

ISSUE 9: 2023

BEHIND THE SEAMS OF THE GLOBAL DENIM INDUSTRY

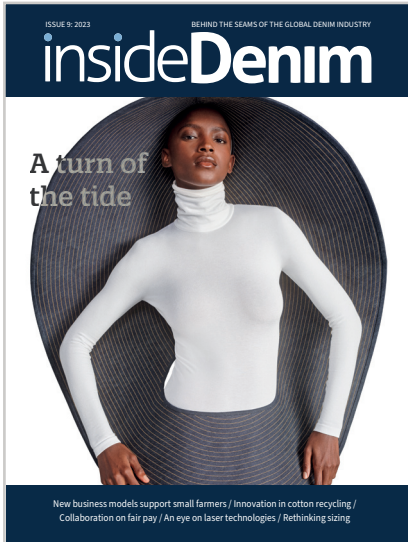
insideDenim

A turn of
the tide

A woman with dark skin and hair is the central figure, wearing a white turtleneck top. She is positioned inside a large, circular denim garment that is laid flat, showing its intricate gold stitching. The denim has a dark blue base color with thin, parallel gold lines. The woman's hands are resting on the denim, and she is looking directly at the camera with a neutral expression. The background is plain white.

New business models support small farmers / Innovation in cotton recycling /
Collaboration on fair pay / An eye on laser technologies / Rethinking sizing

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Cover A couture piece made by British milliner extraordinaire Stephen Jones for Dutch denim label G-Star.

PHOTO: G-STAR

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World Trades Publishing 2023

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Printed by Bishops Printers, Walton Road,
Portsmouth, Hampshire PO6 1TR
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Inside Denim is published three times a year by World Trades Publishing,
36 Crosby Road North, Liverpool L22 4QQ, UK.

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Turning the tide — putting people first

In this issue, Inside Denim takes a closer look at the many people who, from farm to factory, contribute to making the jeans we all love. In the many steps involved in this process, there are many outstanding individuals, and as many astounding achievements, which are making the industry greener and fairer.

As calls for transparency become more insistent, there are moves to bring to light the everyday conditions of individuals who are rarely seen or heard, those who work on the farms and in the factories. It is encouraging to see brands collaborate to provide factory workers with wages that allow them to live decently, as seen in the Living Wage Project underway at Nudie, Kings of Indigo, Armedangels and Mini Rodini. The evolution of legislation is now enabling the most vulnerable in the supply chain to make their own voices heard, as seen in a case that workers in Thailand, mostly migrants from Myanmar, are bringing to court in the UK.

Growing awareness of the impacts of climate change on agriculture, our only source of food, and the role it could play in mitigating global warming, are also drawing attention to the people working in the cotton fields. Not only the big sprawling farms, but rather and more crucially, the smallholdings that provide 75% of cotton's global annual harvest. It is encouraging to see that direct-to-farm initiatives, in India and in Pakistan, seek not only to assist farmers in increasing yield and quality but also improve the year-round livelihoods of the women and migrant workers who care for the crops.

In this issue, we also have a brilliant line-up of denim industry VIPs who share their visions and experiences. Tricia Carey, who provides this issue's guest comment and has taken on a new role at Renewcell, believes in the power of innovation, collaboration, and policy change to make progress towards a more circular fashion system. These will, ultimately, she says, "put people at the centre of the circle".

Adriano Goldschmied walks us through the relaunch of his seminal brand from the 1970s, Daily Blue. David Tring gives us an overview of how far the industry has come, how much it has changed and what the future holds. Mostafiz Uddin, the owner of Denim Experts Ltd, is featured in one of our three Factory Talks and Tilmann Wröbel tells us what he does to uphold his motto: "people before business". Amy Wang, from Advance Denim, yet another industry visionary, maps out the innovative processes that the company's Vietnamese mill has implemented to reduce pollution and ensure its enduring sustainability and prosperity.

Innovation is also fundamentally about people, people with skills and a vision to change the system. In mills, there is a lot of clever engineering going into developing solutions to recycle waste materials and excess stock into new products. In laser technologies, there is also a lot of smart thinking to improve efficiency and reduce hand scraping, one of the more gruelling jobs in the industry. Devising novel solutions for disassembly, too, is the result of tireless toiling and tinkering, as Resortecs co-founder and CEO Cédric Vanhoeck tells us.

At all levels, there is much talk of transforming an industry used to a linear model of making, selling and disposing of into a more virtuous and circular system in which waste materials and end-of-life garments are turned into new resources for a second spin in the cycle without compromising quality. Thanks to the skills that the people in this industry have, from the C-suites to the factory floors and to the fields, change is undeniably underway. ■

Sophie Bramel

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Circularity: the future is now

One more electric truck quietly drives through the gate filled with 40 tonnes of clothing and textiles discarded from a city 30 miles away. It is the 50th truck of the day to drive into the southeast regional recycling centre, which used to be a shopping mall. Once inside the large building with solar panels on the roof, the full container is dumped into a massive hole, and immediately large robotic arms start to pick up the textiles to sort into appropriate areas. Each garment is first scanned to see if it is in good condition to be resold at a local charity shop. The garments which are not wearable are scanned for fibre content and moved into a separate area. Every garment has a digital identification tag to allow for 98% accurate sorting. The cellulose-rich garments are moved into an area for ozone treatment and button removal, then over to the shredding area to be determined if they will proceed towards a mechanical or chemical recycling route.

Outside the wind rustles the American flag hanging on the pole as young children play on swings. The daycare supports the more than 300 parents working at the centre, the majority are women with well-paid jobs to support their families in the suburban community.

This business does not exist, but it will.

It must come to fruition if we are going to manage 17 million tons¹ of textile waste in the United States. It is not why we need circularity; we are past that point. It is how are we going to develop the circular economy within the apparel industry?

Advertising and social media messages highlight the latest styles which are fed through fast fashion and overconsumption. As a society, we have been conditioned to consume more, but, finally, these ways are being questioned.

The need for change in the fashion industry has become the consensus position among brands, manufacturers, consumers, industry leaders and policymakers. The shift has led to significant interest in the principles of the circular economy, which seeks to reduce waste and promote the reuse and recycling of materials.

GUEST COMMENT

Tricia Carey, Renewcell's new chief commercial officer, envisions the day when circularity is no longer an option but a requirement. She observes that this entails a radical scaling of innovative circular materials and that current 'wait-and-see' attitudes are in effect high risk.

One way that the industry is looking to embrace the circular economy is through the use of textile-to-textile recycled materials. Through our research around the publicly stated circularity goals of global brands and retailers, as well as conversations with executives, we estimate that the demand for circular textile fibres in 2030 will amount to around seven million tonnes per year. That is a big number compared to an available supply today which is in the single digit thousand tonnes per year. Scaling of innovative circular materials must be a top priority for our industry.

Brands and retailers need to consider costs in a hyper-competitive and inflationary context. They have an understandable worry that working with innovative materials will hurt profitability. Encouragingly, we also see industry leaders bold enough to take a long-term view. Virgin resources will only become more scarce, and costlier, as the global middle class demand grows, and new regulations designed to make the very real costs to the environment and climate of virgin resource use visible in the product P&L [analysis]. Yes, circular materials may be pricier depending on your comparison. Still, as new highly efficient circular technologies keep chipping away at their temporary disadvantages of scale, brands and retailers will soon see relative cost differences evening out or even reverse. As brands approach the deadlines of their circularity commitments, they will find that cost is no longer the main concern, it is scarcity and access. In the race toward making fashion circular, "wait-and-see" is rapidly becoming the high-risk option.

“As brands approach the deadlines of their circularity commitments, they will find that cost is no longer the main concern, it is scarcity and access.”



Newly appointed chief commercial officer of Renewcell, the maker of Circulose recycled pulp, Tricia Carey formerly held various management positions at Lenzing Fibers to establish the Tencel brand in the denim industry. In roles that spanned marketing and business development in the Americas, she was also instrumental in the creation of countless collaborative collections with mills and brands. She holds a Bachelor's degree in Fashion Merchandising from The Fashion Institute of Technology, as well as certificates in Digital Marketing and Strategy from Cornell University and MIT.

PHOTO: LISA KATO



The main steps Renewcell takes to recycle cotton-rich used textiles into Circulose: after sorting, textile waste is shredded, undergoes dry and wet processing to become cellulose pulp, and is shipped in sheets.

PHOTOS: ALEXANDER DONKA

Innovation for recycling is an investment, a major one. I have spent decades understanding the research, legal, business development, marketing and advertising investments to innovate just fibre developments, not to mention fabric and garment development investment. In my new role as Chief Commercial Officer at Renewcell, a disruptive sustaintech company based in Sweden, I am part of a team that makes fashion circular daily. We shred cotton-rich textiles which go through a dry and then a wet processing, bleaching, and are finally made into sheets of pulp for man-made cellulosic producers of viscose, modal, lyocell and acetate to make a new fibre. It has taken 10 years to reach the level of a full-scale manufacturing facility of 60,000 tonnes of Circulose pulp, and a doubling of capacity is already decided. It is progress over perfection to close the circle.

Within the circular economy for textiles, there are new players who were not part of the linear model - collectors, sorters, pre-processors, and processors are needed to enable a full-circle approach. We are now in a race to invest for scale and efficiency, in order for industries to grow and remain competitive.

There is an urgency for us to address this now. Of the 100 billion garments produced each year, 92 million tonnes end up in landfills. If the trend continues, the number of fast fashion waste is expected to soar up to 134 million tonnes a year by the end of the decade.² It is becoming too late to address climate impacts, water, energy and chemical impacts on the people and planet. Taking innovation, collaboration and policy changes which are needed to truly shift the apparel industry, we can finally put people at the centre of the circle. The framework for this is already set within the UN Sustainable Development Goals including SDG 12 Responsible Consumption and Production, SDG 13 Climate Action, and SDG 17 Partnerships for the Goals.

We will have new business standards and models. Fashion comes and goes, but style is a way to express yourself without stating it. Let's adopt circularity as THE Style for decades to come, using 2023 as the opportunity to not just take steps towards circularity, but leaps. Let's make fashion circular – together! ■

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7 – 9 FEBRUARY 2023

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Industry News



PHOTO: LUIGI CACCIA

Biodegradable by-product

Italian mill PureDenim launched a new range of fabrics made from Asahi Kasei's cupro fibre Bemberg at Pitti Uomo in Florence in January. The new 'Blue di Cupro' range features seven fabrics made in pure Bemberg or in blends with cotton or wool.

These fabrics are processed using PureDenim's advanced technologies. These include Smart Indigo, in which indigo is reduced using an electrochemical process, and EcoSonic, an ultrasound based finishing.

Bemberg is a manmade cellulosic fibre made from cotton linters, a by-product of cotton ginning. It has also been found to be biodegradable, and has recently obtained an OK Biodegradable Marine certification from TUV Austria.

In the build-up to Pitti Uomo, Pure Denim founder, Luigi Caccia (pictured), commented: "PureDenim has successfully reduced the amount of chemicals and water in the process of making jeans and we continually seek to find new opportunities. We have found Bemberg to fit our philosophy and our commitment to premium solutions in terms of quality and respect for consumers and the environment."

He described PureDenim as a company that specialises in the production of sustainable denim. He claimed that the technologies it has introduced in the last 10 years "have revolutionised denim processes". ■

Hat designer takes denim out of its comfort zone

Master milliner Stephen Jones joined forces with G-Star Raw at the end of last year to create a Haute Denim capsule collection. The distinctive range features five hat pieces and two limited-edition ready-to-wear items inspired by classic streetwear styles, a bucket hat and baseball cap.

The pieces are all crafted in Kir Denim Organic 2.0, the third in a series of Cradle-to-Cradle Gold Certified denim fabrics that G-Star has been using since 2018.

Stephen Jones commented: "Everybody around the world knows what denim is and what denim signifies. I took denim out of its comfort zone and made it what it wasn't." ■

Spring-summer 2024 in focus at Kingpins NY

Some 70-plus exhibitors took part in Kingpins New York in mid-January. The event was organised in four sections, with the show featuring a trend area for spring-summer 2024 and a space for designer Stefano Aldighieri to present 'We, The People', an installation sponsored by UCO Denim.

Name change

The European Confederation of Flax and Hemp (CELC) has changed its name and will now be known as the Alliance for European Flax-Linen & Hemp. Representing more than 10,000 companies in 16 European countries, the Paris-based organisation will continue its efforts to make hemp and linen the world's "preferred sustainable fibres".

Progress for YKK

Zip fastenings company YKK completed a conversion to 100% renewable energy at another of its plants in fiscal year 2021, taking the total across its global set-up to 11 sites that run on renewables, according to a new report. It said in the same document that it has increased its use of plant-based and recycled fibres in its zipper textiles by 7% compared to the previous year. The company reduced waste to landfill by 272 tonnes compared to the previous year. It also reported a saving of 7.5% in its water consumption since the baseline year of 2018.

Blockchain bid

Technology group Lectra is to acquire TextileGenesis, a traceability technology start-up founded in 2018 by former Lenzing executive Amit Gautam. Lectra will purchase 51% of TextileGenesis for €15.2 million before the end of this January 2023 and will acquire the remaining shares in two further stages, in 2026 and 2028. TextileGenesis has developed a Software as a Service (SaaS) platform that traces products from raw material to finished goods and secures each transaction and certification in a blockchain.

Farm focus

Tennessee-based maker of natural indigo dye Stony Creek Colors has announced that a series B2 funding round has allowed it to raise \$4.8 million. The company has said it will use the capital to further develop its farming infrastructure and the dye extraction process. It has now gained experience, it said, through harvests covering some 500 acres of farmland. ■

Riri agrees acquisition



PHOTO: RIRI

Swiss textile machinery manufacturer Oerlikon has reached a definitive agreement to acquire Riri, a provider of coated metal accessories including zips, buttons and rivets for clothing, accessories and other uses.

Both companies expect the transaction to close in the first quarter 2023, subject to regulatory approvals and standard closing conditions. Executive chairman of Oerlikon, Michael Suess, said Riri was “highly complementary to our existing business”.

For his part, Riri chief executive, Renato Usoni, said the deal would allow the company to accelerate its growth. He also said access to technology such as Oerlikon’s PVD (physical vapour deposition), a thin-film coating solution, would help it make its components in a more environmentally responsible way. ■

Pre-process progress

Fibre 52, a division of Innovo Fiber, has released a patent-pending technology for bleaching and dyeing of cotton that it intends to license.

Using what the company describes as a “bio-active” product, the technology is able to pre-process cotton using 50% less water and energy, while reducing cycle time by up to two hours, it has claimed. Its dye technology is said to conserve cotton’s natural properties and add new performance features including the ability to wick moisture away from the skin. ■

K-shaped

G-III Apparel Group has launched a new dedicated denim brand under the Karl Lagerfeld label. It announced Karl Lagerfeld Jeans in December, saying its debut spring-summer 2023 collection was available online immediately.

