

# Cotton Outlook

Special Feature

May 2017



Shaping a More Sustainable  
Future for the Cotton Sector



e3 Cotton

## PICK OF THE CROP

### E3 COTTON EXPLAINED

Welcome to e3 Cotton. It is produced from proven sustainable farming practices that satisfy consumer demand for traceability and transparency. This global brand from Bayer is backed by verification programs that document the US farms where quality cotton is produced with environmentally responsible, economically viable and socially equitable methods.

In today's fashion environment it's key to know how and where quality products are made. Consumers want information about their purchase that goes beyond country of origin and deserve to know how companies address the sustainable expectations that preserve and promote a better world for future generations.

In e3 Cotton's first year, 80 farmers across the US signed up to self-assess their methods using the Fieldprint Calculator, a tool that measures the environmental impact of their cotton production, from land use to water quality. To ensure farmers' growing practices are up to standard, Bayer will use independent auditors to check in and ensure they are keeping up their commitment to continuous improvement. It means e3 growers are leading the way in ensuring sustainable cotton production that delivers benefits to the environment, farmers and society.

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# Cotton and Sustainability: Expanding Awareness, Tangible Progress



Mike Edwards,  
Editor, Cotton Outlook

The Better Cotton Initiative's Berlin conference provides a timely opportunity to explore questions of sustainability as they relate to cotton. BCI's decision to open its annual gathering to a broader cotton constituency no doubt marks a landmark in the organisation's own development, but is also testament to a steadily expanding awareness of such issues amongst the various actors in the cotton textile supply chain.

Our last Special Feature devoted to the theme of cotton's sustainability was published in October 2008. At that time, the quantities of cotton produced under various programmes with an accent on sustainability were insignificant in the context of the world market. We observed that even a working definition of sustainability, as it applied to cotton, was elusive.

Since then, invaluable work has been done in this last regard, most notably by the International Cotton Advisory Committee's Expert Panel on cotton's Social Economic and Environmental Performance (SEEP). With limited resources, SEEP has confronted the formidable challenge of collecting data and addressing the complexities inherent in measuring the sustainability of a

crop cultivated in such a wide range of conditions and socio-economic circumstances around the globe. The elaboration and publication of a suite of sustainability indicators marks a significant step forward, that will be of huge practical use to a plethora of agencies that work with cotton farmers. Chair of SEEP, Allan Williams, is keen to point out, however, that the indicators should not be viewed as prescriptive, but rather as a starting point or framework that can be adapted to the circumstances prevailing in a particular producing country or region.

While SEEP's work has done much to clarify the criteria that can help us to define more sustainable cotton production, progress in the field has also been tangible. Writing in our 2008 Special Feature, then BCI Initiative Manager Lise Melvin enunciated the broad principles of the organisation. A contribution to another of our publications in 2014 by Lise Melvin's successor, Patrick Laine, was able to report that cotton was by then being produced according to the BCI production system in 15 countries. The impressive quantities of BCI cotton produced during the 2016/17 season attest to the further

progress made toward the organisation's ambitious goal of bringing Better Cotton into the mainstream.

This Special Feature includes contributions from different stages of the supply chain, and others with an overall perspective on cotton and sustainability.

Amongst the latter, Dr. Terry Townsend asserts the primacy of economic sustainability, and identifies inter-fibre competition as the principal threat to cotton's future viability. In this connection, a key development of recent years has been the rapid expansion of China's chemical fibre capacity, a trend that has left cotton with an uphill struggle to regain market share lost during, and in the aftermath of, the momentous 2010/11 cotton season. At least at an anecdotal level, some more positive signals have recently been discernible in the international market, but the world is still consuming less cotton than was the case a decade ago. The need for the cotton industry to send a clear and unambiguous message, setting out cotton's credentials in the area of sustainability to retail consumers, has never been greater.

The economic sustainability of cotton in a particular country, or according to a specific production model, can frequently represent a moving target, as we also noted in our 2008 publication. Fluctuating costs of production, rising, stagnating or even deteriorating yields, as well as movements in exchange rates, can all affect the farmer's ability to achieve an adequate return from cotton.

And, of course, since 2008, the international cotton market has seen dramatic fluctuations in price. During the aforementioned 2010/11 campaign, world prices reached unprecedented levels – the Cotlook A Index recorded an all-time high in March 2011 of 243.65 cents per lb, against a long-term average in the region of 70.00 cents – before collapsing precipitately. This extreme volatility had immediate and damaging financial repercussions for many market participants, but also dealt a lasting blow to world cotton consumption from which it has yet fully to recover. Cotton Outlook estimates that the world will consume roughly 24 million tonnes of raw cotton during the 2016/17 season - two million tonnes less than a decade or so earlier.

The economics of cotton production are manifestly also influenced by government policies, many of which seek to mitigate some of the uncertainties described above. To speculate what the price of cotton might be in a world devoid of government support raises intriguing questions, but is ultimately of purely academic interest. Cotton has historically been, and remains, a heavily-supported crop, and today virtually all major producing countries intervene in their cotton sectors, directly or indirectly, via a range of different mechanisms. A reframing of cotton policy in China, or the promulgation of a new United States Farm Bill, can have far-reaching consequences for the international market. One major

exception is Australia, where government involvement is restricted to funding for research, whereby the state matches funds raised from farmers via a levy on output. Australia's yields are of course amongst the highest in the world and on virtually the full range of quality parameters, the country's cotton commands a premium in the world market. On a smaller scale, as our contribution from Israel illustrates, cotton research has assisted the quest for ever more efficient use of resources, also in pursuit of improvements in yield and quality.

