FORESTS - THE RAW MATERIAL FOR CARTONBOARD

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KEY FACTS

Forests are essential. They reverse the greenhouse effect, stabilise climate and water levels, prevent soil erosion, store energy and preserve biodiversity

46% of European land is forested. These forests are sustainable, increasing annually in area and volume of growing wood. Over 50% of the forest area is certified as being sustainably managed, with a chain of custody

World-wide, the paper and board industry uses 12% of the wood harvested - no rain forest wood is used. Of the rest, 50% is used for fuel and 30% for sawn timber products

Cartonboard is based on cellulose fibre derived from wood. Over 80% of the timber used in the European paper and board industry is derived from European forests - most of the rest comes from Russia

DETAILS OF FORESTRY LAND USE

Country	% of land under forest	Country	% of land under forest
Finland	72.0	France	27.9
Sweden	65.9	Canada	26.5
Russian Federation	50.4	USA	24.7
Austria	47.0	China	17.5
Portugal	40.1	UK	11.6
Germany	30.7	Netherlands	11.1
Switzerland	30.3	Denmark	10.7
Norway	28.9	Ireland	9.6
Spain	28.8		

Source: FAO

Importance of forests for the environment, and sustainable forest management. Use of trees as a renewable resource for paper and board production

Why are forests important for cartonboard?
Cartonboard, like all paper and board, is made from cellulose fibres. World-wide around 50% of paper and board is based on cellulose fibre derived directly from wood and whilst the rest is derived from recovered paper and board even that material is initially dependent on fibre derived from wood.

Forests are, therefore, the main source of raw material for paper and board.

Why are forests important for the environment?
Forests are essential for the well-being of the planet. They reverse the greenhouse effect, stabilise climate and water levels, prevent soil erosion and store solar energy.

They also provide habitats for animals, plants and insects, promote bio-diversity, protect watercourses and preserve the landscape.

Are there any other benefits from forestry in Europe?
Forestry provides work and supports rural communities. Forestry creates opportunities for leisure and recreation.

What is the "greenhouse effect"?
The greenhouse effect occurs when heat from the sun is unable to escape from the earth's atmosphere. This is considered to be due to the build-up of certain gases in the atmosphere which prevent the heat from escaping - acting, in effect, like glass in a greenhouse - and so cause the temperature at the earth's surface to rise. This is known as "global warming".

The most common greenhouse gas is carbon dioxide. It is released when fossil fuels like coal, oil and natural gas are burnt to produce energy in the form of heat, electricity and in the internal combustion engine. The world's use of fossil fuels releases about 5 billion tonnes of carbon per annum. In the period from 1959 to 2005 the amount of carbon dioxide in the atmosphere has increased by around 20%.

How do trees reverse the "greenhouse effect"?
Trees grow by absorbing carbon dioxide and releasing oxygen. As trees grow, therefore, they remove carbon from the atmosphere and so help to reverse the "greenhouse effect". This is known as "fixing" carbon.

Trees absorb carbon dioxide by a process known as photosynthesis. In sunlight, trees, in common with all green leafed plants, convert carbon dioxide and water into simple sugars and oxygen. The sugars are polymerised naturally forming cellulose fibres.

How much of the world is forested?
About 30% of the earth is forested.

79% of forest is broad leafed (hardwood) and 21% is coniferous (softwood). Coniferous forests provide the main raw material for timber-based industries, including cartonboard.

How much of Europe is forested?
In Europe, about 46% overall of the land is forested.

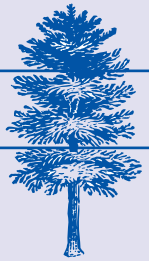
Europe's forests account for 27% of the world's forests.

The largest forests are in Finland and Sweden, where they account for 72% and nearly 66 % of the area respectively.

How much wood is harvested world-wide per year and for what purposes?
The world consumption of wood is around 3,500 million cubic metres annually. Over 50% of this volume is used for fuel, and 30% for sawn timber products.

12% of harvested wood is used for paper and board. Less than a tenth of which is used for cartonboard.

THIS IS HOW THE TRUNK IS USED



The smallest wood is used to make particleboard and chipboard. This timber, as well as small trees, is also used as fuel.

Small trunk parts are used to make paper and also paperboard - from which cartons are made.

Thicker parts of the trunk are sawn into planks in the sawmill. Saw mill waste is used to make paper and also paperboard - from which cartons are made. The bark is used as fuel or for garden purposes.

Where does the timber for the European paper and board industry come from?
Around 80% of the timber used in the European paper and board industry comes from European forests. Most of the rest comes from Russia. No rain forest trees are used.

Are tropical rain forests destroyed in order to produce paper and board?
No - the paper and board industry does not use wood from tropical rain forests. This wood is not technically suitable. The real threat to tropical rain forests comes from land hunger. Every year about 12 million hectares of forest world-wide are cleared for agriculture and fuel in the less well developed parts of the world.

Are any forests destroyed in order to produce paper and board?
No! European forests are large enough to provide all the fibre needed on a sustainable basis.

Forest area in Europe is increasing not decreasing. It increased annually by an area the size of Cyprus between 1990 and 2000, (FAO).

Additionally, the volume of wood in the established forests is increasing as the volume of annual new growth exceeds the volume harvested by around 45%,(CEPI).