It said the brand would be “authentic and outspoken”, and would be aimed at “the first generation of true digital natives”. Its signature aesthetic will include K-shaped stitch details, diversity in denim cuts, and an electric blue as the “house colour” appearing throughout the collection. ■

‘Lumberjeans’ are back

Clothing brand Vollebak, which says that the first jeans were made for lumberjacks 152 years ago, has announced the reintroduction of its ‘lumberjeans’. The jeans are cut in a 14-ounce raw selvedge denim fabric made by Japanese mill Kaihara and woven on shuttle looms with high-strength aramid fibres, with Cordura panels added at the seat and knees. A previous version of the lumberjeans used black fabric; these jeans are blue. ■

New owners

Dutch denim brand Kings of Indigo, which filed for bankruptcy in November, has new owners in Kathrin and Sebastian Proft. The entrepreneurial German couple already owned three fashion companies: Dollinger, Stapf and traditional clothing maker H. Moser, since rebranded as Feli & Hans. Kings of Indigo will be their first foray into denim.

Capsule collection

Apparel retailer Tillys has chosen to integrate recycled cotton fibre made by Recover in a denim capsule collection for its in-house denim brand RSQ. The products contain a minimum of 20% mechanically recycled cotton fibre. The products will be sold online and in Tillys’ 248 stores, located in 33 states.

Dye demand

Textile chemicals group Fratelli Ricci Brasil has launched a new range of dyes that it says can offer “undeniable environmental benefits” to mills. Its products are 100% natural and are effective at colder temperatures on cellulosic or polyamide fibres. It says this is a response to “urgent demand from the market for products that will allow the textile value chain to move towards sustainability and circularity”.

Royal visit

Queen Máxima of the Netherlands visited the headquarters of Mud Jeans at the end of 2022. The brand is based in Laren, roughly 30 kilometres east of Amsterdam. During the visit, the queen saw the brand present its latest sustainability report and discussed circularity-minded entrepreneurship with the company. She even took the opportunity to shred a pair of her old jeans.

Update from ZDHC

The Zero Discharge of Hazardous Chemicals (ZDHC) programme released an updated version of its guidelines for producing manmade cellulosic fibres at the start of January. ZDHC said this update would help “push the industry towards increasingly innovative and sustainable fibre production”. This new version includes chapters on the production of fibres, wastewater treatment and air emissions control.

Solar system

A new solar power plant will start working at vertically integrated mill Diamond Denim, part of Pakistan’s Sapphire Group, before the end of February. ■

Some 1,400 farmers have joined Soorty's Organic Cotton Initiative (SOCI) since the Pakistan-based mill launched the programme in 2021.

PHOTO: SOORTY

Closer cotton connections

Where does my cotton come from? What is the definition of sustainable cotton? Behind these seemingly innocuous questions, there is a lot to unpack. There are many reasons that make tracing the natural fibre back to the specific farm that grew it near impossible.

One simple enough reason is that an estimated 100 million farmers cultivate cotton on our planet and 90% of these on plots measuring less than two hectares, as per "Global Market Report: Cotton" released in 2020 by the International Institute for Sustainable Development (IISD) and State of Sustainability Initiatives (SSI), accessed on the World Bank's website. The Sustainable Trade Initiative, an NGO known as the IDH, estimates that around 99% of the world's cotton farmers are smallholders and they grow 75% of the 25 million tonnes produced annually. This means that the vast majority of those who grow cotton and work the fields live below the poverty line.

The role that small farms play in the denim and apparel industry remains pretty much off screen. Direct-to-grower programmes are helping lift the veil.

If we want cotton in the next thirty years, we need to support small farmers and their communities. This is not the only reason, but the long-term vision driving the development of direct-to-grower programmes. Their ambition is to bridge the wide gap, a chasm really, between global brands and individual farms. The most disruptive projects believe it is time to create new market mechanisms.

Slowly. One farm, or group of farmers, at a time. Most of the projects extend beyond the narrow scope of cotton growing to support rural communities year-round. Australian brand Outland Denim and Swedish label Nudie Jeans have been working with Bossa Denim in Turkey since 2020 on an initiative called Sağ Selim that is widely regarded as a model of excellence with regards to protecting vulnerable migrant workers.

Good seeds and good deeds

In Pakistan, denim mills Interloop, Soorty and Artistic Milliners have set up direct-to-farm systems to support smallholdings and the rural communities and workers, predominantly women, whose livelihoods depend on cotton.

Artistic Milliners runs two projects, the Milliner Cotton Initiative (MCI) for sustainable cotton in Rahim Yar Khan, in the south of the country, and Milliner Organic (MO) in Kohlu, Balochistan, with WWF Pakistan as the implementation partner for both. “Over the past ten years, we’ve experienced a shrinking cotton crop,” says Saqib Sohail, a senior manager for Artistic Milliners. This, he says, is due both to farmers switching to sugar cane, which is easier to grow, and to the deterioration of soil health which has impacted yields. Nearly 1,500 farmers are a part of MCI, a number that has increased threefold since it launched. In addition to assistance in increasing cotton yields and quality, MCI seeks to support the communities on a broader level. “We are helping farm workers, who are mostly women and migrant workers, develop alternative sources of livelihood,” says Mr Sohail, mentioning training in sewing and embroidery, helping set up micro plant nurseries, supplying honey harvesting kits or egg incubation boxes.



Artistic Milliners Organic Cotton Project is set in a remote region of Balochistan, said to be perfect for organic farming.

PHOTO: ARTISTIC MILLINERS



The mill’s second programme, Artistic Milliners Organic (AMO), which receives funding from the Laudes Foundation, supports farmers in Balochistan who grow organic cotton. “Balochistan has a large land mass and a perfect climate for cotton. It is too remote for chemicals companies to be interested, so it was a perfect area to develop organic cotton, something of a blessing in disguise,” says Mr Sohail. “We supply the seeds, but also teach composting techniques, so farmers can make their own fertiliser, and we sponsor organic certification as well.” It is a costly endeavour, with a budget of \$600,000 over four years, without counting seeds, which he says would add another \$100,000. Danish fashion group Bestseller has invested in the project, and recently increased its contribution from 30% to 45%, he says. This secures 30% of the crop, or now 45%, for the retailer. Levi Strauss and H&M have since joined. “Some 1,600 farmers are now involved and we aim to have 2,000 next season, but this depends directly on brands’ commitment,” he says.

A matter of scale

“It is somewhat ironic that everyone wants sustainable fibre, but no one wants to pay,” says Mr Sohail who insists that not 2,000 but 100,000 farmers are needed. “If we expand the project, we won’t need funding. We don’t want to have to rely on donors, we want farmers to be able to live from their harvests. That is the only truly sustainable model.”

Then, of course, the organic cotton fibre needs to be sold. The recent cases of organic certification fraud have impacted demand. “This is more about shaken confidence in the certification process than in the use of organic cotton itself,” points out Mobeen Chughtai, corporate communications and CSR senior manager for Soorty, which also runs an organic cotton farmer initiative in Balochistan. “It won’t last, but at this stage, where Pakistani organic cotton is just starting to take-off, it is proving to be an enormous hurdle.”

Artistic Milliners has set up to two direct-to-farm programmes in Pakistan.

PHOTO: ARTISTIC MILLINERS

Nearly 1,400 farmers have joined Soorty's Organic Cotton Initiative (SOI) since the Pakistan-based mill launched the programme in 2021. "We've managed to incorporate quite a few best practices but most vitally, we've been able to reach one of our primary goals and assist the communities of Naal and improve livelihoods in the area," Mr Chughtai tells *Inside Denim*.

Supporting rural communities

The mill is particularly proud of its collaboration with DOCH, a collective of Balochi social entrepreneurs, to support and train 100 women in the region throughout the year. This covers not only the local Balochi art of embroidery, known as "doch", but also financial literacy, and digital and social media marketing skills.

In Turkey, Sağ Salim has been running since 2020 and has reached more than 6.5 million people in the cotton farming community, says James Bartle, founding CEO of Outland Denim. It cares for small farmers, but he says the point of the programme "isn't to gatekeep impact to only Outland suppliers or products, but rather benefit a geographic area where cotton farming, whether it be organic or conventional, is a primary source of income for the community." It is also open to any brand, retailer or mill that wants to contribute to the cause.

Sağ Salim, which means "safe and sound", specifically seeks to protect workers from exploitation, slavery and unsafe working conditions. As part of its mission to help them understand and defend their rights, it has set up communications channels in languages spoken by the migrant community. "We believe these topics are resonating with the community as engagement has risen by over 100% since last year," he says.

These programmes vary in size but do tend to extend beyond the farm itself to assist the workers who are the most vulnerable in the global supply chain. The services they provide highlight some of the shortcomings of standards and certifications. As respected as it is, GOTS does not cover working conditions on farms, but starts at the factories. It is a sign that organic certification alone is not enough, says Niccy Kol, Raddis System brand catalyst. "It is just a box ticked, there is no real engagement."

New business models

Raddis System is creating a different, and fairer, business model that connects global brands and retailers with actual farmers in India. Raddis, which stands for Radically Disruptive is an innovative model conceived by Grameena Vikas Kendram Society for Rural Development (GVK Society). The Indo-Dutch hybrid organisation promotes market-driven regenerative value chains and supports 18,000 smallholders and their communities in southeast India. Among these, 2,500 farmers grow organic and regenerative cotton as part of Raddis Cotton. The traditional buyer-seller model is upended in that



brands do not just buy a certain amount of cotton but pay rather an 'acre contribution' calculated on the number of acres that will be needed to grow the cotton. The acre fee is central to the disruptive system, it is also considered a donation to the NGO and is often tax deductible. It provides the funds that allows GVK Society to purchase and distribute non-GMO seeds, not only cotton but other symbiotic and food crops (legumes, marigold, pulses, castor, neem, beans, okra), train farmers and provide year-round guidance and support for the farmer families and rural communities. "We do the work, brands provide the financing, you could say," says Ms Kol. Brands that have embraced this concept include Hugo Boss, Umber & Ochre, Bedstraw & Madder, Papillon Bleu and Lässig.

"The tribal farmers we are supporting live below the poverty line, they grow a single cotton crop a year, and have no access to irrigation," says Sanne van den Dungen, supply chain manager. "Shifting to regenerative agriculture is an incredible amount of work." In the conventional process, she says, the farmers are the ones that take on all the risks. They do not know at what price they will be able to sell their goods, they usually receive payment six or nine months after sowing, and they also have families to care for. This, she says, is why the entire system needs to be disrupted.

These farmers are also helping save our planet, points out Ms Kol. "They are rebuilding healthy ecosystems, and we are measuring the impacts." A brand joining the Raddis System can not only have a real impact on farmers' lives, but may also be able to claim carbon eco-credits in the near future.. "This is not offsetting but true insetting. And it is a responsibility every brand should take," she adds.

The Raddis System works closely with the communities it supports to improve their livelihood. The team is shown outside the gin.

PHOTO: RADDIS SYSTEM

Sourcery is another organisation seeking to transform cotton trading by shifting from a push-based system, where farmers grow goods and then sell them, to a pull-based one, where a brand asks a farmer to grow cotton for them, as Crispin Argento, founder, tells *Inside Denim*. “Our membership-based framework is based on true engagement, true trust, true impact, shared financial risks and shared rewards.” This, he says, can lead to transparent, fair and efficient trade, whereas “twenty years of sustainability strategies has gotten us nowhere.” The organisation has decided to focus on cotton as a starting point but also plans to cover other textile fibres such as wool and viscose.

The three-year-old organisation, founded by the former director of the Organic Cotton Accelerator (OCA), is looking to set up a direct-to-grower “sourcing club” business model in which members pay a fee to be a part of the programme. The organisation is working closely with major brands, including Ralph Lauren, Etam and Boll and Branch, as well as mills, though none are, as yet, official members under Sourcery’s new membership model.

The farmers are mostly located in India, but not only, says Mr Crispin. The disruptive nature of Sourcery’s concept is, he intimates, why it is not open to much transparency. These reservations aside, what really counts, he says, is that the system be profit-based. “My experience at OCA taught me that philanthropy doesn’t work on a large scale. The market pays the rent, not goodwill.”

A Western vision?

We must recognise that we have a very Western business vision of direct-to-farm systems, points out Anne Oudard, the author, with Ani Wells, of an ongoing series of reports looking into #WhoMadeMyCotton. “It can work well for farmers who are considered or operate as businesses. Though partnering with a network of smallholder farmers requires more work and investment, the social and environmental benefits could be so much greater,” she says. She supports the mills setting up these programmes, but would also like to see more engagement from brands. “A single major brand could change the entire game,” she says.

The move to build closer connections with cotton growers has a long way to go if it is to make an impact on a large scale. It requires investment from both sides, brand and farm. Small and tribal farmers have good reason to be hesitant to join these programmes, points out Sanne van den Dungen, at Raddis. “It is their livelihood, and when they began planting cotton 20 years ago, they were made big promises by seed and pesticide promoters. None of which came through. They are, mostly, less well-off today.”

Big vs small

Direct-to-grower initiatives are also being set up in the global North. Citizens of Humanity announced last June that it is partnering with the Hardwick Planting Company, an 8,000-acre farm in Louisiana, to support its transition to ‘regenagri’ regenerative agriculture. The California Cotton and Climate Coalition (C4) was formed last September to support ‘Climate Beneficial cotton’ grown in the region, under the aegis of Fibershed and the White Buffalo Land Trust (a Savory Institute hub). The two family-owned farms involved in this project, Bowles and Stone Island, cultivate 11,000 and 13,000 acres respectively. Reformation, Outerknown and Carhartt, some of the brands that have joined the programme, have agreed to purchase farmers’ yields ahead of time. Like the brands that choose to source their ‘climate positive’ cotton from Good Earth in Australia, whose flagship property, Sundown Pastoral Company, cultivates 65,000 acres, they are partnering with farms that are big businesses.

These new projects, and the innovative business models that are in development, are looking to build a bridge between two very different worlds. When a brand or a retailer wants to know where the cotton it uses comes from, it seeks to clear away some of the opacity in its sourcing and guarantee the ethical and certified provenance of a raw material. Fear of being held accountable for its supply chain may not be absent from its thinking. In both cases it is a form of insurance. The hope is that these direct-to-farm programmes also ensure a better life for small farmers and rural communities. ■



Australian brand Outland Denim supports Sağ Salim, in Turkey, which focuses on protecting migrant workers’ rights.

PHOTO: OUTLAND DENIM

RE/J is a range of denim fabrics made from 100% pre- and post-consumer waste that Calik introduced in 2021.

PHOTO: CALIK DENIM



Circular engineering

The situation is a source of embarrassment for all of us operating in the textile industry. This statement, taken from a Gama Recycle brochure, could well have been voiced by Zafer Kaplan, head of the Turkey-based company that has been recycling textiles and plastics for the past 20 years.

Speaking at a conference at TexProcess last June, Mr Kaplan gave a precise overview of this ‘embarrassing’ situation. He said some 40 million tonnes of clothing are thrown away globally every year and only 7 million tonnes are collected, mostly in countries that have operational waste management infrastructure and logistics.

Of the 7 million tonnes of used clothes that are collected, he said that around 3 million tonnes can be resold and reworn, and roughly 3.5 million tonnes can neither be reused nor recycled and are therefore incinerated. This leaves just half a million tonnes of clothing that are recycled, though not necessarily into new textile yarns for apparel. He estimates that only 100,000 tonnes of used clothes are converted back into new textiles worldwide. Mr Kaplan would like to see retailers develop larger scale takeback systems.

