

Forestry & Paper

Sector Report - 6th in a series

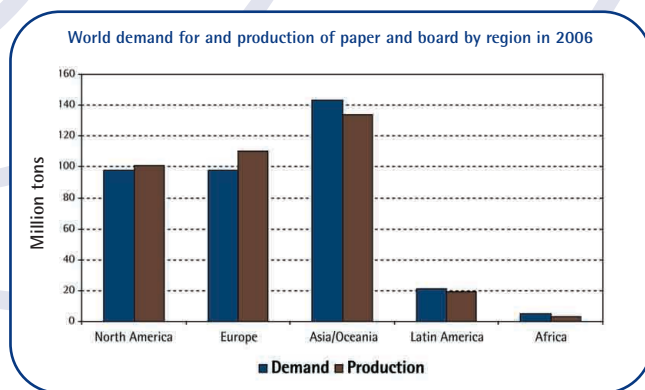


This Eurosif sector report has been compiled with research by Ethis SRI Advisors. It describes the major social and environmental challenges facing the European Forestry & Paper industry and the associated risks and opportunities these pose for long-term returns.

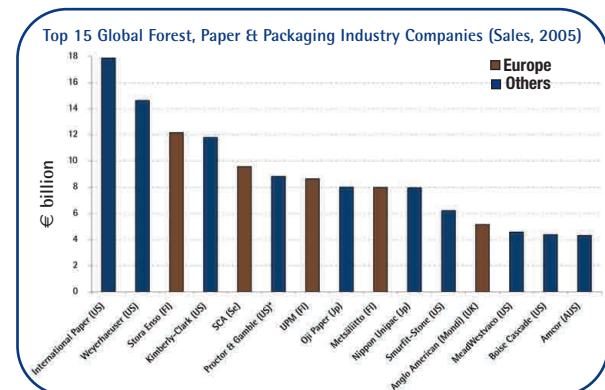
FORESTRY & PAPER OVERVIEW

- The forest industry is mature, capital intensive and highly competitive. In 2001, the European industry employed about 3.4 million people and the annual production value was about €356 billion.
- Wood is a renewable raw material converted into a number of products vital to human well being (homes, hygienic paper, newsprint, packaging, etc). Round wood use can be broken down into fuelwood (55%), pulpwood (29%) and logs (16%).¹
- Similarly to other raw material sectors, the sector growth is closely linked to global economic growth. The companies' ability to adapt to current market demand is constrained by available production capacity, causing fluctuations between over and under capacity (hence also the cyclical prices of fibre).

- The sector is dominated by companies from Europe and North America. The top five companies process about 20% of the world's industrial wood² and the concentration of companies is likely to continue.
- World forests cover in total 3.9 billion hectares, about 30 % of the earth's land area. European forests cover one billion hectares.³ The world forest area is shrinking by 0.18 % per year.⁴ The major threat to forests is unsustainable management, natural risks such as fires and pests and illegal logging.
- One third of global forest areas is used by forest industries. Plantation forests' share (4%) is increasing as they are far more productive than natural forests. Fast growing plantations already supply a quarter of the world's industrial wood harvest and are expected to contribute to nearly half of it by 2040.



Source: RISI



Source: PWC Global Forest, Paper and Packaging Industry Survey, 2006 edition. *Results are reported for identifiable forest segment only (issue)

FORESTRY & PAPER TRENDS

- European paper and board production has traditionally been based on large export volumes to Asia and North America, although exports to Asia are gradually shrinking due to growth of local production. China is the world's largest fast-growing market for forest products (5% per year)⁵ and Latin America's share as a raw materials supplier has rapidly increased.
- Due to cost pressure on the paper industry, industrial capacity in Europe is being reduced as European companies are investing in Latin America and Asia, where production costs are lower.
- Two out of every five felled trees are pulped for paper. The demand for paper is growing 6% per year in the developing world and about 1% in the industrialised world. The world consumption will double in the next 25 to 30 years which cannot be sustained by traditionally managed forests only. Intensively managed planted forests

- (currently 15% of planted forests) have an important potential to meet the growing demand.
- Fibre and human resources are the most significant cost items for paper & forest products companies. Rising energy prices have increased interest for fuelwood (wood as biomass) as well as biofuel production (2nd generation biofuels, using lignocelluloses). This could lead to some distortions in the prices of fibre.
- Consumers are showing a rising preference for certified products and retail companies are increasingly enforcing stricter sustainability guidelines for their suppliers.
- Forest conversion remains a serious threat. Natural forests are still chopped down in many parts of the world to meet other land needs (demand for palm oil, soya, coffee and other goods) with corresponding ecological and social impacts.