Are there any threats to forests in Europe?
The greatest direct danger to trees in Europe is from air pollution. This arises from the burning of large quantities of non-renewable fossil fuels, such as coal and oil, which produces nitrous oxides and sulphur dioxide, in the more heavily populated and industrialised parts of Europe. This can be reduced by more efficient energy generation, flue gas cleaning and the use of “cleaner” fuels and sources of energy.

Who owns the forests?
In the major fibre producing countries - Finland and Sweden - two-thirds of forests are privately owned by very large numbers of small land owners. Private ownership is also common in other countries together with a significant ownership by the state and other public bodies. Overall, the paper and board industry owns less than 10% of the forest area.

If paper and board can be recycled why do we cut down trees?
At least 30% of paper and board used is “lost”. There are two main causes for this loss:

Firstly, by the way in which the paper and board product is used, e.g. as tissues for personal hygiene, food contaminated packaging, cigarette paper, archived material and books. Such loss can only be replaced by new fibres from wood.

Secondly, when recovered paper and board is recycled as fibre, its quality, with respect to fibre length and inter-fibre bonding, is reduced and some is lost in processing.

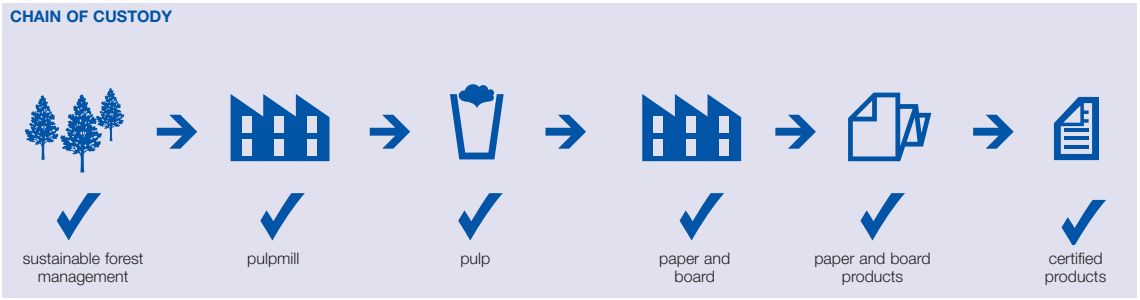
Therefore in order to ensure that quality is maintained in products incorporating recovered fibre it is necessary for new fibre from wood to enter the paper and board chain on a regular basis.

What species of trees are used for paper and board production?
In northern Europe the main species are spruce, pine and birch.

In Spain and Portugal eucalyptus is grown commercially.

Which parts of the tree are used for paper and board manufacture?
The paper and board industry uses forest thinnings, i.e. small trees which are removed so that the remaining trees grow to maturity and can be used for sawn timber.

The industry also uses the small diameter tops of large trees and the round sections of the trunks which are removed in the saw mills (saw mill waste).



How can the European community be sure that forests are being managed properly?
The forest industry has accepted the principles of sustainable development.

What is "sustainable development"?
In 1987, the World Commission on Environment and Development ("Bruntland" Commission") issued it's report, "Our Common Future". This discussed the world's forests, climate change and other global environmental and development issues. The report introduced and defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

At the 1992 United Nations' Conference on Environment and Development in Rio de Janeiro, ("Earth Summit"), world leaders committed their countries to sustainable development. This was re-emphasised at Johannesburg in 2002.

How does "sustainable development" apply to forestry?
Sustainable forestry is, in the words of the European Agreement signed in Helsinki in 1993, "the stewardship and use of forests and forest lands in a way, and at a rate, that maintains their bio-diversity, productivity and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national and global levels, and that does not cause damage to other ecosystems".

According to this definition European forests used by the paper and board industry are sustainable. Every year new growth exceeds the wood harvested. Forests offer a natural habitat to vast numbers and different species of plants, animals and insects - they preserve this biodiversity and make a significant contribution to the maintenance of the world's gene bank.

How can forest owners prove that their forests are sustainably managed?
In order to promote sustainability, National Standards for forestry have been issued by European governments following extensive consultation with other interested parties, including the Forest Stewardship Council (FSC) and the World Wildlife Fund for Nature (WWF).

Forest owners wishing to demonstrate that their forestry management practice conforms with the appropriate standard can apply to independent, third party, auditing bodies for an assessment of their performance.

A number of assessment or "certification" schemes are in current use with over 50% of the forest area in Europe certified, (CEPI). In 2005, 21 million hectares were certified through the FSC (Forest Stewardship Council) scheme and 49 million hectares through the PEFC (Programme for the Endorsement of Forest Certification Systems) scheme. Whilst there is overlap in the types of forest certified by these schemes, the FSC scheme is more generally applied to large forest areas typical of State and Forest Industry ownership, whilst the PEFC is generally used for the certification of smaller private and family owned forests.

By 2005 nearly all the forest area actually owned by the paper and board industry was certified.

Forest owners can also apply for independently audited environmental management schemes. Examples of such schemes are those based on ISO 14001 together with the EMAS scheme. A common feature of these schemes is a commitment to continuous, demonstrable, environmental improvement.

What is meant by "chain of custody"?
In order to demonstrate that wood originates from a certified forest, producers of forest products need a "chain of custody" certificate. This provides traceability at each stage of processing.