With growing demand for recycled content of any kind and a pressing need to find suitable and sustainable solutions for waste, excess stock and end-of-life clothes, denim mills are investing in closing the loop themselves. This is no small challenge. But their central position in the supply chain places them right where the circle may most easily be closed.

He would also like to see recycling certification be restricted to post-consumer waste and not allow companies to make recycling claims when they reprocess pre-consumer waste. “Otherwise, there is no incentive to invest in the technologies and infrastructure we need to recycle post-consumer waste,” he told *Inside Denim*.

Halit Gümüser, managing director of Kipas Holding, was the other speaker at this conference. He is a living example of a company investing in the technologies and infrastructure to recycle textiles back into textiles and jeans. The Turkey-based company began working on this task four years ago, when it made a 100% recycled cotton denim fabric that PVH-owned brand Tommy Hilfiger marketed in 2019.

“We really began to focus on recycling during the pandemic,” he tells *Inside Denim*. The company invested in a machine made in China and invented by Stefan Hutter, founder of Sântis Textiles, based in Singapore and Switzerland. Equipment from Laroche, a French maker of textile recycling machines, was also acquired. With the expertise of Mr Hutter, a new textile recycling machine, the RCO100, was devised and built at Kipas, delivering higher quality recycled fibres. Key to this achievement is a new shredding machine, engineered by Mr Hutter and built by Kipas and Temsan, a Turkey-based machinery maker. The latest generation RCO100 machine line will be officially presented at the next ITMA show in Milan in June.

“Stefan Hutter and I met for another project, we became close, and worked together to develop Sântis’ RCO100 machine and recycled cotton yarns,” says Mr Gümüser, who is a fervent believer in the power of collaboration. “Stefan Hutter has great machine engineering skills, and his daughter Annabelle has great marketing and communication skills,” he says of the partnership.

Kipas has now installed two recycling lines that are fed pre-consumer waste from its own facilities and from partners that supply their post-industrial leftovers, as well as post-consumer waste delivered by domestic and international waste collector partners. For used garments, the first stage consists of removing all accessories and adornments, zips, buttons, sewing threads and collars. This is followed by a sorting by composition, colour and structure (knitted or woven fabric, yarn waste). The Kipas Recycling Facility currently produces between 30 and 35 tonnes of recycled cotton daily, he says. “Our textile mills use 80% of this recycled cotton. The remaining 20% is sold as a yarn on international markets.” The company’s spinning capacity is 500 tonnes per day and it can weave 8 million metres of fabric (denim and non-denim) every month.

Clever engineering

The presence of elastane, he says, is unquestionably a challenge. But there is no way to avoid its presence as it is preferred by consumers, which he admits leads to more waste and burden on the environment. He put the Kipas research and development teams to work on this issue in 2021 and a hybrid solution that combines mechanical and chemical processes is in development. The company’s favourite Swiss engineer, Stefan Hutter, is involved in the project. Now, due to its current high cost, Mr Gümüser says “we need to translate this innovation to mass production.



We are on the verge of designing a new, very environmentally friendly piece of machinery.”

But Kipas has no intention of becoming a professional shredder, nor a used garment processor. “Our intention is to set up circular systems with brands. This is something that brands are looking for, but they are also in the process of discovering how it can work and the challenges it presents,” he says. For instance, a brand does not control cutting waste generated by its manufacturing processes, and these, he points out “have commercial value for garment-making facility owners.” He acknowledges that “there are still things to solve” but seeks to “to streamline the process to make it simpler for all involved.”

The partnership between Kipas and Sântis Textiles has led to the creation of new shredding and processing equipment to generate higher quality recycled cotton fibres.

PHOTO: KIPAS TEXTILES



Halit Gümüser, Kipas Holding managing director and member of the board, has invested in a recycling facility in response to demand from brands, and future generations.

PHOTO: KIPAS TEXTILES

A major recycler of PET plastics into rPET, Gama Recycle also recycles used clothing. It has developed a biochemical process that removes indigo, elastane, polyester, viscose, sewing threads and sundry adornments from jeans. A functioning lab-scale model has been developed and a full-scale system is in the works, Nesli Nur Bilgin, sales and business development manager tells *Inside Denim*. “In the past, we had to cut off the top of jeans to remove zippers, rivets and leather labels, and cut out the legs’ sides to remove sewing threads. This means we were only able to recycle 20 to 30% of a pair of jeans. Our biochemical process can break down 80-90% of the entire product,” she says. The technique dissolves the cotton fibres into a cellulose pulp which can then be spun into a manmade cellulosic yarn. “Demand is up for recycled content,” she confirms, adding that Gama is working with Inditex and H&M. “Brands come to us with their recycling projects. We set up the supply chain, take their second and third quality goods and recycle them into fibre and/or yarn.”

Turkish denim mill Orta has been working with Gama for a few years now, sending its own waste and retrieving recycled fibres that the company integrates into new denim fabrics. It was expecting to increase the volume from to 650,000 kilograms in 2020 to 1 million kg in 2021.

Scaling up

In its Egyptian facility, located in El-Sadat City, Sharabati has been recycling pre-consumer cotton waste for years and formed partnerships with local collectors and sorters. “We recycle our own waste, collect post-industrial waste from other factories in the neighbourhood and also use ideally post-consumer waste from the hospitality industry that needs a solution for its worn pure cotton bath and bed linens,” Alessandro Moretti Ciacci, head of sales and export, tells *Inside Denim*. This system has



been up and running for years. “We know what we have when we are processing our own waste,” he says. Every day, the company collects five tonnes of waste from its own operations and purchases 15 tonnes of cotton-rich waste from nearby textile factories. It is currently investigating the possibility of buying post-consumer clothing, but the transport of waste is problematic. “It is not possible to import second-hand garments into Egypt,” says Dilek Erik, marketing manager for Sharabati. “But we are working on a project that will allow us to receive shipments of cut garments. We are investigating the custom regulations for that right now.”

Investments in building a recycling infrastructure is also at work at Artistic Denim Mills (ADM), based in Port City Karachi, Pakistan. Since 2019, it has been working with Recover, a producer of mechanically recycled cotton yarns based in Spain but whose operations are now global. As part of the partnership, ADM set up a new facility that can produce 100 tonnes of recycled yarns daily.

Sharabati’s cotton recycling line, at its Egyptian facility, has been processing industrial cotton waste for years.

PHOTO: SHARABATI



Selvedge waste from Sharabati’s plant in Egypt; part of the 5 tonnes of cotton it collects daily from its own operations.

PHOTO: SHARABATI

Turkish denim mill Calik launched its RE/J denim fabrics made from 100% pre- and post-consumer waste in 2021. But it has also devised a spinning technique to integrate recycled content without diminishing the quality of the yarn, a process it calls E-Denim. The shorter recycled cotton fibres are placed in the core of the yarn, which is covered either by a Tencel Refibra yarn (a lyocell that is partially made from recycled cotton pulp) or a blend of Tencel Refibra and rPET. This yarn's structure, the company states, makes it possible to achieve higher quality fabrics that have a more premium look.

DNM's Re-Generation denim fabrics are 100% recycled, using cotton from both pre- and post-consumer waste, Unifi's Repreve rPET (17%) and Lycra's EcoMade. These fabrics do not need to be dyed nor washed, as during the sorting process, four different shades are extracted to create a range of anthracite, raw, stone- and bleach-washed references, says Mustafa Kara, product development manager for the mill based in Damietta, Egypt. He confirms that the demand is up for recycled cotton content, "Brands are actively looking to lessen their carbon and water footprints."

"All wastage, from spinning, dyeing and weaving is reused in our collections, with the exception of products containing elastane," says Tejidos Royo vice-president José Royo. The Spanish mill now incorporates recycled content into every fabric it produces. "As opposed to certified organic cotton



which may not be what it claims to be, we can completely control our recycled yarns," he points out. He suspects that demand for recycled cotton is up in part due to fraud in organic cotton. "We have realised that a certificate is not enough and that we need to better control ourselves what we put in our fabrics," he says.

Motivated both by their own zero waste policies and brands' sustainable fibre pledges, mills have thus come to expand the scope of their activities to include sorting and shredding. They have devised special spinning techniques to maintain quality while using recycled fibres, seen above and at Advance Denim (see article page 46). They are, in short, funding the research, investing in new equipment, and putting their staff to work on developing and designing the advanced engineering the industry needs to close the loop. ■

DNM's Re-Generation denims are made from textile and garment waste, both pre- and post-consumer, and are sorted by colour so as to require no dyeing.
PHOTO: WTP



Tillys, a casualwear retailer, has used Recover yarns in a denim capsule collection for its in-house label RSQ. The products contain a minimum of 20% mechanically recycled cotton.

PHOTO: TILLYS

The ray of light that sears away indigo at work. Shown here, Jeanologia's High Dynamic Range (HDR) marking.

PHOTO: JEANOLOGIA

That laser focus

The high cost of the sophisticated machines, their maintenance and upgrades, would be one reason that laser technology adoption is slow. Jeanologia estimates that around 35% of the five billion pairs of jeans produced worldwide yearly are made with its technologies – laser machines being its flagship product. The current energy crisis and skyrocketing cost of electricity would be another issue. While it may avoid excess use of water, it is energy intensive to generate the beam of light that scrapes away dyestuff. Furthermore, productivity is not where laser finishing shines.

The technology is not new and has multiple applications in the textile industry. It is used to cut fabrics and to weld two textiles together. It has arguably found its most creative and elaborate use in denim for its ability to achieve any type of wash, from light fading to heavy distressing, including holes, whiskers and whatnot.

Jeanologia, a company co-founded by current CEO Enrique Silla and his late uncle José “Pepe” Vidal Royo in 1994, is widely viewed as a pioneer in applying the technology to denim and its first laser machines were launched in 1999. In the two decades since, the company, based in Paterna, Spain, has expanded its range of devices to address different needs but it has specifically focused on improving their efficiency. “We have gained the confidence of the market with our laser technologies, giving value to our customers by offering the best return on investment,” Carmen Silla, marketing director, tells *Inside Denim*. “Since the creation of the first laser, there has been a total evolution in marking times that has allowed laser technology to be much faster and more productive today. Image resolution has been greatly improved, marking and programming processes have been simplified, and there is greater production flexibility, precision and power.”

It is a waterless, non-chemical technology that replicates the varied washing and distressing that the denim industry indulges in. It eliminates the distressing job of hand scraping. It is largely automated and Industry 4.0 compatible. Lasering ticks all the boxes... or does it?



Italian machine manufacturer Tonello also introduced its first laser machines in the 1990s. Company founder Osvaldo Tonello had discovered the technology during a trip to the United States where he met a group of Kodak engineers. They had developed a machine that produced a stonewashed effect by applying a laser beam directly on a garment, says Alberto Lucchin, marketing & sustainability manager for Tonello. The company worked on addressing some of its limitations, then. It overhauled its entire range more recently with the introduction of THE laser in 2020, designed to achieve the desired result faster and more economically.

Tonello's new B.O.P. is an automated position detection system that simplifies the placement of a garment on the table. "The laser will find the item of clothing," says marketing and sustainability manager Alberto Lucchin.

PHOTO: TONELLO

“Since the creation of the first laser machine, the process has evolved to be much faster and more productive.”

CARMEN SILLA, JEANOLOGIA

For its ability to etch out the tell-tale signs of years of wearing and washing, laser finishing is widely credited as having contributed to reducing the industry’s excess use of water. Jeanologia calculated that its machines helped save 15.5 million cubic metres of water in 2020, a volume that is said to be equivalent to the annual human consumption of 844,815 people, roughly the population of a city like Amsterdam.

For others, its advantage lies not in saving water but in eliminating other, more hazardous denim finishing processes. “If we compare the laser with the procedure it is designed to replace, namely manual scraping, both do not require water. I would therefore not say that this is an advantage of the technology,” says Mr Lucchin. He insists rather that “if we compare the two in terms of energy consumption, laser is much more energy intensive than manual scraping.” The true advantage of the technology would then be social, related to worker health and safety. Laser finishing “replaces the repetitive and uncomfortable process of manual scraping, which requires respiratory tract PPE equipment to protect operators from the dust that is generated. It also creates a new job position, that of the laser designer,” he says, adding that laser allows graphic patterns, logos and lettering that are not possible using other fading methods. The company has also focused on developing more efficient machines that can achieve the desired result faster and more economically.

From manual to digital

Laser machines have long been automated as manipulating the beam of light is dangerous. Robotic devices direct the “light amplification by simulated emission of radiation”, the original acronym that gave the technology its name. Each new generation machine features more sophisticated mechanisms. Jeanologia’s Handman device, operated by two workers, has two robots that emit eight lasers at a time. “It can produce 10,000 unique vintage jeans in 24 hours with zero waste,” says Ms Silla.



Productivity is a key concern for laser machine suppliers as machines can usually only treat one or two garments at a time. The two newest NRay machines developed by Nexia, a manufacturer of equipment for the denim industry based in Rosà, Veneto, automatically turn garments upside down to speed up production times. The NRAY 4 has a double conveyor belt, two rotating mannequins, and can apply the laser beam both horizontally and vertically. “This allows customers to work faster and in two different areas, on the conveyor belt and on the mannequins, for double production,” says a company spokesperson. Macsa Textile’s Lasertex Unno Agile also features a double workstation to speed up processing. The Catalonia-based company specialises in laser technologies for all textile applications.

Hardware and software

The high-tech nature of these machines means they are not only automated but also completely digital. The hardware needs software and suppliers are constantly upgrading and simplifying their programs to speed up pre-processing phases. Jeanologia says that its efforts to streamline the integration of hardware and software has increased productivity and reduced processing times, ultimately offering a better cost per garment ratio.

Laser companies have created vast libraries of washes and vintage looks that form a database from which a product developer can work. Many are now adding machine learning to make the system smarter. At Jeanologia, better data management will enable the machine to learn to eliminate what does not have to be marked and propose solutions if there is an incident in the marking, says Ms Silla.

Jeanologia’s latest laser machine is the Handman. Introduced in 2021, it can treat 10,000 jeans a day.

PHOTO: JEANOLOGIA

The software used to create the high-resolution patterns rely first and foremost on a designer's vision, and ability to operate high-tech digital platforms, but algorithms are now being tapped to assist both the design process and the productivity. Nexia says its software is now powered by a new algorithm. Turkey-based VAV has recently enhanced its Fabrotech software platform with Fabro Fusion whose algorithm is said to suggest more authentic signs of ageing.

Be On Point, or BOP, the latest development at Tonello, calls on computer vision and machine learning. "In short, it allows garments to be placed on the worktable without any particular accuracy or precision on the part of the operator. The garments can be placed on the table differently each time, but the design will always be precisely placed by the system in the position chosen by the operator," says Mr Lucchin. The work of the laser designer, he adds, is thus simplified and within reach of any operator, even without any graphic design training.

From garment to fabric roll

The development of smarter software, product conveyors and various robotic devices has admittedly increased productivity and worker safety. But the process of placing a garment on a mannequin, and removing it, is mostly manual. Tonello's new BOP does give workers more latitude in the placement of a garment on a flat surface. Italian laser specialist Sei Laser has eliminated the entire process with its Matrix machine. It applies the laser not on a garment but on a bolt of fabric.



Ereks Blue Matters favours lasering a fabric before garment making for small batches and on-demand manufacturing.

