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**Wood supply for the growing European pulp and paper industry**

Session I

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**ABSTRACT**

Today's situation regarding forests and wood in Europe is such that thanks to sustainable forest management, and to sustainable wood usage practices, the net annual forest increment (793 million m<sup>3</sup> over bark) is much higher than the annual felling rate (418 million m<sup>3</sup> over bark). In fact, over the past 10 years the forests on the European continent, including the European part of Russia, have constantly increased, now covering 329 million of hectares. These figures show that there is enough wood available in European sustainable-managed forests and the resource is even increasing.

However, due to government policies, landowners' attitudes, technical and economical accessibility, environmental considerations and market conditions, the mobilisation of wood is now limited and therefore these should be taking into consideration. It is important that the wood-based industries have access to this economic wood supply in a sustainable manner.

Eventhough consumption forecasts for paper and board are steadily growing at an average rate of 2% per year, even with improved technology, a higher recycling rate and more efficiency, the need for wood will also increase. When looking at the three developments (increased use of biomass for energy production, enhanced carbon sequestration via forest management measures, closer to nature forest management) which could threaten its mobility, the industry could face a lack of wood as raw material in the years to come because it cannot be supplied efficiently. For all those reasons, CEPI has made a study, based on the runs of the EFISCEN model, aiming at assessing the future availability of roundwood in the coming decades. This study indicates that the expected shortfall in Europe would be 50 million m<sup>3</sup>/year by 2020, 80 million m<sup>3</sup>/year by

2030 and 194 million m<sup>3</sup>/year by 2060. It shows also that wood imported from Russia would not have a significant impact in reducing the shortfall in the near decades.

Bearing these figures in mind, the industry is developing a strategic vision in order to safeguard the wood availability in terms of quantity, quality and cost while further improving the industry's sustainability credentials. The industry and its partners needs to become more cluster-minded. All members of the cluster need to improve logistics and logging practices, share experiences and knowledge, further improve the recycling rate, harvest more residues in an environmentally sustainable way, and invest more in R&D. But other stakeholders - decision-makers, Environmental NGOs - need to contribute as well, thereby taking up the message from Johannesburg.

Key words: wood availability, renewable energy, climate change, close to nature forest management, shortfall, wood mobilisation, partnerships

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## INTRODUCTION

Along with the increasing awareness of the public about overall sustainability, many developments have emerged in different policy fields, the majority of them being driven by environmental concerns. For many years now, the European Pulp and Paper Industry has been supportive of and has taken action towards more sustainability. New steps in that direction that encompass a balanced approach would be much welcomed and even encouraged by the industry.

Ideally, the European Pulp and Paper Industry sees the Sustainability Architecture like a solid building supported by three equally robust pillars.

By neglecting one or other of those pillars the overall equilibrium would suffer and the building might collapse

Keeping in mind the need for a balanced approach that guarantees the future competitiveness of the industry, while reducing its ecological footprint, CEPI started to explore the issue of wood consumption and availability in European forest-based industries by launching its own survey 3 years ago. Today, the results of this survey show that the European forest-based industries are confident on their own future: investments have been made and the capacity is expected to increase by some 10% for the pulp and paper industry, by some 13% for the panels industry and by nearly 15% for energy plants within the 5 coming years. This represents an additional need for 30 million m<sup>3</sup> of wood in the coming 5 years. One reason for this growing capacity is the expected increase of the consumption of paper and board and other wood-based products, mainly due to opportunities offered by the accession of Central and Eastern European Countries to the EU, global population growth and paper contribution to human welfare.

This perspective is highly dependent on a supply of wood that meets the industry's requirements in terms of quality, volume and costs. In that respect, the survey also showed that the supply of wood was not developing at the same rate as the consumption of paper and board and wood-

based products. The development of these two trends (increasing consumption and non-correlated wood supply) gave strong indications that there would be a gap between wood supply and demand. This means that the build-up capacities could not be fully used in the future, even if one takes into account the change in the mix of raw materials between virgin, recycled fibre and non-fibrous material.

Summing up the conclusions of CEPI's survey, it appeared that wood availability would be crucial for the future sustainability and prosperity of our industry in Europe. Therefore a study, looking into resource availability, was launched by CEPI's Forest Committee as a proactive initiative to get a first scientifically based insight, being aware that any modelling exercise would open the door to further debate.

### **MODELLING STUDY**

Based on 36 countries of the European continent, including the European part of Russia, this new study looks into the impact of some specific policy developments on wood supply in the coming decades.

From the existing policy developments that have an impact on forest management and wood supply, three emerged as potentially threatening: nature-oriented management, renewable energy and climate change. They are further detailed later in this paper.

