FLAX, A GREEN AND INNOVATIVE FIBRE.
A EUROPEAN INDUSTRY COMMITTED TO OUR ENVIRONMENTAL, SOCIAL AND ECONOMIC ECOSYSTEM.

KEY INDICATORS & INFOGRAPHICS
Flax has established itself in the daily life of consumers and businesses. Beyond its textile applications in fashion, lifestyle and interior decoration, flax – a European fibre - is utilized as a wellspring of innovation in the areas of design, sports and leisure, automotives, aeronautics, and so on.

In order to make a 2015 inventory of the flax industry’s strengths, the CELC turned to the expertise of BVA and BIO by Deloitte who provided, and put in perspective, a host of socio-economic, technical and environmental information (both quantitative and qualitative), on the different stages in the life of flax: its cultivation, its transformation, and its consumption.

The figures presented in this press kit, for the flax industry, and comparisons and equivalences, are either extracts directly drawn from reports and websites whose sources are presented at the end of the press kit, or calculated by BIO Deloitte and BVA through a combination of these same sources.

Beyond the collection of sources, the work of BIO by Deloitte and BVA consisted of ensuring the reliability and transparency of their calculations in order to provide the CELC usable and rigorous quantitative data.

20 May 2015
FLAX, UNIQUELY EUROPEAN
DOES THE PLANET GOOD

FLAX
A FIBRE OF PROXIMITY

With 81,300 hectares of fiber flax cultivated in 2014, Europe is responsible for 80% of global production.

Flax is the only plant fibre originating in Europe!
FLAX, UNIQUELY EUROPEAN
DOES THE PLANET GOOD

FLAX
A BREATHE OF AIR
FOR THE PLANET

Every year, the growing
of Flax in Europe
results in the capture of
250,000 tons of CO$_2$

EQUIVALENT TO THE CO$_2$ EMISSIONS GENERATED BY
A RENAULT CLIO CAR DRIVING AROUND THE WORLD

62 000 TIMES
1 LINEN SHIRT BOUGHT

13 1.5L BOTTLES OF WATER SAVED

FLAX, UNIQUELY EUROPEAN
DOES THE PLANET GOOD

FLAX
A NATURALLY FRIENDLY FIBRE

RAINWATER IS ALL THAT EUROPEAN FLAX REQUIRES TO GROW

= 0 IRRIGATION

If tomorrow, all French people bought a linen shirt instead of a cotton one, the savings would be equivalent to the amount of water drank by the population of Paris in a year.
Flax fibre contributes to maintaining the economic and social fabric in rural areas. Its cultivation mobilizes a skilled workforce, five times greater than that required for growing wheat.

**FLAX NONMOVABLE JOBS**

= 12 000 direct jobs in the Growing & Scutching sector of the Flax industry
REQUIREMENTS FOR CULTIVATION

A well-defined territory that requires deep soil in which silt predominates; a moist maritime climate where temperatures do not exceed 25°C on average during the growing time; rainfall to cover all water needs naturally.

Even if 76% of the Europeans interviewed in 2014 are unaware of the fact, Europe is responsible for 80% of global flax production, from a wide swath of land extending from France, Belgium and the Netherlands, from Caen to Amsterdam. Haute-Normandie, Basse-Normandie, Picardie, the North/Pas-de-Calais and the eastern part of the Ile de France are zones that bring together all these conditions and represent 99% of the land given over to the crop in France, all cultivated respecting the environment and biodiversity.

A “GREEN” FIBRE BY DEFINITION

Water requirements for flax are in the order of 600mm for 100 days of growth, covered by rainfall [400mm], a good reserve of ground water, and the moisture provided by dew [200mm]. Therefore, zero irrigation and zero defoliant for this ecologically important crop which ticks the boxes of social, economic and ecological criteria - the three pillars of Sustainable Development.

