

Paper

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myth versus fact

"Everything about paper in Spain"

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Paper: myth versus fact

Myth versus Fact

Everything about paper in Spain

A great deal of myth has become firmly instilled in our collective imagination and we seem ready to repeat it without bothering to contrast it against the reality of fact. That is precisely the aim of this document - to set the myths against the facts to illustrate what paper is and is not in reality. **Here we have collected updated and fully verified information to give a balanced overview of the current status of paper and the Pulp & Paper sector in Spain.**

Paper has been innovating for over two thousand years to meet mankind's ever-changing needs. Throughout the day, each and every one of us is in permanent contact with this natural, renewable and recyclable material. However, its presence has become such a part of our daily lives that most of the time we are not even aware of how paper provides for us in our day-to-day activities.

In fields as far apart as communications, culture, education, personal hygiene, healthcare, trade and transport of all kinds of products ... paper is indispensable. If one morning we were to wake up and find that it had disappeared from our world, we would suddenly realise to what extent paper responds to a endless list of our needs and how enormously difficult it would be to replace.

Volumes and volumes have been written about paper, which is quite to be expected given its omnipresence in our lives. However, despite the length of time it has been with us, we are, to a large extent, still relatively ignorant about paper.

Raw Materials

Paper is planted and recycled

Myth...

Deforestation is increasing throughout the world; we are killing off our forests

... versus Fact

(UNECE/FAO: Global Forest Resource Assessment 2005)

- Forestlands cover 4,000 million hectares: 30% of the planet's land surface (over half a hectare per inhabitant: 0.62 hectares per capita).
- The deforestation rate is dropping: annual depletion of the world forest landcover, which in 1990-2000 stood at 8.9 million hectares per year, has dropped to 7.3 million hectares in the period 2000-2005.
- In Europe and Asia, forestlands are growing:
 - In Europe in the years 2000-2005, forests increased at an annual rate of 660,000 hectares.
 - In Asia in the years 2000-2005, forests increased at an annual rate of 1,003,000 hectares.

Myth...

Spain is becoming a desert; there are practically no forests left

... versus Fact

- The largest forest areas in Europe are in Russia, Sweden, Finland, Spain and France (UNECE/FAO: Global Forest Resource Assessment 2005).
- In Spain, forests have increased their landcover from 13.5 million hectares in 1990 to 16.4 million hectares in 2000 and 17.9 million hectares in 2005 (UNECE/FAO: Global Forest Resource Assessment 2005).
- Annual wood harvesting for all purposes in Spain accounts for 2.3% of total wood stocks and 30% of the total annual increase in wood.



Myth...

Papermaking means clearing forests

... versus Fact

- Deforestation is mainly due to the transformation of forests into farmlands (UNECE/FAO: Global Forest Resource Assessment 2005).
- To make paper, NO fine wood from exotic species in tropical jungles and forests, or oaks or beeches are used.
- Paper is made from fast-growing wood species (in Spain mainly eucalypt and pine) which is purpose grown and cultivated on plantations and which would not otherwise exist.
- The Spanish paper sector has an annual manufacturing output of about two million tonnes of cellulose pulp, for which it uses about six and a half million cubic metres of *eucalyptus globulus* and *pinus radiata* wood grown on plantations that are created and exist for that specific purpose.
- These plantations increase total forest landcover: in Spain, 430,000 hectares of eucalypt and pine plantations are now maintained thanks to paper production.

Myth...

Such a large number of plantations are putting an end to natural forests

Papermakers have filled Spain with eucalypt

.. versus Fact

- Productive plantations (wood and fibre for papermaking and many other uses) account for 109 million hectares worldwide: barely 3% of total forestlands (UNECE/FAO: Global Forest Resource Assessment 2005).
- In Spain, eucalypt and pine plantations for paper-making, according to data from the sector, cover 430,000 hectares, i.e. 2.4% of total forest landcover (17.9 million hectares of total forestlands in Spain according to UNECE/FAO).
- Plantations of fast-growing species, precisely because of that attribute, enable a large amount of wood to be obtained from a smaller surface area and therefore help to preserve natural forests.
- Plantations are established on lands that are now lying waste as disused farmlands, so that thanks to these plantations, actual forest landcover increases.



Myth...

Plantations are harmful for the environment

... versus Fact

Wood plantations help to preserve natural forests: plantations of fast-growing species occupy 6.7% of the forest landcover in Spain and produce 57% of the wood consumed in our country for all uses.