1 FAOSTAT www.faostat.fao.org. In Europe, only a minor fraction of the wood is used as fuel.
 2 WWF "The Forest Industry in the 21st Century".
 3 80 % are located within the Russian Federation, according to the FAO.

4 FAO, Global Forest Resources Assessment 2005. Breakdown by regions: +0.07% in Europe, -0.62% in Africa and -0.5% in South America.
 5 Source: Pöyry forecast.

SOCIAL & ENVIRONMENTAL ISSUES

- Forests are part of a complex ecosystem and are among the most notable storehouses of biological diversity on the land: they house over 2/3rds of known terrestrial species.
- Forests serve multifunctional purposes and help to protect the soil, water and other ecosystem functions. Almost 12% of the forest area in Europe is set aside for conserving biological and landscape diversity.
- European companies are investing in new production capacity in Latin America and Asia. The development of industrial monoculture aims at growing forests more efficiently by producing a uniform commodity. This results in lower cost for raw material and a more efficient forest management.
- Research using genetically modified (GM) trees raises many challenges. Its purpose is to facilitate giant-scale industrial operations. Current research aims for instance at reducing the lignin content (the reinforcing glue that makes the tree strong) in pulpwood trees.

- In some countries in South East Asia, Africa and Latin America up to 80% of all trees are cut illegally. Illegal logging stems from a variety of factors (overcapacity in the forestry industry, abuse of property rights of local communities, lack of transparency in the forestry sector).⁸
- Through the loss of tax revenues, illegal logging has an important economic and social impact on local communities.

- The value of non-commercial goods and services provided by forests (fuelwood, medicines) may well exceed that of the commercial output. Forestry is often a very important element of rural economies, providing complementary employment to the agriculture sector and offering jobs in regions where few other employment opportunities exist. In particular, Indigenous Peoples' culture and identity rely heavily on the forests in which they live.
- Contract labour accounts for a growing share of the forestry workforce in most countries. Often, contractors are not covered by labour legislation and enjoy much less protection than employed workers.
- Forestry is one of the three most dangerous occupations in most countries. All segments of the forestry workforce – but in particular contractors, self-employed and forest farmers – are exposed to high accident risks including many fatalities and serious health problems.¹¹
- Cyclical prices, restructuring and rationalisation of paper companies lead to redundancies and reduction in workforce.

- Wood is a renewable resource. However the pulping process uses large amounts of energy and fresh water. Efficiency in production processes differs among companies. The best sawmills in Europe and US use close to 70% of each processed log, while this figure is about 30% in developing countries due to a lesser use of chips and sawdust.
- Rising energy prices have created a new interest in fibre as biofuel. The resulting rising cost of fibre calls for a reduction of virgin fibre demands.
- Transportation is another important cost item and the increase in energy prices requires companies to develop more efficient transport logistics.

- Cellulose (the fibre) and lignin are the two main ingredients of trees. Pulping is either done mechanically (grinding the wood) or chemically. As the lignin darkens when exposed to light, pulp is still sometimes bleached with chlorine-based chemicals. The process also requires a long cooking time and extensive washing.
- Pollution from production is affecting water (by adding nutrients and removing oxygen) and air quality. It also contaminates marine habitats, wildlife and the food chain.

- An important function of forests is to provide carbon storage.¹⁵ Deforestation is thus a serious threat to the climate. Improper forest management also shrinks the carbon storage capacity of forests and leads to soil erosion.
- The consequences of climate change affect forests themselves. Research shows that climate change can make forests drier, increasing the likelihood of forest fires in number and severity.¹⁶
- Transportation – still often by truck – of raw materials to paper mills and of products from the mills to customers generates greenhouse gas emissions (GHG).
- The development of biofuels (from palm oil, soya, sugar cane, etc.) to reduce CO₂ emissions can be counter-effective in the mitigation of climate change if it implies the active removal of existing forests.