A rotation crop renewed every 7 years, consuming very little nitrogen, the growing of flax boosts the structure and biological activity of the soil thanks to its taproots which sink to a depth of 1m. Very sensitive to its immediate environment, flax has a naturally positive effect on soil, and improves the quality of the following crop by 20 to 30%.

And that’s not all! Totally biodegradable, European flax is all waste-free, with a diversity of destinations beginning from the very first stage of processing. Long fibres for fabric, short fibres for paper or felt; seeds and oils for livestock feed, varnish, linoleum; shives for gardening, animal bedding, compost, etc. Every part of the plant is useful and utilized. Flax is now playing a part in the development of bio-composites, innovative new applications and real opportunities for the whole of the European flax industry.

THE GMO-FREE GUARANTEE

This commitment by the flax industry, the only European agro-industrial sector, is certified by the signing of the EUROPEAN FLAX® Charter. By managing to conserve 250,000 tons of CO2 per year, flax is an powerful asset in the transition to a more solid and low-carbon economy, and a major feature in the immediate perspective of the European Sustainable Development Week [30 May / 5 June] and the negotiations of the COP21 [December 2015].

THE EUROPEAN FLAX® is the qualitative visa of premium quality European flax fibre in all its applications. It preserves, highlights and safeguards a uniquely European agriculture and industry, its regional origins and its inherent non-relocatable know-how. An ambitious global brand that is intended to be identifiable by the final consumer.

The English word “flax” has been specifically chosen: it translates the notion of the “linen fibre”, and is more appropriate than the generic word “linen” which takes in yarn, the textile in general and home fabrics. The expression “all applications” encompasses all the employed uses and products with a flax fibre base, as much fashion and home textiles as high-performance technical products, such as composite materials.

Flax is currently enjoying pride of place in the French Pavilion at Expo Milano 2015 where it has attracted a lot of attention! All these elements commit the flax grower to place agronomics at the center of his argument and to question the alternating and management of temporary crops, physicochemical characteristics and soil management, but also the choice of variety when it comes to sowing. A skill set that gives European flax the best productivity in the world!
Flax corresponds perfectly with current patterns of consumption, influenced by all that is organic and ecological. For flax is a sustainable fibre: it does not require irrigation, its processing methods respect the environment, and it is totally biodegradable. Add to this the fact that flax is hypoallergenic, antibacterial, and thermoregulatory. It is a hugely modern product, with a profile that sets it apart as a new-era raw material.

Nelly RODI
FOUNDER, AGENCE NELLY RODI

Flax is in line with the ambitions of luxury, both in terms of sustainable development as well as creation, in fashion, decoration, in furniture or «services» (five-star hotels are increasingly opting for linen sheets for the pleasure and comfort for their clientele). It is a guarantee of the reputation of French luxury and art de vivre.

Françoise MONTENAY
President of the Economic Commission COMITE COLBERT

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The growing of flax and hemp has a positive effect on agro-ecosystems and the landscape, and offer a welcome respite for soil quality. Report by the European Commission, Brussels, 2008

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Three elements have played a vital role in the history of Hermès: leather, metal and linen. Linen became the stitch and the signature of the house. It’s a linen with multiple qualities: it’s rot-proof and indestructible. And just like some leather, linen develops a patina, it moves, evolves, lives, has a soul.

Pascale MUSSARD
Creative Director PETIT H (HERMES)

A NATURALLY SUSTAINABLE FIBRE

Uniquely European, the growing of flax cannot be moved or easily replicated. The very special combination of climate and soil paired with the knowledge of the flax grower/scutcher and his desire for continuous innovation is irreplaceable. Excellence results from the non-replicable meeting between these geo-climatic specificities and the inalienable expertise of the pairing of flax-grower/scutcher: a fertile union of respect for tradition and continuous innovation.

The cultivation and the transformation of flax necessitate a significant and qualified local workforce (5 times larger than for wheat) in compliance with the rules of the International Labour Office.

Guaranteeing zones of permanent and specialized employment in rural areas that often suffer from a reduced economic outlook, this agricultural exception boasts an important social dimension.

