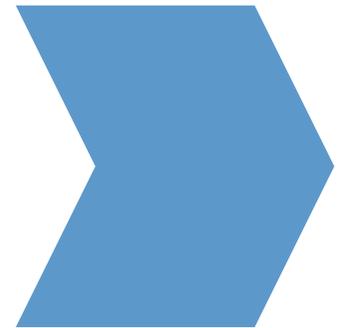


Facts

#16

truths about paper



Myths



Myths against facts

And if we were to be told that someone has invented a natural, renewable, recyclable, biodegradable material with hundreds of applications in our daily life? That the material is, for example, a media on which one may write and store data that operates without consuming energy and has proven permanence in time (it may exceed a thousand years under unimprovably usable conditions); or that the same material is also the lightest packaging, the most resistant, or with the best printing quality.

That it has innumerable applications in health and hygiene, that it may be used to manufacture cups, plates, table cloths, napkins and a never ending list of products we use on a daily basis. That it may be opaque or translucent; that it may be an anti-humidity barrier, filter or absorbent ...

We would undoubtedly be speaking of the invention of the century or millennium, of a true technological, economic and environmental revolution; news that would make rivers of ink run, would be breaking news on television and a trending topic on social media the world over.

Now the fact is that such a material already exists. It has been with us for two thousand years and is called paper. However, and in spite of such a long life together, it is still largely unknown to us.

That is why we wish to do justice to that silent companion that has helped us again and again over the years, making our life more simple. If you are not satisfied with urban legends, with myths about paper that we repeat without bothering to check against the facts, this publication will help you to know what paper actually is and is not.

D.L. M-9270-2014

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No me tires. Recíclame
Y mañana volveré a ti con algo nuevo que contarte.
www.graciaspaper.es

Facts

#16

truths about paper



Myths

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debunked Myth#1

**Deforestation is increasing,
we are destroying the last forests**

**700,000 hectares more forest
per annum in Europe**

Fact#1

The global rate of deforestation is decreasing Forest areas are growing in Europe

- **31%** of the total land area of the planet is covered by forests
- **4,000** million hectares of forests
- **0.6** hectares per inhabitant

The rate of deforestation is decreasing.

The net loss of forests in the world has been reduced quite considerably: it has gone from 8.3 million hectares per annum in the 1990s to 5.2 million hectares per annum in the period 2000-2010. All this is due to the natural expansion of forests and to reforestation, to tree planting.

In the period 2000-2010, in Europe and Asia, forests have grown and in North and Central America they are maintained:

- 7700,000 hectares more forest per annum in Europe
- 2.2 million hectares more forest in per annum in Asia

FAO: Global Forest Resource Assessment. 2010

Myth#2

Spain is becoming
a **desert**

**European countries with most forests:
Russia, Sweden, Finland and Spain**

Fact#2

Spain is one of the countries in the world with the largest **increase in forest area**

The largest forest areas in Europe are those of
Russia, Sweden, Finland, Spain and France.

FAO: Global Forest Resource Assessment. 2010

In Spain
forests have **increased.**

1990 - 13.8 million hectares

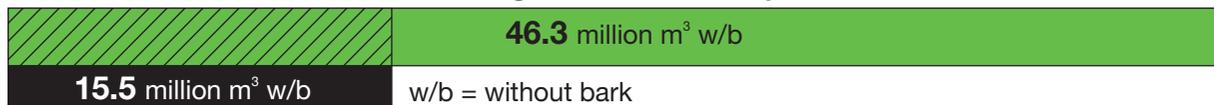
2000 - 17.0 million hectares

2005 - 17.3 million hectares

2010 - 18.2 million hectares

DG Rural Development and Forestry Policy MAGRAMA

Annual growth of wood in Spain



Annual wood felling in Spain for all uses → **33%** annual growth in wood

ASPAPEL: Statistical report 2013

debunked Myth#3

Forests are destroyed
to make paper

Wood for paper
is grown in plantations

Fact#3

More paper = More trees

- **Deforestation** is largely due to **conversion of forests to arable land**.
-