PHOTO: EREKS BLUE MATTERS

"All current laser machine technologies are designed to apply the laser on a finished garment. But this has a number of physical limitations," says Diego Fior, textile application manager for Sei Laser.

"Despite their high level of automation, they can only laser a half or a quarter of a garment at a time. The insides of pockets cannot be lasered, nor the backside of a fabric." This means that some areas will remain dark blue, and will need to be touched up, adds sales manager Ivan Romano. This inspired the company based in Curno, near Bergamo in Italy, to rethink the process entirely, in what can also be considered a pioneering step. "We shifted our mindset and completely rethought the process," Mr Fior tells *Inside Denim*. Lasering a fabric before garment making, the company claims, does not rule out the creation of frayed edges or highs and lows on seams.



The Matrix by Sei Laser, at Ereks Blue Matters, upends traditional laser processes.

PHOTO: EREKS BLUE MATTERS

This radical new approach significantly reduces production times, claims Sei Laser. “The laser treatment of a finished garment can take up to 15 minutes, whereas ours can bring processing time down to 50 seconds, 1.5 minutes max, depending on the design. On average, lasering one item of clothing takes one minute,” says Mr Fior. As an additional logistics perk, each piece of the future garment is inscribed with its pattern-making number.

A tool furthering Industry 4.0

As part of its investigations into on-demand jeans making, Turkey-based Ereks Blue Matters bought a Sei Laser Matrix machine that it uses to make Unspun’s made-to-measure jeans. It has set up a complete production line dedicated to the partnership. “We receive orders from Unspun every Wednesday, and we then have two weeks to make the jean and send it to the customer,” says Pelin Birsen, operations and sustainability manager for Ereks. On average Ereks makes 25 to 30 jeans per week, each personalised with the name of its owner.

For Romain Narcy, Ereks Blue Matters board member and partner, this is the future of no-waste on-demand manufacturing. The project, which the company is fully committed to developing, has yet however to be fully streamlined. “The entire process is digital. Unspun sends us a digital file with a made-to-measure pattern, but we need to adapt each one to our own software, and this takes time, roughly two hours per item,” he says. To make the process workable on a larger scale, pattern conversion time would need to be brought down to 15 minutes per item. This glitch aside, the concept relies principally on Sei’s Matrix. “There is no bottleneck at the lasering stage,” he says. A digital file is sent directly to the machine that engraves the patterns, and numbers each piece. “It would be very tricky if we didn’t have the numbers; this feature contributes greatly to the process,” he adds. The ability not only to fade but also to mark each piece of a pattern may be one of the most useful characteristics of applying laser finishing before garment manufacturing, he says.

Another advantage of the Matrix, says Mr Narcy, is that it is a compact machine that can be placed close to a cutting table. It is the solution that he sees as best suited to on-demand, pre-order and drop-shipping business models. “A brand or retailer can test a new product, wash or fabric. If it sells well, it can have the bulk manufacturing done in a low wage country,” he says. A “must” for personalised products and perfectly suited for small batch runs, he concedes that it is slow for bulk processing.



Laser-friendly fabrics

The development of laser finishing has impacted how mills make their denim fabrics, with new processes designed to achieve optimal results using the technology. The beam of light needs to be able to reach the yarn’s white core and has trouble breaking through dark indigos and deep blacks. The more time and energy spent removing colour, whatever fading agent is used, the more expensive the product. Mills have been tweaking dye penetration to speed up the ageing process. To make a denim fabric more laser-friendly is the goal of special dyeing processes such as Soorty’s Cascara, and foam dyeing, from Arvind’s Quantum to Royo’s Dry Indigo fabrics. Chemicals companies are also pitching in with laser boosting auxiliaries. Lab102, the denim-focused division of CHT Group, presented such a product last year.

Lasering has been accused of singeing a fabric and yellowing its cast, but the issue is rarely raised anymore. That makes one less box to tick on the list. There remain some who would not tick the box for authenticity, as they say it is not capable of replicating true vintage looks. Here it is easy enough to contend that, barring a pair of genuine vintage jeans worn for years, all of the new denims on sale today have been artificially aged. And for the companies that can afford the technology, it does so automatically and with absolute laser focus. ■

An example of customisation, personalisation and zero waste design, made by Ereks’ on-demand manufacturing line.

PHOTO: EREKS BLUE MATTERS

A sample of what Sei Laser’s Matrix can do, including the highs and lows of seams.

PHOTO: WTP





PHOTO: DAVID TRING

From global to local

David Tring, founder of The Magic of Denim Consultancy, visiting fellow at the Hong Kong Design Institute (HKDI), self-described denimhead and keen skateboarder of half a century, unpicks the warp and weft of his life in denim, from starting out on the shop floor in England as a teen to taking Lee to the top in China.

Q Tell us the story of your denim library. How does it reflect, and how has it informed, your journey in denim so far?

A I have been collecting denim books and Japanese denim magazines for around 30 years. At the beginning, it was the Japanese magazines like *The Jeans* by World Mook, *Boon Extra* or *Lightning Archives* that really excited me. They went into such detail and still do. There would be close-up photos of the seams, buttons and all the historical details – I have always loved details, so these magazines were hard to resist. One summer in Hong Kong, I had a Japanese student translate some of them for me. [It turns out that] not all their historical information is correct, but I think that's normal with history as we are always finding out new information from newly discovered documents.

My favourite denim book from recent years is *The Denim Manual*, published by a Hong Kong company



The Magic of Denim Consultancy founder **David Tring** shares his personal news and views, from the making of his future denim archive to the evolution of globalisation and work and how they will shape the future of the industry as seen from Hong Kong.

called Fashionary. It is beautifully put together and covers denim's history and manufacturing methods in a clear and simple format. It's a perfect manual for people entering the industry. Its old-school illustrations remind me of the vintage mail order catalogues from the 1920s, when they did not have access to product photography.

You've previously described worn denims as almost a map of how we have lived. How does this kind of knowingsness feed into your design and consultancy work?

One of the amazing things about denim is its durability, repairability and how it looks better and better the longer you have it. I have several pairs of jeans that are around 20 years old that I can still wear. It amazes me that their whisker patterns and wear lines are almost identical, like a fingerprint of my wear habits. I use these jeans in my lectures and masterclasses to show just how durable and amazing denim really is. There is no other fabric like it and that longevity also helps with living a more sustainable lifestyle. Buy a good quality pair of jeans and they can last you a lifetime, only needing a little bit of TLC along the way.

What, for you, would be the qualities, properties and values woven into denim worthy of inclusion in an archive assembled around the year 2050?

There is a British satirical science fiction film from 1951 called *The Man in the White Suit*, starring Alec Guinness. It tells the story of a scientist who was obsessed with inventing a fibre that was everlasting, self-cleaning and never wore out. I won't ruin the ending for everyone, but we definitely need this type of innovation in the future archive.

The United Nations (UN) has set targets for our world to achieve net-zero emissions by 2050. For me, any denim product featured in the archive of 2050 would have to have taken us on that journey towards carbon neutrality. We are only at the beginning of that journey and there's still a very long way to go. There is a tremendous amount of innovation in chemicals, indigo dyeing and garment finishing and that gives us a good base to start from, but we still need more innovation, especially in our base fabric. It's really exciting to see new options coming through like Renewcell's Circulose dissolving pulp from 100% textile waste.

Could you explain the key differentiators that spurred Lee towards taking the top spot in China, having helped lead the brand's Asia-Pacific arm between 1998 and 2022?

Lee was one of the first international clothing brands to enter China in the 1990s. The Chinese market was not very developed at that time, so it was mainly a jeans wholesaling strategy with retail partners. I moved from the European business [then part of VF Jeanswear] to Hong Kong in 2006, initially focusing on Wrangler and Lee's Asia-Pacific brand licensing partners, which was a real learning opportunity for me.

By 2008, Lee China has started to plateau. A new team was put in place to run the business, with me leading the product design, merchandising and buying teams. The Chinese market was changing, and we needed to change with it. Retail formats were becoming more sophisticated and customer expectations were rising, as were retail prices. Many of our competitors took a more centralised view and offered product ranges aligned with their global strategy. At the time, Lee was a poor number three in the market, behind a local brand called Apple Jeans and the runaway market leader, Levi's. One of the great things about being at VF around that time was the company's investment in consumer research. We undertook a number of different projects, including ethnographic research which involved consumer "shopalongs" and even wardrobe walk-throughs. I loved going into homes and talking to Chinese consumers about their favourite jeans and tops, and what they did and did not like, from fashion to music and culture. The learnings from those interactions could never be fully repeated in a report, too much gets lost in translation.



David documents archival Lee product for a brand history training video. A keen eye for detail, storytelling and what he calls "visual value" are all central to the denim expert's own creative process and ongoing knowledge formation.

PHOTO: ALVIN JONG

Coming out of that research, we decided to pursue a hyper-localisation strategy, putting the Chinese consumer at the centre of our decision-making. We also invested in our retail stores and people. We started designing and delivering biweekly drops of floor-ready coordinated programmes designed specifically for Chinese consumers, with strong themes and storytelling and a big tops offer. Chinese consumers are excited by innovation and what I like to call "visual value" details, such as washes and prints that can clearly be seen and help them to express themselves. Lee became the number one jeans brand in China by 2014, and it still is today, delivering some of the highest margins globally for VF Jeanswear [now Kontoor Brands]. If you really understand your customer, then it does not have to be a race to the bottom.

One key learning I took away from this was that copying the strategies of the market number one, or your biggest competitor, will not always work. Brands need their own positioning and strategies that are right for them. Too often brands fall into the trap of copying the market leader – you have to differentiate. When I talk to buying and merchandising teams for international brands, the main complaint and obstacle they see to growing their Chinese or Asian business is that they cannot find the "right" product from their global line. Covid-19 may have put the last nails in the coffin of globalisation, but I feel that it's been on its last legs for a really long time. Consumers are local, not global; they have localised influences, trends, opinion leaders and tastes. Many so-called global influencers remain unknown in China.

You got your start in the denim business working weekends at an English clothing store as a teenager in the '70s. What excites you about contemporary fashion retailing?

Even pre-covid, it was clear that current models were not working. Department stores, especially, were carrying far too much inventory and fast fashion has become really, really boring. It feels like everyone is still dealing with the major issues of the last few years regarding inventory, supply chain problems and inflation. In Hong Kong, we went from being the most visited city in the world to practically zero visitors overnight due to the pandemic-related lockdowns, but thankfully we are now open for business again.

Despite this, one thing that's really excited me is the emergence of local creatives opening their own retail stores and pop-ups. There's an area of Kowloon in Hong Kong called Sham Shui Po. It is the oldest textile district here and is now seeing a lot of these new stores and coffee shops. Later this year, the area will host a denim festival, which I am really looking forward to.

The mainland Chinese market will also be interesting to monitor, now that it is opening up again. Shopping mall landlords in China expect their tenants to come up with a new retail format for all major malls and to update this format every two to three years, which is very different from the West, for instance. It forces brands and retailers to keep coming up with something fresh and different.

If that same teenager were just starting out today, with the very same passion for denim and skateboarding, where do you think he would go and what do you think he would do to realise his heart's desires?

The main difference today is access to information at speed, thanks to the internet. I talk a lot with my students about the need for curiosity. There is so much information – just look at all the streetstyle bloggers on Instagram. At the same time, though, it is just as important to take a camera out with you and take your own photos and build your own experiences. Looking through the lens is a different learning experience from looking at somebody else's images on a screen.

My skateboarding would have been a lot better [with today's easy access to information]. Back in the day, we had to learn tricks from still photos in magazines and just imagine how they were achieved, then experiment. Nowadays, I see skaters watching YouTube and filming themselves as they do tricks, which is great because they can study the speed, angle and technique needed. Information gives you power.



David Tring providing his HKDI fashion denim design students with feedback on their initial concepts. PHOTO: HKDI

If you combine curiosity with passion for what you do and a willingness to learn, I truly believe anything is possible. I hope I would have ended up in the same place as I have, as I love the journey I have been on. Even the choices and experiences that didn't work out still enabled me to learn.

What should the industry be doing to help develop great people, not just great products?

The only way to create great products is to nurture and inspire great people. All industries are going through one of the biggest changes in recruitment and retention that we have ever experienced. This has mainly been driven by covid, but the new generation are also not as willing to tolerate some of the old situations in companies. There's a major culture gap now between the older and the newer generations. I don't think the gap has been this big since the baby boomers at the end of the 1950s and I actually think that's a good thing. We need change. Young people are far more willing to make career choices based on their values and the older organisations will have to change or risk being replaced. I really like the attitude of the new generation. They have a fresh approach, and they are not taking prisoners along the way.

How do you bring moments of magic into the everyday?

Most of my time is spent with young people in education. It is a different experience for me, compared to working for a brand, and I am still learning how to motivate and inspire them. During my final session of 2022 with six fashion denim design students from HKDI, where I am a visiting fellow, I took them to visit Jeanologia's local hub. They all saw an amazing demonstration of the latest denim washing and finishing innovations from the team there. The laser demo, in particular, really blew them all away. After that, we went to visit the Centre for Heritage, Arts and Textiles (CHAT) and had a private tour of Japanese craft collective Buaisou's exhibition on natural indigo dyes. The students got to see the artisans of the future in the morning, followed by heritage craft techniques in the afternoon. They loved it and it was the best day of the year for me, as I could see that denim was starting to get into their blood.

I don't think you can experience that level of magic every day, as it takes a tremendous amount of preparation, but when it works it truly is magical. We will all need a bit of denim magic in 2023! ■

ADVANCE WATER CIRCULARITY



Water Saving

73% of water in the production has been saved.



Water Consumption

Around **600,000** tons per year.



Water Recycling

Around **440,000** tons per year in the whole Group.



His eternal optimism in a world of indigo means one of denim's leading lights has for the first time taken the brand that started it, Daily Blue, back to the drawing board. Ever the inventor, Adriano Goldschmied's creative spark is undimmed after five decades in the fashion game. He tells *Inside Denim* what's new – and what hasn't changed.

Making a way

“Congratulations, you've picked the most sustainable jeans we have in-store,” is what serial creator and denim luminary Adriano Goldschmied imagines assistants at high-end boutiques will say as they ring up sales of Daily Blue, his relaunched luxury denim line from 1974, for already-besotted customers. Shipping from this January to select US retail partners new and old, including Henry Lehr in East Hampton, Newport Beach's Michael Nusskern and Valentines of Austin, this initial collection includes premium fabrics from Kaihara and Kurabo in Japan, plus Greensboro-based Cone Denim, which today manufactures in Mexico and China.

Although Mr Goldschmied, who championed the use of Lenzing's biodegradable Tencel lyocell fibres in denim as far back as the early 1990s, does not envision that his sustainable practices will ultimately drive sales, these remain unquestionably baked into Daily Blue's design ethos – from all angles. Now as before, he tells us, it is instead the changing room mirror that has final say on whether a customer does or does not buy his jeans.

A special place

The original Daily Blue called the fashionable resort town of Cortina d'Ampezzo in Italy's Dolomitic Alps home. Having started life as something of a spin-off from Mr Goldschmied's King's Shop, which found its niche among the contemporary international jet set, the womenswear brand's denim jeans retailed for what would nowadays equate to roughly \$1,000. Despite minimal fashion experience, the Italian-born designer did know his customer. They were “looking for something really unique”, he remembers, something their peers wouldn't have, and they “didn't really care” about price.