An approach adopted in 1951, the year of the creation of the European Confederation of Flax and Hemp – CELC as a precursor to the Treaty of Rome, the founding text of Europe.

A little-known agricultural facts: if 87% of the Europeans interviewed could identify the plant origins of the flax fibre, 78% were unaware of how it was grown.

After Poland (2013) and Peru (2014), France will chair the 21st Conference of Parties of the United Nations Framework Convention on Climate Change (UNFCCC): the COP21 or the 2015 Paris Climate Conference. This gathering, at which 195 signatory states are expected (including the EU, a full member in addition to the 28 states that comprise it), will take place from November 30 to December 11 at Le Bourget. The major challenge: trying to contain the climate crisis by keeping warming to below 2°C Celsius, ideally 1.5 degrees, before 2100.
EUROPEAN FLAX
WORLD CHAMPION

Europe, N°1 producer with 132,407 tons of long fibres produced in 2013 + N°1 exporter with 70% exported to the international market.

FRANCE: THE PODIUM OF AGRICULTURAL STARS FOR EXPORT (VOLUME)

- 90% Flax
- 47% Champagne
- 33% Wine
FLAX
A STRIKING SELLING POINT!

Material is the fifth criteria for purchase when it comes to women’s apparel. However, corresponding to less than 1% of fibre textiles sold worldwide, linen has become an attention-grabbing selling point!
Flax, the very first textile developed by mankind! Flax fibres dating to 36,000 BC have been discovered in a cave in the Caucasus.

Flax today, a major agro-resource and a high-performance fibre for a new generation of composites.
THE FLAX EFFECT, A MORE FUEL-EFFICIENT AIRPLANE

If an aircraft cabin interior and its service trolleys had used integrated flax composites, the result would be a plane 170 kg lighter.
THE FLAX EFFECT
A LIGHTER CAR

If all the cars sold in the EU in 2014 had used flax-reinforced composites, this would mean that 462 million litres of fuel it would be saved each year

REDUCTION IN WEIGHT
-60 Kg

WHICH CORRESPONDS TO
THE AMOUNT OF FUEL NEEDED TO UNDERTAKE

5.7 MILLION RETURN TRIPS
LILLE - MARSEILLE
FLAX
SPORT WITHOUT
THE SHOCKS

The end of Tennis Elbow!
With a racket containing only 15% flax, the level of shock absorption is already reduced by 22%.
36,000 years ago, humanity discovered a fibre with an infinite number of uses. Today, it’s transporting us!

1st plant fibre textile in the history mankind, flax is a major agro-resource with a level of eco-innovation that is more than ever a vector of French excellence on the international stage.

And yet, if 87% of the Europeans interviewed in 2014 can describe flax as an innovative fibre, 63% are unaware of its technical applications.

Flax remains a primarily textile purchase (60% apparel, 57% home textiles, 41% decoration, 35% bathroom textiles).

It’s chosen for its naturalness (67% of Italians), for its lightness and comfort (35% of French), and its durability (22% of Belgians and British).

Easy to work with, flax in linen form is embraced by textile industry professionals: it takes color easily and blends well with other fibres.

Outside of the indispensable woovens, linen knit has built itself a nice little reputation, taking on all gauges and folding through the use of new stitches. Linen piqué, fleece, outdoor and double-faced linens are just some of the results from years of research and experimentation by European spinners and knitters.

All committed to the strict criteria surrounding their production and their supply in order to attract the 61% of consumers who say they are ready to pay more for a certified product.

SLOW FASHION - FAST FLAX!

European linen is placing eco-finishes at the heart of new developments: low-impact reactive dyes, easy-care eco-treatments, enzymatic finishes, GOTS and OEKO-TEX certification. All attractive assets for slow fashion.
PROVEN MECHANICAL PERFORMANCE:
- Low density (1.45g/cm³ versus 2.55g/cm³ for fibreglass)
- Greater rigidity than fibreglass
- Higher vibration absorption capabilities than carbon and glass fibres
- Thermal insulation higher than that of carbon fibres
- Acoustic insulation higher than that of carbon and glass fibres
- Biodegradability

What is a composite? Two or more materials that combine their properties and thus develop new ones.