FAO: Global Forest Resource Assessment. 2010

- Paper is **NOT** manufactured from exotic species from tropical forests, nor from deciduous or evergreen oaks or beech.
 - **The wood used for paper making are fast growing species** (mainly eucalyptus and pine in Spain), that is purpose grown in forest plantations that are being continually regenerated and replanted and that would not otherwise exist.
 - **The Spanish paper sector** manufactures about two million tonnes of cellulose per annum, for which it uses about six million cubic metres of eucalyptus and pine wood, grown for that purpose in forest plantations, that are planted and maintained for that purpose.
-

ASPAPEL: Statistical Report 2013

debunked Myth#4

There are so many plantations: they are **filling Spain with eucalyptus trees**

Plantations for paper: 2.7% of the total area of forests in Spain

Fact#4

Paper plantations are established on **fallow land** and help to preserve the forests

DG Rural Development and Forestry Policy MAGRAMA



Plantations of pine and eucalyptus for paper: **487,510** hectares → **2.7%** of the total area

ASPAPEL: Update 2014 Sustainability Memorandum

The plantations are made on land that is fallow due to abandonment of agricultural crops so **tree covered areas are increased due to the plantations.**

Plantations of fast growing species, precisely due to that specific characteristic, allow the largest amount of wood to be obtained from the least area and **thus preserve the forests.**

debunked Myth#5

**Plantations are damaging
to the environment**

Paper plantations
store 32 million tonnes of CO₂
equivalent

Fact#5

Paper plantations are efficient **carbon sinks**

Plantations of fast growing species (eucalyptus, pine) are **large CO₂ sinks** and help to halt climate change. Once the wood reaches maturity, it ceases to capture carbon, so these productive plantations are an environmental opportunity. The 487,510 hectares of pine and eucalyptus plantations for paper store 32 million tonnes of CO₂ equivalent.

DG of Rural Development and Forestry Policy MAGRAMA

The carbon stored is not released when the tree is felled, but rather remains in the forestry products. For example, in books, the paper is stored for decades -and generations- in our libraries; and through recycling, the paper extends the term of that carbon sequestration.

1 kilo of paper stores **1.3 kilos** of CO₂,

depending on the proportion of cellulose fibres comprising it*

Plantations allow **effective control of soil erosion** thanks to their roots and **help to regulate the water cycle** through their branches and leaves that retain rain water, so it reaches the ground with less force, remains on the surface and gradually penetrates the deepest layers.

Plantations are managed sustainably, assuring maintenance of their ecological, social and economic functions, which is certified through **forestry certification** systems such as FSC, PEFC...

(* According to the procedure to calculate CO₂ included in the paper -biogenic-.

debunked Myth#6

Paper manufacturers are "dirty factories"

**97% of the Spanish paper production
is carried out under an
Environmental Management System**

Fact#6

The factories are **environmentally very efficient**

97% of the total production of the sector in Spain is carried out under an **Environmental Management System** (ISO or EMAS).

Energy efficiency

- Mix of fuels: biomass (32%) and natural gas (65%).
- The electric energy required to move the machinery and steam to dry the cellulose and paper is produced by the sector in cogeneration plants (1,135 MW of installed power) beside the factories. Cogeneration saves primary energy and reduces emissions. *IDAE/ASPAPPEL*
- Manufacturing all the paper a Spaniard consumes in one year produces less CO₂ emissions than a single journey by car Madrid-Barcelona-Madrid. *Facts by ASPAPPEL and Pitney Bowes Inc.- The environmental Impact of Mail: A Baseline, 2008*

Efficiency in water use

In the paper making process, water is used, it is not consumed. **Only 5% of the water used is consumed and the remaining 95% is returned after purification.**

Water use in the industrial process has been reduced by 22% since 2000 in total volume and effluent per tonne has decreased by 18% for cellulose and 57% for paper.

Efficiency in waste management in the process

77% of the waste materials in the process are recycled:

energy recovery (27%), direct agricultural use (24%) composting (10%), cement industry (2%), ceramics industry (1%), raw materials in other industries (8%).