Amongst the noteworthy conclusions to emerge from various of the contributions to this publication is precisely that more sustainable practices invariably make a contribution to improving yields and lowering costs of production. Improved productivity goes hand in hand with lessening environmental impacts. There is no doubt that "Economics matter too", to quote Dr. Townsend, but improved profitability need not be at odds with favourable environmental and social outcomes.

When our last Special Feature was published, the supply chain concept itself had only recently begun to gain broader currency in cotton textile circles. Amit Shah of Spectrum notes that the cotton textile supply chain is a long and complex one, in which traditionally, "the cotton farmer had little or no visibility to the retailer or consumers. The desire to map and better understand the cotton textile supply chain coincides with the emergence of a range of technology that facilitates the collection and assessment of data from farm to retailer. Traceability and transparency thus form a growing part of the picture.

As our contributions from Marks and Spencer and Nike illustrate, at least for the more progressive retailers and brands, sourcing strategies have been evolving considerably in recent years, a transformation that may be expected to continue.

The distance travelled since our 2008 Special Feature has undoubtedly been considerable, both as regards practical outcomes and less tangible shifts in corporate thinking. The gathering in Berlin will provide an opportunity to take stock of progress made, and plot a path for future improvements. We are indebted to all who have written for this publication for their contribution to the continuing debate.





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# Better Cotton: Developing a Sustainable, Mainstream Commodity



The Better Cotton Initiative exists to make global cotton production better for the people who produce it, better for the environment it grows in, and better for the sector's future, by developing Better Cotton as a sustainable, mainstream commodity. In the 2015 – 16 harvest, BCI reached nearly 1.6 million farmers in 22 countries, including China, India, and Pakistan, some of the world's biggest cotton producing nations. Meanwhile, demand for Better Cotton continues to rise, as more retailers and brands join BCI and opt to make Better Cotton an integral part of their sustainable cotton strategies. A sizeable 12% of global cotton production is already licensed as Better Cotton, and by 2020 this figure is expected to rise to 30%. That's 8.2 million metric tonnes of Better Cotton.

## So Where Did It All Start?

In 2005, a group of visionary organisations including H&M, IKEA, Organic Exchange, Oxfam, Pesticide Action Network UK, and World Wildlife Foundation came together to work out a practical solution that would secure the sustainable future of the industry. The result was Better Cotton. In the 2010 – 2011 season, the first harvests of Better Cotton took place in Brazil, Mali and Pakistan, where 28,000 BCI Farmers produced 77,000 metric tonnes of Better Cotton lint.

Better Cotton means producing cotton in a way that cares for the environment through processes that minimise the negative impact of fertilisers and pesticides, and cares for water, soil health and natural habitats. BCI Farmers aim to achieve better yields and more financial security through access to global markets, whilst improving the working conditions in their fields.

Cotton that is made in this way meets the Better Cotton Standard. The standard has been developed by BCI, an independent multi-stakeholder organisation whose members are committed to making Better Cotton a mainstream product. From NGO partners to garment manufacturers, from the farmers to household brand names, all BCI's members are working to transform the way cotton is produced and safeguard the future of the sector.

## So What Is the Better Cotton Standard System?

The Better Cotton Standard System is a holistic approach to sustainable cotton production which covers all three pillars of sustainability: environmental, social and economic. Each of the elements – from the Production Principles and Criteria to the monitoring mechanisms which show Results and Impact – work



together to support the Better Cotton Standard System, and the credibility of BCI and Better Cotton. The system is designed to ensure the exchange of good practices, and to encourage the scaling up of collective action to establish Better Cotton as a sustainable mainstream commodity.

The standard gives assurance that more responsible farming is happening at field-level. Every step of cotton production, from sowing and growing to picking and harvesting, adheres to the production principles. BCI Farmers are also expected to continually improve their production processes.

There are six components which make up the Better Cotton Standard System:

1. *Production Principles and Criteria*; providing a global definition of Better Cotton through the following key principles.
  - Better Cotton is produced by farmers who minimise the harmful impact of crop protection practices.
  - Better Cotton is produced by farmers who use water efficiently and care for the availability of water.
  - Better Cotton is produced by farmers who care for the health of the soil.
  - Better Cotton is produced by farmers who conserve natural habitats.
  - Better Cotton is produced by farmers who care for and preserve the quality of the fibre.
  - Better Cotton is produced by farmers who promote Decent Work.
2. *Capacity Building*; supporting and training farmers in growing Better Cotton, through working with experienced partners at field level.
3. *Assurance Program*; regular farm assessment and measurement of results through 8 consistent results indicators, encouraging farmers to continuously improve.
4. *Chain of Custody*; connecting supply and demand in the Better Cotton supply chain.
5. *Claims framework*; spreading the word about Better Cotton by communicating powerful data, information and stories from the field.
6. *Results and Impact*; monitoring and evaluation mechanisms to measure progress and change, and to ensure that Better Cotton delivers the intended impact.

## How does BCI report on the results and effects of implementing the Better Cotton Standard System?

As BCI continues to scale up and engage with more farmers around the world, the role of data collection, management, and analysis becomes critical. It enables us to identify, isolate, and report on the effects and results of implementing the Better Cotton Standard System.

In the last six years, BCI has built the infrastructure to train farmers around the globe and has implemented a reliable assurance program and chain of custody mechanism to support the production of Better Cotton. BCI has gathered enormous quantities of field-level data, all of which will be extremely useful when BCI starts discussing impact. A pressing need for the standards sector is the ability to reliably measure the impact of implementation. BCI is no exception and is gearing up to communicate the impact of the Better Cotton Standard System's implementation. While this may appear to be an obvious requirement, demonstrating impact is an immense challenge. The diversity in the parameters related to cotton production, from geography to soil to climate to farming techniques, not to mention habitat and environment, and of course, seasonalities in every harvesting period, contributes to this challenge.

