Bioproducts, bioconsumerism

The Spanish circular bioindustry of pulp and paper is one of the largest producers of pulp and paper in Europe, with 68 paper mills and 10 pulp mills. Its business contributes to the generation of wealth, as well as being the driving force behind a powerful value chain, whose global contribution to the economy accounts for 4.5% of GDP and generates one in every fifty jobs in our country. The sector improves citizens' quality of life with renewable and recyclable bioproducts, capable of producing the greatest added value from local raw materials. These bioproducts respond to modern consumers' demands by replacing products from non-renewable fossil resources and thus contribute to decarbonisation.

The multiplier effect of the sector through the paper value chain

GRI 201-1 | GRI 203-2

THE circular bio-industry of pulp and paper has an important multiplier effect on the economy as the driving force of a powerful value chain, whose overall contribution to the economy accounts for 4.5% of GDP and generates one in every fifty jobs in Spain, according to a recent study by CEPREDE for the organisations in the chain. Likewise, four out of every fifty euros invoiced by the industry and one out of every fifty euros collected by the State through taxation or social security contributions in Spain are linked to the business activities of this value chain.

The pulp, paper and board value chain - as defined in that study - begins in nature with wood for paper plantations from which the natural and renewable raw material is obtained that the paper industry uses to produce pulp and paper. In the next link, converting companies take that paper and use it to produce a very broad range of paper and board products, such as packaging of all kinds (boxes, bags...), stationery (envelopes, notebooks, folders...) and tissue products (toilet paper, handkerchiefs, kitchen towels...). The value chain continues through the printing, reproduction and finishing services sector, advertising and direct publicity firms, and through the publishing industry with books, newspapers and magazines. This powerful chain that creates employment and wealth also encompasses postal and mail businesses dedicated to sending letters and parcels. And finally, the chain closes with the waste recovery sector that collects and treats used paper so that it can be returned to the paper mills.

Made up of 17,377 companies with paid workforces, the pulp, paper and board value chain provides direct employment to 182,370 people. Direct turnover stands at 23.094 billion Euros. The paper and board value chain has a very significant effect on the Spanish economy, not just directly but also an indirect or induced effect that has to be reckoned in its entirety.

Overall turnover accounts for 4.5% of Spanish GDP. In terms of labour, the global contribution of the chain represents 18.5% of industrial employment and 2% of total employment. With 8.8% of industrial output, it generates 13.2% of industry's added value. It also contributes 1.8% of the country's tax revenue through corporate tax, S.S. contributions, income tax and VAT.

The total contribution (direct, indirect and induced) of the pulp, paper and board value chain to the entire national economy translates into 369,036 jobs and a payroll bill of 12.536 billion Euros. Overall turnover stands at 48.471 billion Euro and added value amounts to 18.378 billion. Therefore, total contribution to the State coffers via taxation and social security contributions is 7.424 billion Euros.

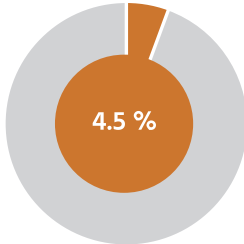
SOCIO-ECONOMIC SIGNIFICANCE OF THE PULP, PAPER AND BOARD VALUE CHAIN 2015 | MILLION EUROS

GRI 201-1 | GRI 203-2

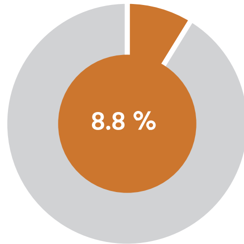
	Direct contribution	Total contribution (direct+indirect+induced)
Turnover	23,094	48,471
Added value	8,528	18,378
Employment	182,370	369,036
Payroll	6,090	12,536
Gross surplus	2,566	6,055
Taxation	3,529	7,424

TOTAL CONTRIBUTION OF PULP, PAPER AND BOARD VALUE CHAIN 2015 (direct+indirect+induced) | MILLION EUROS