The incorporation of flax fibres in the latest generation of composites leads to a significant reduction in weight, while maintaining the same strength levels, resulting in lower fuel consumption. A bonus for aerospace or automotive industries concerned about making energy savings.

If the three sectors driving R&D to date have been aeronautical, nautical and automotive, it’s in the area of Sports and Leisure that the applications are really kicking off.

For the comfort of the novice as much as for the needs of the advanced competitor, the equipment’s lightness and shock absorption capabilities are key assets to ensuring optimum performance.

The “Dual” tables were created in a vision of modern eco-design. They explore the duality contained in flax fibre: I wanted to highlight the emotional charge of this material, a warm and natural fibre, which refers in its formatting to other composites of a more technological appearance.

The use of natural fibres is an important step in the efficient use of resources.

Flax fibre – with its proven environmental qualities – boasts mechanical characteristics equal or superior to fibreglass; and in our ‘Earth’ range, flax partners harmoniously with wood and cork for paddles produced without the use of varnish. High performance and naturalness act as selling points for an ever-increasingly committed consumer!

Since 2008, we have used flax to create some of our tennis rackets: those for both regular players and intensive players. The flax we use is produced in Normandy and is found in the racket’s graphite frames. The flexibility of this natural fibre provides maximum comfort to the players. Apart from tennis rackets, at Decathlon we also use flax for squash rackets and table tennis paddles; other Passion Brands at Decathlon use flax, too, including Wedzé and Caperlan.

EUROPEAN FLAX
FUTURE FIBRE SINCE FOREVER
6/10 consumers declared themselves ready to pay more for a product with a certified European flax origin.
Flax is taking its place in the composition of our everyday products in order to improve the ways in which they are used. Furniture design, the sports and leisure industry, sailing, construction, home improvements and, next to emerge from the R&D laboratories, aeronautics and rail. The number of sectors exploiting the special virtues of flax composites is broad and growing.

Mixed with plywood in table tennis paddles, and with carbon or glass fibres in tennis rackets, flax optimizes shock absorption and improves handling and play.

From leisure to competitive sport, skis are defiantly advancing into the realm of eco-design. The ultra-technical result [composites reinforced with flax combined with traditional wood] optimizes the absorption of vibrations and reduces stress on muscles and joints. Even the poles include flax fibre, for a level of sturdiness and strength comparable to carbon fibre.

A mountain biking helmet containing flax fibre offers an excellent level of shock absorption, while the city bicycle helmet combines lightness and greater ventilation thanks to flax’s elevated capacity for wicking away moisture.

Flax composite is a major ally of technical performance. It’s already behind an eco-designed surfboard and a brand new, easier to handle, stand up paddle board – all the better when races can run to 60km!

Aqueduct by ANDES.

IS THE FLAX CONSUMER MORE COMMITTED THAN THE AVERAGE?

This is what the associated study for these two surveys reveals. As part of its Barometer of Sustainable Commitment, in 2012 BVA implemented an indicator to measure civic engagement based on 41 sustainable practices and 33 collaborative practices.

These findings, compiled with the Barometer of Flax Consumption BVA-CELC (2014), have helped to establish a detailed sketch of the flax consumer.

Buyers of flax/linen are a reflection of the product itself. Twice as committed than the rest of the population (29% vs 14%), attached to tradition while also resolutely looking to the future, these enlightened citizens are the torchbearers for a changing world.

Being more experienced (+35 years /74% vs 60% for non-buyers), regular purchasers of flax products are up to speed with new codes and digital tools.

They commit every day to helping to change the system. They are twice as likely as flax non-buyers to take part in civic activities: protest marches (25% vs 17%), online petitions, community-supported agriculture (25% vs 15%), volunteer organizations (28% vs 20%), social finance (23% vs 14%), crowdfunding.