In a market dominated by more utilitarian denims by Levi's, Lee and Wrangler, Daily Blue immediately stood out for its fresh, fashion-first point of view, with Mr Goldschmied and then business partner Ambrogio Dalla Rovere pushing bold colours like hot pink, as well as “new fits, new shapes and innovative materials”. Not to mention quality fabrics and construction. Another advantage afforded by the label's well-travelled clientele: it quickly gained fans from Japan to the US, the UK (whose music and fashion scenes inspired Daily Blue's early designs) and beyond.



Adriano Goldschmied reviews samples of Turkish denim mill Bossa's hemp-blended fabrics in his office. He is now largely based in California, having first moved there in the 1990s.

ALL PHOTOS: DAILY BLUE

Looking at today's denim-filled catwalks, Mr Goldschmied says he feels a sense of mission accomplished. Well-known in denim circles as the industry's “godfather”, a moniker thought to have first been given to him by late *Vogue Italia* editor-in-chief Franca Sozzani, he would go on to bring numerous jeanswear brands to market after stepping away from the first iteration of Daily Blue in the 1980s, including Diesel, Replay, Gap 1969, Goldsign, AG Jeans, A Gold E and Goldie, also lending a hand to help develop the collections of others such as Evisu, Citizens of Humanity and Edwin. Mr Goldschmied has been quoted as estimating that the total number of denim brands he has played a role in either founding or forming exceeds fifty.

The trajectory of the designer's career thus far certainly confirms his express desire to keep moving forward in the spirit of “making something new”, avoiding any temptation to merely replicate past successes. This makes the reintroduction of Daily Blue an exception to the rule, which Mr Goldschmied traces back to the feelings he had when first assembling the collections that would not only transform him into a bona fide denim designer, but also bring premium, trend-led denim to global attention. Daily Blue set up shop in a special place in his heart, he shares, and he would like to repeat that.



Daily Blue's original colourful embroidered logo from 1974, seen here as a back patch, still feels as fun and fresh as ever.

Ahead of the curve

“The world is changing very, very fast and I would like to be a part of this change,” Mr Goldschmied explains. “In 1974, I was part of what you could call a revolution [in denim]. Today, I’d like to play the same game.” He also opines that the premium segment has become a little bit boring, in his words. The only hint of what once was in the current Daily Blue line-up is the line’s brightly coloured, embroidered sunrise logo. Though “months and months” were spent trying to come up with a new design, the original emerged from the brainstorming process unbeaten. Still atypically cheerful in appearance against a sea of vintage-inspired branding, Mr Goldschmied describes its bold hues as signifiers of his own optimistic vision for the label’s relaunch, adding that it has been well-received by buyers so far.

A key difference, this time around, centres on the brand’s global sourcing and production strategies. To further lower the impact of its fashions, Daily Blue will develop continent-specific manufacturing plans for its collections, working only with suppliers based within each region in which it intends to sell. When the brand re-enters the European market, for example, it will restrict its sourcing to locally made materials and solely partner with Europe-based cut-and-sew factories. Mr Goldschmied suggests that the search for collaborators is further along in Asia-Pacific and has previously indicated that Vietnam may serve as the label’s regional production base. One anomaly is the US launch collection. Though 100% of the manufacturing process took place at Star Fades International (SFI), Artistic Milliners’ laundry and design hub in Los Angeles, the majority of materials used, most notably fabrics, had to be imported due to the absence of denim-making in the country, at least at scale.

The designer frames working with SFI as “a special kind of partnership”. Its facility, close to Daily Blue’s own headquarters inside the offices of Mr Goldschmied’s Genius Group design studio, boasts “all the technology needed” to test new processes and innovations, he states, all with an emphasis on sustainability. They are currently exploring some “revolutionary” products from Italian chemicals company Soko together, he reveals. Meanwhile, Manifattura Italiana Cucirini has supplied 100% Tencel threads and the brand has used cellulose-based bioplastic buttons in place of conventional metallic fastenings. Mr Goldschmied conjectures that Daily Blue is “probably the first in the world” to work with this kind of button, said to be made from a new material. His time designing a Jeans Redesign-inspired circular denim collection for Parisian fashion house Chloé, which debuted early last year, only entrenched his belief that high-quality jeans can – and, for end-of-life recycling purposes, perhaps should – be made without traditional buttons and zipper components, although he later acknowledges the necessity to make small compromises every day.



This new dawn for Daily Blue sees its initial US collection 100% processed by SFI in Los Angeles, using denim made by Kaihara, Kurabo and Cone.

New horizons

Daily Blue’s initial US offering comprises several jeans styles (Mr Goldschmied is positive about the end of skinny jeans’ grip on the market), in addition to denim overalls, jackets, shorts, shirts and vests, including a paisley-print version that appears as though stonewashed in a clear, yet subtle, nod to the brand’s 1970s beginnings. While he still shops vintage himself, the designer has not had a personal archive in around 30 years. He prefers taking a blank canvas approach and tells *Inside Denim* that “fashion is more important than vintage” for him nowadays. Wherever he is in the world, his eye is on the street and how people are dressing to go about their daily business. He also wants to entice customers back into stores by cultivating emotional connections through innovative fabrics, fits and details that he believes can prove harder to find nowadays amid the near endless possibilities of the internet. The team is already pursuing “more radical” and responsible denims with this in mind, such as some “very good fabrics from Bossa”.

Following half a century in the fashion business, his instinct is that now is a good time to launch. Bad times always bring a silver lining, he says. And digital communication tools, particularly when it comes to meeting with suppliers and obtaining information, has made things much more efficient and democratic. The hope is for Daily Blue to establish itself as a small, but leading label, not only in terms of creative direction and aesthetics, but also when it comes to pursuing new and improved production methods. Mr Goldschmied, driving things forward once again, is undaunted by the challenges that inevitably lie ahead. “I like to play difficult games; the easy ones are too easy. It is not the time for easy games.” ■



insideDenim
BEHIND THE SEAMS OF THE GLOBAL DENIM INDUSTRY

insideDenim.com

We've been publishing for three years! Industry professionals all over the world have gravitated to our print and digital unique content, exploring the science behind the seams. They are following us on social media too, **11,000** denim industry professionals now follow us on social media – pretty good organic growth in three years we think. We will continue to share our content across all of our channels this year so if you haven't found us on social media, you should!

If you have not already you can sign up to www.insidedenim.com **FREE** and access our technical articles and features. We'll also send you a weekly newsletter to keep you up to date.

If you are interested in raising the profile of your business to our global industry professional audience in either our magazine or digitally on our website, email: jo@worldtrades.co.uk

With the fashion industry's complex global supply chain and factories located in low-wage countries, ensuring production workers receive decent pay is not easy. But four brands — Nudie Jeans, Mini Rodini, Armedangels and Kings of Indigo — pooled their efforts to meet this challenge.

Fair and square

There is a short but impactful video online called “The Industry We Want” in which a group of women, all heads of sustainability at their respective brands, describe an initiative called the Living Wage Project. Taking turns delivering segments of the simple but powerful message, the speakers say: “The industry we want is an industry defined by environmental and social justice, transparency, and actual living wages. Our vision of the industry is collaboration: collaborating with other brands, partners, workers, NGOs and unions. We four Fair Wear brands are working together to implement living wages at a shared partner in Turkey. There are various challenges we face, but let's join forces and make it happen.”

What is impressive about this video is the collective of Northern European brands it features: Nudie Jeans, Mini Rodini, Kings of Indigo and Armedangels. These names in denim have taken on a long-overlooked problem: the world's garment workers are too often badly underpaid.

“We all have to be [part of] the change we want to see in the world,” Cassandra Rhodin, founder and creative director of Mini Rodini, based in Stockholm, tells *Inside Denim*. “If we don't want to continue with the slavery, pollution and the overconsumption that is a race to the end of everything we love, we need to look at new business models and make it work. Supporting living wages will actually sustain businesses in the long run.”

Living wages ensure workers' basic needs can be met.

PHOTO: MERGÜ / ARMEDANGELS





Meeting workers' basic needs

A living wage is the minimum amount of pay workers need to meet their basic needs. But this simple description masks complex issues. A living wage varies from country to country and region to region depending on geographic-specific factors such as cost of food, housing, transportation, healthcare, clothing and other necessities. Whether or not a government mandates a national minimum wage, there is often a significant disparity between wages being paid and true living wages. Research from 2019 by Labour Behind the Label, an ethical fashion advocacy group, found that the legal minimum wage in Sri Lanka was about 13% of what would be a living wage there, and in Georgia the minimum wage was just 10% of a living wage. These gaps tend to widen with time, as the cost of living can rise faster than typical income.

The four brands behind the Living Wage Project at the time of writing were working together to help close those gaps specifically for the production workers at Mergü Tekstil factory in Izmir, Turkey. “We had a unique situation where four like-minded brands and the supplier itself were interested in addressing the issue of living wages,” says Armedangels social impact manager Julia Kirschner. “So we joined forces to find a solution. The set-up for this project was done collaboratively with all brands. We did all the calls, discussions, calculations and benchmarking together as a team.”

Independently, the brands had already taken measures towards paying living wages to their suppliers; Nudie Jeans, in Gothenburg, and Mini Rodini have done so in India for many years, and Cologne-based Armedangels’ ‘true costing’ methodology ensures that all suppliers pay 20% above minimum wage. Everyone brought their expertise and experience into this project, says Ms Kirschner, and together they were able to “build a reliable and resilient system that can be used for other supply chain partners and for any other brand sourcing at Mergü.”

The Fair Wear Foundation, a non-profit that works to improve conditions for workers in garment factories, stresses that international supply chains are complex and raise many practical questions before and after a brand, a factory and workers have agreed on a living wage benchmark. But one key starting point is that pricing must be determined from the bottom up.

The Living Wage Project seeks to compensate these workers more fairly.

PHOTO: NUDIE JEANS

“We had a unique situation where four like-minded brands and the supplier itself were interested in addressing the issue of living wages.”

JULIA KIRSCHNER, ARMEDANGELS

Top down or bottom up

The top-down approach, the common method today, establishes a product’s price based on what a consumer is prepared to pay for it. From that starting point, everyone takes their cut: retailer, brand, shipping company, and factory, leaving little for workers and materials suppliers.

A bottom-up approach would start from the fair cost of materials and worker wages and build from there. So, at the heart of paying a living wage is calculating the fair cost of material and wages, and then establishing a reliable system for making sure payments make it to their intended recipients.

Ms Kirschner credits Fair Wear’s methodology of calculating labour/minute costs as being quite helpful in simplifying calculations. This approach, as described by Fair Wear, ‘uses payroll data to calculate how much it would cost each year to raise wages to a living wage. This total annual cost is measured against data about the time (in minutes) required to make each garment to calculate a brand’s share of higher labour costs.

Sustainability leaders at the four brands announce the Living Wage Project.

PHOTO: YOUTUBE

While payment and invoicing are carried out separately by each brand, working out the logistics as a team was key to getting the programme off the ground. “Even if it’s an ‘every brand for themselves’ situation when it comes to prices, [we know] our shared contribution will make a great impact for the employees of the supplier,” says Kevin Gelsi, sustainability coordinator for Nudie Jeans. “The quality and optimisation of the programme are more likely to thrive if several brands are working according to the same methodology and standards.”

The Living Wage Project brands bridge the gap by issuing bonus payments to supplement workers’ wages. In 2021, the group paid a combined total of €50,000 in bonus payments to the production workers at Mergü, and in 2022 nearly €72,000. It is felt that collaborating means each brand has more leverage and more potential impact than if they were acting alone.

But none of this is easy. “[There are] bureaucratic challenges, inflation, challenges in setting up a robust structure that is workable for management, as well as a fair distribution,” says Ms Rhodin. “However, the least we can do is to continue our commitment and also work to inspire and set an example for other brands in the industry.”

The importance of trust

Fair Wear says trust between brand and supplier is essential for a living wages arrangement to work. The brands behind this partnership with Mergü couldn’t agree more. “Having a healthy relationship with our suppliers is of fundamental value to us. It affects how we run our business and ultimately our level of sustainability as a producing brand,” says Mr Gelsi. “When we choose to partner with suppliers, it’s also important to us that we share perceptions of what sustainable development means, in order to strive towards the same goals and do so collaboratively.” Living wage projects might vary from one supplier to another, he adds, “but to have an open dialogue and the joint willingness of exploring and developing, are the first steps.”

This dialogue is vital in part because of the unpredictability in what constitutes a living wage. Not only does it vary from one region to another, but in each area there will be fluctuation due to forces that are beyond a supplier or brand’s control. “Talking about living wages and setting a benchmark in Turkey is extremely difficult at the moment, because it is so volatile due to very high inflation,” says Ms Kirschner. “The reality of the lower paid workers is becoming harder and harder, making the project even more important.”



What started as a pilot project is now what Mr Gelsi describes as an “implemented living wage programme”. He says, “We’ve had positive results and feedback from both Mergü and the partner brands. The structure is in place and we will continue to work accordingly with regular follow-ups as long as the programme fulfils its purpose.”

The project is unique in its structure, according to Ms Kirschner, because “we as brands openly work together towards our shared goal of supporting the suppliers and their workers”. Stockholm-based Toteme has now joined the project, and others have expressed interest. “This is what we have hoped for,” she says. “The more, the better!”

A worthwhile challenge

For Kings of Indigo, this partnership represented the first supplier with whom the brand was implementing a living wage. “It was a quite new topic, and we still have a lot to learn,” says Ms Bosboom. “The current economic times with inflation and energy prices make it difficult to find a stable and achievable method for all parties involved.”

However, companies contemplating a system for paying a living wage to the workers up the supply chain should not be intimidated. “Just start,” says Ms Bosboom. “One supplier at a time, or maybe even one collection at a time. Communicate and work closely together with your suppliers.” The impact, she says, will be worth the effort. “The most rewarding part was to see how willing everyone was to participate and how grateful the workers at the factory were. They are directly benefiting from the bonus that we as brands pay.”

And, as Mr Gelsi of Nudie says, no brand can solve the problem of unfair wages alone — and nor should they try. “It’s not meant to be just one single brand at each supplier taking the full cost of paying living wages. The structure we have in place is based on our production share, which at the end of the day means we pay our share of living wages. This still leaves a gap for the other purchasing brands to take their responsibility.”

He acknowledges it is difficult to “find a functional system based on wage situation and the actual cost of living mapping” but that “this is where the close dialogue and relationship with the suppliers become crucial, to gain that insight and get started”. He recommends that interested businesses reach out to organisations with experience, whether there are other brands or NGOs, and “make sure your partner suppliers are engaged”.