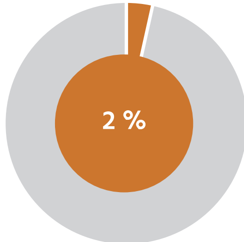
GRI 201-1 | GRI 203-2



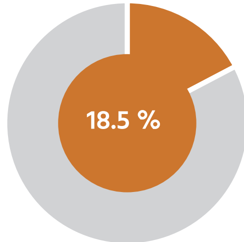
Of Spanish GDP



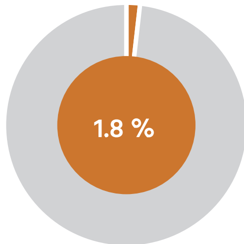
Of industry turnover



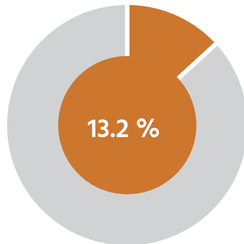
Of total employment in Spain



Of employment in industry



Of tax revenues in Spain



Of industry added value

Part of Europe's elite

THE Spanish paper industry is one of the largest European producers of pulp and paper, with 68 paper mills and 10 pulp production plants, which play an important role in generating employment and wealth in their respective communities.

With a production of 6.2 million tons of paper, accounting for 7% of all European output, Spain is the sixth producer in the E.U. after Germany (which produces a quarter of the paper manufactured in Europe), Finland, Sweden, Italy and France. With 1.7 million tons of pulp production, Spain is also the sixth largest European producer after Sweden and Finland (the two top European forest powers, which have an equal share of 60% of European production), Portugal, Germany and France.

Within the context of recovery initiated by the sector in 2015, the various types of paper have performed differently, the highlight being the growth in packaging papers and specialty papers.

Papers for packaging already account for 61% of production. Demand for them is growing strongly with great future prospects as a result of the increase in electronic commerce and of the fact that paper, given its environmental characteristics (natural, renewable, recyclable, biodegradable), is taking over from other packaging materials based on fossil resources. Production of corrugated paper is at an all-time high, nearly reaching the three million ton mark in 2017, while production of coated cardboard is displaying 2-digit growth rates.

Similarly, production of special papers has been growing at or around a two-digit rate for four consecutive years. These high added-value papers for very specific applications (decorative papers, security papers, self-adhesive paper, metallized paper ...) already account for 8% of Spanish paper production.

SECTOR'S TOTAL TURNOVER | MILLION EUROS

23 GR | GRI 201-1

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
4,845	3,400	4,160	4,643	4,317	4,263	4,141	4,156	4,240	4,401