Consumer-facing brands and retailers, one of the driving forces behind the growth of Better Cotton, need to communicate reliably about the impact of their sustainability practices. Here, BCI's leadership in the area of data collection and management is a major advantage. Just as data is required to help standards systems switch the focus away from compliance auditing toward continuous improvement, data also plays an important role in demonstrating impact. Furthermore, data is required to transform verification into risk-based programmes that are significantly more efficient.

The Open Data Institute (ODI) points to one useful way to look at data — as a road. Roads can help us navigate to a destination, data helps us make decisions. Data can be converted into information, which in turn leads to knowledge, which enables learning, and ultimately permits better management, and therefore, improvement.

BCI is using field-level data and supply chain knowledge to connect farmers, ginners, traders, spinners, mills, cut & sew, manufacturers, retailers, brands and grassroots organisations. Our common goal is to develop Better Cotton as a sustainable mainstream commodity, and a tangible and useful by-product of our multi-stakeholder work is a sharper view of the intricacies of how cotton moves from farm to finished product.



# Economics Count Too



Terry Townsend,  
Cotton Analytics<sup>1</sup>

Cotton is a great industry of enormous worldwide benefit, and BCI was created to help producers improve production practices, not to undermine their economic livelihoods. As BCI expands to include more producers and gains members in the value chain, it is important that the Initiative remain true to its founding principles of making cotton production better. Accordingly, everyone associated with BCI must stay focused on enhancing the economic viability of cotton production.

## The Stakes are High

The cotton industry connects people to markets. Cotton bales can be stored without loss of value, can be transported over rough roads for thousands of kilometers without damage, and they have a high ratio of value to weight and density so they can be economically shipped from distant locations. That is why cotton is grown in places like Mali and Zambia, Uzbekistan and

Lubbock, Xinjiang and Maharashtra. In addition, cotton is a desert crop, having evolved over some 60 million years to survive in harsh conditions. That is why cotton is one of the most suitable of all commercial crops for cultivation in arid and semi-arid conditions, providing an economic return in seasons when other crops fail.

Cotton is often produced in regions far from markets with difficult agronomic challenges and low labor costs relative to the rest of the economy because cotton is the highest valued economic product those locations can produce with their infrastructure, soil, water and temperatures and skill levels. In many regions, cotton is the only viable economic activity available, providing income each season to between 30 and 60 million households. Threats to the viability of this industry have serious repercussions for livelihoods of about 2% to 3% of the world's population.

<sup>1</sup>Dr. Townsend served as Executive Director of the International Cotton Advisory Committee between 1999 and 2013, having previously spent more than eleven years as the organisation's Statistician.



## Sustainability of Cotton Production

Cotton has been produced intensively in some areas for about 200 years, and it has been produced with high-yielding intensive agronomic practices for over 50 years. If widespread damage to the environment, or persistent and systematic harm to workers were resulting from cotton production, it would be apparent by now.

An objective, statistically valid, metric-driven evaluation of cotton production practices would find that nearly all of the annual average of 24 million tons is fully environmentally and socially sustainable. If that were not the case, you would have to assume that farmers, scientists and government officials in approximately 80 producing countries are all stupid and that environmentalists, brands and retailers, almost all sitting in urban areas and having urban backgrounds, are all smarter and that they know better than farmers how and what to grow.

In the history of the world cotton industry, there have been only two regions where cotton production has been planted on a significant scale and collapsed because of environmental pressures: Central America in the 1970s, where misuse of insecticides resulted in industry collapse; and Central Asia today, where salini-

***“the greatest negative impact on the world cotton industry is the growth of polyester production”***

zation of soil is resulting in reduced area. In no other region over the long history of cotton production have farmers exited the industry because of environmental degradation. In all cases other than Central America and Central Asia, farmers cease cotton production because of economic pressures, not environmental destruction or social injustice.

## Market Fundamentals

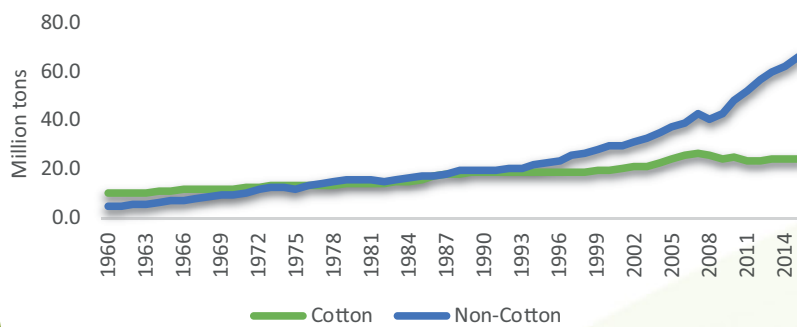
The factor having the greatest negative impact on the world cotton industry is the growth of polyester production.

