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Published by : Cotlook Limited, PO Box 111, Liverpool, L19 2WQ, United Kingdom.
Tel : 44 (151) 644 6400 E-Mail : editor@cotlook.com www.cotlook.com

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Making the case for cotton – urgently



Mike Edwards,
Editor, Cotton Outlook

In this, our fourth publication to mark World Cotton Day, we again focus on some of the vast number of new initiatives and technologies that are proliferating across the globe. All share the objective of building on cotton's inherent credentials in the area of sustainability: environmental, social and – last but not least – economic.

In this last regard, it would perhaps be an understatement to say that trading conditions in the international cotton market have been challenging since World Cotton Day was celebrated last year. By early October 2022, world prices had already collapsed from

**Cotlook A Index 2020 -
April 2020 to September 2023**



the peak attained in May of the same year – the culmination of a bull run that began in April 2020 in the most unpromising of circumstances and was to last for more than two years.

It is true that during the past year or so the world market has regained a semblance of stability following the huge price movements that went before. However, macro-economic headwinds have taken



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their toll on downstream demand for textiles and clothing and thus on mill consumption of raw cotton. The speed with which prices collapsed from their peak in May 2022 – the A Index lost almost half of its value in just six months – and the subsequent stagnation of demand have been damaging to the interests of producers, traders and spinners alike.

That the economic viability of cotton processing has been under strain is understandable, given the wide price swings and market disruption alluded to above. It is perhaps an uncomfortable truth that cotton is unlikely ever to be either more stable or more competitive in price than most synthetic fibres. In nominal terms, world cotton prices, as measured by the A Index, are close to their 15-year average and well above the 30-year average. However, the inflationary pressures unleashed over the recent past have raised most cotton producers' break-even threshold significantly.

While consumption of all fibres has suffered in the prevailing environment, it seems that cotton's market share has also slipped. That is deeply frustrating at a time when cotton should be asserting its inherent qualities as a sustainable fibre and recapturing its share of textile markets.

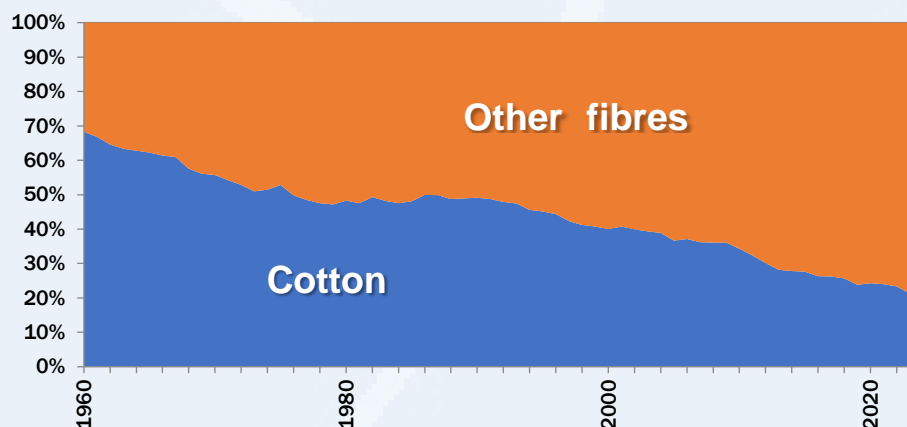
Retailers of textiles and clothing frequently assert that their customers have a growing appetite to know and understand the materials and processes used in the manufacture of their products. The difficulties posed by traceability in the long and complex cotton-textile supply chain are daunting but the sector is rising to the challenge. The quest for greater transparency and traceability is sometimes an arduous (and costly) one but progress is being made, thanks in large part to innovation and cutting-edge technological developments.

Is the same rigour being applied to

the provenance of garments made from synthetic fibres? Is the customer interested in the location of the oilfield from which the primary raw material was extracted or which petro-chemical plant produced the feedstock? How many consumers are even aware that their garment is derived from fossil fuels? Or might it be that the provenance of chemical fibres is an area into which brands would prefer not to enter in too much detail? It seems curious that, to some extent at least, the mainstream public debate about plastic pollution has so far bypassed the textile and fashion industries.

Cotton, a natural fibre, is easily biodegradable, as our entertaining contribution from Australia demonstrates with great clarity. By contrast, at least for a lay person, it appears surprisingly difficult to establish how long polyester, a polymer, takes to degrade. Using the familiar internet research tools, one discovers that a minimum period of 20 years may be required – some sources imply a timeframe ten times longer. But if we adopt the lower figure as a working assumption, simple arithmetic produces some sobering results.

The share of global textile fibres claimed by cotton has been falling since the middle of the 20th century as polyester output has expanded, and today accounts for less than 22 percent of global consumption, according to the latest data from ICAC. It is estimated that world production of polyester (filament and staple fibre) will this year surpass sixty million tonnes, more than twice that of cotton (global production of our natural fibre has only once surpassed the 27-million tonne mark). Applying our 20-year metric, at the current rate of production, the implication is that the world will have



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produced 1.2 billion tonnes of polyester before the fibre we are producing today has fully degraded. Could that be sustainable?

Less than ten percent of world polyester output is produced from recycled PET bottles. Moreover, labelling of recycled polyester seems to be lacking in uniformity and clarity. Different standards exist in various geographies and differing proportions of polyester qualify a garment to be labelled as made from recycled fibre. The writer was surprised to discover that for some that ratio is as low as five percent. In the debate about sustainable textiles, polyester would seem to be the proverbial 'elephant in the room'.

The proposition that renewable, biodegradable, natural fibres are inherently more sustainable than their fossil fuel-derived, synthetic counterparts seems unanswerable. But that is emphatically not an endorsement of the status quo as far as the cotton industry is concerned. Rather, as several contributions to this publication demonstrate, in recent years we have seen

a proliferation of initiatives to enhance cotton's sustainability, combining innovation and technology, at all stages of the value chain.

In this publication, we attempt a (by no means exhaustive) survey of some of these programmes. Many are evolving rapidly and each has its own unique characteristics. The desire to differentiate one set of criteria for improvement from another is understandable, but an unintended consequence may be to ignore the aforementioned elephant in the room. We must continue to make the generic case for cotton. As the Executive Director of the International Cotton Advisory Committee notes astutely, to debunk the misconceptions about cotton is an urgent task.

In the cautionary words of the 18th Century satirist, Jonathan Swift, "Falsehood flies, and truth comes limping after it, so that when men come to be undeceived, it is too late."

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World Cotton Day: Cotton for Good



Eric Trachtenberg,
ICAC Executive Director, and
Mike McCue,
Director of Communications,
International Cotton Advisory Committee

World Cotton Day, held on October 7 each year, began as a casual conversation in the International Cotton Advisory Committee's (ICAC) headquarters in Washington, DC, on a cold and snowy day in 2019. From that humble beginning, it was first embraced by the Cotton-4 countries – Benin, Burkina Faso, Chad, and Mali – followed by many others around the world.

Building on this momentum, the inaugural World Cotton Day event in 2019 at the World Trade Organization (WTO) headquarters was attended by more than 800 participants, including ministers, heads of international organisations, development assistance partners, and the global cotton community.

World Cotton Day was created to:

- Highlight the critical role that cotton plays in economic development, international trade, and poverty alleviation.

- Promote cotton on a global scale to support and potentially even increase demand for cotton.
- Highlight cotton's sustainability by refuting the myths and misunderstandings about cotton by promoting the *#TruthAboutCotton*.
- Boost collaboration between businesses and organisations around the world to the betterment of cotton.

As evidence of its success, in August 2021 – less than two years after it was launched – the 75th session of the United Nations General Assembly adopted UN resolution (A/RES/75/318) to reserve 7 October as World Cotton Day on its permanent calendar. This recognition of World Cotton Day acknowledges the vital role cotton plays by providing benefits for 100 million families in more than 75 countries and its broader global economic and social importance, from the farm to the consumer.





Lastly, and most importantly, World Cotton Day was created to be a *celebration* of cotton! From its inception, World Cotton Day was always intended to be a fun and interesting way to highlight the important and positive stories of the cotton sector.

Cotton for Good

As a part of World Cotton Day, individuals, governments, and organisations coordinate and hold their own events all over the world each year, and many of those events have their own individual themes.

Event localisation became especially important after the successful inaugural World Cotton Day event in Geneva at the WTO headquarters in 2019 was followed by the COVID-19 pandemic. Once the world went into lockdown, it was impossible to hold any major in-person event – or for most people, even a small face-to-face meeting.

Under those difficult circumstances, the six founding organisations of World Cotton Day (Food and Agriculture Organisation (FAO), International Trade Centre (ITC), United Nations Conference on Trade and Development (UNCTAD), United Nations Industrial Development Organization (UNIDO) and the WTO, and of course the ICAC) had to figure out how to keep the momentum going during a global lockdown – and the solution they came up with was to ‘outsource’ the event to the entire world. People couldn’t meet in large groups, so we encouraged them to celebrate cotton in whatever way they could, and they rallied to support cotton in a big way.

In some places, people were able to gather in person.

They arranged field visits, trade fairs, conferences, and parades to remind people of cotton’s importance to their communities.

Unfortunately, most people could not meet in person – but they did not let that stop them from celebrating cotton on 7 October. All over the world, people organised online conferences, arranged educational sessions for smallholder farmers, and posted on social media. Some people used cottonseed oil to cook their meals, demonstrating that cotton provides food as well as fibre. Some people held Twitter and essay contests while others made a host of very professional videos.

All these celebrations focused on the permanent theme of World Cotton Day: ‘Cotton for Good’. There are many reasons that this was chosen as the permanent theme for 7 October. In addition to promoting all the good things that cotton brings to our lives, it helps to fight the many myths and mistruths about cotton that are sometimes prevalent in the media and the popular imagination.

Although many people tend to think of cotton only in terms of the fibre and the clothing that we wear, that’s only half of the story. The seeds can be used to grow more cotton, of course, but they can also be used to make cotton seed oil for cooking. They are used in seed cake to feed to livestock as well. Cotton by-products are employed in the manufacture of boards for construction, charcoal, currency notes, pharmaceuticals, cosmetics and much more.



