As the popularity of sustainable apparel increases—especially in the outdoor sector—demand for high-quality, locally sourced linen fabrics, spun from locally grown flax is on the increase in Europe. Recent technical developments to enhance linen's natural appeal may help it make even more of an impression on the textile market in the near future.

Linen back in the line-up

Twenty top European designers participated in a special linen-themed collection called 'The 100% Male Wardrobe' at the most recent edition of Première Vision (PV), in Paris at the end of September.

The designers—who included Messori, Ermenegildo Zegna, Kuyichi, Melinda Gloss and Oscar Udeshi—worked in partnership with the European Flax and Hemp Confederation (CELC) and its Masters of Linen subsidiary to put on an impressive display.

As expected, they showcased a collection of men's tailored outfits from traditional shirts and suits to waterproofed raincoats and travel bags, but they also showed some exciting outdoor ideas, including a proofed camouflage parka from Italian brand Stone Island.

Overall, they presented linen as a fibre that is "anything but conventional", inviting designers and apparel manufacturers to include linen in their plans to become more innovative and more sustainable.

As well as being thought of as a naturally eco-friendly fibre, linen offers natural strength, suppleness and ease-of-use, CELC said at the event. It blends well with wool, cashmere, alpaca, silk and cotton creating "sophisticated and technically advanced fabrics".

These technical advances may make linen of even greater interest to readers of *WSA*.

But it may be helpful to sum up the sustainability appeal of the yarn first. Spun from flax fibres that grow in fields in colder climes than cotton—which, in Europe, are often close to cold seas such as the English Channel, the North Sea and even the Baltic—linen is fresh and natural. If fibres had a face, flax's would have rosy cheeks.



Outdoor camouflage jacket in linen from Italy's Stone Island.

Stone Island

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Masters of Linen

Sometimes the flax fields are so close to the sea that, at high tide, the fibre is washed clean, meaning there is no need for pesticide in growing this crop. Its consumption of water is between four and eight times less than that of cotton, and it plays a less significant part in contaminating water supplies. An independent study called the Eco-Profile of a Linen Shirt took place in 2007 and featured at the February 2008 edition of PV. It concluded that the impact of residues on water sources is seven times greater with cotton because of cotton's extensive use of "double the amount of pesticide" and also of substances such as defoliants, chemicals sprayed on plants to cause their leaves to fall off. The argument from the linen community is that if we all agree that water is a life-giving and life-saving resource, the textile and apparel industry must play its part in keeping what water we have clean.

To emphasise the independent nature of this study, it also said that cotton beats linen in the important field of energy consumption. The calculation was that linen garments use 14% more energy because of the amount of ironing they usually require.

Perhaps, in time, the geniuses that inhabit the technical textile arena will come up with a treatment for weaving non-iron linen. Certainly, there is plenty of innovation in the air already.

Milan-based fashion trends expert Ornella Bignami is a self-professed linen enthusiast. Her background is in polyester, but she has become "passionate about natural materials", and about linen in particular. She began working with Masters of Linen ten years ago and brought some younger members of the Milanese design community to linen for the first time.

She says that Stone Island produced the jacket for the Paris display almost as a kind of experiment. However, she knows of top

Linen combinations

According to trends consultant Ornella Bignami, combinations of linen and the finest wool are proving popular at the moment. She likes ones that contrast shining and matt effects, and soft designs with overlapping geometrics and small jacquards. Linen with silk is another combination that will be popular in coming seasons, she believes, although one that works best in "interseasonal applications".

The clearest example of the technology innovations that are mentioned in the main article may be fabrics with linen on one side and a coating for waterproofing or stain resistance on the other.

Ms Bignami has also seen materials that combine wool, silk and linen. "Weavers are combining them to give special colour effects," she explains, "and it's possible because each yarn absorbs dye differently, giving these interesting textures."

Linen by numbers

Total European flax cultivation:	120,000 hectares.
Main players:	France 80%; Belgium 12%; Netherlands 5%.
Farms involved:	8,000.
Fibre production:	150,000 tonnes.
Linen yarns spun from this:	22,000 tonnes, which is 15% of global output.
Value:	Annually, €300 million for fibres, €120 million for yarn.
Employment:	The flax/linen sector in Europe employs 15,000 directly and 10,000 people indirectly.
End-use:	60% of the linen fabrics produced go into clothing, 15% into household textiles, 15% into decoration and furnishings, and 10% into industrial and technical fabrics.

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Spun from flax that grows in colder climes, often close to the sea, linen is fresh and natural.

Masters of Linen

weavers in Italy, and names Crespi of Vanzaghello (near Malpensa airport) as an example, who are "working hard" on coatings that she feels will work well with linen and will bring new functionality to the yarn.

"Most of these treatments, for example waterproofing, are with a high level of technology, some of them at nano level," Ms Bignami continues, "so what they add is so small it does nothing to compromise the breathability of the yarn. It's so small it doesn't cover the pores, so the pores are still open and the fabric can continue doing what it does naturally—which is to keep body temperature constant, thanks to the structure of the fibre that gives thermoregulation. But now you can add completely new technology that doesn't change the look or the quality."

She also points to innovation in the blends that weavers are now constructing with linen. She likes, for example, Solbiati's combination of linen and alpaca wool, a blend that seems to be working very well for accessories such as hats, scarves and gloves, with natural colours or vegetable dyes predominating. "Many companies are working in this direction," she explains. "They're not pretending to be 100% eco, but they can justifiably claim to have a low impact on the environment. And I don't think the market is very accepting of companies that exaggerate their credentials in this area. If you present a quality product with a real story behind it, then the market is open."

In the current economic climate, she accepts that no one in the apparel supply chain has money to invest just for the sake of it. The Stone Island jacket may, perhaps, be a one-off, but even this will go onto the market, she insists. For Ms Bignami, the interesting point is that weavers have shown themselves willing to develop some new ideas. It is certainly time that the linen industry understood the needs of the sports sector and tried to increase its use of linen.

"That's already a step forward," she says. "There is genuine interest, and I honestly think that if brands and garment manufacturers are using cotton, at the high end, they have to look at linen as a more sustainable alternative, or at least get some blends working together."

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