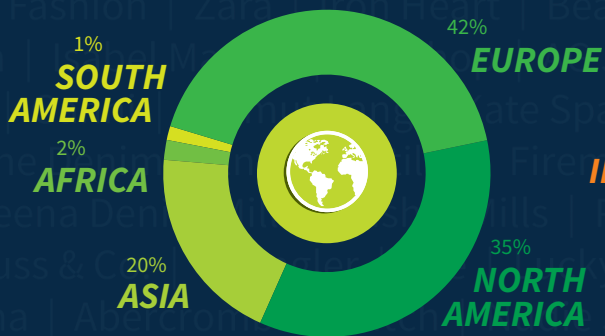
Even in moments when fluctuations of the global economy make it difficult to pay workers fairly in another part of the world, Ms Kirschner is spurred on by the success they have had so far. “The most important lesson we learned in this project: it can get very complex sometimes. The second lesson: you need to listen to the reality of your supplier. Third lesson: nothing is impossible,” she says. “We receive a lot of very positive feedback from workers, which encourages our work and shows us how essential living wages are.” ■

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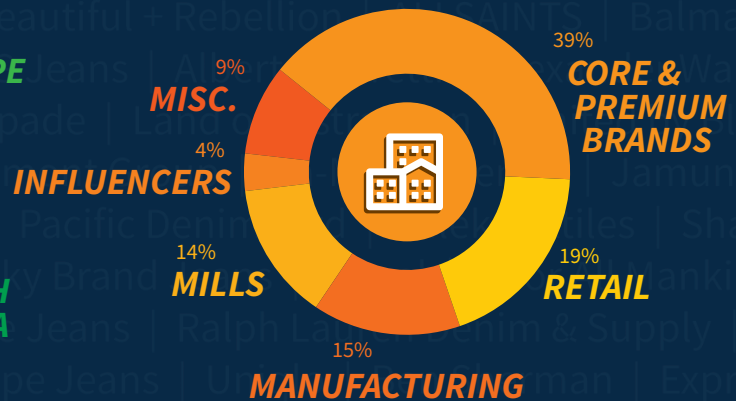
BEHIND THE SEAMS OF THE GLOBAL DENIM INDUSTRY

We want our readership to be as valuable and as valued as our journalism. It's why we have left no stone unturned in identifying key global contacts in the global denim industry.

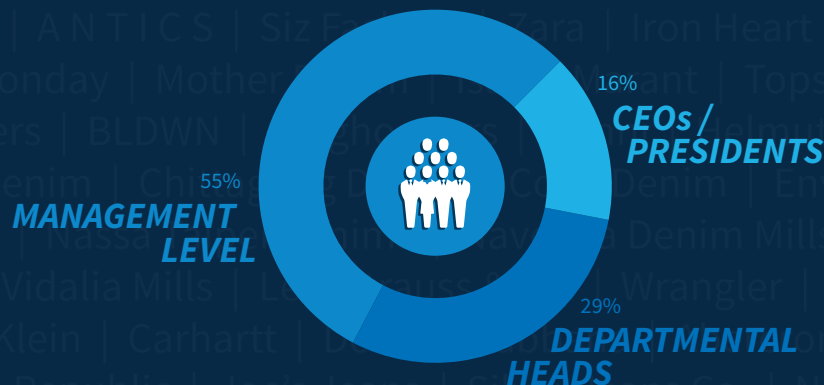
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TYPE OF BUSINESS



JOB TITLES



insideDenim will be landing on the desks of those individuals we have hand-picked to receive our magazine: **Global Sourcing** Managers, Product **Development** Managers, **Senior Denim** Designers, **Product Development** Directors, International **Sourcing** Directors, Wash **Technicians**, Senior **Sustainability** Managers, Denim **Laundry** Managers.





Resortecs, the Belgian start-up that has developed dissolvable stitching threads and a disassembly process to simplify the process of recovering and recycling textile products, continues to make progress. Chief executive and co-founder, **Cédric Vanhoeck**, explains how.

Dissolve to evolve

**Q: What was the starting point for Resortecs?
When, where and how was the idea born?**

A: Active disassembly is a research field in engineering that applies materials science to joining techniques with the goal of enabling the disassembly of complex products in an easy and cost-effective manner. I hold an industrial design engineering degree from TU Delft in the Netherlands and a brand management Master's from Domus Academy in Italy. After joining the Antwerp Fashion Academy, I saw first-hand the huge disconnect between fashion and the circular economy. When a friend at the academy decided to quit because he didn't want to be part of the waste problem, I realised that I might have the right combination of education and expertise to resolve the issue. I went back to the engineering drawing board to see if the principles of design-for-disassembly and active disassembly could be applied in fashion. Active disassembly makes the recycling of consumer products possible at industrial scale. Originally, it was developed for hardware products, but at Resortecs, whose name comes from the words 'recycling', 'sorting' and 'technologies', this approach and the technology are working on textiles.

What is Smart Stitch?

Our heat-dissolvable stitching threads, which have different melting points: 150°C, 170°C and 190°C. They enable brands to transform their products into recyclable, circular pieces from the manufacturing stage.

What does Smart Disassembly consist of?

Smart Disassembly is our patented thermal disassembly solution. It is five times faster than manual disassembly and makes it possible to recycle up to 90% of the original fabric.

This enables recyclers to unlock higher volumes of premium-quality material. A new oven, for which we raised €2.5 million in 2022 and currently have under construction, will have the capacity to process up to 4 million garments per year with low emissions and no material damage, so that fabrics can be used over and over again. Our aim is for these innovations in the way clothes are assembled and disassembled to empower clothing brands to rise to today's environmental challenges at the pace and scale that the earth needs. And all without compromising on creativity, design or quality.



Chief executive and co-founder of Resortecs, Cédric Vanhoeck.

CREDIT: RESORTECS





According to your figures, only 1% of textiles are recycled back into garments at the moment. Why is that? Fashion For Good said in 2021 that your technology could tackle a recycling bottleneck. What creates that bottleneck? What other solutions has the industry tried to put in place?

On average, each European Union citizen consumes 26 kilos of textiles and generates 11 kilos of textile waste each year, but, yes, only 1% of the material used in textile production goes back into garments, in closed-loop garment-to-garment recycling. On the bottleneck, the cost and complexity of most disassembling and recycling processes lead fashion brands to adopt polluting and unsustainable options such as landfill and incineration for the remaining 99%. The major cost driver and bottleneck is the fact that textile products are not designed for disassembly; and that disassembly is done with expensive and time-consuming manual or mechanical processes that waste more than 50% of the original fabric. When compared to other common end-of-life options such as incineration or landfill, our solution reduces textile waste by 80% and generates between 6 and 7 kilos less CO₂ equivalent per pair of

denim jeans. Translated into business figures, these eco-impact metrics mean reducing raw material loss by 50%, cutting CO₂ offsetting costs by 50%, and saving more than €1.50 per pair of denim jeans.

In the hundreds of news stories that we published on the *Inside Denim* website in 2022, more than one-quarter (27.8% to be precise) contained the word ‘recycle’ in one form or another. What does this tell you about a move in the denim industry towards circularity?

It is clear that the use of recycled material is becoming a norm in the industry and this is not only because of the European Directives on sustainable textiles. Nevertheless, currently only pioneers and innovators such as Unspun and Bershka are working on the recyclability of their denims. Using recycled content does not automatically mean circular. Rather, it only represents optimisation of a linear supply chain. This is because using recycled material for a product that, later, may not be recycled (because it is too complex and costly to disassemble the product and sort the material it is made from) doesn't solve the problem; it only postpones it.

The Smart Disassembly process. A new version will have the capacity to disassemble 4 million garments per year, with 90% of the fabric becoming available for reuse.

CREDIT: RESORTECS



Smart Stitch dissolvable stitching threads have different melting temperatures to aid recycling.

CREDIT: RESORTECS

After working with Unspun, H&M and Bershka, what knowledge of the particular challenges of recycling denim garments has Resortecs been able to build up?

Working with brands such as H&M and Bershka, as well as Decathlon [which launched a ski jacket designed for 100% recycling last December], proves that the Smart Stitch and Smart Disassembly technology is compatible with the pricing and the production requirements of big companies in the fashion industry. These collaborations with big brands prove that Resortecs represents a small change, but one with a big impact. What we have proved is that the challenge is no longer recycling or disassembly. The challenge now lies in how to recover the highest possible volume of discarded products in order to secure a stable, affordable and premium supply of recycled material, which brands are going to need to stay relevant, resilient and compliant.

Decathlon used your technology to develop the ski jacket it launched in December. What will need to happen in 2023 for us to see jeans that, like that jacket, are designed for recycling?

We have already seen jeans designed for recycling, powered by Resortecs, in Bershka stores across more than 60 countries. Unspun has been producing jeans designed for recycling, powered by Resortecs, since 2019. We will continue helping brands implement circular value chains in 2023, as we have been doing for the past three years. Brands need to understand that the need for efficient recycling is intensifying as a result of changing legislation, but also because of the growing pressure on supply chains from geopolitical and climate-related events. What remains important is that designing for recycling only makes sense if you, as a brand, also want to work on the reverse logistics needed to recuperate goods made from materials that you want to recycle and reuse.

What has been the experience of the brands so far?

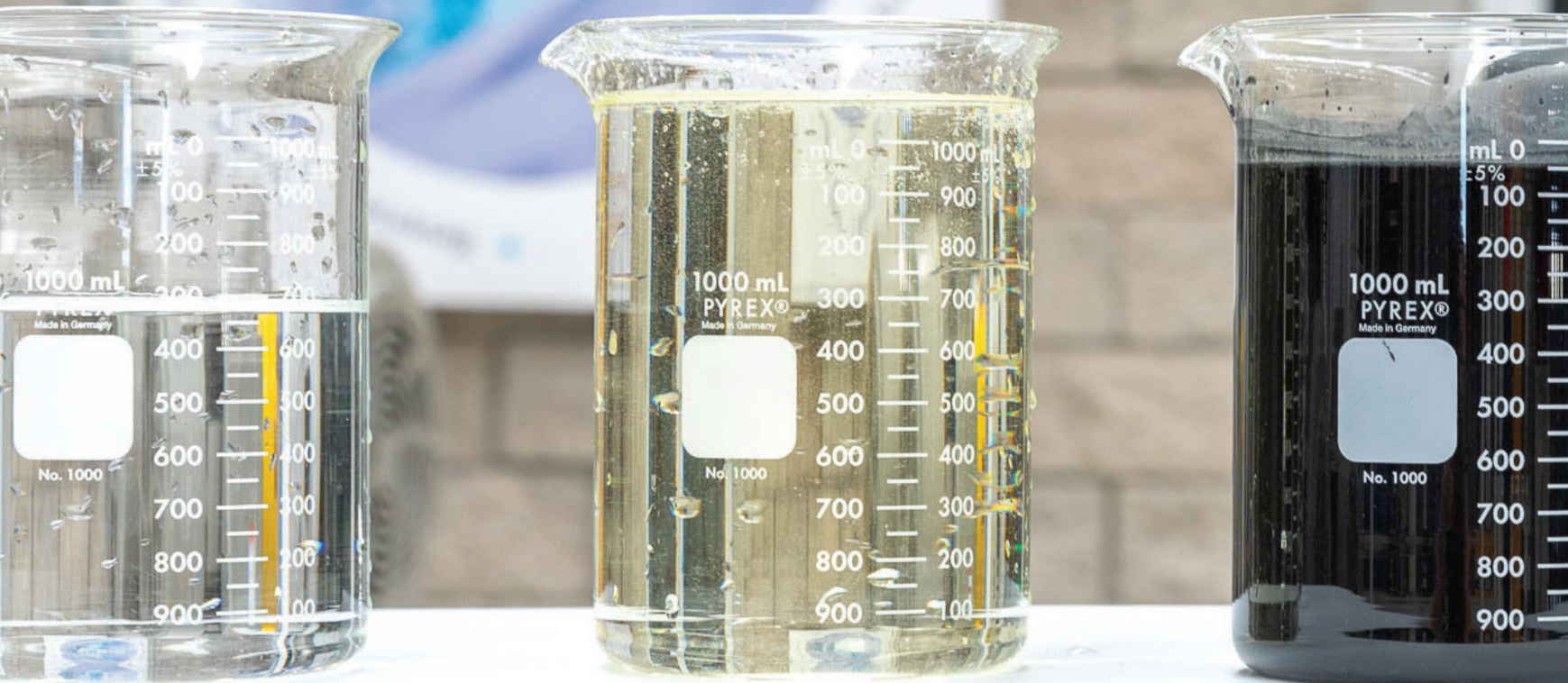
The feedback we always receive from the brands we work with is about how easily they can actually apply our technology. There is, of course, a lot of work that goes into deciding the best products to start working with in order to create the best environmental and financial impact case, but from a technical perspective, it works better than brands expect. It's still a challenge to make brands understand we are not only selling threads but rather a full solution that can and should be coupled with existing traceability and material innovations to really close the loop. Once they understand that, we can bring truly circular products to the market in keeping with the industry's usual costs and quality and creativity standards. The ski jacket we launched with Decathlon, for example, incorporates our technology and a number of other innovations that make it future-proof at a retail price of only €45. ■



Part of the jeans-designed-for-recycling range that Bershka developed with Resortecs in 2022.

CREDIT: RESORTECS

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WATER SAVED PER
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Our ZLD system incorporates biological treatment, ultrafiltration and reverse osmosis processes to provide water to be recycled back into the denim production process.

This is the New Wave in Denim Sustainability.

VKG's workers in Thailand were making jeans and denim jackets for Tesco's F&F clothing label.

PHOTO: F&F

Garment workers go legal over Tesco Thai ties

Complaints from workers who made jeans and denim jackets at a factory in Thailand could make legal history in Europe this year. A case against retail group Tesco and testing and certification body Intertek could go before courts in England if these organisations fail to settle workers' claims for compensation.

Leigh Day, a UK legal firm representing 130 Asian garment workers, sent a 'letter before action', the first step in legal proceedings, to the two UK-based multinational companies in December. It detailed the complaints that the workers have made, and Leigh Day has asked Tesco and Intertek to settle their claims for compensation. It said that if this does not happen, the workers will consider progressing the matter in the High Court in England.

In a series of reports about the case, *The Guardian* said Tesco and Intertek faced a "landmark lawsuit" and suggested this would be the first time UK-based companies would face litigation in the English courts over the treatment of workers in an overseas garment factory owned by third-party suppliers. Intertek and Tesco have both said in response that they believe they have no case to answer.

Lawyers in the UK have begun legal proceedings on behalf of garment workers in Asia in a potential landmark case. Retail group Tesco and quality and safety audit body Intertek face action over the alleged treatment of workers at a jeans factory in Thailand.

The same workers say they were dismissed from the garment factory in 2020 after confronting managers about the conditions there. They have been seeking justice in the Thai courts since then. They are now asking for compensation from Tesco too because they allege the retail group was negligent in allowing a third-party supplier to treat them badly and because Tesco gained financial benefit from the work they did in making jeans and jackets.

UK-based retail group Tesco is potentially facing a landmark court case over conditions at a supplier's factory in Thailand. Having failed to get justice thus far in Thai courts, a group of 130 workers has begun legal proceedings in the UK over their complaints. If successful, it could have major implications for the global garment supply chain and its auditing.

PHOTO: TESCO



Jackets and jeans supplier

Leigh Day's letter before action describes conditions in the factory as poor in the extreme. The facility was run by a supplier called VK Garments (VKG) in Mae Sot in western Thailand, just a few kilometres from the border with Myanmar. The VKG workers who have taken their legal complaint to the UK are from Myanmar and Leigh Day has described them as "vulnerable and impoverished migrants who fled war or left Myanmar in the hope of finding safety and work in Thailand". They worked between 2017 and 2020 making jeans and denim jackets at VKG, which had big orders to fulfil for Tesco's F&F clothing label.