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In fact, nearly 100 percent of the cotton plant is usable for one application or another, and because it is a xerophyte – a semi-arid plant – cotton only requires 600 millilitres of rainwater annually. That means that it can be grown in regions where many other food crops cannot grow, and the fibre and seeds can be stored for future use. The sustainability case for cotton comes from the fact that it is renewable and biodegradable, making it a highly sustainable raw material for the textile industry.

On top of this, cotton can be a powerful vehicle for poverty reduction and economic growth. As a major cash crop, it can also create opportunities for quality work along the value chain from the farm to ginning, spinning, textiles, and garments. For these and many other reasons, cotton has come to be known as the ‘poverty-alleviating crop’.

The founders to gather in Austria

For the first time since it was launched in 2019, World Cotton Day falls on a Saturday this year. Although 7 October will always be the official date of World Cotton Day, the fact that it falls on a Saturday has required the founding organisations to be flexible.

In 2023, the official Founders’ Event will be held on October 4 at UNIDO headquarters in Vienna. The heads of the six founding organisations will be featured speakers at the event, which has the theme, ‘Making cotton fair and sustainable for all, from farm to fashion’. There will also be an exhibit area and a fashion show. For more information, click [here](#).

In addition to the Vienna conference, the ICAC has organised a World Cotton Day exhibit in Taiwan from 18-19 October as part of the ICAC’s International Seminar and the huge TITAS trade show in Taipei. It will be designed to show how innovative and sustainable cotton can be. For example, exhibitors will display cotton clothing that incorporates fibres from pineapples and bananas. They will demonstrate that not only can cotton itself be sustainable but also that cotton’s versatility can help other agricultural products reduce their own carbon footprint. By incorporating fibres from pineapples and bananas, cotton can make use of fibres that would otherwise be burned or discarded. At another display, researchers will show how they use short cotton fibres to make mats from low-quality, low-Micronaire cotton. These mats float on water and can absorb up to 50 times their weight in oil, making them potentially very valuable for protecting the environment when there is an oil spill.

Cotton needs support year-round

World Cotton Day offers a unique opportunity to renew our commitment to a sustainable cotton sector for better production, better nutrition, a better environment, and a better life, leaving no one behind. It will increase the visibility of the cotton sector and awareness of the critical role that it plays in economic transformation, agricultural and value chain development, international trade, and poverty alleviation. The observance also aims to highlight the importance of sustained economic growth, inclusive and sustainable industrial development, and quality employment.

It is important to remember that as successful as World Cotton Day has been in its first few years of existence, celebrating cotton is not something to be done only on 7 October. For years, myths have been spreading about cotton that hurt its reputation and could potentially even reduce demand, which would affect millions of people around the world. While we emphasise cotton on 7 October, spreading the *#Truth* about all the positive things that cotton brings to our lives is something we should do all year long.



Sustainability initiatives – navigating a diverse landscape



Ruby McGrath,
Trade and Markets Reporter,
Cotton Outlook

Awareness of sustainability-related issues amongst consumers has been growing steadily for some years. This year's extreme weather events have no doubt sharpened that consciousness. The devastating effects of climate change have been felt across the globe, be that as a result of floods, droughts, wildfires, or record temperatures.

While emissions from industry and aviation may feel far from our control, we do have an influence over the textiles that clothe us and enter our homes. Images of mountains of discarded clothes and textile waste demonstrate further the consequences of our unsustainable consumption habits and production methods. Clearly, there is a long way to go in reducing our footprint on the environment including in the cotton and textiles industries, but consumers need support to help them make informed choices.

Steps to meet this need are increasingly being taken across

the supply chain. However, the result has been a wide range of differing definitions, methodologies, solutions, initiatives, and further questions. What follows is a selective attempt to take stock the current state of play.

The volume of cotton produced under the larger sustainability initiatives has been increasing. According to a recent survey from the International Cotton Advisory Committee, cotton output under 'identity' programmes (such as Better Cotton, US Cotton Trust Protocol and organic) rose from 6.2 million tonnes in 2018/19 to around 6.8 million tonnes in 2021/22.

As mentioned, however, there is still a lack of synchronisation in the approaches taken by initiatives and the areas they choose to focus on. A World Wildlife Fund study, *Benchmarking of Sustainability Standards used in Cotton Production*, this year highlighted the differences of emphasis between the various programmes with

regard to specific issues such as climate change, soil health, water use and workers' rights by major standards. Sustainability standards also diverge in their organisation and funding, targets, metrics and reporting methods, as well as their approaches to questions regarding organic and regenerative production models, traceability, and so on.

Major sustainability programmes for cotton

Better Cotton, a non-profit initiative, is the largest in terms of production, now accounting for 20 percent of the world's total, since it includes in its figures the cotton produced under programmes benchmarked with BC, such as Australia's myBMP and Brazil's ABR. Better Cotton output in the 2020/21 season totalled 4.7 million tonnes across 24 countries (Brazil, India and Pakistan being the biggest producers). The figure stood at just 73,600 tonnes ten years ago and had been increasing ever since, reaching a peak of 6.2 million tonnes in 2019/20 before dropping in the following season, the reduction attributed by the organisation partly to the Covid-19 pandemic, weather and market difficulties, as well as changes to the programme.

Better Cotton has a broad scope, working across the supply chain from small and large farms to companies and retailers and aiming to produce and promote more sustainable cotton (for example with lower greenhouse gas (GHG) emissions, water and pesticide use, and better soil health) as well as to improve growers' livelihoods and the economic development of farming communities. Better Cotton seeks to achieve this via investment, training, criteria-setting, targets, and tracing cotton grown under the scheme via the Better Cotton Platform.

Cotton Made in Africa (CMiA), also a non-profit initiative of the Aid by Trade Foundation, works in ten cotton-growing countries in Africa and produced 715,000 tonnes of verified lint in 2022, accounting for 40 percent of the continent's total. That figure is almost four percent higher than in 2021, and annual reports show steady year-on-year increases since the programme's launch in 2012. The quantity of CMiA-labelled textiles

on the market has also risen each year: the figure in 2021 was over twice that a year earlier at 600 million.

This initiative, like Better Cotton, also focuses on protecting soil, biodiversity, water and the climate. A soil-health project, CAR-iSMA, is currently active, training small-scale farmers on regenerative agriculture practices such as crop rotation and zero tillage. CMiA also excludes the use of genetically modified organisms (GMOs), something not required by the other initiatives mentioned here with the exception of the organic schemes. The organisation offers a separate organic cotton standard by which farmers can be verified.

The CMiA programme has a particular focus on improving the living and working conditions of smallholder farmers specifically, as these make up the majority of cotton producers on the continent. The organisation seeks to achieve this end through trade, for example by promoting their cotton and connecting growers to international markets. Furthermore, its Community Cooperation Programme invests in training for growers, schools for children, women's projects and water and hygiene facilities in grower communities.

The US Cotton Trust Protocol (USCTP), meanwhile, is a membership-based initiative that began its operations much more recently in 2020, with a global membership comprising mills, manufacturers, brands, and retailers. 376,000 tonnes of US cotton were produced under the scheme in the 2021/22 season. According to ICAC, 376,000 tonnes of US cotton were produced under the scheme in the 2021/22 season.

Grower participation expanded rapidly following the pilot year, with 1.1 million acres enrolled in the programme in 2021/22, representing 10 percent of the US crop. The USCTP has completed nine traceability pilots with a further 15 planned. In addition, four million bales are projected to be produced over the next five years under the Climate Smart Cotton programme (helping growers to adopt 'climate smart' practices), indicating that growth is expected for this initiative too.

The Protocol also seeks to reduce the environmental footprint of cotton production: supporting regenerative



methods and measuring progress against six metrics including GHG emissions, water, energy and land use, and soil conservation.

Data capture, monitoring and traceability are given high priority, as demonstrated by the publishing of its progress against the metrics, and by the Protocol Consumption Management Solution (PCMS). The Solution offers article-level transparency to track cotton across the supply chain, with two levels of verification, aided by blockchain and digital technologies.

Bodies such as the Textile Exchange (TE), Global Organic Textile Standard (GOTS), and Organic Cotton Accelerator (OCA) promote organic cotton production (barring the use of GMOs and chemicals such as synthetic fertilisers and pesticides) as the preferred approach to protect soils, the environment and biodiversity.

The ICAC estimated global organic production in 2021/22 at 342,000 tonnes, or 1.4 percent of total world cotton output. OCA stated that 77,958 hectares were planted to cotton under its scheme (including organic, regenerative, and in-conversion cotton) in 2021/22, up from 24,022 a year earlier. Meanwhile, 65,547 tonnes of seed cotton were procured in the initiative, up from 31,290 in 2020/21. Differences of emphasis are, however, evident between organic initiatives too.

The GOTS, for example, sets mandatory production and

manufacturing requirements for organic certification, but also social criteria, prohibiting poor labour standards. Textile Exchange, meanwhile, encourages brands to source organic or ‘preferred’ cotton from initiatives such as those mentioned here, and to support farmers in the often expensive transition to organic and regenerative production. The Exchange has an Organic Content Standard and a Blended Content standard for growers to verify their crops by. It also publishes a Material Change Index, tracking the progress of hundreds of volunteer brands toward sustainable sourcing.

Furthermore, TE has launched a strategy called ‘Climate+’, with the goal of reducing GHG emissions from fibre and raw material production across the industry by 45 percent by 2030, through tailored strategies on soil, biodiversity, water, as well as material substitutions, innovation, and slowing growth. OCA, finally, has a particular focus on increasing organic production and improving profitability and resilience for growers through non-GMO seed availability programmes, research, data collection and collaboration.

The forgoing represents only a partial view of the landscape as far as cotton sustainability initiatives are concerned. Other programmes exist in China, Europe and elsewhere. Numerous manufacturers, brands and retailers, motivated by the need



to defend their reputational integrity and seek advantage in a competitive global market, have their own programmes. The whole adds up to a diversity that even the most discerning consumer might at times find bewildering.

Most of the programmes described operate outside the purview of governments. However, in March 2022, the European Commission published the EU Strategy for Sustainable and Circular Textiles, which contains some important conclusions with regard to the environmental impact of textiles and makes wide-ranging and radical proposals to reduce that impact. In June this year, the European Parliament voted overwhelmingly in favour of adopting the Strategy's recommendations. However, Euratex, which represents the EU textile and apparel industries, has expressed concerns regarding the potential impact on competitiveness, particularly at a time of poor demand and high operating costs. The association has also pointed to a lack of clarity thus far, and potential practical difficulties.