Myth#7

debunked

The paper sector is an
antiquated, obsolete industry

Bio-industries such as paper making
are the industries of the future

Fact#7

The paper macro-sector, as a **forest based bio-industry**, is the key sector of the new bio-economy

Bio-industries such as paper making from natural, renewable raw materials, that manufacture recyclable products with a smaller carbon footprint, **are the industries of the future**.

Europe -and Spain in particular- **have good weather conditions to grow wood** and fallow areas available due to abandonment of agricultural and husbandry tasks, all along with major development of the paper collection and recycling systems (the urban forest).

As a bio-industry, **the paper macro-sector** is taking a position as the key sector of the new low-carbon bio-economy, depending on efficient use of renewable, recyclable resources, to manufacture natural products with a large added value.

In the near future -one that work is already being carried out on- **the factories in the paper chain shall be wood and recycled fibre** based bio-refineries that, making highly efficient use of their raw materials, shall manufacture cellulose, paper and board, bioenergy and biofuels, biocomposites and a whole series of new forestry fibre based products.

debunked Myth#8

Paper is **not** an industry for
developed countries

Largest paper producers:
China, USA, Japan, Germany and Sweden

Fact#8

44% of the production worldwide is concentrated in **Europe, USA and Canada**

The **largest paper producers** in the world

- 1° China
- 2° USA
- 3° Japan
- 4° Germany
- 5° Sweden
- 6° Republic of Korea
- 7° Canada
- 8° Finland
- 9° Brazil
- 10° Indonesia
- 11° India
- 12° Italy
- 13° France
- 14° Russia
- 15° Spain

Facts ASPAPEL, CEPI, RISI

48% of the world production

is concentrated in Europe, USA and Canada, with a clearly upward trend in Asia (China, Japan, Republic of Korea, India and Indonesia).

Facts CEPI, RISI

With 71 industrial plants, among which there are some of the most modern in Europe, **Spain is the 6th paper producer and the 5th cellulose producer in the EU**, as well as the **2nd largest European paper recycler**, just behind Germany.

ASPAPPEL: Statistical report 2013

debunked Myth#9

Paper is a product of the past

**91% of consumers
cannot imagine life without paper**

Fact#9

Renewable, recyclable bioproducts such as paper are the **products of the future**

Consumers, who are increasingly more aware of pressures on resources and the need for efficiency, demand increasing **functionality** of products and a **lower carbon footprint**. **Renewable, recyclable, biodegradable bioproducts** such as paper, able to produce the greatest added value from the initial raw materials, are the most suitable to satisfy the demands and expectations of the new consumers.

CEPI-ASPAPEL Paper invents the future 2013

In a future already in sight, the paper macro-sector will manufacture a whole **new generation of wood fibre bioproducts** (textiles, cosmetics, paints and varnishes, insulation, composites...). *CEPI-ASPAPEL Paper invents the future 2013*

And the **present paper products shall also be reinvented**: intelligent packaging that tells you if the fruit is mature or whether or not you have taken your medicine; hygienic and sanitary products with the highest service, with new solutions for babies and the elderly; graphic papers integrated with computer solutions... *CEPI-ASPAPEL Paper invents the future 2013*

91% of consumers **cannot imagine a life without paper** and the majority (68%) are open to using new paper products such as paper batteries, intelligent packaging or cosmetics and medicines based on cellulose fibre. *Paper Survey in Spain. TECEL ESTUDIOS-SIGMADOS for THE PAPER FORUM, April 2012*

debunked Myth#10

**Paper is more polluting
than other materials and media**

The **carbon footprint** of paper
is lower than that of other materials

Fact#10

Highly positive balance in favour of paper

Paper books and electronic books: Only by reading more than 33 e-books of 360 pages each one, during the life cycle of an electronic book, may the device become preferable to paper from the point of view of mitigating climate change. *Centre for Sustainable Communications - Royal Institute of Technology KTH Sweden (Borggren & Moberg) - Pappersbok och elektronisk bok på läsplatta, 2010*