In the Age of Sail, all lines and sails on ships were made of natural fibers, mostly hemp and sisal for ropes, and linen for sails, and millions of tons of each fiber were produced each year. Today, with the exception of museums, all ships' lines and sails are made of nylon, polypropylene or polyester, and world production of

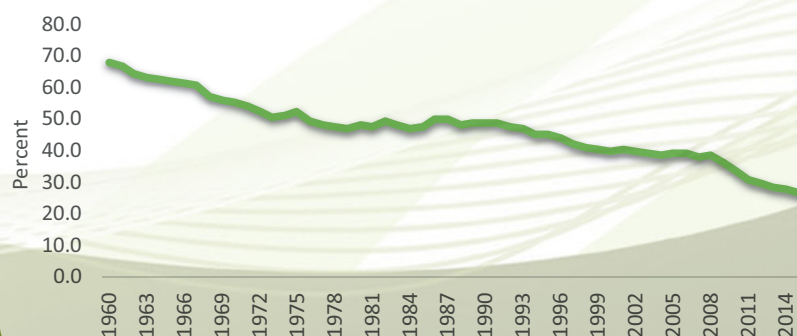




## World Fiber Consumption



## Cotton's Share of World Fiber Use



natural fibers used in lines and sails has fallen to just a few hundred thousand tons.

Prior to the advent of “fast fashion” and “casual Fridays,” wool was a major apparel fiber. In the 1960s, wool accounted for 10% of world apparel fiber use. Today, wool accounts for 1% of world fiber use.

In the 1800s and early 1900s, cotton probably accounted for 75% of world fiber use, and in the 1960s, cotton still accounted for two thirds of all fiber use. By the 1980s, cotton’s share had fallen to half, and today, cotton’s share of world fiber consumption is less than 30%, and falling.

World cotton consumption reached 26.6 million tons in 2007, but nine years later in 2016, despite population growth of 11% or 760 million, and cumulative world real GDP growth of 10% or US\$3.1 trillion, world cotton consumption was still approximately 3 million tons, or 10%, less than it was at its peak. Just as with hemp, sisal, flax, wool and other natural fibers, the world may realize years from now that ‘Peak Cotton’ has passed.

The world economy is highly competitive, and all industries face strategic threats. However, the natural fibers, more than most other agricultural commodities, face competition from manmade alternatives. To survive, cotton must be able to compete with manmade fibers, especially polyester.

Cotton depends on consumer preference to maintain demand. Polyester can be longer, stronger, finer,

more uniform, without contamination and more stable in price than cotton, and spinners would shift to polyester if consumers would buy such products. Therefore, allegations that potentially undermine consumer confidence in cotton, and thus encourage consumers to choose alternative fibers, are a serious threat to the sustainability of the industry and the livelihoods of millions.

## Berlin

I congratulate BCI on its growth to 2.6 million tons in 2015/16, and I wish all participants in the BCI 2017 Global Conference and Membership Meeting in Berlin a successful conference. But as you meet, I hope that all members of BCI maintain the focus of its founding members in 2005 on helping farmers to improve production, not on helping brands and retailers to increase sales margins or volumes.

As noted earlier, cotton is a great industry and provides incomes to millions. An objective, statistically valid, metric-driven evaluation of cotton produc-

tion practices would find that nearly all of the annual average of 24 million tons is fully environmentally and socially sustainable. BCI has an important role to play in assuring that cotton remains economically sustainable by helping farmers raise yields and lower input use. I thank members of BCI for their contributions to this worthwhile effort. Remember, as you discuss the sustainability of cotton production, Economics Count Too.







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# Measuring the Sustainability of Cotton Farming



Allan Williams,  
Chair, ICAC Expert Panel  
on the Social, Environ-  
mental and Economic  
Performance of Cotton

## Introduction to SEEP

The Expert Panel on the Social, Environmental and Economic Performance of Cotton (SEEP) is an advisory body of the International Cotton Advisory Committee (ICAC), formed in 2006 with the following terms of reference:

1. Provide the ICAC with objective, science-based information on the negative and positive social, environmental and economic aspects of global cotton production;
2. Gather information from around the world on costs of agricultural labor and the factors that affect those costs to assess their impacts on the social performance of cotton; and
3. Make recommendations for further action as appropriate to improve the social, environmental and economic performance of the cotton sector.

***science-based information on  
the negative and positive social,  
environmental and economic  
aspects of global cotton  
production***

The focus of SEEP for the last few years has been on the issue of 'how do we best measure the sustainability of cotton farming' and particularly what sustainability indicators should we collect data for and report on? A recent report prepared by SEEP and published by FAO and ICAC, "Measuring sustainability in cotton farming systems: towards a guidance framework" (Framework Report), seeks to start to answer these questions

The primary impetus behind the work was a desire to help the cotton sector better understand its current



environmental, social and economic ‘performance’, and – critically – provide a framework for improving on (and reporting) its performance. The issue of the performance of raw materials used in the textile supply chain is broader than just identifying areas for improvement. A range of metrics-based supply chain initiatives are developing Life Cycle Assessment (LCA)-based tools that are being used to compare and contrast performance across different raw materials. How these tools operate, and how they might be used, are critical issues for the cotton sector.

The approach taken to answer the question of how best to measure performance was to review the literature on the environmental, social and economic impacts of cotton, as well as a number of sustainability initiatives that have developed indicators relevant to monitoring and measuring those impacts. These sustainability initiatives included both cotton-specific and more general agriculturally-focused programs. Cotton-focused initiatives reviewed were the Better Cotton Initiative, Cotton made in Africa, Fairtrade cotton, organic cotton and Australia’s myBMP, while the generic agriculture initiatives reviewed included the USA’s Field to Market, and Sustainability Assessment of Food and Agriculture Systems.

Following an extensive consultation process, the Framework Report was finalised as a joint ICAC/FAO publication. It is currently available in English and

French. As well as detailing 68 priority indicators, the report provides an overview of the main sustainability themes and impacts associated with cotton farming, the relevant literature, and each of the sustainability initiatives reviewed to identify potential indicators.