EU textiles strategy

The Commission's strategy places an emphasis on circularity, recycling and the reduction of pre- and post-consumer waste – an estimated 5.8 million tonnes of textiles are discarded in the EU every year. Amongst the objectives is the 'reversing of over-production and over-consumption of clothing' by improving the quality and durability of garments, with an emphasis on design. Another aim is to crack down on greenwashing, for example by requiring 'green' claims to be backed by substantial evidence, ensuring clear labelling and traceability of items with a Digital Product Passport.

The broad thrust of the strategy, therefore, implies a reduction in the quantum of fibre consumption by suppliers to the EU textile market. The implications for inter-fibre competition are less clear but could be far-reaching. The March 2022 document advocates circularity in opposition to 'fast fashion', the latter, it notes, being 'linked to the growing use of fossil-fuel based synthetic fibres'.



Elsewhere, reference is made to microplastic pollution. In addition, a reduced reliance on 'virgin' raw materials is advocated in favour of 'fibre to fibre' recycling.

The scope of the proposals will have an impact well beyond Europe. For example, the Corporate Sustainability Due Diligence and Reporting Directives (CSDDD and CSRD) will apply to companies established both in the EU and outside the bloc, depending on the number of employees and turnover worldwide, or within the EU for the latter case. The Ecodesign for Sustainable Products Regulation (ESPR) which includes the Digital Product Passport, meanwhile, would apply to all products placed on the EU market regardless of the location of the manufacturer or distributor.

Conclusion: a rapidly changing landscape

Clearly, the demand for 'sustainable' cotton – however defined – will continue to grow. Initiatives can provide opportunities for growers, manufacturers, and suppliers to improve their sustainability practices and help protect the environment, people, and their livelihoods, and for consumers to make more informed purchasing decisions. However, even the major initiatives examined above demonstrate varying priorities and structures. It remains to be seen whether the approaches to cotton sustainability will eventually converge, allowing diversity to give way to a more uniform set of criteria – or whether the prevailing variety will persist or even increase. What impact the major regulatory measures proposed by Brussels will play in that process (and whether other regulatory bodies will follow suit) will likewise become clearer over time. What is evident is that the 'sustainability test' will play an ever greater role in patterns of fibre consumption over the years ahead.



Developments and prospects in global commodity markets



John Baffes,
Senior Agricultural Economist,
World Bank

In recent years, commodity markets have experienced significant upheavals, prompting contemplation on whether a new paradigm is emerging. The collapse of oil prices in 2014, and to a lesser extent, price declines across various commodities, initially sent commodity markets into a period of relative stability, albeit lasting less than five years. However, this respite was interrupted by the sudden advent of the pandemic in early 2020, triggering extensive supply disruptions and instilling apprehensions regarding commodity demand. This, in turn, led to notable price volatility within commodity markets. A notable example was the unprecedented dip into negative territory in the crude oil market within a single day in April 2020.

Yet, as commodity consumption gradually surged, driven in part by government stimulus measures and pent-up demand, commodity

prices swiftly rebounded, soon reclaiming pre-pandemic levels. However, just as the recovery seemed under way, the outbreak of the war in Ukraine dealt yet another blow to commodity markets, this time impacting them from the supply side.

The prices of commodities for which Russia and Ukraine are significant exporters, encompassing key resources like crude oil, natural gas, wheat, and certain metals, experienced a dramatic surge. This surge was propelled by the combined impact of sanctions and trade redirection, propelling prices to unprecedented levels. The World Bank's energy price index recorded a remarkable increase between the second quarter of 2020 and the corresponding quarter in 2022. Specifically, the price of natural gas in Europe escalated by an astonishing 40-fold, soaring from an average of US\$ 1.74/mmbtu in July 2020 to a peak of US\$ 70.04/mmbtu in August 2022. As



we entered 2023, commodity markets stabilized, albeit with most commodity prices residing above their pre-pandemic benchmarks.

The trajectory of commodity markets is at a crossroads, heavily influenced by the enduring repercussions of the pandemic, supply disruptions, the conflict in Ukraine, and the ongoing energy transition. These factors are set to reshape commodity markets, including price dynamics, consumption patterns, and trade flows, in multifaceted ways.

Notably, the surge in energy and food prices, exacerbated by the pandemic and geopolitical tensions, will impose a substantial strain on both advanced economies (AEs) and Emerging Market and Developing Economies (EMDEs). The accelerated inflation resulting from these price hikes will significantly impede growth and pose challenges in policy decision-making for central banks. In response, central banks may implement higher interest rates and adopt tighter global financial conditions, historically demonstrated to exert profoundly negative effects on EMDEs, especially those with considerable foreign financing requirements.

A comparison of the present energy price shock with historical episodes reveals three salient characteristics that could pose challenges in effectively addressing the energy deficit. First, the contemporary landscape offers limited alternatives to counter the impact on the most affected energy commodities – gas and coal – given that price hikes have permeated all fuels, leaving fewer substitution options. Additionally, heightened energy prices have augmented the production costs of other commodities, compounding the predicament. Second, the energy intensity of GDP has significantly declined since the 1970s, potentially reducing consumer sensitivity to relative price alterations, particularly in the short term. Furthermore, reducing energy consumption may prove more challenging, given the diminished availability of easily attainable energy-saving opportunities. Third, many countries' policy responses have predominantly leaned towards energy subsidies and tax breaks, exacerbating the situation and lacking a focus on addressing the fundamental disparity between supply and demand.

Effective policy responses are pivotal in formulating a lasting solution to the current surge in energy prices. A juxtaposition



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with prior shocks underscores the efficacy and advantages of certain policies, while revealing the drawbacks of others that offer transient fixes at the expense of market distortions or new predicaments. Policies promoting enhanced efficiency standards for automobiles, incentives for more energy-efficient home appliances, and renewable energy mandates (excluding biofuels) have demonstrated lasting positive impacts. Likewise, establishing institutions to enhance market transparency, coordinate policy responses, improve data quality, and facilitate policy dialogues has proved to be beneficial. Notable institutions in this regard include the International Energy Agency (established by the OECD after the first oil price shock) and more recently, the Agricultural Marketing Information System (initiated by the G20 in response to the 2007-08 price spike).

Historically, some policy measures that provided immediate relief from escalating prices exacerbated medium-term issues or introduced fresh challenges. For instance, in the aftermath of the first oil price shock in 1973, price controls implemented in the United States distorted markets and potentially heightened oil demand. The promotion of coal for electricity generation during the late 1970s alleviated dependence on oil but resulted in adverse environmental effects, including air pollution and the acceleration of climate change. Similarly, the widespread adoption of biofuels, while presenting an alternative to crude oil and potentially increasing the renewable energy share, faced scepticism due to its substantial energy and fertilizer requirements for

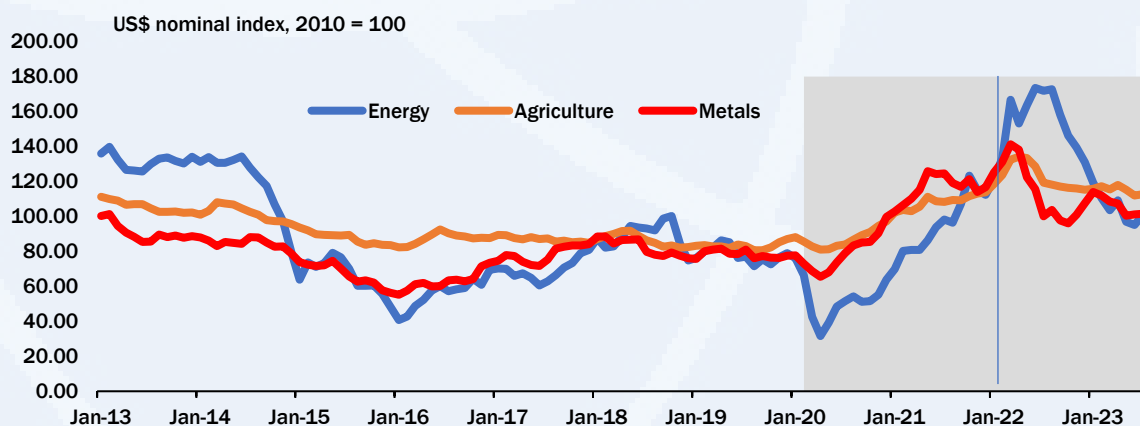
production, consequently putting pressure on food prices.

Export bans on food commodities, notably during the price hikes in 2007-08 and 2010-11, provided transient relief from food price inflation for certain vulnerable households. However, these measures induced high volatility in global prices and triggered reciprocal policy responses from other nations. In the present context, well-intentioned energy subsidies aimed at easing the burden on consumers may inadvertently impede the transition to a zero-carbon economy.

Recent surges in energy and food prices have considerably amplified food price inflation across both Advanced Economies (AEs) and Emerging Market and Developing Economies (EMDEs). This inflation compounds the ongoing upward trajectory of food insecurity. Furthermore, the anticipated increase in adverse weather patterns is expected to pose additional long-term challenges to global food security. Government policies, such as export bans, designed to shield consumers from external shocks, albeit appealing domestically, can contribute to heightened instability in the global market.

Lastly, the green transition, pivotal for aligning the energy system with the 1.5°C target, is anticipated to drive a reduction in fossil fuel consumption. However, this transition comes at a substantial cost, estimated at up to US\$130 trillion by 2050, encompassing investments in technologies and associated infrastructure.

Commodity price in retreat



Source: World Bank.

Note: The shaded area corresponds to February 2020 – August 2023 (last observation); vertical line corresponds to February 2022 (war in Ukraine).



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Can a revolution that has us soiling our undies lead to better-protected soil?



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Brooke Summers,
Cotton Australia,
NSW Australia



Chris Cosgrove,
Sustenance Asia, TAS,
Australia

On the October 7 each year we celebrate World Cotton Day, which presents an opportunity to bring the global cotton community together to celebrate all things cotton. This is a wonderful achievement when we reflect on the species of *Gossypium* cultivated, the large number of countries growing cotton all over the world, the multitude of crop management decisions made to produce and pick that cotton in a wide range of systems and geographies, and the diversity of yarn, fabrics and products it goes into. However, there is something that is central to all of these diverse systems, without which there would be no cotton – soil.