SOURCE: ASPAPEL

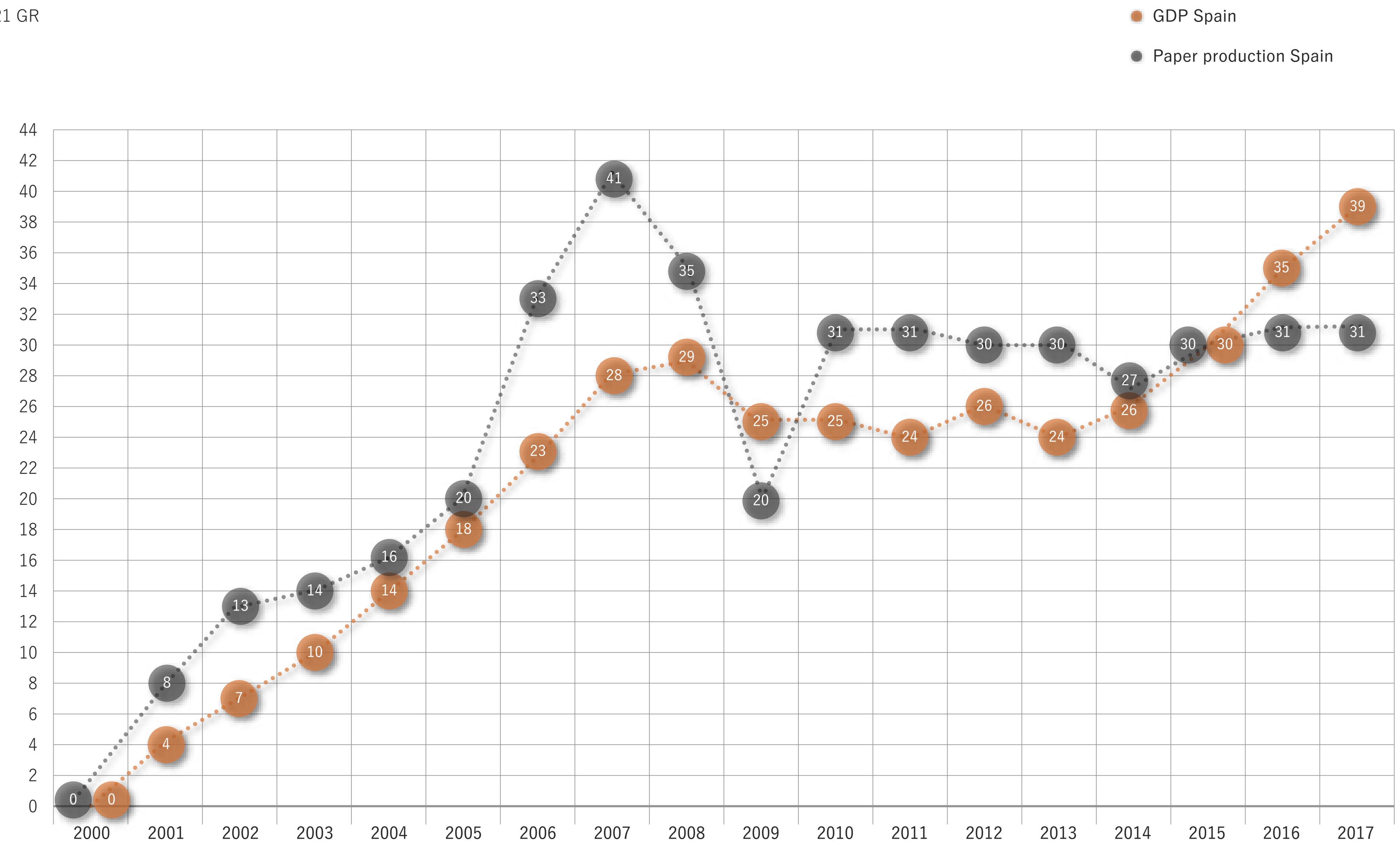
EVOLUTION OF PRODUCTION OUTPUT AND CONSUMPTION | 000' TONS

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Paper production	6,414	5,700	6,193	6,203	6,177	6,181	6,036	6,195	6,219	6,218
Paper consumption	7,266	6,213	6,448	6,428	6,158	6,085	6,257	6,607	6,645	6,803
Pulp production	2,009	1,739	1,865	1,976	1,981	1,977	1,863	1,641	1,677	1,700
Pulp consumption	1,965	1,743	1,794	1,771	1,847	1,921	1,813	1,949	1,914	1,877

