

POLICY BRIEF

“Increasing sustainable use of forests and the carbon-neutrality targets of the Paris Agreement can be combined”

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SUMMARY

- Despite the foreseen increase in future wood use, the carbon storage of Finnish forests continues to accumulate. This is due to the accelerating growth of the growing stock resulting from implemented forest management measures and the climate change.
 - The sustainable use of forest resources is the core of successful forest-based bioeconomy. A significant part of Finnish forests are privately owned. The more income forests yield to owners, the better they manage their forest assets. This improves the growth and carbon sequestration by forests.
 - Forest industry products store carbon. In the future, the end-products of an ever-widening product portfolio will circulate even longer and act as carbon sinks for years, even decades.
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- The long-term storage of carbon in dense and aging forests is risky. Tree growth is declining and aging forests are more susceptible to storm and insect damages. As a result forest can turn from a carbon sink into a carbon source.
 - Finnish forests provide a sustainable raw material base for biorefineries and energy production. The forest ecosystem stays healthy when forests are managed in a sustainable and balanced way. As a result, the bioeconomy has access to raw materials and carbon is stored

“Roughly half of the carbon emissions generated annually in Finland through fossil fuel-based energy production is sequestered by forests, soil and wood products. Forests and soil are currently the only ways to capture and store carbon emissions. In the future, the role of forest products as carbon sinks will increase due to their longer lifecycles.”



USE OF WOOD IN FINLAND AND CARBON SEQUESTRATION BY FORESTS CAN BE INCREASED

Finland will attain the targets set by the Paris climate conference if the forest-based bioeconomy evolves and attention is paid to the material cycles of wood-based materials. The key is to further develop forest management and utilisation methods that enable using forest-based raw materials, carbon sequestration and preserving forest biodiversity.

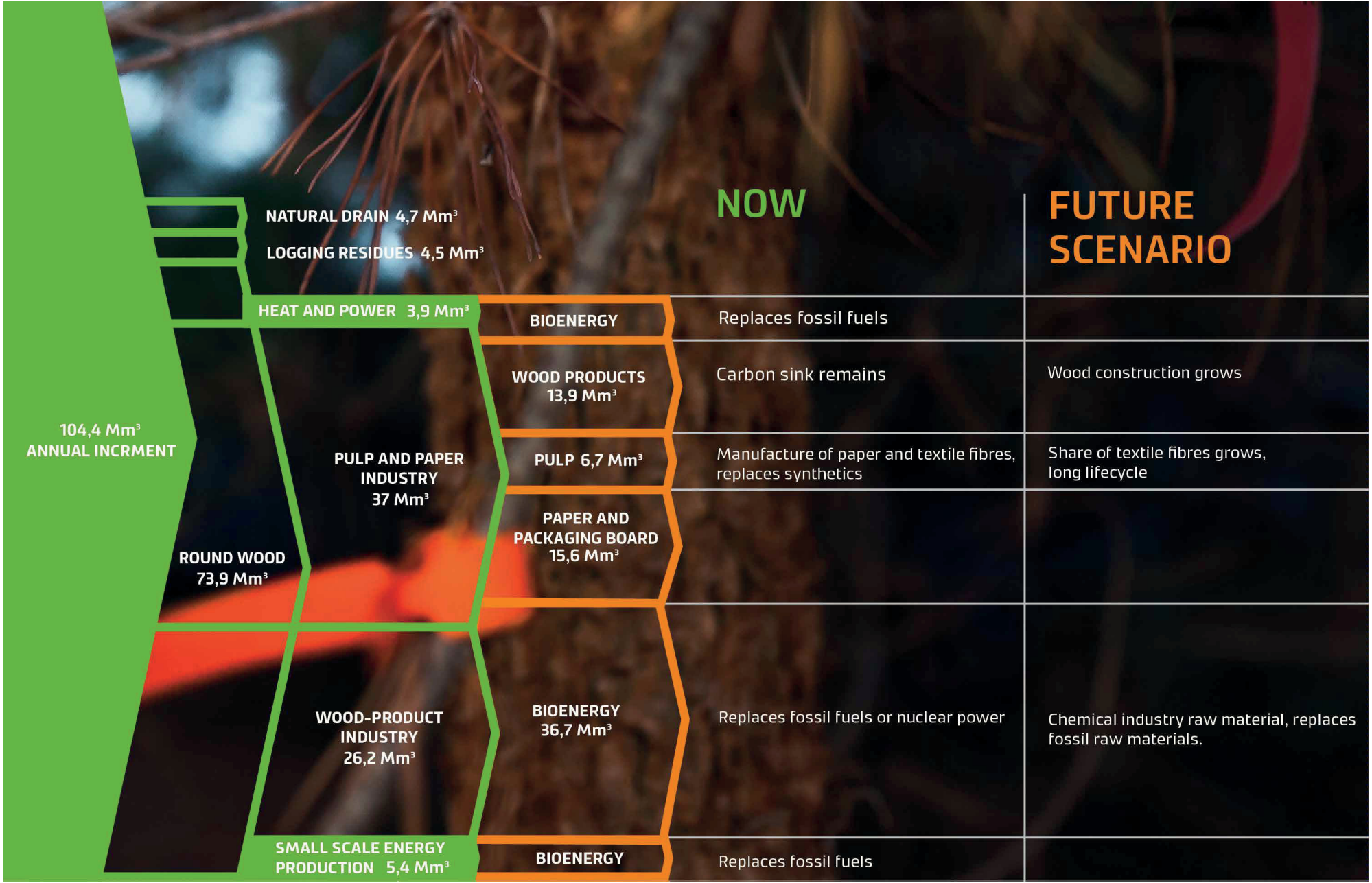
More than one hundred million cubic metres of stemwood grows in Finnish forests every year. The growth can be increased through forest regeneration measures and the tending of seedling stands, by using processed materials in forest regeneration and through fertilisation and well-managed harvesting practices. Climate change is also estimated to accelerate the growth of forests in Finland.

