By-products from the industry turns into gold

New products made from these by-products should increase Northern European value creation. In order to achieve a better value creation, NIBIO has in 2018 started a strategic research project on this.

The tree in the forest absorbs CO_2 through photosynthesis. Timber can be used for many products we need in our everyday life and replace products that have a high climate footprint.

After a final harvest in Northern European forests, new forests are planted or naturally rejuvenated. If one chooses to never chop the forest, net storage of carbon over time will decrease. If we cut the forest in mature age and rejuvenate, and use wood in eg homes, the forest will over time absorb more CO_2 than if it is left. The use of wood in long-lived products such as houses thus increase the climate benefit.

Wood can be used for several applications and especially in Northern Europe, where we have long and good traditions of using wood. Wood constructions have been used since the beginning of time and have now come so far that it is not only more environmentally friendly and practical to use, but with the new cross-laminated timber technology, it has also become more economically advantageous over other materials. We therefore see a large increase in the use of wood as a construction material.

When a log goes into a sawmill, only about 50% of the logs volume is converted into construction material. The secondary products – by-products – are bark, sawdust, cellulose chips, etc.

Bark is mainly used for heat production (80%), and the rest (20%) goes to soil improvement and gardens. Sawdust are used both for heat production and chipboard production, while cellulose chips are used for cardboard/ paper production, heating and production of wood-based panels. More information on this can be found in the NIBIO report ”Secondary raw material from wood-based value chains in Norway” (Alfredsen et al. 2018).

Due to lower demand for paper products, several factories have had to close down in the last decade. The wood based panel industry and biorefining industry will now benefit from these by-products.

In the Bioeconomy 1.0, the time before the oil, many technologies had been developed that allowed us to use wood for everything from clothes and chemicals to simple ”plastic” products. With the oil adventure, this was no longer economically profitable and much of these solutions were put on hold. Now that the oil will be phased out again and we enter the Bioeconomy 2.0, all these good solutions will come back and we see a growth in innovation of new wooden products.

New products made from these by-products should increase Northern European value creation. In order to achieve a better value creation, NIBIO has in 2018 started a strategic research project on this. From 2018 to 2022, NIBIO will, among other things, use wooden material or modified wood pulp together with other chemicals to create new products from secondary wood products, either by pressing, large-scale 3D printing or moulding.

The aim of this network is to contribute to the optimization of the resources spent individually and by society on research projects within Wood Science and Engineering in the EFI NORD area.

The goal is to coordinate Northern European research in this field by maintaining a network between senior researchers, PhD students and industrial representatives.

The network targets wood and wood based products and their production and use in constructions.