SOURCE: ASPAPEL

SECTOR GROWTH VS. GDP | % OF AGGREGATE GROWTH SINCE 2000

21 GR



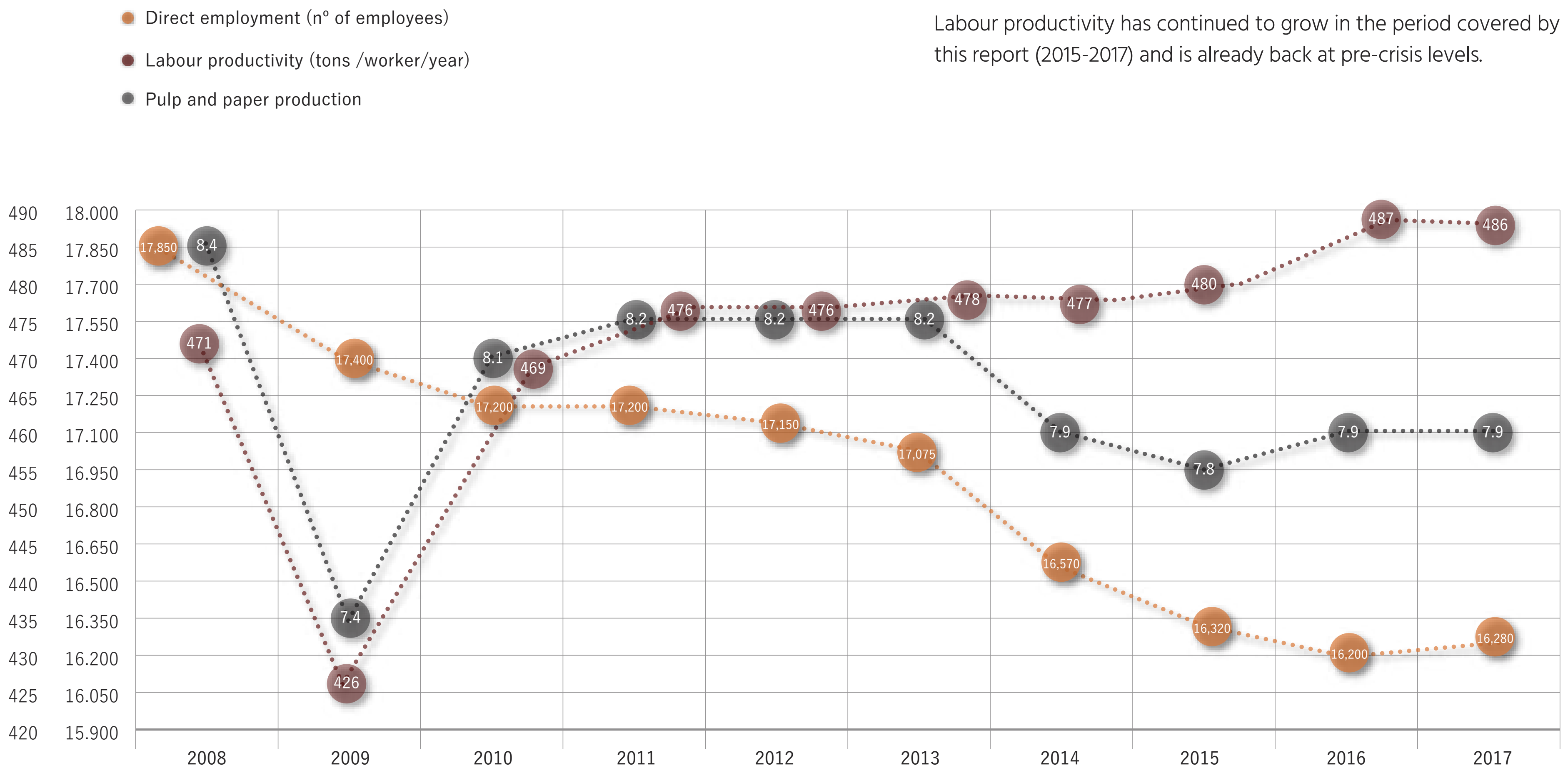
SOURCE: INE & ASPAPEL

LABOUR EMPLOYMENT AND PRODUCTIVITY

26 GR | 27 GR | GRI 401-1

The number of direct jobs in the pulp and paper sector stands at 16,280. In 2017, a rebound in employment began following the first and second recession, which brought about a 10% loss of employment in the sector compared to 2007. Employment in the sector is characterised by its high qualification and stability. The paper industry is the driving force of a powerful value chain that globally generates 19% of industrial employment and 2% of all employment in Spain.

Labour productivity has continued to grow in the period covered by this report (2015-2017) and is already back at pre-crisis levels.



SOURCE: ASPAPEL

UPDATED MAP OF PRODUCTION MILLS

GRI 203-1

SOURCE: ASPAPEL

GRI 203-1

EXAMPLES OF DYNAMIC INFRASTRUCTURES AND SERVICES AROUND THE SECTOR'S BUSINESS

RAW MATERIAL SOURCING

> Wood Contribution to cleaning forest stands and the building and maintenance of access roads (forest tracks)
> Paper for recycling Contribution to clean cities and reduced dumping on landfills.

PRODUCTION

Improved access roads, extension of gas supplies or installation of municipal water treatment plants where there were none previously.
Enhanced stability of the electric system, grid and transformer stations thanks to the sector's CHP plants.