### **FOREST RESOURCE IN EUROPE**

The forest cluster in Europe includes forest owners (more than 9 million private forest owners), woodworking industries (sawmills and panel industries), pulp, paper & board manufacturing industries, paper & board converting industries, printing industries and furniture industries, with an annual turnover of 400 billion EUR. Altogether it directly employs 3.5 million people. The forest cluster is vital to the rural economy all over Europe, as well as to some key urban regions, sustaining welfare and livelihood.

Together, the pulp and paper and downstream sectors contribute by 116 billion Euro, which is more than 9 %, to the total added value created by the European manufacturing sector. In some countries, this contribution even amounts to some 25 %.

To safeguard the socio-economic contribution of this cluster, a sustainable wood supply is a prerequisite.

Forests on the European continent, including the European part of Russia, increased between 1990 and 2000 and now cover some 329 million of hectares. 55% of it is coniferous, 30% deciduous and 15% mixed stands. Today only about 30% of European forests (incl. Russia) are managed for wood production.

According to conservative inventories' data, the annual fellings (418 million m<sup>3</sup> over bark) represent almost 50% of the net annual increment, 793 million m<sup>3</sup> over bark) in Europe. That

means that each second the forest biomass increases by 25 m<sup>3</sup>, of which 12 are not used but increase the growing stock. This is the result of sustainable forest management, as well as sustainable wood utilisation practices.

This fantastic natural process of fibre production shows that there is enough wood in Europe and that this resource is increasing.

It is nevertheless obvious that this theoretical quantity of available wood cannot be assembled in its entirety: government policies, landowners' attitudes, technical and economical accessibility, environmental considerations, and market conditions have to be considered.

## **BUT HOW TO MOBILISE ENOUGH RAW MATERIAL FOR THE PULP AND PAPER INDUSTRY?**

### **WORKING ASSUMPTIONS**

As well as society in general, the diverse types of forest owners have diverse expectations from their forests, ranging from professional management to recreation and conservation. These different behaviours have to be taken into account when assessing the feasible mobilisation potential.

According to different market analyses, paper and board consumption is forecast to grow on an average rate of 2% per year over the coming decades. From one study to another, the expected increase in consumption of wood products ranges from 11% to 18% between 2000 and 2020. Even with improved technology, higher recycling rates and better efficiency, the need for wood will continue to increase.

### **IMPACTING EUROPEAN POLICY DEVELOPMENTS**

Let's come back now to the 3 developments that were identified as having a significant impact on future wood availability: nature oriented forest management and climate change policies might lead to decreasing harvesting, while renewable energy policies will create a competitive use of wood.

"Closer to nature" forest management aims at enhancing nature conservation values in the forest and differs from traditional economic optimisation in sustainable forest management because it is directed less towards wood production. This can have various forms: switching to deciduous rather than coniferous, increasing rotation length, moving from even-aged to uneven-aged forests (continuous cover), favouring natural regeneration, etc. up to creating more strictly protected forests.

The other policy that leads to increasing the growing stock is the climate change one. Now that Russia has announced its intention to ratify the Kyoto Protocol, this will enter into force soon. For the European Union and other European countries, the reduction effort probably won't be met by only reducing emissions, but also by using the carbon sequestration potential of forests.

The Protocol provides for the recognition of forest “sinks” in the first commitment period, but could even consider further roles for forest in the future. In reality, forest management measures to enhance carbon sequestration in the trees would have a similar effect to nature-oriented forest management. Increasing the rotation length, going to selection forestry and uneven-aged forests, etc. are measures that are explored today by the decision-makers to enhance carbon sequestration by trees. Using inadequate subsidies or incentives to encourage this function of forests would dissuade forest owners from harvesting wood.

A competitive use of wood results from the increasingly ambitious policies in the field of energy. Today, estimating the use of wood for energy is very uncertain because of the decentralised nature of wood energy use, and because of auto-consumption without being obliged to keep records. Only few countries have statistics. What is even more difficult, is to assess the quantity of wood used for energy that comes from productive exploitable forests. The European Union as well as European countries are setting more and more targets for the use of renewable energy sources to produce heat, electricity and power. Many sources are cited – water, wind, sun – but probably the most accessible one is biomass, and in particular woody biomass. We are already confronted with this development. The European pulp and paper industry strongly supports an ambitious but fair engagement in the promotion of renewable energy and is already one major producer and user of renewable energy (17% of the total RES production in the European Union and 28% of the total European biomass based energy production). In the context of uncertainty about demand and supply of fuelwood, any excessive support or incentive mechanism facilitating the use of wood for energy would divert a big proportion of it from its raw material function.

#### **MODEL RESULTS: A FUTURE WOOD SHORTFALL?**

When putting figures in front of these three developments, the run of the model confirmed the industry’s first impression. The European wood-based industries could face a lack of wood as raw material in the coming decades. This is not because there is not enough wood, but because this wood could probably not be efficiently mobilised for the wood-based industries.