Plantations - CO₂ sinks: Given their particular characteristics, fast-growing tree plantations (eucalyptus, pine...) are large-scale CO₂ sinks and help to mitigate climate change. Recent studies have revealed that when a forest reaches maturity, it stops sequestering carbon, so that these plantations in constant production are a benefit to the environment: 20% of increased carbon sequestering in Spanish forest sinks between 2003 and 2005 took place on the paper industry's forest plantations.



Raw Materials: Paper is planted and recycled



- **Paper - a CO₂ store:** stored carbon is not released when a tree is felled but remains in wood-based products. For example, in books, paper is stored for decades - even generations - on our bookshelves and in our libraries. By recycling paper, the length of time that such carbon remains sequestered is extended. One kilogram of paper stores 1.3 kilograms of CO₂.
- **Less erosion and more water:** forest plantations allow for more efficient control of soil erosion thanks to its root system, while its branches and leaves help to regulate the water cycle by retaining rainwater so that it hits the ground less violently, remains on the surface longer and therefore manages to reach deeper soil levels.
- **Forest certification:** plantations are managed sustainably to ensure that they maintain their full ecological, social and economic functions, which is then certified under International forest certifications schemes such as PEFC, FSC...

Myth...

Very little paper is recycled in Spain

...versus Fact

- In 2008, 5 million tonnes of used paper were collected and recycled in Spain: we now collect and recycle 69% of the paper we consume.
- There has been a significant increase in paper collection in recent years, which has grown from 1.7 million tonnes in 1990 to 3.3 million tonnes in 2000 and now stands at about 5 million tonnes.
- The Spanish paper industry is the European leader in used paper recycling: for every 10 kg of paper made in Spain, 8.5 kg of used paper are used as raw material.
- The Spanish paper industry guarantees the recycling of all used paper collected in Spain.



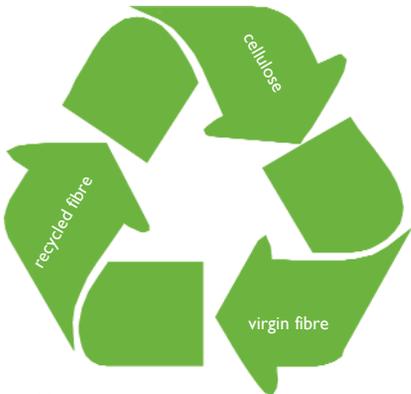
Myth...

Only recycled paper should be used

Only recycled paper is ecological

... versus Fact

- Cellulose wood fibre is a natural and renewable resource and is the main raw material for making paper.
- Recycling extends the useful life of the cellulose fibre to create a full use cycle with this natural resource.
- When cellulose fibre is used for paper-making for the first time is known as virgin fibre. When that same fibre is subsequently reused several times, it is known as recycled fibre.



- This use cycle needs to add a certain amount of virgin fibre to maintain performance levels, because:
 - Cellulose fibre deteriorates with successive usage. It is estimated to be apt for recycling about six times, on average.
 - Around 19% of the paper we use is not suitable for recycling for several reasons: sometimes because we store it in books, documents and photographs we keep at home or in offices and libraries. Other times because, given the use it has had, it is deteriorated or destroyed, such as toilet paper and healthcare paper products.
- Certain types of paper need to provide special characteristics for the specific use to which they are destined that can only be achieved with a greater input of virgin fibre, so these papers tend to use virgin fibre which subsequently goes into the recycling process.
- The best contribution a citizen can make towards responsible consumption is to collaborate in the recycling process by separating used paper from other waste and dropping it in a blue container.



Raw Materials: Paper is planted and recycled

Myth...

By recycling paper, we save on trees

... versus Fact

- Paper is made with cellulose fibre that comes plantations of fast-growing tree species specially grown for that purpose and which would otherwise not exist, so it is not true that by recycling paper, we save trees.
- Recycling paper does mean that landfills and the emissions they produce can be reduced: the 5 million tonnes of used paper collected for recycling in Spain each year account for a saving on landfill volume equivalent to 50 large football stadiums such as Real Madrid's Bernabeu or Barcelona's Camp Nou filled to the brim.



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Raw Materials: Paper is planted and recycled



One kilo of
paper stores
1.3 kilos of
CO₂

Fast-growing
plantations (eucalypt, pine...)
are large-scale CO₂
sinks and help to mitigate
climate change

Papermaking

Efficient and responsible
production

Myth...

**Papermaking is a highly pollutant process - paper mills are
"dirty factories"**

... versus Fact

- In recent years, the Spanish pulp & paper industry has undergone a veritable "environmental revolution". A brief summary of its achievements in this field demonstrate how hard the sector has worked and how far it has progressed along the road to sustainable development:
 - 75% of total output in the sector in Spain is performed according to an Environmental Management System (under ISO or EMAS). This rate is well above the average and is one of the highest throughout Spanish industry.
 - The use of water in the industrial process has been reduced by 40% since 1990 and discharge rate in volume terms has been reduced by 44% in pulp and 74% in paper making.
 - In the papermaking process, water is used, not consumed: only 5% of the water used is consumed, while the remaining 95% is returned after being treated.