GRI 203-1

The Spanish paper sector's business, in as far as supplies of both wood and paper for recycling are concerned, generates capital expenditure in infrastructures and services that boost economic and social dynamics in the vicinity of its 68 paper mills and 10 pulp mills, to the benefit of the entire community in the areas where they operate.

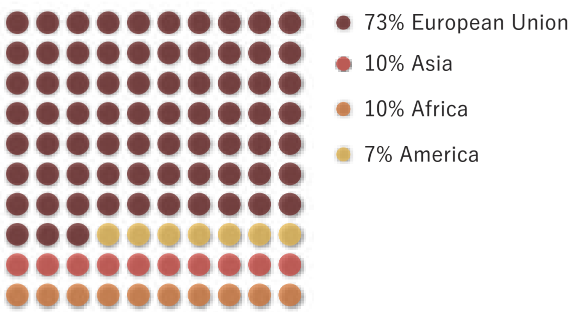
EVOLUTION OF EXPORT RATE | % EXPORTS/PRODUCTION OUTPUT
25 GR

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Paper export rate	46.2	49.3	49.4	47.6	47.9	49.3	48.3	45.1	45.5	43.1
Pulp export rate	53.3	50.1	51.8	62.3	59.2	61.6	58.9	51.8	55.4	56.6

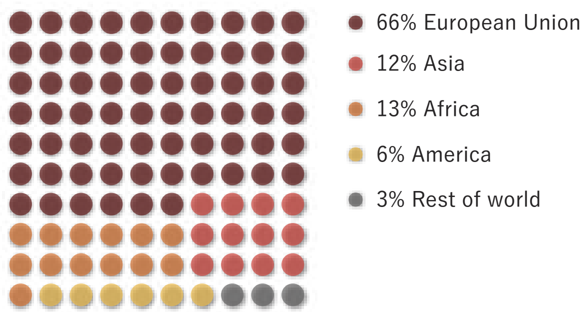
SOURCE: ASPAPEL

DESTINATION OF PULP AND PAPER EXPORTS | % OF TOTAL
25 GR

2014



2017



SOURCE: ASPAPEL

The paper industry is strongly geared to foreign trade - 57% of pulp and 43% of paper made in Spain is destined to foreign trade, which accounts for 56% of turnover. Most of the exports (59% of paper and 84% of pulp) are headed to other countries in the European Union, more specifically to highly demanding markets such as Germany, France, Italy, Portugal and the Netherlands. The EU remains the destination of 66% of all of the sector's exports, although other regions such as Asia and Africa are increasing.

Exports gave the sector certain respite during the crisis in the face of the significant downturn in the domestic market. Following the reactivation of the Spanish economy, the sector – while still not neglecting its foreign markets – is giving domestic consumption top priority again.

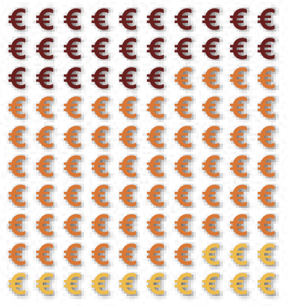
RAW MATERIAL PROCUREMENT

24 GR | GRI 203-2 | GRI 301-1 | GRI 301-2

2014

- 25% Virgin fibre
- 61% Fibre for recycling
- 14% Auxiliary materials

2017



- 26% Virgin fibre
- 61% Fibre for recycling
- 13% Auxiliary materials

SOURCE: ASPAPEL

RAW MATERIAL PROCUREMENT

24 GR | GRI 203-2 | GRI 204-1 | GRI 301-1 | GRI 301-2

Virgin fibre, fibre for recycling and auxiliary materials (starch, kaolin, glues, dyes ... which are used to give paper certain finishes depending on its intended end use) are the fundamental raw materials used in papermaking.

Raw material procurement is an important chapter in terms of economic impact in the pulp and paper industry, since the sector prioritises local sourcing.

