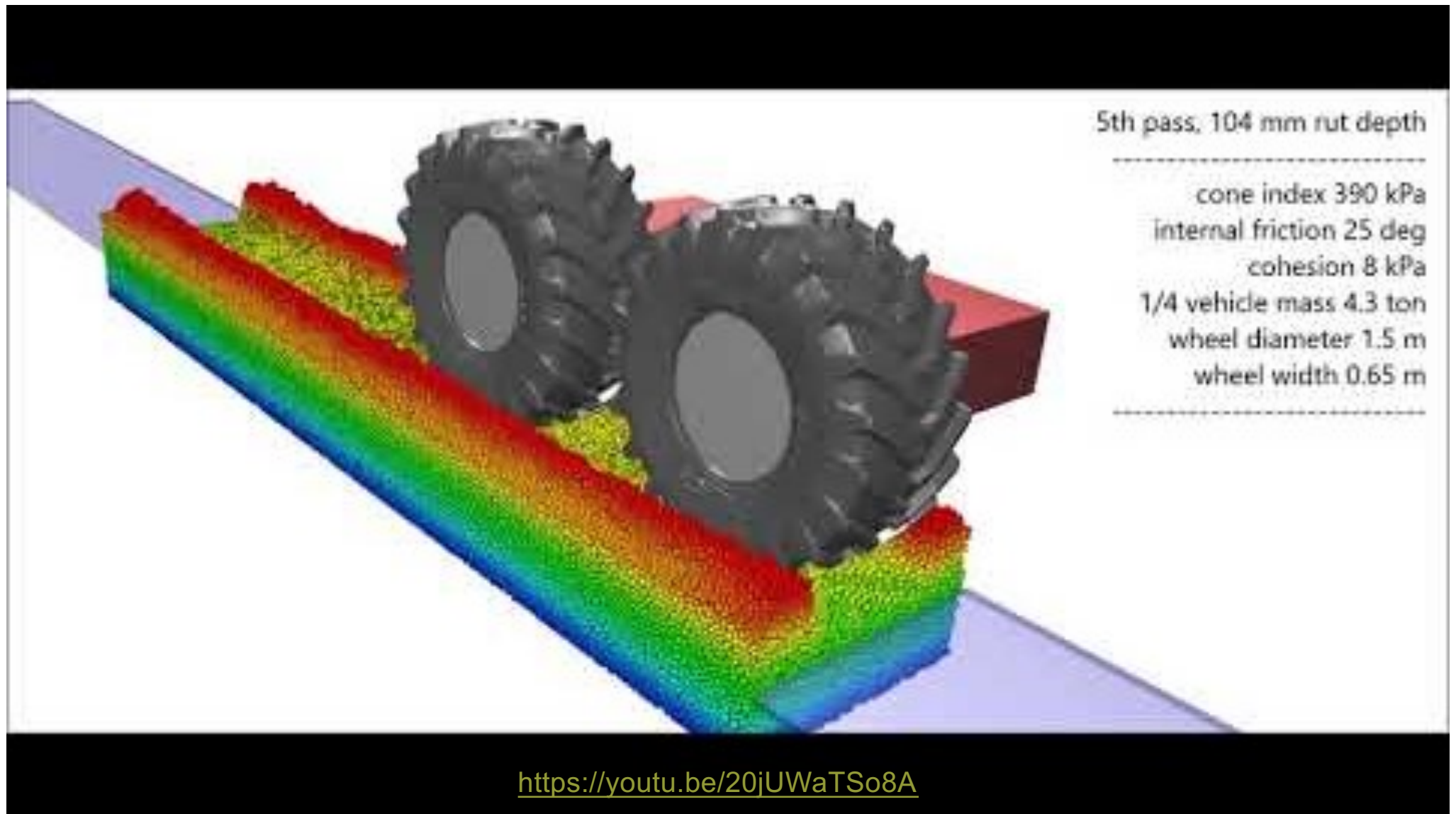


Laser scanning of forests



Exempel of laserdata from Asa juni 2019, Riegl 1560 DW, NIR, 10 dots / m²







Summary

- The forest industry utilises the whole tree for sustainable products as carbon binder
- The product portfolio is constantly changing
- Digitalisation is a game changer