As SEEP has been keen to stress, the 68 recommended indicators are not a mandatory, global list that every cotton-growing country should use to measure its performance. Rather, they are intended to be a starting point for anyone working with cotton farmers – governments, industry organisations, development agencies, funders and voluntary standards initiatives – for the basis for their reporting. As noted in the preface to the Framework Report by FAO’s Clayton Campanhola, the diversity of farming systems in different geographic areas, the specificity of sustainability challenges and the synergistic relationships between the different components of sustainability preclude the development of a blueprint or one-size-fits-all approach

Nevertheless, it is hoped that the list of indicators can support a degree of ‘commonality’ in how progress towards becoming more sustainable is assessed. Such commonality would help to identify whether some efforts are more effective in specific regions or applied within specific production systems, as well as helping to answer the question: How is the sustainability of the global cotton sector performing over time?



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Following the Framework Report's publication in 2015, a number of 'pilot-testing activities' have been undertaken across a diverse range of cotton growing conditions, including Australia, Benin, Bolivia, Cameroon, China, Paraguay, Peru, Senegal, Togo, the United States and Zambia. Further pilot testing is planned for Argentina, Colombia and Ecuador in 2017, and workshops to discuss the framework have involved participants from Burkina Faso, Côte D'Ivoire, Guinea, Mali and Niger. It is clear that the report is as much a framework for industry collaboration on the issue of sustainability, as it is a framework for measuring sustainability. It provides a focus for gathering together a range of perspectives - those of industry, government and non-governmental organisations - to discuss issues of common concern, and common feedback has been that the Framework serves as a 'crystallisation point' for local discussions. Importantly, rather than simply focusing on the question of 'which indicators should we use', one approach that worked well in Zambia was to first identify and agree, based on the range of impact areas detailed in the Framework, what the most relevant sustainability issues were, which current practices most threatened the sustainability of the cotton sector, and the potential solutions. Once consensus was reached on what practices were the priority to change, the Measuring Sustainability report provided a range of options for monitoring progress. Other suggestions include the development of tools for harmonised data collection and processing.

A comprehensive cataloguing of the 'lessons learned' from these pilot testing activities and workshops is currently being undertaken, kindly supported by GIZ<sup>1</sup>. This GIZ report will also summarise which indicators have been used or modified in the various countries that have tested it, how the data is being collected, and the collaboration efforts required to implement the Framework.

## Sustainability Indicators and Life Cycle Assessment

The development of a framework for measuring sustainability in cotton farming - i.e. the identification of a suite of indicators that could be used to benchmark cotton production sustainability and support continuous improvement - has coincided with the rise of initiatives driven by the downstream supply chain that are also interested in assessing the sustainability of the raw materials used in the textile industry in a metrics-based manner, and generally using a Life Cycle Assessment (LCA) based approach. Examples relevant to cotton that are using an LCA approach include the European Union's Product Environmental Footprint Category Rules (PEFCR) initiative, which is running a pilot program for a range of products, including a cotton T-shirt, and the Material Sustainability Index (MSI) of the Sustainable Apparel Coalition, which covers the range of textile raw materials used in apparel production, including cotton.

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<sup>1</sup>The German Gesellschaft für Internationale Zusammenarbeit



LCAs are based on averages, often at a very large scale, up to global. This large scale, together with the fact that not all the databases are freely available, makes it difficult at times to know precisely what specific (i.e. field level) data were used to compile a global 'average'. Further, the critical data required to assess the footprint of agricultural production will be influenced by very localised and highly variable factors, such as soil type, climate and choice of inputs, all of which will vary greatly from region to region and from country to country. In addition, the data may also very likely vary from season to season in the one location depending on seasonal weather conditions, choice of crop rotations, insect pressure etc.

An LCA-based assessment that provides a score for an impact area, while potentially identifying broad hotspots, cannot readily address this diversity and variability, and it is not apparent how this information is planned to be 'brought back' to the field level to support improvements in cotton farming. Can such an approach help cotton growers to improve their farming

practices and contribute to the continuous improvement in the sustainability of cotton farming?

These LCA-based initiatives are comprehensive, and take into account impacts along the entire supply chain, all the way from the farm to the end-product; they are being largely driven by the far-end of the supply chain, from a farmer's perspective, raising some critical questions: As but one, highly fragmented sector in a complex global value chain, how can the cotton sector best participate in these initiatives? What are the implications for cotton of environmental footprint labels? Can the objectives of these initiatives also support the interests of the cotton sector, especially the farmers? How does the industry ensure that any additional 'workload' regarding the collecting and reporting of information on cotton production is recognised and taken into account by the supply chain?

The SEEP Framework report is available at <https://www.icac.org/getattachment/Home-International-Cotton-Advisory-Committee-ICAC/measuring-sustainability-cotton-farming-full-english.pdf>



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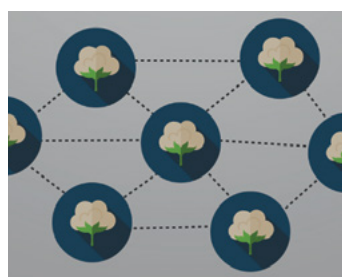
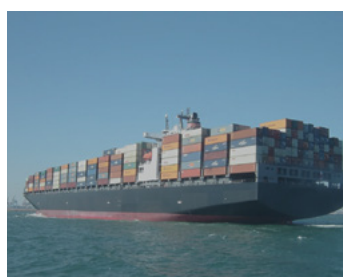
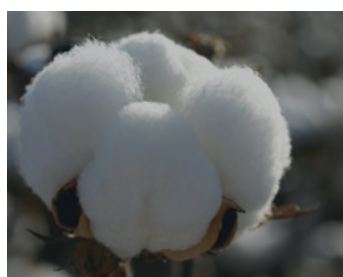
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# Cotton's Sustainable Future



James Pruden,  
Senior Director,  
Public Relations,  
Cotton Incorporated

The sustainable future of cotton is linked as much to its past as its present. Like all fibers, cotton comes with its own, unique set of environmental and social baggage. Cotton is actively pursuing verifiable means of reducing its environmental footprint, without increasing its economic burden to those on its supply chain. For cotton, there exist established and emerging programs intent on achieving this delicate balance, and multiple metrics to monitor and benchmark progress. Arguably, no other textile fiber is as active in its own self-improvement as cotton.