Soils are probably the most precious resource with which our farmers interact. They are found on this planet in both limited supply and suitability for agriculture, are produced at a rate that is imperceptible to humans, and are fragile, easily damaged by pollution or lost by erosion. However, all too often they

are treated as little more than dirt, with not enough thought given to the life that the soil both harbours and supports. Could changing our perceptions and attitudes towards soil, recognising that it is a valuable ecosystem rather than a congregation of minerals, help to promote its protection rather than continually risking its degradation?

Now that is a very good question, but how does one go about changing attitudes towards soil? How do we help people appreciate the life that resides in the earth beneath our feet? Can we make the invisible microscopic life, which drives the nutrient cycles our plant production relies on, visible? Or at least tangible and understood? Well maybe we can, by asking everyone to soil their undies!

Now if you are wondering how making a mess of your underwear could possibly help to create a worldwide awareness of life in our soils, then you'd better read on. Soil Your Undies is a soil health experiment,

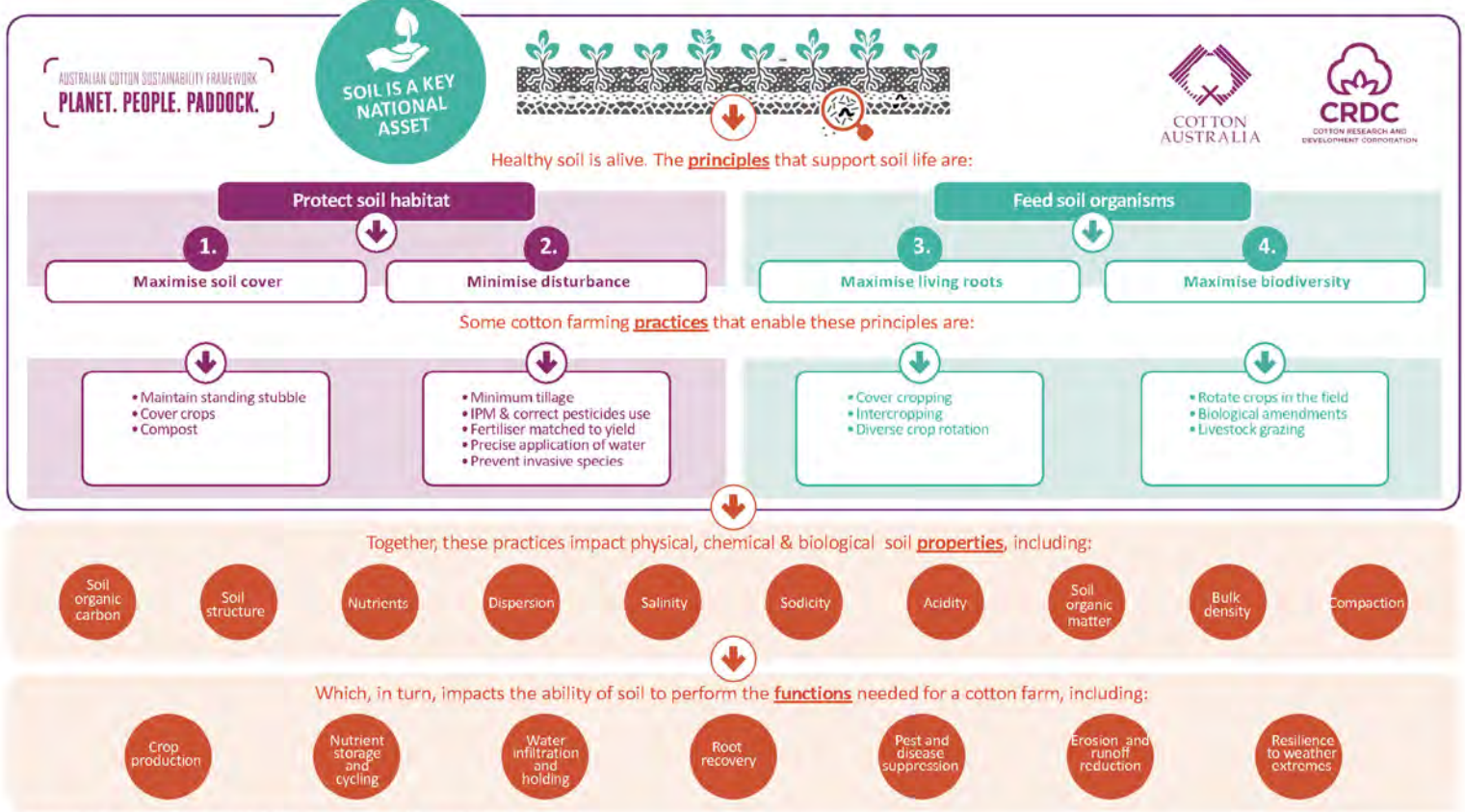


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Developed by Oliver Knox and Sustenance Asia, 2022. Adapted from USDA Principles for High Functioning Soils.

Figure 1. The Australian cotton industry’s sustainable soil health framework, driven by protecting soil habitat and feeding the soil microbial population. Opportunities to address these needs and the flow-on benefits and functions are illustrated.

where cotton underpants are buried 5 cm deep in the soil, left there for eight weeks and then dug up to see what’s occurred. If you have healthy and diverse microbial life in your soil and conditions favour its activity, then it will have set to work, breaking down the undies’ cotton fibres to the sugar it was initially made of – and all that remains is the synthetic waist and stitching. The general rule is that the more broken down the cotton is, the healthier your soil! Now, we could get a bunch of scientists to run around the country doing the equivalent cotton strip assays, but that takes most people out of the equation and, as not everyone has access to the correct weave of cotton or a tensiometer for a strip assay, soiling your undies is far more accessible and way more fun.

From humble beginnings in the USA, the soiling your pants revolution spread to Canada, underwent a name change, headed for Australia and then the rest of the world. Like all successful revolutions it capitalised on a core theme and a critical issue – that soils are important and reform is needed, because we cannot keep farming the way we have. As it turns out, the humble undies were only a simple tool in this revolution,

a pawn to be sacrificed ahead of something bigger. Having awakened the knowledge that there really is life in soils, a new path to help farmers with practical information on what to do next was needed.

This was provided in the form of a Sustainable Soils Framework (Figure 1), created as part of the Australian cotton industry’s PLANET. PEOPLE. Paddock sustainability framework, which is managed by the Cotton Research and Development Corporation and Cotton Australia.

In collaboratively developing this framework, certain caveats were considered. It needed to be simple, but not simplified, because of the phenomenal level of education and local soil knowledge possessed by the Australian cotton farmers we were wanting to support. To give it longevity, it would need to be based on science rather than succumb to current trends or rhetoric. The practices it promoted would have to be flexible, because we believe there are too many examples of failure when prescriptive farming is pushed too hard, and it would need to be easily integrated into current farming practices including the industry’s cotton certification program – myBMP (Best Management Practices). Finally, as if there was not





Figure 2. Bales of shredded cotton waste, diverted from landfill and ready for field application.

already enough to consider, some form of monitoring at a level of granularity that could be used by the industry and our customers had to be captured. So what would deliver all this AND protect a fragile and vulnerable living ecosystem in a way that made sense at farm level to the people doing the work?

Humanising the framework in this way helped to distil our thinking. We turned to Maslow's Hierarchy of Needs but found that the psychological aspects were not applicable. We scoured literature on soil health and frameworks, only to find that most suggested more scientific exploration and discourse, with few getting back to the practicalities of farming.

We asked ourselves "what, in its simplest form, does our soil really need?" The answer was simple – shelter and food. To protect our soils and maintain the biology we are reliant on, we simply need to provide them with improved habitat and food, both of which we know how to achieve in agriculture.

With these starting points set, the rest of the framework simply fell into place, providing several potential practices for growers to consider adopting if they had not already done so, giving them freedom to operate within their known limits and monitoring change through existing practice surveys and

data collection tools. The framework has been shared with farmers, researchers and other stakeholders interested in soil health globally, including Textile Exchange.

We gave thanks to the thousands of undies that gave up their fibres to highlight that soil is far more than just dirt. From the simple act of soiling our undies, we delivered a framework that promotes more sustainable soil management practices and now finds itself travelling beyond Australia's cotton fields on this World Cotton Day.

This focus on soil health coincided with another major and connected issue for the global cotton and fashion industries – textile waste and circularity. In 2018, a group of 75 soil, fibre, biotech and materials scientists, academics, commercial solutions, recyclers, the charity sector, brands and retailers was established called the "Cotton Converts". Led by Cotton Australia and circularity campaigner Tanya Bastyan, the group's mission was *to help make cotton truly circular – from the farm, through the textile supply chain, and back to the farm again.*

Like the rest of the world, Australia's textile waste issues are nothing to be proud of, with each Australian currently responsible for disposing of over 20 kgs of textile waste each per year, mostly to landfill. As we know, there is a strong move globally towards circular models that do away with the notion of take,





make, use, discard and instead create a more sustainable model of production and consumption that aims to eliminate waste and keep textiles out of landfill.

We know that cotton as a natural fibre is biodegradable and renewable, so what if we could recover cotton from traditional waste streams and divert it to soil, where it could feed the soil biology and potentially provide other benefits such as carbon capture and water retention? And even better – what if we could return it to the soil in which the cotton was grown, at scale, truly closing the loop for cotton?

The “Circular Cotton Farming Project” has done just that. Kicking off in 2019, this project has included lab trials, and two years of large-scale field trials on farms in Queensland and New South Wales, with a continuation planned in 2023.

Success is due to a true collaboration between circularity specialists Coreo, cotton farmers Sam Coulton and Scott Morgan, Australian brand Sheridan, Cotton Australia and the Cotton Research and Development Corporation (CRDC), supported by soil scientist Dr Oliver Knox of the University of New England (UNE).

The team has successfully shredded, composted and applied and tested over 10 tonnes of pure cotton textile waste to the soils of cotton fields, with no detrimental effect detected and some indications that an increase in soil microbial activity and water retention can be achieved.

This is just the start, and many questions remain regarding the difficulties of dealing with blended fabrics, the removal of buttons, zips and tags and the effects of dyes and finishes on soil health. Through funding from Australia’s cotton farmers and the Australian Government, CRDC has planned further research over the next three years to investigate these and other questions such as how to make the business model and logistics work at scale.

The project has elegantly demonstrated a circular pathway for cotton at end of life, reducing the volumes of waste going to landfills and significantly reducing climate-damaging methane emissions.