Printed newspaper and digital newspaper: Reading a printed newspaper has less impact on global warming than reading the news on the Internet for 30 minutes. *Centre for Sustainable Communications - Royal Institute of Technology KTH Sweden (Moberg, Johansson, Finnveden y Jonsson) - Screening environmental life cycle assessment of printed, web based and tablet e-paper newspaper, 2007*

Electronic mail: Office e-mail users emit 131 kilos of CO₂ equivalent per annum (including both spam as well as legitimate messages). *McAfee - ICF International - The Carbon Footprint of email Spam Report, 2009*

Postal mail (on paper): the emissions associated with postal mail received annually per home amount to 14 kilos of CO₂, that are equivalent to the emissions of five cheeseburgers or a 70 kilometre car journey. *EMIP European Mail industry Platform - The Fact of our Value Chain, 2009*

Corrugated board packaging: If Spain were to replace reusable plastic packaging with corrugated board packaging, it would lower the annual CO₂ emissions by 133,480 tonnes, as much as if 78,518 cars were taken off the road. *José Luis Nueno y Pedro Videla - IESE - Analysis of the economic and environmental impact of corrugated board packaging industries compared with reusable plastic, 2009*

Paper bags: The carbon footprint of Kraft paper bags is half those of LDPE (for a large bag, 41 grams of CO₂ equivalent if paper compared with 87 grams if it is plastic; for a small bag, 14 grams of CO₂ equivalent if paper and 28 grams if plastic). *Asociación Cluster del Papel de Euskadi - Factor CO₂ - Improving sustainability of the paper sector. Carbon footprint study of the paper sector in the Autonomous Community of the Basque Country, 2009*

debunked Myth#11

Consumers **no longer read on paper**

92% of **internet users** read paper magazines
and 82% read printed newspapers

Fact#11

According to the surveys, **consumers want to continue to use paper media**

According to the largest and most recent research into the matter, the *Paper Survey in Spain* conducted by *TECEL ESTUDIOS-SIGMADOS for EL FORO DEL PAPEL* in April 2012, with a thousand interviews nationwide of respondents over 18 years old, the consumers emphasised the emotional values of the paper media and wished to continue to use it, considering it compatible with the electronic media:

- They feel paper is **nearer and more pleasant** than other products and technologies (81 %).
- They defend that there should continue to be paper media for **books** (91 %) and for **newspapers** and **magazines** (77%).
- They consider that in a sustainable economy, it would be appropriate for printed **books to cohabit with electronic books** (87%).
- They want to continue to receive their **invoices and bank balances on paper** (60%).

96% of internet users affirm they have read a magazine in the last six months: 60% opts to read magazines in both formats (paper and electronic), 32% only reads printed magazines and 4% only reads such publications on line. *Survey AIMC Traditional magazines versus on line magazines 2012*

A similar percentage (93%) affirms having read a newspaper in the lost month: 58% opts to read newspapers in both formats (paper and electronic), 24% only reads printed newspapers, and 11% only reads such publications on line. *Survey AIMC Daily press and supplements 2014*

debunked Myth#12

We should **consume bulk** products to use **less packaging**

93% of consumers considers that **paper and board packaging** is the **most ecological**

Fact#12

Paper and board packaging **protects** the product, **provides relevant information** on it and its environmental characteristics are unbeatable

Paper and board packaging is **natural, renewable, recyclable and biodegradable** and produced with increasingly cleaner technologies.

Paper and board packaging allow the product to reach the consumer **intact** and under **adequate hygienic conditions**. Moreover, **they are an identical media for the Brand, and to provide information** on the characteristics of the product (composition, expiry, using instructions ...), as they provide the best printing conditions.

In underdeveloped countries, throughout the supply chain, losses of food products - to a fair extent due to lack of packaging - reach 50%, while in developed countries, this amounts to 2 or 3%.

World Health Organisation

93% of consumers consider that paper and board packaging is the most ecological.

