THINK FOREST

# Future of the European Forest-Based Sector and Bioeconomy

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Reference to the full report:

Future of the European Forest-Based Sector: Structural Changes Towards Bioeconomy. Lauri Hetemäki (editor)

European Forest Institute, 2014.

http://www.efi.int/portal/virtual_library/publications/what_science_can_tell_us/6/

**Suggested reading**

Lauri Hetemäki, Bart Muys, Paavo Pelkonen and Davide Pettenella 2014. Forest Bioenergy in Europe: Reassessment Needed. ThinkForest Brief, European Forest Institute.

# Transformational change in the forest-based sector

The European forest-based sector is in a period of profound structural change. Fundamental changes have already taken place in forest products markets, and significant structural changes are anticipated in the next 10–20 years. For example, some important forest products face mature or even declining markets, and at the same time see increasing competition from emerging economies. On the other hand, forest products which did not exist in the 20$^{th}$ century are already in production now – not to speak of the possibilities in coming decades.

The European forest-based sector is also becoming more diversified, interlinked, and cross-sectorial. It is increasingly affected by issues such as climate change impacts and policies, energy policies, advances in new technologies, the increasing role of services, and trends towards a low carbon bioeconomy or green economy. Furthermore, the forest sector is becoming more integrated with other industrial sectors, such as construction, energy, chemicals and textile industries. The concepts of 'forest-based sector' and 'forest-based bioeconomy' are beginning to replace the conventional and more narrow concept of 'forest sector'.

European forest products markets may change more in the coming two decades than they have during the whole of the 20$^{th}$ century. This has not been sufficiently addressed by the sector – **there are major issues needing urgent reassessment and research, as well as policy and stakeholder attention.**

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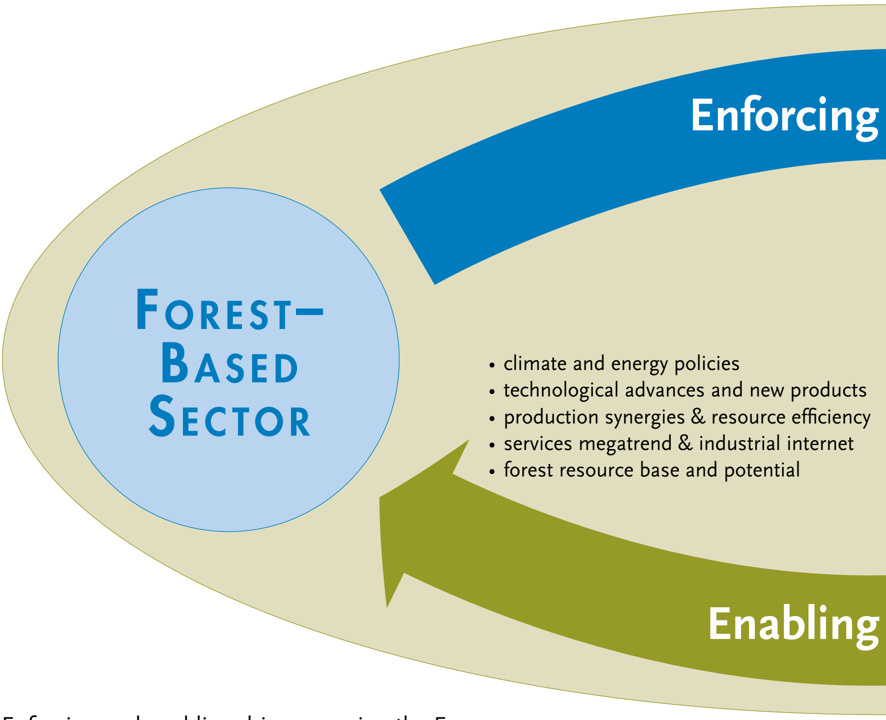


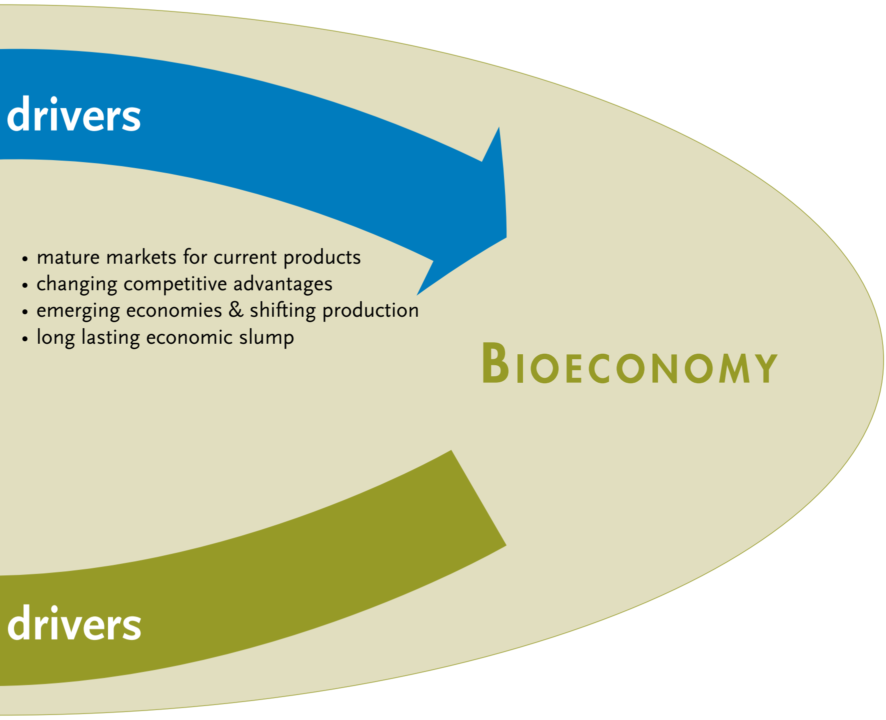

Enforcing and enabling drivers moving the European forest-based sector more strongly to the 'new' bioeconomy.