The same soil biology, whose existence we demonstrated with a pair of undies, is now helping us to address a waste stream and bringing about a more natural and circular conclusion to a current issue. Whilst there are other higher value circularity pathways out there, current costs, by-product handling and limited processing capacity make soiling of cotton textile waste a viable alternative for now.

So, on this World Cotton Day, if someone asks you if you’ve soiled your undies, just remember they are actually seeking your involvement in a revolution. It’s about changing the way we think about our soils and in doing so encouraging the adoption of practices, which may include waste recycling, to protect this most valuable of Earth’s resources.



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African cotton gains a space-based ally



Holger Diedrich,
Project Manager Public Relations & Communication,
Aid by Trade Foundation

Promoting social and environmental sustainability in African cotton cultivation through innovative ideas and progressive agricultural methods has been a core objective for Cotton made in Africa (CmiA) since it was established by the Aid by Trade Foundation (AbTF) in 2005. This approach has also played a decisive role in its success. In 2022, 40 percent of cotton produced in Africa was verified by CmiA, and the uptake of CmiA cotton by retailers and brands increased by 50 percent compared to the previous year.

CmiA's success is based on the impressive achievements of some 900,000 small-scale farmers who cultivate cotton on more than 1.8

million hectares throughout ten countries in Africa south of the Sahara. The way they work is being shaped and permanently changed by the challenges of both the market and climate change.

Above all, CmiA aims to empower people to help themselves. However, even these



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efforts require direction and a goal. “It has always been a priority for CmiA to find sensible and feasible innovations that enable small-scale farmers to improve their sustainability, profitability, and quality of life,” states Tina Stridde, the Managing Director of the Aid by Trade Foundation, continuing, “In this way, CmiA provides farmers with the tools to master future challenges as well.”



From the very beginning, CmiA has supported cotton farmers with a number of projects for developing their agricultural and entrepreneurial skills on a sustainable trajectory. Hundreds of thousands of women and men have already participated in CmiA training conducted through CmiA partners to address a variety of topics relevant to the CmiA standard, including soil conservation, integrated production and pest management (IPPM), and foundational business knowledge, as well as indirectly connected issues such as gender equality and child protection.

Through innovative projects like CAR-iSMa (short for “Climate Adaptation and Resilience – a pan-African learning & knowledge exchange project on improved

Soil Management”), CmiA is working with cotton companies to investigate new ways of improving soil fertility and building up agricultural resilience to the effects of climate change and to promote regular communication on this subject area between people from different companies and different countries.

The Innovations Club was founded this year by AbTF and the African Cotton Foundation to foster communication between regional and international experts. It aims to support the exchange of regional and international experts to establish practical measures for the regeneration of African cotton ecosystems.

CmiA worked with its partners to develop seminal training material on issues including biodiversity and rainwater management, for example in the form of accessible picture blocks. These materials will soon become available on the CmiA Learning Platform, which will always be accessible to agricultural consultants working for CmiA partners in Africa.

Cotton made in Africa’s latest project is also paving the way to the future. Together with Geocledian, a leading



Pictured above: Tanzanian farmers harvesting cotton in their fields © Malicky Stanley Boaz



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company in the field of geoinformation and remote sensing, and with the Tanzanian company Alliance Gineries Ltd, CmiA is currently exploring the applicability of satellite-supported remote sensing to cotton cultivation.

Remote sensing technology has the potential to transform global agriculture. Using satellite technology and computer-supported evaluation processes, data on the condition of agricultural land, including crops, will become available and always be accessible worldwide.

Sensors mounted on satellites for Earth observation capture various wavelengths of electromagnetic radiation reflected by the Earth's surface and its vegetation. This provides information on crop cultivation and plant growth and allows conclusions to be drawn about soil composition and fertility.

CmiA launched a remote sensing project in May 2023, collecting data from two of the ten Sentinel satellites operated by the European Union for the purpose of observing the Earth and the environment. Using machine learning, computers identify patterns in the raw data delivered by the satellites. In the case of the CmiA-initiated project, this process yields information about the condition of and changes in land surfaces.

The next step of this project involves collecting GPS data for a selection of cotton fields. "With a relatively small set of reliable reference data, we can make inferences about the bigger picture. Broadly speaking, I only need to collect data for 1,000 fields in order to evaluate the condition of 40,000," explains Stefan Scherer, the CEO of Geocledian.

Satellite-supported remote sensing offers great opportunities for the cotton industry in sub-Saharan Africa with its many small-scale farms.

These opportunities are available



The data from the two identical Sentinel-2 satellites is part of the basis of the Remote Sensing Project of CmiA and Geocledian ©ESA/ATG medialab

to everyone involved in production. For instance, cotton companies can collect more precise production data through remote sensing. Exact information about the area under cultivation enables them to estimate harvest yields, which is helpful for market projections and trading decisions.

Agricultural consultants employed by cotton companies also benefit from the results of remote sensing, as do farmers, since the consultants can see which farmers need assistance with improving their sustainable cotton cultivation practices. A user-friendly data report reveals where cotton is currently developing well and where not; in addition to helping identify pest infestations. This allows the ideal harvest time to be calculated.

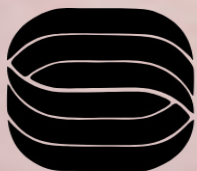
Remote sensing is also a boon for transparency. When combined with GPS data pertaining to the fields of the farmers who cultivate cotton in collaboration with Alliance Gineries, it shows users where the fields are and allows them to monitor compliance with sustainability criteria such as minimum distances from protected areas. Users can also monitor the performance of other processes like crop rotation, intercropping, and green manure.

Above all, remote sensing has great potential to further strengthen the structural advantage of African cotton, which is becoming increasingly significant on the international stage due to current trends



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in legislation. In the view of Stefan Scherer, cotton cultivation in sub-Saharan Africa is more sustainable than in industrialised and emerging economies like Brazil; this is due to its more traditional economy, whose beneficial aspects remote sensing can amplify. "Reporting requirements along the lines of the Supply Chain Act in Germany or the European Union's Taxonomy Regulation will eventually make it mandatory to be able to trace sustainability metrics down to the field level," says Stefan Scherer.

CmiA's remote sensing project is in the right place at the right time, showing how trade and production can benefit from innovative approaches, including on the globalised cotton market. Sooner rather

"Cotton made in Africa's work in the coming years will be shaped by sensible and feasible innovations that advance the sustainable development needed for the cotton sector in Africa South of the Sahara to make major progress. The remote sensing project has the potential to become a milestone along this path."

Tina Stridde, CEO Aid by Trade Foundation.



than later, remote sensing will be used not only by industrial cotton cultivation in the Global North and in emerging economies but also by small-scale farmers in Africa, who can employ the technology to increase the fertility of their fields and improve their harvests in order to earn a decent living in a stable environment.

Through its remote sensing project,

Cotton made in Africa is once again proving that it is more than a sustainability label or a certificate of origin for cotton. By counting on the future viability of Africa's traditional small-scale farming culture, CmiA's efforts reflect its firm belief that this culture has the potential to become a driver of innovation for sustainability in the textile value chain in the coming years.

"We are thrilled to be partnering with CmiA on the remote sensing project. It is exciting to be promoting the digitalisation of cotton cultivation in Africa and supporting CmiA and its partners in Africa with our expertise. CmiA takes a systematic approach to sustainability, and remote sensing makes it possible to provide proof of its success as far back as the cotton fields."

Stefan Scherer, founder and CEO of Geocledian. @Geocledian



Cotton Outlook – Better Cotton Q&A



Abdoul Aziz Yanogo,
Regional Manager for West Africa,
Better Cotton

Cotton Outlook: Cotton Outlook last reported on Better Cotton’s operations in Egypt in the summer of 2020, shortly after an initial agreement had been reached. Can you bring our readers up to date with developments over the past three years?

BC: The Better Cotton Programme was launched after the completion of a country-level assessment in collaboration with the United Nations’ Industrial Development Organization (UNIDO) and its Egyptian Cotton Project. Since then, the programme has been fully operationalised with three Implementing Partners, namely ALKAN Mohamed Nosseir for Trading & Industry, Modern Nile Cotton Co. and, most recently, El Ekhlis Company for Trading cotton Import & Export.

This year, a new strategic partnership has been signed with Cotton Egypt Association (CEA), which exclusively manages and promotes the registered Egyptian Cotton™ logo, which will

strengthen our ties. For the 2023/24 season, our programme will cover around 19,000 participating farmers across approximately 8,000 hectares.

CO: What proportion of Egyptian output may now be marketed under the Better Cotton label?

BC: The programme is growing year-on-year despite the external challenges posed by COVID-19 and the more recent crisis in Ukraine. The new partnership with CEA has the main objective of further expanding Better Cotton in Egypt to be able to respond to the growing demand for more sustainable Egyptian cotton. The expected licensed volumes for the 2023/24 season will represent around 10 percent of total cotton production in the country.



CO: Our earlier reports referenced the role of UNIDO and the Italian-funded cotton project. Can you explain how these various initiatives fit with the Better Cotton involvement?

BC: The previous initiative led by UNIDO and funded by the Italian Agency for Development Cooperation and the International Islamic Trade Finance Corporation (ITFC) ended in 2022. This first stage allowed the launch of the Better Cotton Programme, supported Programme Partners as they established a functioning system, as well as through the phase in which their Producer Units were licensed.

However, both Better Cotton and CEA are very open to collaborating with any development initiatives that can complement and further support Egyptian cotton farmers, as well as the textile supply chain sourcing more sustainable cotton from Egypt.

CO: Egypt, of course, has its own long history and culture of cotton cultivation. What have been the particular challenges associated with applying BC standards to the Egyptian production model, for example in comparison to the modern commercial, mechanised farming systems in countries such as Brazil and Australia?

BC: The Better Cotton Standard (BCSS) is designed not only to be implemented in large farm contexts such as those you find in Brazil and Australia, but also in the context of smallholders as is the case in Egypt and other African countries. In these cases, farmers are organised into Learning Groups and Producer Units to ease the implementation of the different components of the BCSS (capacity strengthening, assurance, etc.).

Egypt cannot be compared to Brazil and Australia, as agricultural work, including that in cotton, is mostly performed by smallholder farmers with around one hectare of farmland. Better Cotton implements a systematic approach to best sustainable practice, while also raising more awareness about decent work conditions and measures to prevent child labour.