For seven millennia, cotton has been used as a textile fiber around the world. That enviable longevity stems from the fact that cotton can be grown on every continent except Antarctica; that it is versatile enough to create rugged denims and the most delicate of laces; and notably, because people find it comfortable to wear. Research from the Cotton Council International and Cotton Incorporated Global Lifestyle Monitor show that 79% of consumers around the world prefer their apparel to be cotton-rich.

The perception of cotton's environmental impact is muddled. Compared to manmade fibers, 85% of global consumers say cotton is safe for the environment, and 70% say that cotton is the most sustainable. This consumer perception is interesting given the negative and inaccurate depictions of cotton by some non-government organizations, competitive fiber companies, and in turn, media.

Cotton's detractors tend to paint cotton with a broad brush, as if there is one kind of cotton, grown one way across every continent. Of course, nothing could be further from the truth. Multiple cotton varieties, differing production systems, and variable geographic growing environments exist, making cotton not one business, but a series of independently-operated businesses that contribute to the world supply.

The false claims perpetuated by detractors and competitors are often at odds with science, scientific evidence and simple logic. For example, an often-repeated and inaccurate claim is that cotton accounts for 25% of the world's pesticide use. This would be damn-



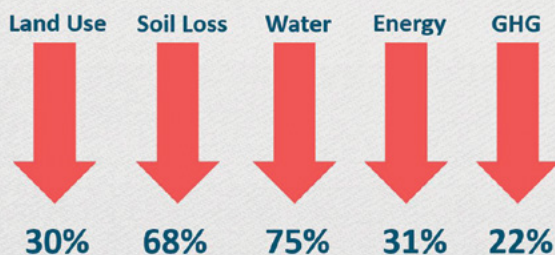
## THE LIFE CYCLE INVENTORY & LIFE CYCLE ASSESSMENT OF COTTON FIBER & FABRIC

ing indeed if it were true, but there are two challenges with the claim. First, there is no mechanism to accurately monitor global pesticide applications. The closest proxy is global pesticide sales, which are monetary units, not units of volumes applied. According to AMIS Global, a company that monitors chemical sales, cotton accounted for 5% of global pesticide sales in 2015. In the United States, Mississippi State University tracks insecticide applications on cotton across the 17 growing states. In 2015, U.S. growers applied insecticides an average of 1.96 times, less than twice.

Cotton's water use is another area where cotton is frequently and falsely maligned. Cotton is a heat- and drought-tolerant crop – this is a matter of fact. The fiction that cotton requires excessive amounts of water likely stems from an engineering débâcle by the Soviet government in the 1960s. As described in "The Aral Sea Crisis," a 2008 study by Columbia University, the Soviet project redirected the flow of two rivers that were the main sources of water for the Aral Sea. The redirection of water was intended to transform surrounding desert areas into farm land to grow a range of crops, primarily cotton. The project was unsuccessful, and its effects on the Aral Sea serve as a cautionary tale.



### U.S. Cotton Environmental Snapshot 30 Years of Reduced Impact



Field to Market: Keystone Alliance for Sustainable Agriculture Jan. 2012  
<http://www.keystone.org/>

The facts of the Aral Sea situation have been distorted over time as proof positive that cotton requires copious amounts of water. A 2007 study by Hoekstra and Chapagain, however, shows that cotton accounts for roughly 3% of the world's agricultural water. The same study estimates that about 50% of the world's cotton water needs are met by rainfall; in the U.S. that number rises to over 60%. To put it in perspective, more water is required to grow an acre of lawn grass than an acre of cotton.

Throughout history and into the present day, the cotton industry has distinguished and perpetuated itself through innovation and proactivity. In 18th Century America, the need for faster processing of harvested cotton resulted in the invention of the cotton gin, which also sparked the industrial revolution in the United States. In more recent years, the mapping of the cotton genome is helping to accelerate the development of improved plant varieties, in half the time.

Today, mature cotton-growing countries employ a combination of techniques, such as conservation tillage; and technologies, such as computer-aided measurements of input needs, which enables more precise application of water, fertilizers, or pest deterrents.

In well-established cotton-growing countries such as Australia and the United States, cotton production is high-tech and well-regulated at the national and local levels. Growers in both countries self-invest in research and development projects designed to balance maximum output with minimal environmental impact.

These efforts are the foundation of the Cotton LEADS™ program. With over 450 global industry



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partners, this joint effort of Australian and U.S. cotton-growing organizations aims to educate downstream links on the global cotton supply chain about the robust regulatory structures in both countries, their research and development activities, and the significant, measurable gains made by the countries' cotton producers.

For less mature cotton-growing countries around the world, ones that may not have the luxury of an established and regulated national infrastructure, programs like the Better Cotton Initiative (BCI) fill a vital role. With government funding and support from apparel brand partners, BCI provides grower education on improved production practices and helps individual growers set sustainability goals. On-farm audits verify implementation and monitor results.