98% of the wood and 70% of the paper for recycling that were used in 2017 as raw material for the Spanish pulp and paper industry came from of local sources. Few industrial sectors in our country, which traditionally suffers from a large deficit of raw materials, have a similar degree of local sourcing of raw materials and creation of added value through industrial conversion at the sector's 10 pulp mills and 68 paper mills in Spain.

Spain is the third largest EU country in terms of forest land cover after Sweden and Finland, the two major European forest powers, and also has an efficient system of collecting paper for recycling with which citizens collaborate on a massive scale.

RAW MATERIAL PROCUREMENT | 000' TONS

24 GR | GRI 203-2 | GRI 301-1 | GRI 301-2

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Virgin fibre	1,965	1,743	1,794	1,771	1,847	1,921	1,813	1,949	1,914	1,877
Fibre for recycling(*)	4,735	3,997	4,440	4,432	4,409	4,476	4,396	4,508	4,520	4,367
Auxiliary materials	850	750	800	866	867	886	1,043	1,198	1,024	906
Total raw materials	**7,550**	**6,490**	**7,034**	**7,069**	**7,123**	**7,283**	**7,252**	**7,655**	**7,434**	**7,150**

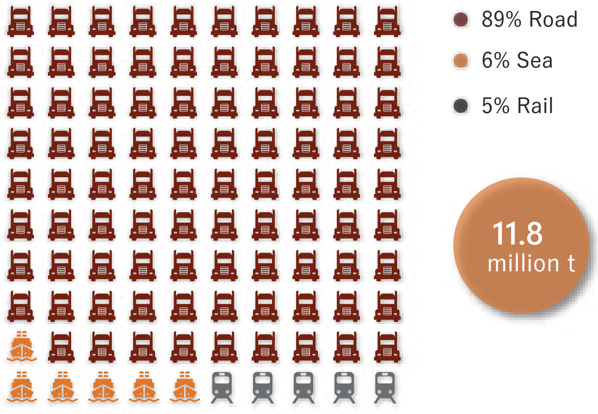
SOURCE: ASPAPEL

* Equivalent pulp consumption

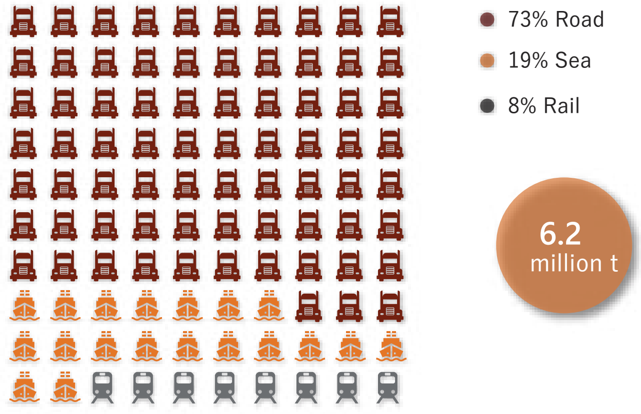
RAW MATERIAL AND FINISHED GOODS FREIGHTING 2017

32 GR

RAW MATERIALS



FINISHED GOODS



SOURCE: ASPAPEL

FREIGHTING | 32 GR

	2014	2015	2016	2017
Raw material freighting (wood, market pulp, paper for recycling)				
Total volume (million t)	11.2	11.4	11.6	11.8
Rail (%)	7	6	5	5
Road (%)	86	89	90	89
Sea (%)	7	5	5	6
Finished goods freighting				
Total volume (million t)	6	6.2	6.2	6.2
Rail (%)	10	9	8	8
Road (%)	66	69	71	73
Sea (%)	25	22	21	19

SOURCE: ASPAPEL

RAW MATERIAL AND FINISHED GOODS FREIGHTING

32 GR

Of equal relevance in economic and environmental terms is the transportation of raw materials and finished products. Based on 2017 data, the Spanish pulp and paper industry moves 11.8 million tons of raw materials (wood, market pulp and paper for recycling) by road (89%), sea (6%) and rail (5%) every year. Road haulage (73%) is also the most usual means of transport for finished goods (6.2 million tons), followed by sea freight (19%), mainly for export destinations, and rail freighting (8%).