CO: Better Cotton's involvement in Egypt commenced just as Covid was disrupting all spheres of activity, including the global cotton

market. What adaptations were required to circumvent or manage the constraints imposed by the pandemic?

BC: Better Cotton adopted the same measures worldwide to all Better Cotton countries, Egypt included. We monitored the local conditions on a weekly basis to make sure that our Programme Partners could still support farmers and workers safely throughout the season. Training was typically delivered either remotely or in open air spaces, allowing Better Cotton and its Programme Partners to meet production requirements by the end of season and successfully license the producer groups.

CO: Egypt is not the only producer of long staple cotton in which Better Cotton is involved. How does your approach to this specialised sector of the market differ from your operations in countries cultivating upland varieties?

BC: The BCSS implementation approach does not differ according to cotton variety or the fibre quality. It is a holistic approach that is adapted to the context in which it is implemented. In the case of Egypt, the sector is already well organised to take account of the varieties produced in each zone and Better Cotton aligns itself with this system by working with the Programme Partners to promote the adoption of more sustainable production practices in the spirit of continuous improvement.



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Embarking on the waterless dyeing journey for cotton



Xiao Feng,
General Manager,
Exponent Envirotech

In the context of the global consensus on sustainable development, natural fibres such as cotton have garnered increased attention for their role in fostering sustainable and inclusive economic growth. Cotton products can be recycled. The crop occupies only 2.1 percent of the world's arable land, and fulfils 27 percent of global demand for textile fibres. The cotton plant is virtually waste-free. As World Cotton Day on October 7 approaches, the industry's focus turns to green and environmentally-friendly practices, including a critical phase – dyeing.

Empowering sustainable development in the cotton textile industry

The sustainable development of cotton, one of the world's essential textile materials, is important for the entire industry and global ecosystem. Taking a shirt as an example, the process of transforming raw cotton into a finished garment for the customer consumes about 150

tonnes of water per tonne of cotton fabric produced, with dyeing accounting for over 60 percent of the water usage. Reducing water consumption and pollution remains a pressing challenge for the industry.

In pursuit of “waterless dyeing,” many teams both domestically and internationally have been exploring related technologies. Amongst them is the research team at Guangdong Exponent Envirotech Limited (hereafter referred to as “Exponent Envirotech”). Exponent Envirotech is an innovative enterprise specialising in environmental and energy technologies for the manufacturing industry. The company is committed to providing technology consulting and comprehensive solutions for green manufacturing, empowering industries to embrace a “resource-saving and environmentally friendly” path of sustainable and high-quality development.

In their non-water dyeing research, the use of supercritical carbon dioxide fluid dyeing is primarily applicable to

dyeing of chemical fibres and less suitable for cotton's reactive dyeing. Exponent Envirotech's innovation comes in the form of the ECOHUSE™ waterless dyeing, which uses an innovative organic solvent to replace water as the dyeing medium. This technology achieves a dye fixation rate of 97 percent and avoids dye hydrolysis reactions, significantly enhancing the chemical stability of reactive dyes and the success rate of dyeing. Furthermore, the organic solvent used can be highly recycled, with a recycling rate exceeding 99 percent, allowing it to be continuously reused in the dye vat. With no wastewater discharge or treatment required in the dyeing process, environmental concerns are significantly alleviated.

From a process perspective, conventional



dyeing with water requires pre-treatment of cotton fabric to remove natural waxes and impurities on cotton fibres, increasing the fabric's wettability to water. In contrast, the waterless dyeing system allows for dyeing directly without the need for pre-treatment. Leveraging the characteristics of waterless dyeing, Exponent Envirotech technology achieves a comprehensive dyeing process that eliminates the need for scouring before dyeing and soap washing after dyeing. The process involves no water or dye assistants, with only a small amount of water used for alkaline pre-treatment before dyeing and fixing-softening after dyeing. This streamlined process not only reduces the usage of chemical assistants and lowers production energy

consumption but also improves production efficiency. Compared to traditional water-based dyeing, this process reduces dye usage by 20 to 50 percent, saves 100 percent of salt, and conserves 95 percent of water.

Accelerating downstream applications in the industry chain

Over the years, Exponent Envirotech has deepened cooperation with leading enterprises, accumulating abundant green environmental and energy technology achievements and a wealth of successful cases in industrial applications. Exponent Envirotech currently has three major

business project areas, including industrialisation of waterless dyeing for textiles, water environmental governance, and energy conservation and carbon reduction. These areas provide multi-level, all-round environmental and energy-related systematic solutions for the manufacturing industry, particularly the textile and apparel industry.

Recently, ECOHUSE™ has established a robust industrial brand value and has collaborated

with multiple domestic and international renowned fashion brands to develop environmentally friendly products. In April this year, the first batch of clothing using ECOHUSE™ technology was launched by the menswear brand, Ten Like Shi. In the third quarter of 2023, the DETERMINAT and other brands' sustainable development product lines will extensively apply ECOHUSE™ products. Internationally recognized brands are also set to release ECOHUSE™ collaborative products in 2024.

Exponent Envirotech is actively building an ecological, green manufacturing, product, and consumer value system, which includes equipment certification, process audits, product traceability, and associated trusted

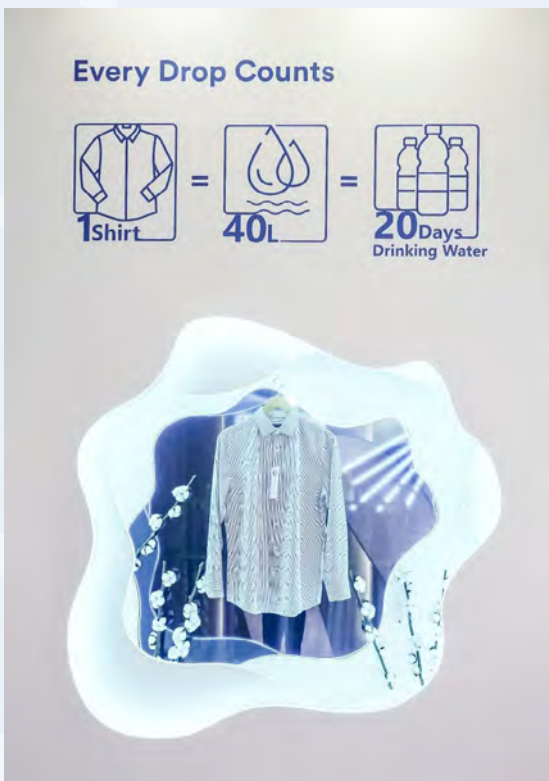


the industry chain. This development is generating a positive and profound impact on advancing green initiatives in the cotton textile industry.

Sustainable development has become an industry consensus, and the characteristics of cotton align perfectly with industry trends and consumer demands. As cotton embarks on its journey from a blooming flower to a soft, natural

transaction systems. Through coordinated development and promotion along the upstream and downstream supply chain, ECOHUSE™ waterless dyeing technology will bring about significant economic and social

benefits. Additionally, the technology's collaboration with specialized sectors such as new equipment manufacturing, solvent media and dye production, and the construction of green dye factories form a comprehensive, multi-sector industrial development cycle within fabric, the advanced and efficient ECOHUSE™ waterless dyeing process ensures a purer and safer transformation.



benefits. Additionally, the technology's collaboration with specialized sectors such as new equipment manufacturing, solvent media and dye production, and the construction of green dye factories form a comprehensive, multi-sector industrial development cycle within



What sustainability might mean in the area of textile fibres – current and future trends in viscose



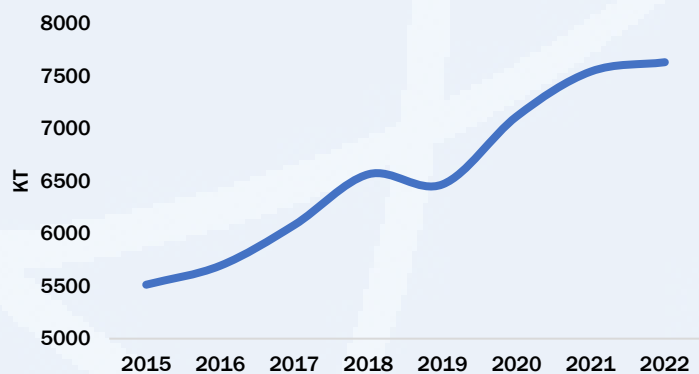
Christian Chavassieu,
Managing Partner,
Celco Cellulose Consulting

World demand for Viscose Textile Fibres (VSF) has until now been growing at an impressive rate of 4.7 percent CAGR. In the light of this year's much slower textile demand, future growth in the standard VSF may be affected by a number of factors covered in this article.

To start with, the textile industry has in recent years witnessed a drive toward the production of more environmentally friendly textile fibres. Initially, the industry was simply focusing on "Sustainability", but then moved toward "Circularity" and now focuses as well on "Traceability."

This trend originates from various factors, including: greater environmental consciousness on the part of consumers and textile brands; increasing pressure from Non-Governmental Organisations;

World VSF capacity (incl Lyocell)

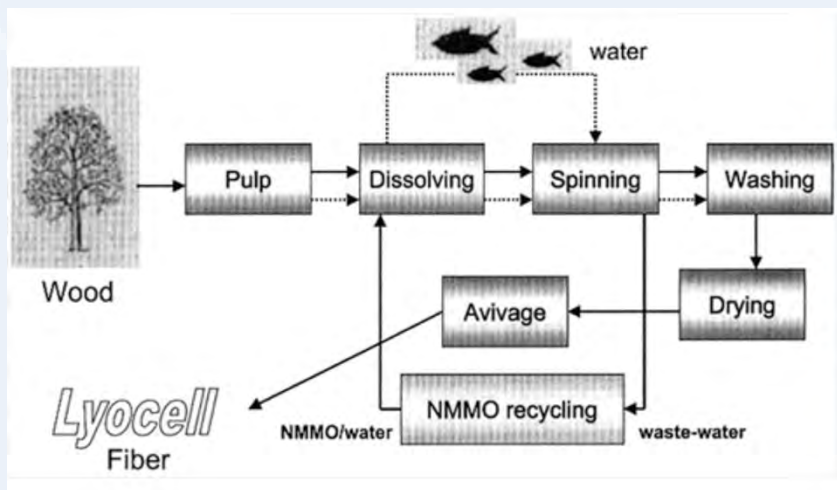


technological improvements in the viscose textile value chain; and now the emergence of blended viscose fibres.