KEY CHALLENGES⁶

Biodiversity

- Monoculture forests are less biodiverse and more vulnerable to problems such as weeds and pests, necessitating the use of agrochemicals. Overtime, this can lead to less fertile soils and erosion, impacting long-term production capacity and increasing potential damages from storm and fires. To mitigate biodiversity risks, companies should set aside small areas of protected forests. A good plantation design and the use of biodiversity "corridors" can also improve the levels of biodiversity in and around the plantations.
- Reducing the lignin content could result in important savings for the industry since less water, energy and chemicals would be needed in pulp recovery. The risk with genetic engineering is that the trees might become more vulnerable to pathogens. GM trees and their genes could also invade native ecosystems. To balance those risks, companies need to adopt the precautionary principle over the use of new technologies.
- By promoting sustainable and diversified forest management⁷, forest and paper companies maintain a license to operate from their different stakeholders, including local communities and society in general.

Responsible Forest Management & Traceability

- A study estimated that world prices were depressed by between 7% and 16% (depending on the product) due to the presence of illegal timber products in the market. This caused losses of at least US\$460 million each year in forgone sales for US firms.⁹
- Companies can mitigate illegal logging by using and promoting traceability systems to check that all wood and external pulp has been harvested in compliance with national legislation and through systems covered by third-party certification schemes (examples include FSC, PEFC)¹⁰. The use of traceability systems can also present a competitive advantage for companies. (see case study)

Human Rights & Labour Standards

- Forestry & Paper companies have an important role to play in the poverty alleviation of local communities. A failure to fulfil this role or endangering Indigenous Peoples' existence could lead to damaged reputation and/or increased legal fees.¹² Recent examples include controversies over improper logging in the Saami territory (northern Finland).
- Companies developing dialogues with a wide range of participants from the industry, labour representatives, family forest owners, and NGOs can increase mutual understanding and collaboration between the different stakeholders and reinforce their licence to operate. (see case study)
- As a result of difficult working conditions, turnover in the workforce tends to be high, even in many industrialised countries. Adequate training is one of the key elements in breaking the cycle of low productivity, low wages, high accident rates and high turnover in the forestry workforce.
- Capacity closures and structural changes can cause tense labour relations or even strikes if they are not properly planned in cooperation with key stakeholders. Responsible practices include outplacement and career transition services, retirement plans or retraining.

Resource Use

- By redesigning their production line, companies can increase raw material efficiency. In particular, waste wood and bark can be used as a source of energy (or as bioethanol once the technology is ready), thereby reducing the demand for external energy. Companies investing in improved energy use avoid rising energy and environmental costs. (see case study)
- By improving vertical integration (e.g. combining pulp and paper production), companies can achieve transportation synergies and reduce transportation costs and greenhouse gas emissions at the same time.
- Encouraging the use of recycled paper will lessen the demand for virgin fibre and the need for chemicals.¹³ It can also provide niche market opportunities for companies.

Pollution

- Pollution represents a risk for companies in terms of reputation, legal controversies and fines. Recent examples of accidental pollution include liquid waste from two paper mills overwhelming a tiny village in Inner Mongolia, China in April 2006.
- By switching to less toxic bleaching processes,¹⁴ the risk of paper mills to lose their license to operate is reduced. Building a closed-loop system with purifying water for re-use and recovering used chemicals can help companies reduce their environmental footprint.

Climate Change

- EU Emission Trading Scheme registered mills are likely to face tougher restrictions on GHG emissions as the scheme enters its second phase.
- Forest owners can profit from the Kyoto Protocol by generating carbon reduction credits and selling them on the market.
- By using sustainable forest practices and shifting to more enduring forest products, companies allow forests to prolong their carbon storage function and therefore mitigate climate change.
- Companies can reduce the environmental impacts of transportation by improving logistics and using more sustainable shipping methods such as water ways and railway networks.
- With future biotechnological developments, waste wood could become the preferred source for biofuels. This would be more sustainable than diverting plants that could also be used for food or feedstock.

⁶ Ordered according to the life cycle production of forest products.