They are contributing to the emergence of a new collaborative society by exchanging goods and services (22% vs 14 %), or participating in the enrichment of open source internet content (20% vs 13%), for purposes of circular economy and co-construction.

Finally, they make up a population of active trailblazers in what we might term the post-oil world and choose flax for its intrinsic qualities which they see as being in perfect harmony with the requirements of societal change: natural and comfortable, local and renewable sources, bio-sourced trad-innovation, durability.

They pay close attention to labels (61% say they are ready to pay more for a certified product), preferring local products (46% vs 26%), without colorants or additives (48% vs 20%), and Fairtrade (15% vs 6%).

Aerodynamics and lightness are the two essential criteria for a cyclist. Substituting flax for carbon in certain parts of a bike’s frame* allows for both structural strengthening and a reduction in vibrations of around 20%! The result: greater resistance to breakage, compression and torsion.

*Depending on the frame part, flax can be substituted for carbon at between 20% and 80% of the total. Based on a trial carried out during an 80km race lasting 2hrs 50mins.

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The fate of the 546,000 French pleasure craft*, most of them produced using rot-resistant composites, is a pressing question. Integrating flax is a solution towards improving their recyclability. Gwalaz, designed by the skipper Roland Jourdain, is a 7-meter-long trimaran weighing 520kg, reaching speeds of up to 16.4 knots. It is composed of 110 kilos of flax fibres, 33 kilos of balsawood and cork, and 285 kilos of resins of which 30% are bio-sourced using molecules drawn from colza. The flax acts as a structural reinforcement material, substituting fibreglass.

Two semi-rigid boats, eco-designed through the combination of a hard composite shell and an inflatable float were awarded the Prix JEC Innovation Award 2013 in the Sports and Leisure category. The AirEthic is a mass-produced boat while the Z-Concept is a “concept boat” integrating all aspects of ecological impact reduction: recyclable thermoplastic materials, eco-sourced materials, clean processes and an electric motor.

The intrinsic qualities of flax fibres - torsion resistance, lightness, flexibility of the material, pleasant to touch, biodegradability - is driving the increased interest of designers who use them primarily as structural parts. These pioneers enthusiastically create complex forms in flax composites whose fibres generally show on the surface of the finished product to heighten the aesthetic effect: chairs, armchairs, tables, lights, desks. FRANCOIS AZAMBOUR, JM MASSAUD, NOE DUCHAUFOUR LAUWRANCE POUR SAINT LUC EDITIONS, STARCK POUR MAGIS, M DESIGN AZ&MUT

Visible flax fibres give products an undeniable extra aesthetic dimension. Several products in our daily lives stand out as a result of this display of naturality.

Lightweight glasses in a flax composite that combines strength and impermeability. CUSTOM6

A suitcase rendered shockproof thanks to the technical capabilities of flax [composite 50% flax/polyamide thermoplastic resin]. DELSEY

A notepad serving as a case for a reader or a tablet, and protected from shocks and temperature fluctuations, using a technique involving a needled flax/recycled polypropylene mat, affixed and stitched to a hydroentangled/viscose interior. TAPEGEAR

A 100% Made in France cot bed in flax composite, shielding the baby from intrusive noise while integrating into the fabric of the family through an optimized design for portable use. A philosophical and technical revolution! BBDOR

* According to the French Nautical Industries Federation, the average age of the 546,000 pleasure boats currently in use is 23 years, with their retirement expected by the time they reach their 30th birthdays.
About CELC —

The European Confederation of Linen and Hemp (CELC) is the only European agro-industrial organization bringing together and federating all the stages of production and transformation for flax and hemp. It is the specialized spokesperson for 10,000 European companies of 14 countries, overseeing the fibre’s development from plant to finished product. Founded in 1951, the CELC is a source of pioneering thought, economic analysis, industry consultation and strategic direction.

CELC —
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