Many textile brands are now building their image on sustainable clothing and communicating actively on this. Others are currently developing a road map to reach environmentally friendly textiles in the years to come. All apparel segments are focusing

on this from H&M, Uniqlo, Nike to Kering, LVMH... Some, such as Patagonia and Stella McCartney to name but two, have for a long time established a strong reputation in that sphere.

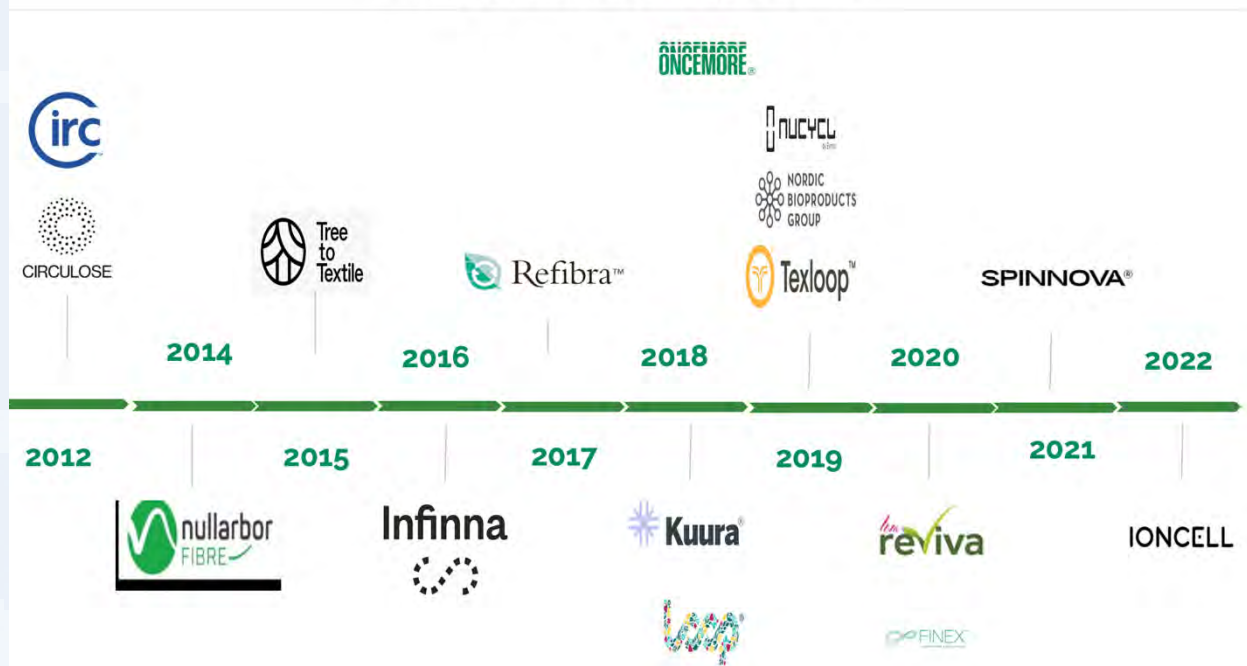
Textile brands have also come under pressure from NGOs such as Canopy to source their viscose textile fibres from producers vetted by their organisation. Today, Canopy claims that over 500 brands are partnering with them: “Canopy’s Hot Button Ranking and Report is the primary fibre sourcing analysis tool for the fashion sector that focuses on forests. This includes the CanopyStyle brands, retailers, and designers that are committed to eliminating the use of Ancient and Endangered Forests in viscose and other cellulosic fabrics, and to giving preference to textiles made from innovative fibres.”



forest plantations supplying hardwood or softwood pulp for the VSF industry are managed forests, re-planting way more trees than what they cut, and are far away from “at-risk” areas in the Amazon, Canada or Indonesia.

Irrespective of NGOs’ actions and claims, the viscose industry has in recent years worked actively toward more environmentally friendly production

When it all started



Other NGOs (such as Greenpeace) have also been aggressively influencing brands toward selecting VSF using “non-Endangered Forests”.

The reality of it all is that the viscose industry does not use wood from Endangered Forests. The

processes with better energy sources, fewer chemicals and less water usage. Amongst the results was the development of the NMMO process, better known by its generic brand name Lyocell.

Lenzing initially implemented this process in Austria under the brand name Tencel.





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Now, Lyocell fibre production is gaining momentum in China and could in time be the preferred cellulose viscose fibre in the world.

The shift of demand toward more recycling of all our consumer goods is finally catching up with the textile industry. Recycling of paper, among other raw materials, is now largely developed and structured. The time is now coming for the textile industry to organize the collection, sorting and recycling of clothing. The goal in the European Union (but also in other geographies) is to push fashion companies to produce circular textiles that are durable, and can be easily reused and recycled, by 2030. Despite the EU's Commission for the Environment, we are still a long way from generating significant volumes of recycled textile fibres. However, many industrial initiatives are emerging across the globe to produce viscose or cellulosic fibres in new and innovative ways.

As examples, Re-Newcell (Circulose) is ahead of the pack, with its current supply of viscose pulp from 100 percent pre/post cotton consumer waste; Sodra (Once More) is proposing a textile pulp made from a blend of post-consumer textile waste and wood pulp. Others, such as Wood Spin (Spinnova/Suzano), are

directly transforming hardwood pulp into cellulose textile fibres, skipping altogether the viscose process, or more extreme Nanollose microbial cellulose from industrial organic and agricultural waste which is then transformed into rayon fibres.

So, circularity in the textile industry is coming, but it may take time to grow because the infrastructure needed to collect and distribute textile waste in a cost competitive way is at yet not in place, while some of these new technologies have yet to prove their scalability and competitiveness.

In conclusion, demand for traditional viscose staple fibre or Lyocell grades still has a bright future, considering that growth in the supply of cotton will be limited due to environmental and weather-related issues. However, as we are seeing this year, the global demand for textile fibre has slowed considerably, which could signal a structural change, with less “fast fashion” and greater interest in second-hand clothing.

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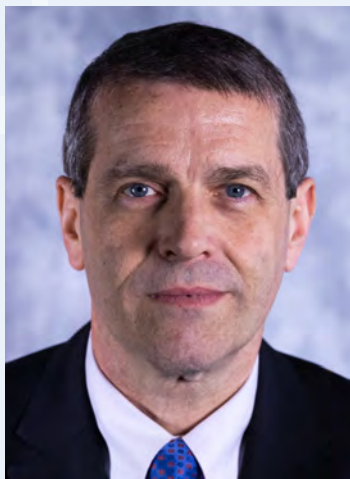
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Interview with Eric Trachtenberg



In July 2023, Mr Eric Trachtenberg was chosen by the Members of the International Cotton Advisory Committee (ICAC) to serve as the organisation's eighth Executive Director since its foundation in 1939. Shortly after taking up his post in August, he graciously found time to field some questions posed by Cotton Outlook's Editor, Mike Edwards.

Cotton Outlook: Mr. Eric Trachtenberg, Executive Director of ICAC. Many congratulations on your appointment and welcome to the cotton community. Can you tell us a little about your professional background?

Eric Trachtenberg: First, I consider it a great privilege to join the ICAC, which I describe to those unfamiliar with us as the 'United Nations of Cotton and Products'. Within this context, I look forward to serving our Member countries and cotton value chain stakeholders, from farm to customer.

I have been involved in agricultural trade and development for almost 30 years. These experiences include work as an agricultural attaché at USDA's Foreign Agricultural Service, with the UN Committee on Food Security, as a consultant in the private sector, and as the agency agriculture lead at the Millennium Challenge Corporation, a large international development agency.

My goal has always been to strengthen agricultural value chains

to reduce poverty through sustainable growth by facilitating trade, promoting sustainability, and telling the truth about agriculture. I have also always had an especially strong interest in innovation as a driver of positive transformation.

CO: What attracted you to the ICAC position? Are there any insights or perspectives gained from your previous role with the US Millennium Challenge Corporation that you feel may be of relevance to cotton?

ET: I have been interested in ICAC for several years. I was attracted to its deep focus on one value chain with a potential for global impact. Its status as an international organisation enables us to have a global reach that can boost the cotton value chain everywhere. Finally, I was attracted by the opportunity to work with an ICAC staff renowned for its talent and dedication. It's an honour to join so many outstanding professionals to support our industry.

My work at MCC was instructive in several ways. One of the most important



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was to promote partner country-led solutions to their issues. Instead of telling countries what to do, our most effective programmes were created by our partners and designed to solve the issues they care about the most. As we co-created projects, I saw the depth of talent in the Global South as we worked together to create programmes with real impact. For example, in Niger, we implemented a programme building upon indigenous knowledge of agricultural land that basically doubled yields on 100,000 hectares by removing invasive species and managing water more effectively.

As we designed and implemented our programmes, I also saw the importance of economic and environmental sustainability, the value of promoting innovation, the need to create an enabling environment to boost the private sector, the merit of using rigorous models to design programmes, the importance of gender, and always being attuned to both political and economic realities.

All these issues are relevant to cotton. Sustainability, economics, country-led solutions, and the importance of innovation matter in the development of more vibrant global cotton value chains. The goal is to tell the story of cotton by making its sustainability case to boost its competitiveness and improve prospects for farmers. It's a big mission, but I believe we can make great progress together.

CO: Many of us in the cotton community feel a degree of frustration that cotton's credentials as a sustainable textile fibre – one that contributes to achievement of several Sustainable Development Goals – are not being asserted forcefully enough. ICAC has done sterling work in this regard, for example via the #TruthAboutCotton initiative. Can we expect more of the same?

ET: Agriculture in general suffers from misplaced public perceptions – and cotton is unfortunately affected by this phenomenon. We need to get the truth out about cotton – which means you certainly can expect more of the same from us. During its 75th session,



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the United Nations General Assembly adopted UN resolution (A/RES/75/318) to reserve 7 October as World Cotton Day on its permanent calendar. This is the kind of visibility we need to continue fighting the myths that have plagued cotton for so many years. In fact, during the World Cotton Day Founder's Conference that will be held in Vienna on 4 October (because 7 October is on a Saturday this year), I'll be delivering a presentation on the Global Sustainable Cotton Outlook.