Tesco sold its business in the Asian country to Bangkok-based conglomerate CP Group in November 2020. When it first announced its intention to sell this part of its portfolio, in March 2020, it described Tesco Thailand as a strong business. It began operating there in 1998 and, by 2019, had built up a network of almost 2,000 stores across Thailand, serving more than 13 million customers per week and turning over more than £4 billion per year. It built this platform up with a local company, Ek-Chai, which operated as a subsidiary of Tesco Thailand. The group's then-chief executive, Dave Lewis, said Tesco had decided to sell following "inbound interest" from CP Group and "a detailed strategic review of all options". It was Tesco Thailand that placed orders with VKG and the retail group has stated that garments the factory made for it only went on sale locally at stores run by its business in Thailand. The Tesco Group has also said it had no role in the day-to-day running of the site.

Leigh Day, however, asserts that Tesco management in the UK must have known that F&F denim garments were coming into the group's supply chain from VKG between 2017 and 2020 and must have been aware, or ought reasonably to have been aware, "of the unlawful housing conditions and factory working conditions and practices" at the Mae Sot site. The legal firm also asserts that Intertek "consistently conducted audits at the VKG factory between 2017 and 2020 and did not accurately identify or report what was happening there".

“The garment industry’s reliance on social auditors should end now and they should start to take greater responsibility for their supply chains.”

OLIVER HOLLAND, PARTNER AT LAW FIRM LEIGH DAY

Specific complaints

Allegations in the letter before action Leigh and Day has issued include complaints that, while working at VKG between 2017 and 2020, the 130 migrant workers were paid at most £4 a day, worked seven days a week, and became "trapped in a cycle of forced labour and debt bondage". There are further allegations that VKG bosses controlled their documentation and housed them in "pitiful conditions [in] tiny dormitories with cement floors and little or no privacy". At the factory, it is alleged that pressure to fulfil the orders for F&F was so intense that workers were often unable to take breaks to eat, drink or go to the toilet, sometimes working through the night "in conditions that were hazardous, unventilated and overcrowded".

In the letter, Leigh Day also alleges that under Thai law at the time, these workers should have been paid a minimum of £7 for eight hours' work, plus £1.34 per hour overtime. But overtime pay was rarely forthcoming, the legal firm alleges, and charges for rent and immigration documents were deducted from wages. The firm says this often left the workers so short of money that they had to turn to loan sharks, "leaving them in a state of debt bondage with no alternative but to remain working at the factory in order to service debt".

In its reports, *The Guardian* quoted one of the workers as saying she had to leave two small children on their own in a VKG-run dormitory while working in the factory. Returning to them after ten o'clock one night, she found that her seven-year-old daughter had suffered a very serious assault at the hands of another VKG employee. She and her daughter are among the 130 complainants in the case. The newspaper quoted a Tesco spokesperson as saying about this assault: "This is an horrific incident and our thoughts go out to the victim and everyone affected by it. Had we been alerted to it at the time it took place, we would have ended our relationship with this supplier immediately."

Accusations in Leigh Day's legal case are that Tesco and Ek-Chai displayed negligence by permitting, facilitating or failing to prevent the unlawful working and housing conditions which caused injuries and losses for the workers. The companies are also accused of being "unjustly enriched at the expense of the workers and are liable to make restitution of that enrichment under Thai law". For its part, Intertek is accused of negligence for failing to identify or report the unlawful working and housing conditions, causing injury to the workers.

The secrecy of supply chains

If *The Guardian's* assertions are correct and this is the first time UK companies have been threatened with litigation in the English courts over conditions at an overseas garment factory, Leigh Day's view is that this higher level of accountability is overdue. In comments to *Inside Denim*, the law firm has said there are a number of reasons why garment industry claims have not come to court in the UK before, including a lack of transparency, what it calls "the secrecy of supply chains" and workers' reluctance to come forward because of fear of reprisals. It also says recent developments in the law in England and Wales mean that there is now, potentially, "greater likelihood of a case being successful here".

In a statement, Leigh Day partner Oliver Holland has been critical both of the Tesco group and of Intertek, saying: "The alleged treatment of vulnerable migrant workers is totally contrary to the ethical image that Tesco seeks to portray in the UK. A company of this size should be taking steps to ensure that workers producing their products are not mistreated. The garment industry's reliance on social auditors like Intertek should end now and they should start to take greater responsibility for their supply chains to ensure endemic issues like forced labour are wiped out." ■



F&F takes its denim collections seriously. It banned its suppliers from using sandblasting more than ten years ago, is an avid user of organic and BCI cotton, and has invested in advanced solutions such as textile finishing technology from Jeanologia.

PHOTO: F&F

Denim matters at F&F

Tesco's F&F clothing label takes denim, and the sustainability of its denim clothing, seriously. It has its own denim sub-brand, F&F Blue, and says that all of the cotton it uses in its jeans is organic or "supports more sustainable farming". F&F says it is proud to support the work that the Better Cotton Initiative does to help cotton producers around the world move to more sustainable farming practices.

In 2010, Tesco banned sandblasting at all of the sites worldwide that produce its denim clothing. It has invested in new ways to achieve the fashionable looks it wants its jeans to have, including working with specialist textile finishing technology provider Jeanologia on some of the styles in its denim collections. It says this also produces savings in energy and water consumption.

Tesco launched its own clothing label in the UK and Ireland in 2001 and F&F clothing is currently available in 12 countries around the world.



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Customer care

The very first mill run by the Sharabati family was located in Syria in 1978, 45 years ago. The family-owned company now operates two factories, one in El-Sadat City, Egypt, which dates back to 1998, and a second one in Kadirli, where production began in 2017. This makes it one of the newest denim mills in the country.

Ongoing investment in the Kadirli mill have sought to align its production with that of the Egyptian plant so that they produce the same qualities and quantities. The combined production capacity of the two plants is roughly 120 million metres. “Now, technically, we can produce the same products in Egypt and in Turkey,” Alessandro Moretti Ciacci, head of sales and marketing, told *Inside Denim* last October when the company opened its doors to its key customers.

In early October, Sharabati invited 250 denim industry professionals, working for brands, manufacturers, sourcing offices or the media, to its Kadirli mill. Among these, 53 international customers working for 31 companies flew in from Italy, Germany, the Netherlands, France, Tunisia, Egypt and Morocco, while 151 Turkish customers representing 69 companies also attended. “Denim is a family, it is a big family, and we wanted to bring this big family together at our company,” says Mr Moretti Ciacci. The event was also an opportunity to show off the nearly brand-new facility. The most recent building, when we visited, was the entrance hall that “was finished just six months ago,” he says.

FACTORY TALK: SHARABATI

Originally based in Syria, Sharabati Denim operates two facilities, one in Egypt and the other in Kadirli, in the south of Turkey, where construction began in 2015. With continued investment in new generation equipment, this site has progressively expanded to double and mirror the production of the Egyptian mill.

Still a work in progress, the Kadirli site was in the process of taking delivery for the solar panels that were to be installed on its rooftops. At the end of 2022, the surface covered represented 4.5 megawatts (MW). When complete, the installation will reach 5.6 MW, Dilek Erik, Sharabati’s marketing manager tells *Inside Denim*.

Efficiency & sustainability

The Kadirli mill has a production capacity of 50 million metres a year, it covers nearly 200,000 sq.m and employs a staff of 1,500. “When I arrived at Sharabati, Kadirli was already one of the best mills. As it is a new mill, it has very recent machinery and equipment,” says Mr Moretti Ciacci. He says 2021 was a good year, as the company sold 100 million metres of fabric. The company’s main mill, in Egypt, has a capacity of some 70 million metres a year and is where its management is based.

Sharabati’s mill in Kadirli is located in the south of Turkey, not far from Syria, where the family-owned company’s first denim factory was in operation from the late 1970s to the early 2000s.

ALL PHOTOS: SHARABATI



“Our high level of in-house expertise is also how we maintain a high level of innovation.”

ALESSANDRO MORETTI CIACCI, SHARABATI

The vertically integrated facility has both open end and ring spinning lines, which manufacture 25 tonnes of open-end and 50 tonnes of ring spun yarns daily. These enable the company to cater for the demand for both types of yarns, with the ring spinning machines delivering the slubby qualities that are currently in high demand.

In the dye house, a new slasher dyeing machine was recently installed next to the two rope dyeing ranges. These operations are conducted under safe working conditions with an automatic dosage dye kitchen. The company says it uses mostly pre-reduced indigo. Its Sahara dyeing process allows it to reduce water consumption (by 50%), chemicals (by 15-20%) and electricity (by 40%). This building also houses an automated warp beam management system that transfers beams from warping to weaving operations that the company claims is unique.

The weaving operations are housed in two halls, one dedicated to denims, the other to gabardines. A total of 288 looms produce the fabrics. Sharabati has calculated that the iSaver looms, machines made by Italian group Iteima, have helped save 900 kg of selvedge yarns per loom per year. With an ear to calls for authentic selvedge denims, the company will be installing vintage selvedge looms from the early 20th century next to these high-tech and highly efficient 21st century machines.

“Our strong point is our internal know-how,” says Mr Moretti Ciacci. “The rope and slasher dyeing machines were set up by our own staff. Our high level of in-house expertise is also how we maintain a high level of innovation.” This competence and keenness for technical innovation spans the entire company, as he says that even Mohammad Sharabati, company president and owner, is adept at running machines and “loves denim technology”.

Sharabati’s commitment to sustainable innovation can be seen in the mill’s caustic soda recovery unit. Here, the mercerising agent is reused instead of being discharged. The company says it can recover up to 75% of the caustic soda it uses. Water evaporated from this unit is also captured for reuse in the mercerising process itself.



From left to right, Mohammad Sharabati, president and owner, Mohannad Shehneh, head manager of the company’s Istanbul office, and Alessandro Moretti Ciacci, head of sales and marketing welcoming visitors to its open house event last October.

Sharabati is currently building a new wastewater treatment system in Kadirli which will combine chemical and biological processes and should have a capacity of 2,500 m³ per day once it is in operation.

Customer focus

The on-site stock can house some 5 million metres of fabric, and the company also stores its goods in warehouses located closer to garment manufacturers, in Tunisia and Morocco. These make it possible to offer fast delivery times and were cited by Sharabati’s customers as a big plus in working with the company.

The company’s goal is now to make its achievements, with regards to innovation, sustainability and customer service, better known. Behind the scenes, it has developed many greener denim production methods; it is time now, it believes, to communicate its efforts to reduce its environmental impacts. “We were the only denim mill to take part in the Circular Days event in the Netherlands last fall,” points out Ms Erik. Its closeness to key buyers and manufacturers was made particularly clear at the open house event last fall, attesting to Mr Moretti Ciacci’s assertion that Saharabati “is a very brand-oriented company”. ■



The mill has both rope dyeing and slasher dyeing ranges.

Not so limited

Indeed, between the age-old image we might have had of a country of sweatshops, and the reality of denim manufacturing in Bangladesh today, this country has a surprise for you. Fact is, today Bangladesh is the most scrutinised and monitored denim manufacturing destination one can find in the world. Personally, I have seen more denim sweatshops in dismal and dark suburban zones in Europe, which you don't want to hear about, than in Bangladesh. But that is another story.

Today I would like to take you to DEL, the name insiders use to refer to Denim Expert Limited. And when talking about Denim Expert Ltd, we have to speak about its visionary founder, the man, the myth, Mostafiz Uddin.

The first time I heard of Mostafiz was around 2011. It was the day that my friend Sandeep Agarwal, of Denim & Jeans, and a French sales agent whose showroom was close to my studio, introduced me to him. He was, so I understood, a must-know in the industry. I instantly realised that he was a “developer”, a “maker” — he had so many projects a minute that it was almost a challenge to follow him.

Mostafiz grew up in Bangladesh, and right from his youth he has promoted his country and sought to enhance awareness of its know-how. And, yes, he does that well. I could write a thousand lines on the many achievements he has instigated for his homeland, but let's focus here on his achievements in manufacturing jeans.

Mostafiz began working for the local textile industry as an agent. In denim, and in his eyes, the Bangladesh sourcing landscape was not at the level it should be. This led him to create the Denim Expert Ltd factory that opened in 2009. DEL is situated in the city of Chittagong, south of Dhaka. It is a city well-known for its “ship-cutting services” with its proximity to the large Karnaphuli river delta, but it also has several areas dedicated to manufacturing, which is where DEL first opened. The facility was built in 2008 according to high security standards with regards to earthquake resistance and fire safety systems. It also has a state-of-the-art water treatment plant. One of the company's targets is to reuse 100% of its water, and shift to solar power. In front of the DEL building, one can see flowers growing and in the pond many kinds of fish swimming in the cleaned and treated water released by the plant. Yes, on arrival at the factory, it is obvious that special love and vision have been bestowed upon the infrastructure. And not only on the infrastructure.

FACTORY TALK: DENIM EXPERT LIMITED

If you have never been to Bangladesh, you should be prepared to see quite a difference between its former reputation and expectations and today's reality. A telling example is the Denim Expert Ltd's ready-made garment factory in Chittagong.



The company employs slightly more than 2,000 workers, which is not a lot by Bangladesh standards. The factory is set up to process high quantity orders (per style) but can also take on smaller minimum order quantities (MOQs) for special designs and sophisticated washes. This is where Mostafiz's hands-on and down-to-earth know-how shines through. He loves to spend time in the laundry and personally develops elaborate washes. A bandana wrapped around his head, grinding machine in hand, he indulges his passion for the world of denim and the complex washes he has become famous for. The factory has a full array of denim-making equipment, including, of course, its own laundry.

Company owner Mostafiz Uddin has a hands-on approach when developing washing and fading processes.

ALL PHOTOS:
DEL / TILMANN WRÖBEL



Workers at the DEL denim making facility.



The company's innovation room houses several thousand samples.

But there is more. In Bangladesh, a factory plays an important role with regards to the health of its workers and managers. Compared to European standards, the sickbay at DEL is large, and the medical team does truly take care of the staff's health. During covid, when workers were not allowed to go to their factories, it was pretty much akin to not allowing them to see their doctors. The commitment of DEL and its sickbay team goes above and beyond average such services. Numerous workers are treated on site, and many were able to have major hospital surgeries financed by the company.

On a similar note, and in line with Mostafiz's motto "people before business", DEL was the first factory in Bangladesh to offer a "trans-inclusive" environment, hiring transgender employees. This shows that people count at DEL.

With regards to production, many major international retailers and brands are DEL clients. Buyers and designers are often invited to visit the company's Innovation Room. This space, accessed only via a biometric fingertip recognition system, is where DEL stores and exhibits its samples, which number in the few thousands, with varied fit, style, fabric and wash combos. It is DEL's treasure trove, or holy grail.

In addition, Denim Expert Ltd participates in many global causes. It joined the Partnership for Cleaner Textile (PaCT) project created by International Finance Corporation (IFC) in Bangladesh. DEL is also a member of the International Apparel Federation (IAF), the Sustainable Apparel Coalition (SAC), ZDHC, and the United Nations Framework Convention on Climate Change (UNFCCC). As I write, more may be added.