“A tree continues to store carbon even after it is cut down”

Forests provide Finland a sustainable raw material base for biorefineries and energy production, even though globally biomass can replace a small proportion of fossil fuel-based energy production or non-renewable raw materials. In Finland, forests play a key role in the transition from a fossil-based economy to a bio-based economy.

GOOD YIELD FROM FOREST ASSETS ENABLE SUSTAINABLE FOREST DEVELOPMENT

The more income forests generate, the more money forest owners can invest back into forest regeneration and forest management. Forests grow better and their ability to act as carbon sinks improves. On the other hand, if forest assets do not yield any income and are not profitable targets for investment, forest owners will start to lose interest in the management and preservation of forests. Finland has excellent resources to direct forest development through the income flows generated by forests.



IN ADDITION TO FORESTS, ALSO HARVESTED WOOD ACTS AS CARBON STORAGE

A tree continues to store carbon even after it is cut down. The product portfolio of Finland's forest-based bioeconomy is undergoing a major change, and the lifecycles of end-products are becoming longer. In the future, the end-products of the forest-based bioeconomy will replace products manufactured from fossil raw materials as well as act as long-term carbon sinks. Long-lifecycle products therefore strengthen the climate benefits associated with forests.

Finnish pulp, for example, can be processed into textile fibres rather than into paper. Viscose clothing made from dissolving pulp can store carbon for years. Mechanical wood products also act as long-term carbon storage. Process by-products that are currently directed to produce energy, such as lignin or bark, contain chemical components that can be used as raw material by the chemical industry to replace fossil raw materials in various products.