## A STATE OF CREATIVE DESTRUCTION

The current state of the European forest-based sector could be labelled as one of *creative destruction*. The concept was coined by economist Joseph Schumpeter in the 1940s to describe a *"process of industrial mutation that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one"*. It highlights the fact that some economic activities or sectors decline and vanish, while at the same time new technologies, products and business models emerge.

'Destructive' processes include:

- the declining demand for communication paper products and stagnating demand for a number of other forest products;
- the economic slump in the EU over the last seven years and its many impacts; and
- the move of some forest industry investments to fast-growing markets in Asia, or low-cost production regions like South America.




The changes above have also been important drivers for the European forest-based sector to *renew*. This is the ‘creative’ or innovative side of the development, opening up **new opportunities for the sector to move and contribute to the bioeconomy**:

- Forest industry is changing strategies and business models, investing in new products such as second and third-generation biofuels and biochemicals, as well as new engineered and prefabricated wood products.
- Changes in markets are also creating new demand for old products, such as dissolving pulp and tall oil. Global demand for dissolving pulp has grown over 10% annually since 2011, driven by the need in the textile industry to substitute cotton with more environmentally friendly raw materials.

# Policy recommendations

### Reassess and update the long-term outlook for the European forest-based sector

Existing outlook studies are either outdated or incomplete in some important respects, which may lead to incorrect policy conclusions. The most striking example is the long-term projections for graphics paper demand and supply in many European countries. Reassessments should also use systematic foresight methods to address developments which cannot be evaluated by traditional data-based models. Foresight is also necessary to generate a shared bioeconomy vision on which strategies can be based.

### Re-evaluate EU forest biomass demand

There has been general agreement that there will be growing demand for EU forest biomass in the future, due to increases in the production of forest-based bioenergy along with traditional and new forest-based products. This view is supported by more general megatrends of increasing global population and growth in the middle class. The increasing demand and 'tightness' of forest biomass markets in the EU is a clear possibility.

However, existing expert assessments of forest biomass demand and supply in the EU have neglected some important market forces and dynamics, such as the declining production of some current forest products and the emergence of new products, and the potential impacts of these on roundwood demand. There is a need for more thorough assessments of these trends and:

- the impacts of international trade
- the basic market and price mechanism
- technological advances in biomass conversion, bioenergy production and biomass harvesting
- new and increased competition for non-forest biomass sources
- the changing global competitive advantages in product value chains.

If these issues are properly accounted for, the results could still imply an increasing demand for forest biomass in the EU in the future – or not. We do not really know.

### Be prepared for product-related services – the new megatrend

In the future, a significant part of the value added and employment in the European forest-based sector is likely to come from services related to products as well as the whole forest value chain, in addition to the actual processing of forest biomass. The forest-based sector is likely to follow the trend in other manufacturing sectors in OECD countries. Digitalisation, or the *industrial internet*, has made it possible to develop new services related to products, e.g. monitoring and remote servicing. It also helps to disaggregate the product value chains to *tasks*, which may be produced in different geographical locations, and by a number of different enterprises.

High-cost western European countries may increasingly focus on services related to new products, rather than actual manufacturing at scale of traditional forest products. However, this possibility and the impacts and opportunities for the European forest-based sector have hardly been addressed in research or in EU forest or bioeconomy strategies, national forest policy documents and industry vision papers.

### Design policies for a cross-sectorial and regionally diverse industry

The forest products sector has been dominated for over a century by the pulp and paper and wood products industries. In the coming two decades, the sector will also increasingly merge with the construction, energy, chemicals and textile industries to become an essential part of the bioeconomy. It will turn from a very focused sector into a much more diversified one.

When designing policies, we need to acknowledge the *regional diversity* of the European forest-based sector, and the fact that it has significantly different roles and contributions in different countries. For example:

- in Finland about 78% of the land area is covered by forests, compared to less than 9% in the Netherlands;
- in Poland over 80% of the forest area is state-owned, whereas in Portugal over 90% is in private hands.

Due to these and a number of other differences, it is clear that how European countries and regions perceive the role and possible contribution of their forest-based sector will vary.

### Place strong emphasis on the carbon price

Although it is very unlikely that there is one overarching policy which can solve the challenges and create opportunities, strong emphasis needs to be placed on the carbon price. In one way or another, it is an essential tool in tackling climate change, and also provides incentives for economies and sectors (including the European forest-based sector), to transform to the new bioeconomy.

### Base policies on sustainability and resource-efficiency

Environmental sustainability, resource-efficiency and emphasis on comparative advantages are necessities. Whatever policies and strategies are designed, these are crucial elements and must form a basis for them.

### Invest more in research, development and education

Despite the fact that the economic slump and the need to cut public spending might create pressures not to invest in such activities, more investment in research, development and education is needed. This is necessary for the sector to renew itself and be globally competitive.

*There is a growing need to strengthen communication between the science community and key policy makers in the EU. For this reason, the European Forest Institute (EFI), after consultation with leading experts on forest policy in Europe, is supporting and facilitating a high-level discussion and information-sharing forum, "ThinkForest".*

*ThinkForest provides an active and efficient science-policy interface and fosters an inspiring and dynamic science-policy dialogue on strategic forest-related issues.*

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