The potential shortfall in Europe, without considering Russia, is estimated to be 50 million m<sup>3</sup>/year in 2020 and 80 million m<sup>3</sup>/year in 2030. This is confirmed by other studies. In 2060, ceteris paribus, the shortfall could be 194 million m<sup>3</sup>/year.

Apart from this result an extra amount of some 80 millions m<sup>3</sup>/year has been estimated to be needed to meet EU commitments in the field of renewable energy sources by 2030.

A realistic contribution of wood coming from Russia would have a rather limited influence in reducing the shortfall. It is more probable that capacity relocation and increasing investments will take place in Russia.

As shown at the beginning of this article, there are large quantities of wood available in the European forests without wiping out sustainable forest management. As stated in the 5<sup>th</sup> European Timber Trend Study, “there is no doubt that Europe’s present wood supply is well

below its physical potential". This study also estimates the maximum biological potential removals at about 780 million m<sup>3</sup> in 2020, which is close to the current net annual increment.

## **FUTURE PARTNERSHIPS**

It is therefore up to the pulp and paper industry, forest owners, decision-makers and environmental organisations to act together to prevent this shortfall from happening. By doing this, one could achieve a "win-win" situation for all stakeholders.

Keeping these figures in mind, the European wood-based industry needs a strategic vision. "Rather than waiting for the potential shortfall to become a reality, we have to start now to safeguard the availability of wood, in terms of quantity, quality and costs", whilst further improving the industry's sustainability credentials. The responsibility of the industry to fulfil this objective is to raise awareness and to involve all the stakeholders and have them sharing the same vision. The World Summit for Sustainable Development in Johannesburg acknowledged the role of partnerships with the economic sector. This is also valid for the forest-based industry.

Using more wood in a sustainable manner, because it is a renewable, climate friendly and carbon neutral raw material is probably the best argument for making it more easily available for the market. Keeping in mind the value chain of wood-based products and their capacity to store carbon all along their life-cycle is equally important.

The industry itself has some tools in its hands. First of all, it has to be more "cluster" minded: the forest-owners, the intermediaries have to be treated as partners. More concretely, logistics and logging practices can be improved. Knowledge and experience are assets that the industry can share. More residues for renewable energy can be harvested in a way, which is compatible with environmental sustainability. With the help of used paper collectors, the recycling rate - which is already very high today - can further be improved. Technology used is constantly more efficient. Hence, investing in research and development can make it even better.

Wood suppliers, the forest owners, can be more deeply involved in the "cluster" approach. The wood-based industry, their clients, could offer them to share views and be interested in adding value to their products. By doing this they would be further integrated in the economic circuits. Why not give them support to create co-operatives that could act as a preponderant supplier on the wood market? Why not conclude longer-termed supply contracts? They are part of a chain, which should not be broken. They should be confident about their major role and this role should be enhanced.

To the policy-makers, this very simple but strong message should be addressed: *‘Our industry needs a sustainably managed and sustainably used resource: wood. By using wood, we help you and society to fulfil your commitments. Here also, we are partners. Wood is climate-friendly, not only because it can sequester carbon, but also because forests are managed and because it is a substitute for other less sustainable materials. Using wood is Kyoto compatible. Wood products are biomass. But, don’t burn wood before it has completed its life and carbon cycle. When a wood-based product can no longer be recycled, time has come to use it as a renewable source of energy.’*

With respect to environmental organisations, they should remember the outcome of the Johannesburg Summit: partnerships will contribute to enhancing the overall sustainability. Wood-based industries have similar interests in sustainable management and use of natural resources in a cycle approach. Management is not contradictory with nature and environmental sustainability. Wood is a fantastically eco-friendly raw material. Let’s promote its sustainable use together.

#### **FUTURE ACTION**

Very concretely, CEPI committed to join forces with the wood-working industries to write a unified Code of Practice for assessing the wood flow into the industrial process, the so-called Chain of Custody. Whilst being the initiator of the project, the industry is opening the door to co-operation and consultation with interested parties. This Code of Practice for a single approach of the Chain of Custody could serve as a contribution to a future Code of Practice for an economically, socially and environmentally sustainable mobilisation of wood. This would promote the best available practices and tools to secure the availability of wood whilst considering in a balanced way the environmental amenities, the climate change commitments and the demands from society.

#### **CONCLUSION**

The Forestry and Forest-based industries should be seen as a cluster, not only from outside, but also by insiders.

If the viability of the pulp and paper industry decreases, the entire cluster will suffer.

Once again, when the three pillars of the sustainability building are equally solid, the benefits are equally shared among the society, the environment and the economy.

**REFERENCES**

CEPI/ALTERRA Report to be published.

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