World Cotton Day is a once-per-year global celebration where the international community focusses on cotton. This global spotlight can be leveraged to educate people about how important cotton is. At the ICAC, we focus on the global cotton value chain every day, but on World Cotton Day, we have the attention of many very important stakeholders who don't focus solely on cotton like we do. It's an opportunity to ensure that government officials, major donors, NGOs, and the mass media are presented with accurate and positive information about cotton. Cotton isn't necessarily top-of-mind for all those people daily, but by putting the world's most important natural fibre at centre stage on World Cotton Day, we can make an impression on them that we wouldn't otherwise be able to do.

The *#TruthAboutCotton* initiative seeks to communicate all year long to media outlets and organisations that might have misconceptions about cotton in need of correction. The best example I can give is the myth that cotton consumes inordinate amounts of water. That's untrue because cotton is a xerophyte, a plant particularly suited to thrive in dry and arid conditions. In fact, in many regions in least-developed countries, cotton is the only crop that can provide an income to farmers.

For years, the biggest thorn in cotton's side was the myth that the cotton plant needs 20,000 litres of water to produce one kg of lint – enough to make a single tee shirt. It's such an attention-grabbing number that some outlets latched onto it years ago and have refused to accept that it simply isn't true. But by consistently posting about the #Truth of cotton's water consumption – which is generally between 1,800 to 2,200

litres of water per kg of lint, depending on a given year's overall production and precipitation – we got the organisation that created the '20,000 litres' myth to finally accept that their science was wrong. To their great credit, they followed the science and removed that information from their website. People had been trying for years to get them to take that claim down with no luck, but the constant repetition of new, reliable facts forced them to re-evaluate their claim. It took years of consistent effort – not just from the ICAC, but from many of our friends and allies – to get the source of that myth taken down. In fact, we were very pleased to see the organisation that made the original '20,000 litres' claim was celebrating World Cotton Day by posting accurate information about cotton on 7 October in each of the last two years. It shows that our efforts can make a difference.

One of the ways ICAC supports the cotton value chain is by drawing upon deeply researched information and analysis. The Technical Section of the ICAC meticulously gathers reliable data from its Member organisations regarding sustainability metrics, encompassing aspects like production costs, cultivation expenses, employment opportunities, water usage, fertiliser, and pesticide application, and more. This annual data-collection process involves collaboration with government agencies, researchers, and industry stakeholders. These efforts furnish us with valuable insights into critical aspects of cotton farming, including carbon footprint assessments, factor productivity evaluations, input utilisation efficiency, and the vital task of dispelling misinformation that perpetuates misconceptions surrounding cotton production practices and sustainability. The ICAC remains steadfast in its commitment to sound evidence to more effectively counteract misinformation to tell the truth about cotton.

CO: Could this extend to a delve into inter-fibre competition? Cotton is being held to ever greater standards in terms of production practices, traceability, and transparency – and rightly so. But it seems that far less attention is paid to the provenance and impact of fossil-fuel-based, non-bio-degradable chemical fibres. Could



it be part of ICAC's remit to redress that imbalance?

ET: The mission of the ICAC is firmly rooted in serving the cotton and textile community through a multifaceted approach that encompasses promotion, knowledge sharing, innovation, partnerships, and providing a valuable forum for discussions on matters of international significance within the cotton industry. Within this milieu, promotional campaigns can be a pivotal tool in shaping public perceptions and influencing choices within the textile sector.

To optimise the effectiveness of promotional efforts, it is imperative that governments across the globe collaborate to promote cotton generally alongside promotion of their own cotton. This collaborative approach allows governments to present a united front, emphasising the intrinsic merits of cotton – its biodegradability, sustainability, and natural origin – to a global audience.

Fostering collaboration within the industry becomes of utmost importance in this undertaking. Collaborating with other organisations and stakeholders in the textile industry to create industry-wide standards for production practices, traceability, and transparency is essential. Such collaborative efforts encourage responsible sourcing and

production practices throughout the entire supply chain.

Policy advocacy also plays a crucial role in promoting sustainability within the textile industry. This includes advocating for policies that regulate the use of synthetic fibres and incentivise sustainable cotton farming practices.

However, the end markets and consumers always play a decisive role. To support the cotton value chain, we must reach customers. Educating consumers about the environmental and social implications of different fibres empowers them to make conscious choices when purchasing clothing and textiles. If they demand quality cotton goods, it will support the market from farm to garment.

CO: As you are no doubt already aware, the world cotton market has been through a period of considerable upheaval over the past two or three years. The shock of Covid initially provoked a collapse of prices, followed by a sustained bull market that defied expectations. Then we experienced another brutal downturn of prices between May and November of last year. What role, if any, can ICAC play in mitigating the impact of these extreme price movements?

ET: The cotton industry faces challenges due to its nature as an agricultural crop, making it vulnerable to weather patterns,



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growing conditions, and market volatility. To tackle the latter, the ICAC has partnered with the World Bank and its member governments to reduce the negative effects of these changes. Key action items include:

- **Increased Transparency:** Promoting transparency in cotton market information and encouraging countries to enhance and standardise reporting on cotton supply and use is crucial. A clear and current information system regarding cotton supplies and stocks is essential. This transparency not only improves market efficiency but also promotes responsible trading practices. ICAC's data products play a significant role in supporting transparency.
- **Price Risk Management Tools:** Governments play a pivotal role in ensuring that the cotton industry can

access effective tools for managing price risk. By facilitating access to such tools, they empower cotton producers, processors, and traders to hedge against price fluctuations.

CO: The economic sustainability of cotton production is of course vital to all producers. Those in the developing world face the greatest challenges in improving yields. Can you comment on some of the innovative technologies ICAC has developed to assist cotton producers in the developing world and enhance the transfer of knowledge?

ET: The ICAC has the advantage of having a global perspective on the latest sustainable technologies that supported yield improvements across the world. While some technologies were developed specifically for the developed world, a few are amenable for adaptation to small-scale production systems. ICAC has been working on adapting



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such amenable global best practices in developing and least-developed countries. We have recently implemented projects to improve soil health through methods standardised by the ICAC specifically for small-scale farms. These techniques include mass production of biochar from cotton stalks using open-earth cone-pit kilns, rapid composting from waste through anaerobic methods, high density planting systems, and the preparation of nano-biopesticides from local botanical resources.

These initiatives have resulted in improved soil health that led to higher yields and the rapid spread of technologies between farmers. The ICAC has also developed a mobile application in 26 languages, and our Virtual Reality Cotton Training Programme has become very popular with smallholder farmers in developing countries.

CO: I had the pleasure of attending the last 'in-person' ICAC Plenary Meeting in Brisbane, Australia, shortly before Covid changed all our lives. The Plenary returns to a physical setting in Mumbai this year. What can you tell us about the agenda?

ET: The 81st Plenary Meeting will be held from 2-7 December 2023 in Mumbai. The theme will be: 'Cotton Value Chain: Local Innovations for Global Prosperity'. The sessions will look at technologies to increase productivity, research and development, provide updates on cotton markets and policy, highlight our work on sustainability and collaboration with the private sector, the social contribution of cotton production and value chain, smart textile manufacturing, value-added cotton production, and several panels focused on the critically important sustainability issue. In addition to covering the central sustainability issue, we will look at markets, farms, textiles, and innovation. The Plenary is a can't-miss event for anyone with an interest in cotton.

CO: ICAC was closely involved in the process that led the United Nations to endorse October 7 as World Cotton Day. Beyond a celebration of all things cotton, how might this date provide an opportunity to address some of the themes we have discussed in this interview?

ET: ICAC was one of the six founding organisations that held the first World Cotton Day Celebration in Geneva in 2019. Those six founders — the ICAC, Food and Agriculture Organisation (FAO), International Trade Centre (ITC), United Nations Conference on Trade and Development (UNCTAD), United Nations Industrial Development Organization (UNIDO) and the World Trade Organisation (WTO) — have united to hold a World Cotton Day event every year since and will again at UNIDO headquarters in Vienna on 4 October 2023. The permanent theme of the global celebration is 'Cotton for Good'. It's short, easy to remember, and most of all, accurate — because cotton does so much for so many people.

But there are other phrases that can capture, in just a few words, how cotton helps people and the environment. Most recently, we spoke with Manish Daga, a cotton advocate in India who wanted to speak with us in advance of our Plenary Meeting. While chatting after our interview he said something that really struck a chord: 'Cotton is for now'. It resonated with me because it expresses so many things in so few words. Most of all, it expresses urgency.

An environment that is rapidly being buried in microplastic pollution caused by synthetic fibres needs cotton now. These microscopic fibres have been found on the top of the Himalaya Mountains and at the bottom of the Arctic Ocean. We are awash in them, literally from the highest mountains to the deepest seas, and they are now in our food chain as well. The need to replace oil-based synthetic fibres with natural fibres like cotton cannot wait. For the environment, cotton is for now.

The impacts of climate change don't need to be explained. The devastating effects of our warming planet can be seen across the globe daily. Fortunately for us all, cotton sequesters carbon in its biomass. It can absorb more carbon than it generates during production, and we desperately need to reduce the amount of greenhouse gases in the atmosphere. That can't wait. For the planet, cotton is for now.

Tens of millions of smallholder farmers feed their families because of cotton — and many have no other source of income. They need to be educated on global best practices



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so they can increase their yields and income; they need access to technologies that help them identify and troubleshoot insect pests and diseases in their fields; and they need access to the international marketplace so they can get a fair price for the cotton they produce. This is how their families survive. For the most vulnerable people, cotton is for now.

Women are often the poorest and most marginalised farmers. Our sector has focused on this challenge and opportunity through its ‘Women in Cotton’ initiative.

This committee was established by the International Cotton Association but now has membership from everywhere, including several members of the ICAC Secretariat. Women in the Global South

often don’t have many opportunities to earn money, but cotton can provide them with one. For women who need to feed, clothe, and educate their children, cotton is for now.

At the ICAC, we work daily to help the cotton community. Our goal is to strengthen the health of the global cotton community by supporting cotton demand, promoting sustainability, and enhancing development of the entire value chain from farm to spinner, textile, and consumer. We will build upon the high visibility that comes with World Cotton Day and continue to refute the myths about cotton and spread the #Truth. In these ways, we can serve our Member countries, our value chain stakeholders, and the global community.



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