Surprised? Not me. Where there's a will, there's a way. Ultimately, it is always a matter of people. Good people. ■



Tilmann Wröbel is the founder of Monsieur-T, the 'denim lifestyle' studio. He started his career as a haute couture designer before moving into streetwear and denim. He has worked as a designer and consultant for some of the world's top brands. He is based in Dusseldorf, Germany, and Biarritz, France.

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Advance Sico's specially designed wastewater treatment system is but one example of its innovative and sustainable "spirit", according to the company's general manager Ms Wang.

ALL PHOTOS: ADVANCE DENIM

A new route forward

Advanice Sico, the Vietnamese counterpart to China's oldest denim mill, Advance Denim, commenced operations in 2020. As overseer of both sites, Ms Wang, who first joined the manufacturer's headquarters in Foshan's Shunde district, in Guangdong, upon completion of her textile engineering studies in 1993, deconstructed Advance's full denim production process before work even started on Advance Sico, with the clear aim to "make it the most innovative and sustainable denim factory in Vietnam". Located in the resort town of Nha Trang along the country's south-central coast, the mill is outfitted with similar "cutting-edge" technologies as those installed at Advance Denim in China, with the added benefit of a site-specific, eco-tech water purification system and its own team of in-house Japanese rope-dyeing technicians.

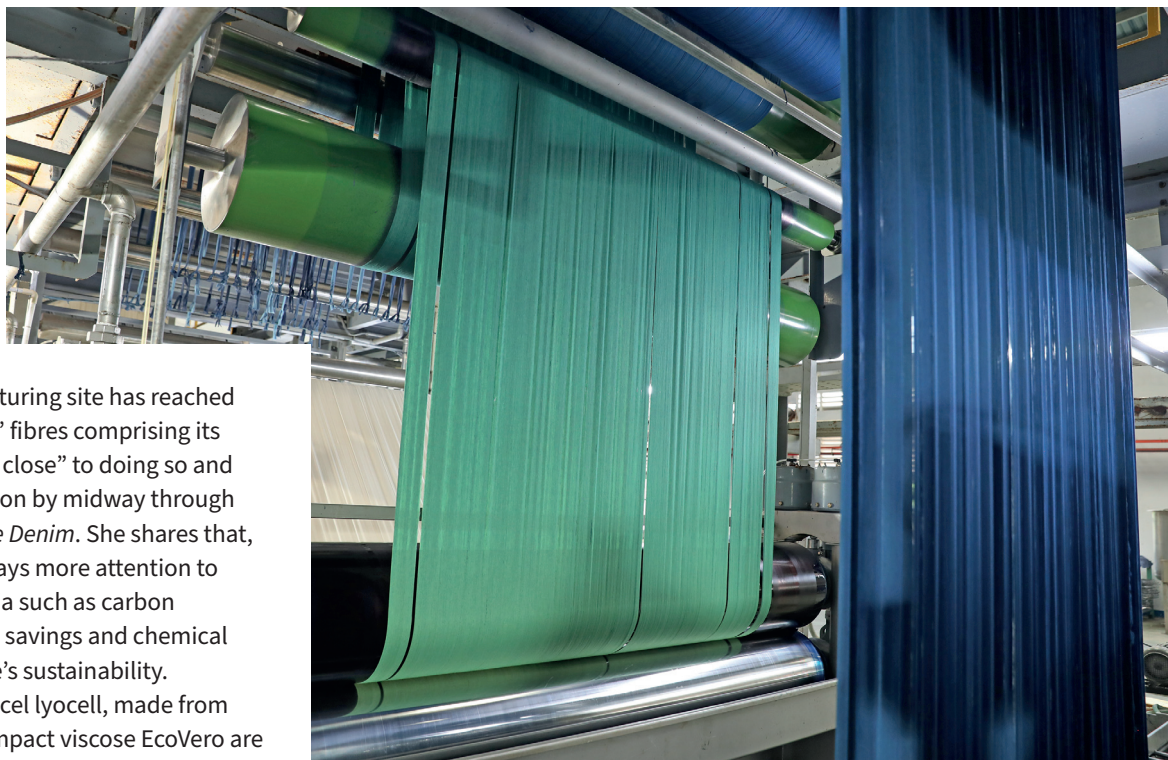
Nha Trang's situation also facilitates the more efficient shipping of Advance Sico's fabrics, Ms Wang explains, as well as speeds up the supplier's ability to fulfil orders placed by customers now manufacturing nearby or in neighbouring countries, such as Cambodia, due to relatively cheaper production costs and advantageous free trade agreements with Japan, the European Union and other partners. The beauty of the town's natural environment only underscores the need to act responsibly, to mitigate working in a way that might inconvenience future generations, she adds.

FACTORY TALK: ADVANCE DENIM

Advance Denim's general manager, Amy Wang, takes stock of the competitive advantages of the company's latest factory, challenging the "common" misconception that Vietnamese-made denim is in any way "more basic".

Shared aspirations

In this vein, Advance has been working towards company-wide strategic goals around increasing the proportion of sustainable fibres used throughout its product lines for the past six years. Its target was for 90% of fibres to be derived from "green" sources by 2023. Capacity at Advance Sico is just under 1.4 million metres of denim a month, with room to grow with demand (its sister mill in China can make up to 36.6 million metres annually, nearly three times more). The facility has already installed 160 rapier looms by Picanol, in addition to two rope-dyeing ranges and two new pre-shrinkage finishing machines to support the sanforisation process. Thanks to their close ties, Advance Sico "inherits" the same "innovative spirit and ability" and access to the latest technologies which has served to benefit researchers at its Chinese head offices over the years.



Although neither manufacturing site has reached the threshold of 90% “green” fibres comprising its fabrics, the business is “very close” to doing so and expects to realise this ambition by midway through the year, Ms Wang tells *Inside Denim*. She shares that, across the board, Advance pays more attention to environmental impact criteria such as carbon emissions, water and energy savings and chemical usage when assessing a fibre’s sustainability. Lenzing’s biodegradable Tencel lyocell, made from wood cellulose, and lower-impact viscose EcoVero are considered two “good” options. Approximately 1,000 tonnes of Tencel were used by Advance’s Shunde denim-making facility in 2018.

The team in Nha Trang also benefits from Advance Denim’s investments in new technologies and the in-house technical expertise it has honed since its founding in 1987, including an eco-development centre in Shunde.

Expanding impact

Another such preferred fibre singled out by Ms Wang is Good Earth Cotton, a traceable and “carbon positive” regenerative cotton crop grown in Australia and, more recently, on in-conversion farms in India. Advance Sico announced its partnership with Good Earth Cotton last October and the first fabrics to come from the collaboration will be released during the first half of this year, she confirms. Over time, the Vietnamese mill will gradually increase use of this fibre in its denim fabrics “as conditions permit”. Advance Denim, meanwhile, was the first Chinese denim mill to be certified by GOTS (Global Organic Textile Standard), it says, and 40% of the cotton it used in 2019 was sustainably sourced, according to its website. Advance Sico also works to GOTS’ specifications.

Examples of other eco-friendlier fibres now often requested by “significant” brands, bound by their own sustainability targets, include recycled cotton, hemp, recycled polyester and biodegradable polyesters and nylons, Ms Wang states. Yet, finding partners that share Advance’s enthusiasm for developing greener fibres, and are willing to invest in the appropriate processes, is an ongoing challenge. The company still managed to recently launch a new collection with a higher-than-before proportion of recycled fibre content thanks in large part to what Ms Wang says is an innovatively spun yarn whose “unique construction” limits fibres’ loss of strength and can thus deliver improved durability. Enhanced fabric softness and a greater “vintage” slub texture also result, she says, describing the hand-feel as comparable to that of a traditional denim.

Tools and trade

A sustainability goal that Advance Sico did tick off ahead of the new year, though, is 100% use of speciality chemicals supplier Archroma’s aniline-free, pre-reduced Denisol Pure Indigo 30 for “cleaner and safer” dyeing with “minimal” sodium hydrosulfite. Advance Denim originally adopted this process at Shunde not long after the liquid indigo initially hit the market in 2018. Researchers at the company further optimised the dye application process with the introduction of BioBlue Indigo technology in 2021, which enables the removal of hydrosulfite from production. BioBlue results in effluent with 70% lower chemical oxygen demand (COD) and 55% lower biological oxygen demand (BOD) than would typically be observed following use of the compound as a reducing agent, as validated by a third party. Similarly, the company’s in-house Bigbox is an inert gas system that dyes warp yarns and replaces the eight to 13 boxes conventionally used to dye denim with a single “very big” box. This results in water savings of up to 98% versus rope dyeing.

For the Nha Trang site, the team designed a reverse osmosis water purification system capable of processing up to 3,000 cubic metres of wastewater every day. The “state-of-the-art” circular water technology developed for Advance Sico biologically cleans the wastewater it generates by mixing it with air and bacteria after an initial screening treatment. Next, remaining organic matter is taken out of the water via ozonation, followed by an ultrafiltration process and reverse osmosis purification, which can “remove up to 90% of all COD”, prior to refiltration. Having passed through this system, water was found to be close to 50% cleaner than the national baseline standard for COD, helped by the mill’s relatively low hydrosulfite use, Ms Wang tells us. Clean water then circulates back to the denim finishing area, and the indigo filtered out is also recycled. Advance’s ultimate goal is to recycle 100% of wastewater generated in its plants, to truly close this loop.

Generally, today’s market is perhaps too focused on the eco-friendliness of different fibres, Ms Wang believes. The broader impact of the production process in full is still largely overlooked. “[Some brands and consumers] don’t quite understand or realise its importance,” she explains. With more education, transparency and traceability from farm to shelf, Ms Wang hopes customers will come to appreciate the multiple steps taken to produce sustainable denim, whether in Vietnam, China or elsewhere – and be willing to pay for it. ■



Paris-based trend consultant and menswear designer, François Lavaux, is a sneaker and denim head who works primarily for trend forecasting agencies. He has also presented a womenswear collection at the prestigious Hyères international fashion design competition. When not scouting out trends, he scouts out vintage denim and workwear garments and upcycles them into new pieces.

PHOTOS: FRANÇOIS LAVAUX

CLOCKING ON...

Paris-based freelance designer **François Lavaux** plies his colorist skills to upcycle vintage jeans and workwear in his off-time.

Breathing new life into old denims

8.00am

I wake up naturally because I hate alarm clocks and, as a freelancer, I am allowed and happy to do it quietly every day! Before getting out of bed, I read emails and check my Instagram wall and Vinted. People would stop me in the street to ask where I got my jeans, so I decided to make some and now I have a shop on Vinted.

8.30am

Breakfast is butter on gluten-free toast, or cereals with a piece of fruit, and green tea. Then I take my shower and start my day.

9.00am

Every day is different. Some days I have a Zoom conference with the trend agencies I work with, other days I work/design/research on my computer for my freelance missions. This could be a menswear trend book for a Parisian agency or a contract for a menswear brand.

12.30pm

Lunch break at home, or I go out for lunch. This could be with a freelance friend who has the same schedule as me or with a trend agency CEO.

2.00pm

I like to hunt vintage stores in Paris, often at Guerrisol or Free'P'Star, to find quality and inexpensive pieces to repair, rework or over-dye. I usually look for denim or workwear garments from the nineties to nowadays. Mixing worn denim shades is cool and allows the upcycled garment to retain its soul.

I have always repaired my own jeans myself. My grandmother sewed a lot, making and repairing clothes for everyone, and as a child I would spend a lot of time watching her.

3.00pm

To the BHV Paris department store to buy dyes. I would prefer to use natural dyes, but they are not easy to find; my goal in my upcycling workwear projects is to be as close as possible to zero pollution. When working with denims, I never dye them, but choose rather to mix them all together in the upcycling process.

4.00pm

Back home, I start the process of upcycling, which could require some sewing or dyeing. My home is my sewing atelier, and it becomes a mess



in seconds! I usually use my terrace for the dyeing operations both to avoid stains all over the place and to have more space to create colourful camouflage motifs. These days, I am working on a fifteen-piece order from a streetwear boutique called Isciacus Store, which is close to where I live; it has to be delivered this February. When I am working on denim pants, I'll repair and patch them on the front with a double knee insert, for instance, which was taken from a worn workwear vest. For workwear jackets, I tend to overdye them in a creative medley of colours.

6.00pm

Back to my desk where I finish my morning freelance work, which is mainly menswear trend books research and design.

7.00pm

I go to a yoga class, also next to my home, which usually lasts 90 minutes. It is a lovely yoga class because not only does it help me relax and wind down, but I also feel really at home with the coaches and other club members.

8.30pm

Dinner time, while watching something fun on TV or a show on Netflix. I've been watching *Sex Education* and *Emily in Paris* recently.

10.30pm - 12.00am

I try to go to bed before midnight for an optimal sleep to feel completely refreshed waking up. ■



Hybrid denim/workwear redesign.



The background is a construction site near the Palais Royal in Paris.

BLUEZONE

INTERNATIONAL DENIM TRADE SHOW

ADA DENIM
AKDENIM | AKKUMAS
ALTERO ACCESSORIES & CO
ART N CRAFT
ATELIER FASHION TEKSTIL URETIM
ATLASDENIM
AYDENIM
AY YILDIZ FABRIC
BARTATEKS TEKSTIL
BERTO INDUSTRIA TESSILE
BLUE POINT
BORKRO TEXTILE
BOSSA
BROTHER INDUSTRIAL
CADICA
CALIK DENIM
CANLIOGLU TEKSTIL
CHITTAGONG DENIM MILLS
COTTON FABRIC

KASIV LEATHER LABEL
KILIM DENIM
KIPAS
KOMET METAL ACCESSORIES
KT TRIMS & ACCESSORIES
LEFAXX JEANS
LENZING AG
MAIBOM
MARITAS DENIM
MEKOTEX
MONSIEUR-T. EURL
NZ DENIM
OFFICINA +39
OLIMPIAS FABRICS
ORTA
PANTHER DENIM / TAT FUNG TEXTILE
PIONEER DENIM LIMITED
PROSPERITY TEXTILE
RAYMOND UCO

DISCOVER

COTTON FASHION BLUE
DENIM AUTHORITY TUNISIA
DENIM HOUSE
DENIM TEAM
DNM DENIM
DYNAMO
EFNA TEKSTIL
ELLETTI
EREKS - BLUE MATTERS
EVLOX - TAVEX
F'BLUE DENIM FABRIC
FORTEKS
GAP PAZARLAMA
GONSER GROUP
I.MA.TEX SRL
INDIGO TUNEL TEKSTIL
ISKO & ISKO LUXURY BY PG
ISKUR DENIM
ISLAND DENIM
ITALIAN LUSTER
JEANSMUSEUM
JOF LABELS

REALTEKS
SAITEX
SAPPHIRE FINISHING MILLS
SHARABATI - DENIM
STITCH & TRIM
STROM
SPHYNX
SWIFT DENIM
TEJIDOS ROYO
TEXPRO CORP
THE FABRIQUE
TINTES EGARA
TÜSA DENIM
VAN DELDEN / DIAMOND DENIM
VELCOREX SINCE 1828
VICUNHA
W DENIM BY SIRIKCIOGLU GROUP
WISER
XINDADONG TEXTILE
YILMAZ
ZAITEX
ZARES TEXTILE

24 + 25
JANUARY
2023

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