⁷ According to the IFC Performance Standard on Biodiversity conservation "sustainable forest management is the management of the use, development and protection of resources in a way, or at a rate, which enables people and communities, including Indigenous Peoples, to provide for their present social, economic and cultural well-being while also sustaining the potential of those resources to meet the reasonably foreseeable needs of future generations and safeguarding the life-supporting capacity of air, water and soil ecosystems."

⁸ Source: WWF.

⁹ American Forest & Paper Association, Seneca Creek Associates and Wood Resources International. 2004. "Illegal Logging and Global Wood Markets: The Competitive Impacts on the US Wood Products Industry."

¹⁰ FSC: Forest Stewardship Council; PEFC: Programme for the Endorsement of Forest Certification schemes.

¹¹ www.ilo.org/public/english/dialogue/sector/sectors/forest.

¹² The UN Declaration on the Rights of Indigenous Peoples was adopted by the UN Human Rights Council in June 2006.

¹³ As long as the environmental impact of the de-inking process is monitored.

¹⁴ Totally Chlorine Free (TCF) bleaching process, using oxygen and peroxide.

¹⁵ Trees absorb carbon dioxide during photosynthesis and release oxygen into the atmosphere in return.

¹⁶ Source: WWF

Stora Enso in Partnership with UNDP

Stora Enso began discussions with the United Nations Development Programme (UNDP) in 2003 to explore possible partnerships regarding its forestry project in the Guangxi province in southern China. Stora Enso intends to expand its plantation of fast-growing eucalyptus from 20,000 hectares in 2005 to a sustainable fibre base of 120,000 hectares in 2010.

UNDP conducted an EISA (Environmental and Social Impact Assessment)

on Stora Enso's plantation in Guangxi. The EISA report identified a lot of minor issues, including the need for Stora Enso to intensify communication with local communities, but no major social and environmental show-stoppers.

To address the key findings of the EISA report, UNDP and Stora Enso have signed a memorandum of understanding. From 2006 to 2010 they will cooperate to conserve biodiversity in Guangxi and improve community well-

being. In 2005, Stora Enso also signed a loan agreement with the International Financing Corporation (IFC) to finance its activities in China (IFC conducted its own sustainability audit).

Stora Enso expects that the cooperation with UNDP will increase the credibility of the project and win the acceptance of stakeholders.

Sources: www.storaenso.com, www.undp.org, www.ifc.org

UPM's Use of Forest-based Biofuels

The pulp and paper industry is an important producer and consumer of renewable energy in the form of waste fibre and wood residues. According to CEPI (Confederation of European Paper Industries) the industry intends to increase the share of biomass-based energy in its total primary consumption from 49% in 2001 to 56% in 2010.

UPM has been a forerunner in using bio-renewable energy. In Finland the

company is self-sufficient in terms of electricity and more than 75% of fuels used by UPM mills are CO₂-neutral. During the past ten years UPM has cut manufacturing CO₂ emissions by 34% while production has increased by 47% during the same period. Energy efficiency is also essential in emissions reduction and all UPM mills are continuously evaluated.

In 2006, UPM opened energy plants

in Finland and the UK that use renewable fuels. In 2007, UPM and the town of Lappeenranta (Finland) agreed to build a joint power plant whose energy sources are renewable forest biofuels such as bark, logging residues, stumps and small wood. The plant will generate heat and energy for the UPM mills and electricity and district heating for Lappeenranta.

Source: www.upm-kymmene.com

SCA – Leading Supplier of FSC-Certified Products

The forest products from SCA consist of paper, pulp, timber and solid-wood products. For SCA it is important to have control of its own wood raw materials. Environmentally certified forestry and control of timber's origin make it possible to offer products with a high environmental profile. The demand for FSC-certified paper products has increased in Europe, especially in the UK and Germany.

SCA uses two types of wood fibre in production, recycled fibre and fresh fibre mainly from forests owned by SCA or others in Sweden, Austria and Germany. SCA has been working for many years to promote responsible forestry and was certified by FSC in 1999. SCA is also entitled to issue FSC group certification, enabling the company to service private forest owners seeking FSC certification.

SCA requires its suppliers to comply

with its requirement that none of the raw materials has a controversial origin. All SCA wood consuming units are audited by a third party to ensure compliance.

SCA is a global leader in FSC-certified products. In 2007, SCA was ranked number two in environmental awareness in a world survey undertaken by EIRIS.

Source: www.sca.com

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