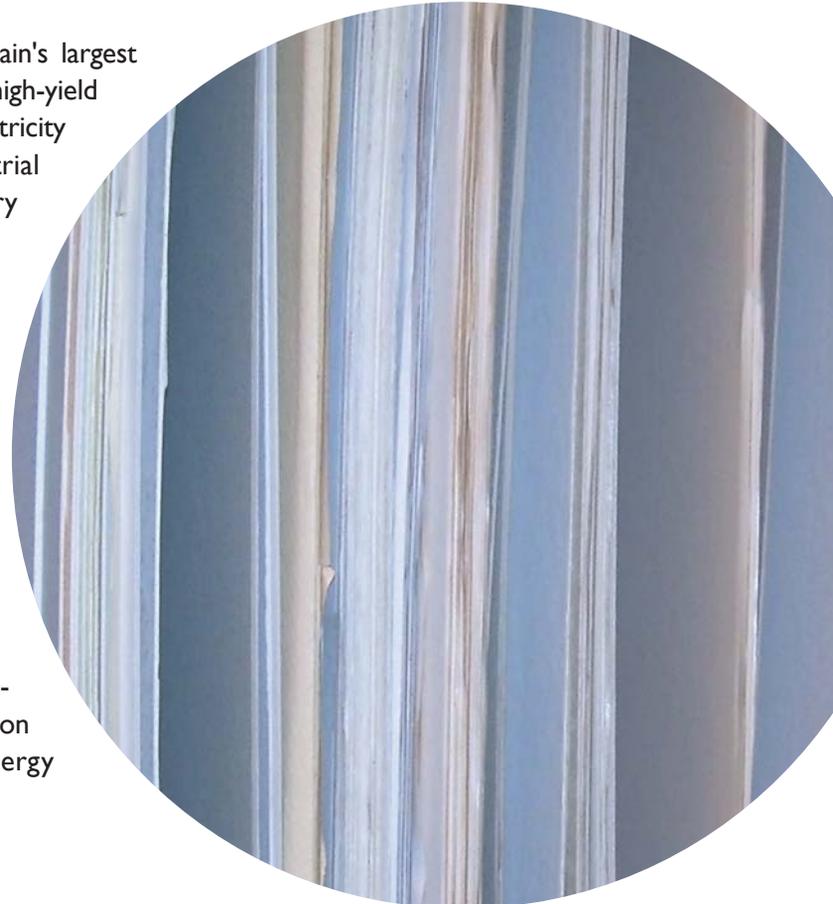


- Since 1990, Chemical Oxygen Demand (COD) in the sector's effluents per tonne of production output has been reduced by 57% for papermaking and by 69% for pulpmaking; suspended solids per tonne have been reduced by 64% for pulp and 91% for paper, while absorbable organo-halides (AOX) have been reduced by 73% thanks to the production of elemental chlorine-free pulp.
- 100% of bleached cellulose pulp is now ECF (elemental chlorine free) or TCF (totally chlorine free).
- The sector uses 94% cleaner fuels such as natural gas (62%) or renewable fuels such as waste biomass from the manufacturing process (32%). It also produces nearly 50% of the biomass-based renewable energy generated in Spain.





- The pulp & paper industry is one of Spain's largest promoters of cogeneration, a very high-yield system which produces both electricity and heat energy for industrial consumption to save on primary energy and reduce emissions. Through cogeneration, the sector produces 2.2% of all electricity generated in Spain and is the national leader in cogeneration with a production rate of 18%.
 - High energy efficiency: the energy generated by the Spanish pulp & paper industry through a highly efficient method such as cogeneration covers the sector's entire energy consumption requirements.



The Pulp & Paper sector
A hi-tech, expanding
industry

Myth...

The pulp & paper industry is old and obsolete, an industry of the past

... versus Fact

- The pulp and paper sector is a modern and technologically innovative industry. More speed, more productivity, more specialisation and more output quality, always in hand with solutions aimed at protecting the environment, are features that define the steady evolution of pulp and paper making technology.
- A modern paper production line measures up to 200 metres in length and occupies a land area equivalent to two football pitches. With a power rating greater than that of 500 modern motorcars, it has over 5,500 km of wiring, 100 km of piping and hundreds of valves.
- The papermaking process is fully automatic and computer-controlled and as such up to 50 workstations, screens and keyboards are required to manage a modern paper machine. Hundreds of state-of-the-art sensors and scanners are used in the processes to control the different parameters.