Although programs like Cotton LEADS™ and BCI operate independently, the results of their parallel goals are chronicled in a variety of third-party measurement studies, such as: the BCI Annual Report; the Independent Environmental Assessment of the Australian Cotton Industry; and for the United States, the Field to Market®

National Indicators Report. For a snapshot of global cotton's environmental impact, there is the Life Cycle Assessment of Cotton Fiber & Fabric. First conducted in 2010, this study marked the first time a commodity had assessed cradle-to-grave life cycle metrics for finished goods across the spectrum of production, manufacturing, use, and disposal. An update to this LCA was recently conducted by Cotton Incorporated and includes an expanded look into how consumer laundering habits affect overall cotton sustainability.

Consumer laundering habits figure prominently in two related opportunities for cotton and its sustainable credibility. A variety of reports, starting with a well-publicized assessment from Patagonia, demonstrate that the laundering of polyester apparel releases micro-fibers into waterways, which negatively impact aquatic environments. Related to this are other studies that conclude polyester apparel does not release odors as readily as cotton during home laundering. Thus, if a polyester garment requires multiple launderings to remove odor, each wash load releases additional micro-fibers into aquatic environments. Along with polyester, tree-based rayons are also coming under fire for their role in global deforestation. A number of major apparel brands have adapted their rayon sourcing strategies to ensure their products are not contributing to deforestation around the world.

The increased awareness of the environmental challenges posed by competitive fibers like polyester and rayon come at a time where there is also increasing awareness of how far and how effectively cotton is traveling down multiple paths to sustainability. A combination of ongoing innovation and fact-based advocacy may well sustain cotton as a go-to fiber, and do so sustainably.





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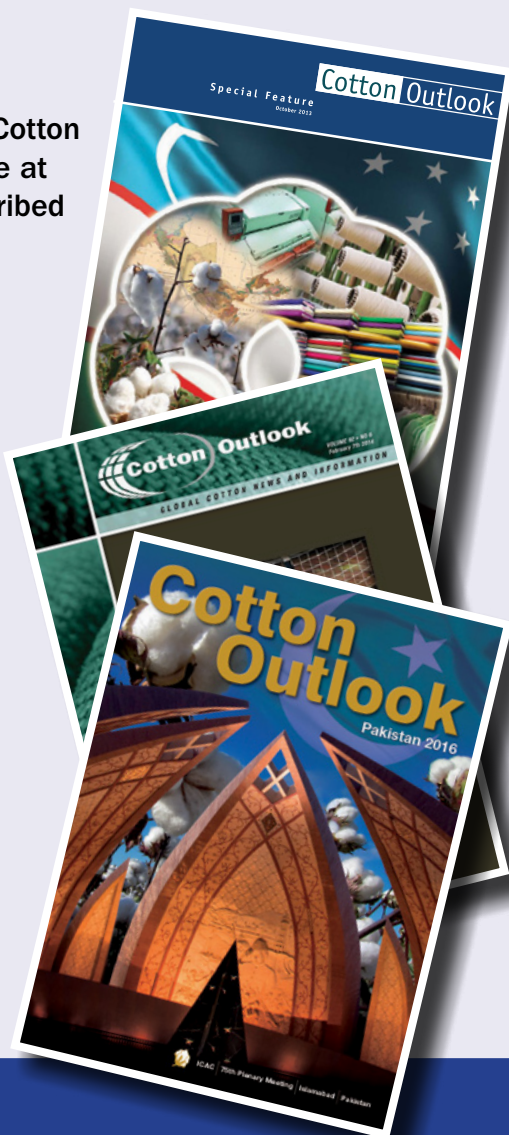
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# Sustainable Cotton: Closing the Gap



Amit Shah,  
CEO, Spectrum  
International

As our world continues to battle between diversity and coexistence, one cannot help but look at the cotton industry, as diverse as it is unique, and admire how effectively it has performed for decades. It is surely exemplary that marginally sized farming countries like India (with an average land holding of approximately 1.5 hectares and lint yields ranging from 400-800 kgs

per hectare) to large sized farming countries like Australia (with an average land holding of approximately 500 hectares and lint yields ranging from 1,800-2,500 kgs per hectare)<sup>1</sup>, not only grow the same product but end up serving the same supply chains and consumers, albeit each with their own uniqueness.



Hand-picking Vs. Machine harvesting: same job, Different worlds

Left Photo Credit: World Bank Photo Collection © Ray Witlin/World Bank

Right Photo Credit: Sustainable Ag: A view from the field



While it is probably easier to imagine how different the production methods, how varied the farmer profiles and skill sets and how divergent the use of technology between such countries would be, the differences and the challenges that follow become even more pronounced when it comes to setting up and applying a single set of global sustainability principles such as the Better Cotton Initiative.

Our company, Spectrum International, entered the field of sustainability in 1998, while setting up one of India's first contract farming projects for Organic Cotton production in the state of Gujarat. Gujarat, though known for its cotton quality, had relatively poor farmers, with little or no real irrigation techniques, technology or best practices. These troubles were soon compounded, as in 2001 Gujarat suffered a devastating earthquake that broke both homes and spirits! Our projects aimed at bringing the Indian farmer into the new age, making him/her knowledgeable and self-reliant. The vision was to create a balance between our CSR and business goals with farmers producing quality cotton in a cheaper and yet more sustainable method, which in turn would additionally give them and us a commercial edge in the world of textiles.

