

Will There Be Enough Wood (for all)?

The demand for wood is expected to increase due to targets defined by the European Commission to nearly double the share of renewable energy in the total energy consumption to 20% by 2020. Wood and wood waste have traditionally played an important role and represent currently about half of all the renewable energy sources in the European Union. According to the EUwood project, coordinated by the University of Hamburg, there is a risk that there may not be enough wood to meet all the demand in the future. This is a significant challenge, but one that, with strong input of time and political will, governments and stakeholders in co-operation could overcome.

The EUwood project aimed to match the demand for wood for energy and for products with the potential supply of wood from forests and other sources for the 27 EU member states. This was done using a novel approach called the Wood Resource Balance. The approach was based on available production and trade statistics as well as a consumption analysis supplemented with data from field research where available. It facilitates assessing inter-sectoral material flows and estimates demand for wood and possible supply of wood simultaneously taking into account multiple use of wood.

Wood demand for energy use

Wood energy is currently the most important single source of renewable energy in the EU. Any policy striving to increase the share of renewable energy could result in a strong increase in the demand of wood for energy. EUwood energy calculations indicate that wood consumption for energy use in the EU 27 countries could grow from 346 million m³ (2010) up to 566 million m³ (2020) and might reach up to 749 million m³ in 2030. These volumes already imply that member states successfully implement overall substantial energy efficiency improvements of 20% by 2020. It is also anticipated that other renewable en-

ergy technologies are likely to evolve faster. Consequently, the study assumes that wood energy decreases its share in the renewable energy portfolio to 40% in 2020.

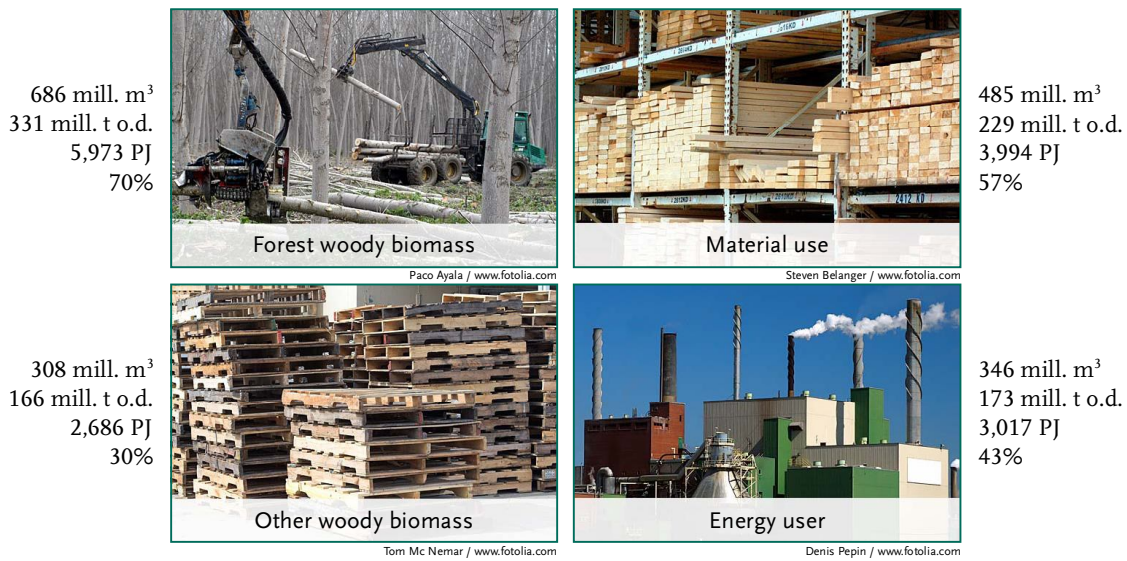
Wood demand for products

The demand for roundwood for material uses was projected, based on an economic modelling approach for a high (A1) and a low (B2) economical development scenario. For that purpose the quantities of produced goods were estimated for sawmill industry, wood-based panel industry and pulp production. The demand for wood for material use is expected to increase by 15 to 35% between 2010 and 2030, for the B2 and A1 scenarios resp. However, compared to energy use, the market share of wood for material use represents about 55% of the demand in 2010, but its share could decline up to 44% in 2030 according to the A1 scenario, as energy use must grow faster to meet the official targets.

Potential supply from forest woody biomass

To satisfy the demand for wood, forests will play the central role. Based on detailed forest inventory data, a maximum harvest

Dimensions of woody biomass in Europe (EU 27) in the year 2010



All calculations in the wood resource balance are based on solid wood equivalents. Thus, the volume of forest resources is reduced to about 92% because bark is transferred into solid wood equivalent.

potential was estimated using the large-scale EFISCEN model. This potential was reduced taking into account multiple environmental, technical, and social constraints that limit the amount of wood that can be extracted from forests. This was done for three mobilisation scenarios, which differed in environmental concern and the effective implementation of existing recommendations on wood mobilisation. It was estimated that the realistic potential for 2010 is 686 million m³ solid wood and could range between 581 million m³ and 839 million m³ in 2030 depending on the mobilisation scenario.

Potential supply from other woody biomass

Besides forest resources, landscape care wood, post-consumer wood and industrial wood residues play an important role in wood fibre supply. Assessing available volumes and potentials of these sources depends very much on regional data, model studies and comprehensive industry data. Available area or per capita data of landscape care wood potential and post-consumer wood for some countries were applied for the 27 EU countries. Industrial wood residues, however, as side product of the highly developed processes of sawmill-

ing, pulp and wood-based panel production and further processing depend very much on the measurable consumption of wood. Altogether, these sources account for about one third of the wood fibre supply.

Wood resource balance

Finally, the supply and demand of wood fibre were combined in the Wood Resource Balance. Contrasting demand and supply revealed that enough wood could be supplied from forests and other sources of wood in Europe until 2015 or 2025, depending on the mobilisation scenario. This means that without additional measures, forests and other sources of wood in Europe cannot maintain their current share in renewable energy sources without leaving a shortage for the forest-based industries. Wood imports and short rotation coppice plantations were listed as options to overcome a possible gap between demand and supply.

Policy options

The study has shown that it is difficult, but not impossible, to supply enough wood to satisfy the needs of the industry and to meet the targets for renewable energy.

Without additional measures, there is very likely not enough wood to satisfy the combined needs from the forest based industries and the wood energy producers from domestic sources in 2030.

To increase supply, a large number of policy measures should be implemented to mobilise wood from the forest, trees outside the forest and post consumer wood, in the context of a much more intensive management of the sector. However, such measures are of a technical, social and economic nature and must be based on a sound understanding of the vulnerability of natural ecosystems, to avoid damage to soils, sites and ecosystems. Furthermore, measures will involve resolving a number of complex trade-offs, notably with increasing biodiversity and carbon sequestration in forests.

On the other hand, it is as important to manage the demand for wood. This could be addressed notably by stressing energy efficiency and the development of other, non-wood, sources of renewable energy.

After publication, the EUwood methodology report and final report can be found from the web pages of the European Commission.

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