Myth...

The paper industry does not belong in developed countries

... versus Fact

- There exists a very clear relationship between a country's GDP and its papermaking output capacity:
 - Almost 60% of total world production is concentrated in Europe, the USA and Canada. Europe is presently the largest producer, followed by North America, while Asia is clearly growing (China, Japan, South Korea and Indonesia).
 - By countries, the largest paper producers in the world are: the USA, China, Japan, Germany, Canada, Finland, Sweden, Republic of Korea, France, Italy, Brazil, Indonesia, Russia, India, the United Kingdom and Spain.
 - With 99 industrial mills, which include some of the most modern in Europe, Spain is the 6th largest pulp and paper producer in the EU, with a growth in output well above GDP and new capital investments in state-of-the-art technology worth 1,200 million Euros in just the last years.

The P&P sector: a hi-tech, expanding industry

Spain
is the 6th largest
pulp & paper
producer in the
EU

Spain
has 99
industrial
mills

Paper

The natural response to development

Myth...

Paper consumption is damaging for the environment

We should consume bulk products to use less packaging

... versus Fact

- Paper is a natural, renewable and recyclable product which is produced with increasingly clean technologies.
- Paper covers a wide variety of needs in culture, art, education, communications, trade and goods transport, health care and personal hygiene... and the citizen knows that he is acting correctly when he satisfies those needs by using paper instead of other materials that do not provide the same environmental characteristics as paper.
- Packaging enables a product to reach the consumer intact and in suitable conditions of hygiene. Furthermore, it is an ideal way of providing information about the characteristics of the product (composition, sell-by date, instructions for use...).
- In underdeveloped countries, loss of foodstuffs - due to a large extent to a lack of packaging - stands at 50%, whereas in developed countries the figure is about 2-3% (World Health Organisation).



Myth...

The new technologies will put an end to the use of paper (paper-free offices)

Paper is a product of the past

... versus Fact

- Growing technological capacity and paper's immense versatility have made it possible to steadily develop new products with a high added value and surprising performance in unimaginable applications: waterproof, cushion, metallized, inter-leaving, self-adhesive ... or papers with properties such as mould-inhibitor, capable of withstanding high temperatures, great extensibility, etc.
- Over 30% of the paper we use today provide new functions that 10 years ago did not even exist.
- Modern communication technologies have led to the creation of domestic printshops at home and in the office ... (the ubiquitous printer's): it has never been so easy to print documents on paper.



- In Europe, average per capita paper consumption has grown from 160 kg per year per inhabitant in the early 1990s to the current 195 kg per year per inhabitant (EU-25). In Spain, the figures over the same period have grown from 116 kg per capita to the current 170 kg per inhabitant.
- According to a recent survey by Sigma Dos for the Paper Forum, Spanish consumers reveal a high level of overall satisfaction with paper (7 out of 10) and value its quality (7.5), its suitability for different end uses (7.4) and its environmental characteristics (6.8) positively.
- According to the same survey, 60% of the population prefers to receive their invoices, bills, bank statements, etc. on paper instead of consulting the Internet or receiving them by e-mail. And 75% think that companies that intend to suppress paper in their relationships with their customers do so simply to save costs and increase their profits but not for ecological reasons.



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Myth...

Reusable packaging is more ecological than recyclable packaging

.. versus Fact

- Recyclable packaging reduces environmental impact more effectively than re-use, thanks to its integrated, sustainable and environmentally responsible cycle:
 - **The manufacturing optimises the use of resources.** Packaging manufactured with paper, which comes from a natural and renewable resource such as wood, is 100% recyclable and biodegradable. Through recycling, used paper and board become secondary raw materials to make best use of their cellulose fibre. Nearly 85% of the raw material used to make corrugated board boxes comes from recycling.
 - **In the supply chain, it reduces pollutant emissions from transport vehicles.** It provides customised protection and design. It is capable of adapting to the shape and size of the product. Its versatility enables every centimetre of the pallet, lorry and warehouse to be used efficiently. It transports only the product, not air: therefore fewer lorries are required to transport the same number of goods.



- **During usage: it does not present any health risk.** With board, each product is packed in a new box and with new packaging, there is no risk of pollution from previous uses.
- **After use: 100% biodegradable and leader in collection and recycling.** Used paper and board are recycled and transformed into new paper. This represents more efficient use of resources and a reduction in landfill volumes and in the emissions that it produces. The 5 million tonnes of paper and board collected for recycling each year in Spain represent a saving in landfill volume equivalent to 50 large football stadiums.