Paper Survey in Spain. TECEL ESTUDIOS-SIGMADOS for EL FORO DEL PAPEL, April 2012

debunked Myth#13

Reusable packaging is more ecological than recyclable

Paper and board packaging:
**natural, renewable,
recyclable and biodegradable**

Fact#13

Board packaging optimises use of resources through an integrated, **sustainable cycle**

Recyclable packaging reduces the environmental impact more effectively than reuse, through an **integrated, sustainable, environmentally responsible cycle**:

Manufacturing

Optimises the use of resources. Paper packaging is 100% recyclable and biodegradable and manufactured from a natural, renewable source such as wood. Nearly 85% of the raw material used in manufacturing corrugated board boxes is obtained from recycling.

Distribution

Optimises the logistics processes and reduces contaminating emissions from transport. Provides custom protection and design. Is able to adopt as many shapes and sizes as required by the product. **Transports product, not air**: less trucks are required to transport the same amount of merchandise.

Use

There is no health risk. With board, each product is in a new packaging: with a new package, there is no risk of contamination from previous use.

After use

100% biodegradable and a leader in recovery and recycling.

debunked Myth#14

Very little paper is recycled in Spain

The Spanish paper industry is the second largest recycler in Europe

Fact#14

We collect more than 70% of the paper and board we consume for recycling

In 2013 Spain collected: **4.3** million tonnes of paper for recycling.

We collect more than **70% of the paper we consume.**

ASPAPEL: Statistical Report 2013

The growth of paper collection

1990 - 1.7 million tonnes
2000 - 3.3 million tonnes
2013 - 4.3 million tonnes

Facts: ASPAPEL

The Spanish paper industry is the European **leader in recycling**: for every 10 kilos of paper manufactured in Spain, 8.3 kilos of used paper are used as raw material. Its factories recycle 5.1 million tonnes of used paper per annum, which makes us the second larger recycler in Europe, just behind Germany. *Facts: ASPAPEL, CEPI*

The Spanish paper industry **guarantees recycling of all the used paper** collected in Spain.

debunked Myth#15

One must **only** use **recycled paper**:
only recycled paper is ecological

Virgin and recycled fibre
are the same fibre at two moments
of their life cycle

Fact#15

Thanks to recycling, the **useful life** of wood fibre is optimised

Cellulose fibre from wood, which is a **natural, renewable resource**, is the fundamental raw material to manufacture paper.

When that cellulose fibre is used for the first time to manufacture paper, it is called **virgin fibre**. When that same cellulose fibre is reused successive times, it is called **recycled fibre**.

That **cycle of uses** requires a certain amount of virgin fibre to be added to remain in operation:

- **The fibre gradually deteriorates** through successive uses (it may be recycled up to approximately eight times).
- There are certain types of paper used for specific purposes that have certain technical **characteristics only virgin fibre provides**, due to which virgin fibre is preferably used for such paper.

The best contribution the citizen may make to responsible paper consumption is to collaborate in the recycling process, separating used paper from other waste and depositing it in the **blue bin**.

debunked Myth#16

Paper recycling **saves trees**

Wood for paper is grown in plantations that are being **continually regenerated and replanted**

Fact#16

Paper recycling reduces landfill volume and the emissions released

Paper is manufactured with cellulose fibre from **plantations** of fast growth species used for that purpose and that otherwise would not exist, **so it is not true that trees are saved by recycling paper.**

Paper recycling does allow the **volume in landfills and the emissions they produce to be reduced.**

Spain recycles **5.1 million tonnes of used paper per annum**

That amounts to a **saving on landfill volume** equivalent to **50 major football stadiums** such as the Bernabéu or the Camp Nou filled right to the top.

ASPAPEL: Statistical Report 2013



More information on:
www.graciaspapel.es

Paper Forum:

ASPAPEL, ASOCIACIÓN ESPAÑOLA DE FABRICANTES DE PASTA, PAPEL Y CARTÓN
AFCO, ASOCIACIÓN ESPAÑOLA DE FABRICANTES DE ENVASES Y EMBALAJES
DE CARTÓN ONDULADO

ASPACK, ASOCIACIÓN ESPAÑOLA DE FABRICANTES DE ENVASES, EMBALAJES
Y TRANSFORMADOS DE CARTÓN

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Paper recycling, a history of success

Paper, natural practice life: bioconsumption

The efficient factory: sustainability and innovation

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