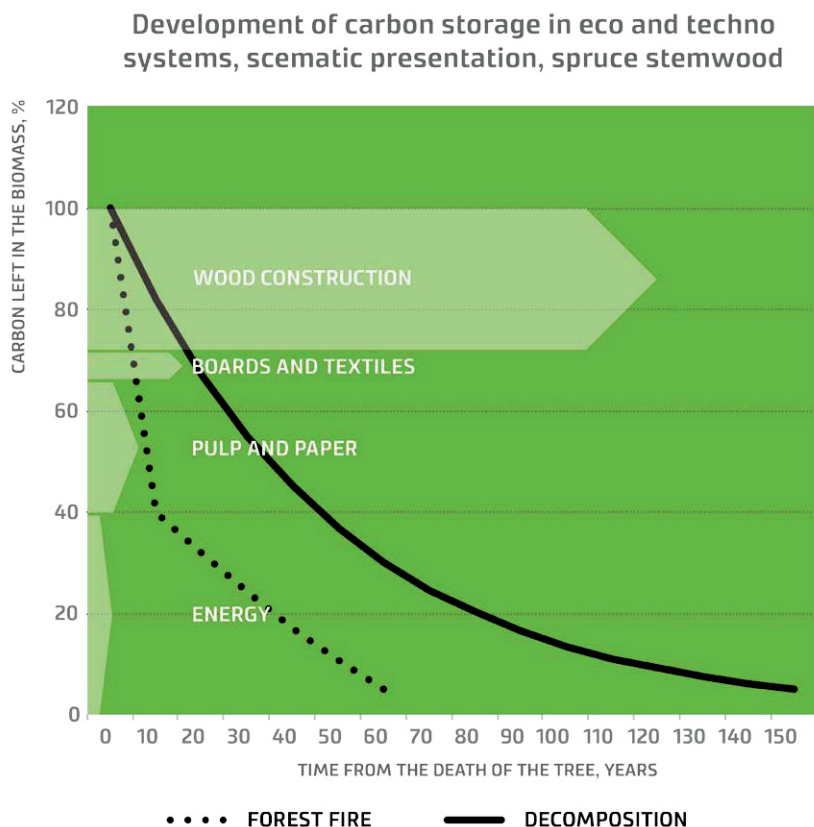
WELL-MANAGED GROWING STOCK SURVIVES CLIMATE CHANGE

Climate change may negatively affect forest health. The changing climate favours pests and other natural disasters.

Unmanaged, dense and old forests are susceptible to insect damage and, subsequently, forest fires. In such cases, the carbon stored in the trees is released directly into the atmosphere without providing any opportunities to utilise the biomass. The forests of Western Canada are a worrying example of this. They changed from carbon sinks to carbon sources due to extensive insect damage induced by mild winters and the subsequent forest fires.

It has been predicted that similar damages can become more common also in other parts of the boreal zone. In Finland, this can be avoided by ensuring proper forest management and by being alert for emerging insect and invasive species problems and other disasters arising from climate change.

“Unmanaged, dense and old forests are susceptible to insect damage and the increased potential of forest fires.”





POLICY RECOMMENDATIONS

- Increasing the production and use of wood-based biomass considerably in Finland is justified in order to enable the forest-based bioeconomy.
- Increasing sustainable use of forest biomass requires advanced forest management and use of forest raw materials in products with long-term carbon storage capabilities.
- The carbon storage has to be assessed throughout the tree growth, harvest and life-cycles of products, because many long-lifecycle products act as long-term carbon storage.
- Policy measures should be implemented to ensure that forest bioeconomy and the use of forests as raw material and carbon sinks is economically viable. Our forest resources are sufficient for both carbon sequestration and for use as raw material by the forest industry and energy production sector if the wood biomass components are used in a cascaded manner in highest possible value applications.
- Developing the forest-based bioeconomy provides global opportunities to Finland as a biomass supplier, manufacturer of value-added biomass-based products and manufacturer of technologies to different parts of the value chain.

“If the use and management of forests is continued with the existing methods, the carbon storage capability of forests will grow by several hundred million cubic metres.”

Policy actions can be used to promote forestry and forest use. For example, the development of forest regeneration methods for over-grown forests, the use of high-quality processed seedling materials, the right-time thinning will further increase the carbon binding and storage capacity of forests. Research and development measures play a key role in developing existing approaches and finding new, creative solutions.



FURTHER READING

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Finland's expertise in the sustainable use of forest resources and the global application of the related expertise should be highlighted more in the international discussion on climate issues.

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Boreal green bioeconomy

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