This of course was easier said than done. The textiles and apparel supply chain is of one the longest, and one in which, traditionally, the cotton farmer had little or no visibility to the retailer or consumers. On one hand, we had to train a vast number of illiterate or semi-literate farmers with no real financial, technical or skill resources and who were largely exploited by various elements in the agro-ecosystem, while on the other, we had to manage a very organized textile, apparel and retail sector that expected just in time deliveries and pushed for impact on all sustainability indicator scales.

To put one such challenge of the massive farmer numbers in perspective... One Indian farmer on average produces cotton to make roughly 1,300 T-shirts of average weight and quality, which means a brand that sells, say just 500,000 pieces a year, would need approx. 380 farms (Australia has a total of 1,200-1,400



On-Field Training of BCI Farmer by Spectrum in Maharashtra



Brand representatives interact directly with a Spectrum BCI Farmer



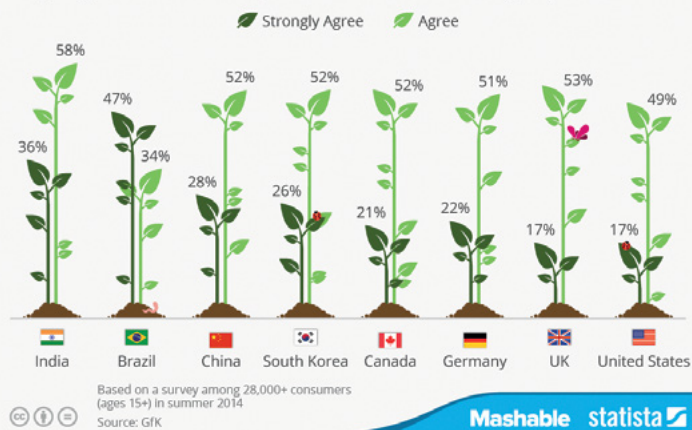
Training of BCI farmers by Spectrum in Gujarat  
Photo credit: © Spectrum International Pvt. Ltd

farms)<sup>2</sup> if they were sourcing from India. Add to this the challenge of different cultures and languages in a country like India (currently Spectrum International publishes its literature in four different languages). To overcome this, we (and now other such projects in India) operate a pyramid model, based on hiring a large contingent of 'Extension Service Providers', farmers hired and trained by organizations such as ours that act as a bridge between the farmer and



### Brands Widely Expected to Act Environmentally Responsible

% agreeing that brands and companies have to be environmentally responsible



What do the consumers want?

us. Through the Extension Pyramid, organizations provide knowledge, technology, training, etc., and in return get feedback relating to farmer challenges, progress and impact. Extension teams give skill, behavioral, Decent Work and safety training, both in theory and by operating demonstration plots all across the project area. The Extension Pyramid is the backbone of all sustainability operations in countries dealing with marginal farmers.

The other large challenge was to align with global retailers (many of whom, in contrast to other industries at the time, did not have visibility beyond one or two tiers of their supply chain), through a long and geographically spread textile and apparel vertical. Retailers then had little or no real need to go back all the way to farming and, frankly, depended a lot





**The Extension Pyramid is the backbone of all sustainability operations in countries dealing with marginal farmers.**

upon the supply chain to figure things out for itself. Of course, this was okay for traditional farming but for any form of sustainable farming, where the farm and its practices were front and center, and where traceability was paramount, most members within the supply chain lacked the necessary resources to do justice to the task at hand.

Fortunately, a lot changed. While the early 2000's saw retailers, or at least their CSR departments, take keen interest in traceability and chain of custody within the supply chain, it was only around 2010 that retailers realized the potential, commercial benefits of being entrenched within the vertical at different stages. Today, we operate in unprecedented times, in which certain retailers have even begun to procure materials like yarn directly from spinners, and who invest large sums of money and other resources to study and support sustainable cotton farming. While this may be restricted to the sustainable supply chain at the moment, it is not hard to imagine that this probably has the potential to reshape textile merchandizing forever.

So, what does this spell for the future of sourcing from marginal farming countries like India? Are all the challenges a thing of the past? The fact is that, while it is extremely heartening to see the supply chains of many leading brands within the industry become more integrated as well as more involved than ever before, and to see sustainability finally cross the office walls of CSR heads into the purchasing departments, this still reflects only about 20%-30% of the global industry. This could be a reflection of consumer preferences as well. If a GfK study<sup>3</sup> of 2014 is to be believed, surprisingly, not too many consumers in developed countries as yet believe brands have to be environmentally responsible.

But the future challenges also lie in the realm of the farmer. As consumers, brands and members of civil society rightly push for impact on critical global issues such as climate change, water management, land use, etc., the fact is that the poor farmer in most developing countries still stresses about putting food on the table and making ends meet.

Individual organizations such as Spectrum International (both in the private or non-profit space) are trying hard to close the gap by making small farmers realize the collective impact that they have on global environmental and social issues (India, China and Pakistan collectively contribute almost 57% to the world's cotton production<sup>4</sup>) and at the same time making the supply chain, brands and consumers aware of the various



Farmers' Children in a School supported by Spectrum International

challenges faced by these marginal producers. But even with that, multi-stakeholder platforms such as BCI are becoming extremely crucial in gathering critical mass. What took companies like Spectrum years to achieve in terms of brand traction can now happen very easily through the various supplier chain initiatives taken by BCI and its partners. For BCI is about much more than just imparting technical knowledge on sustainability, as it provides a common language to be spoken between various, very diverse entities within a very complex supply chain. It is an opportunity for individuals at two ends of the vertical, the farmer and the retailer, to create a shared understanding, pool resources and effect mass-change that is helping transform the world of cotton agriculture into one that is fit for the next era.

Our journey of almost two decades has been one full of challenges, achievements and most of all a lot of learning. By no means can we claim to be close to the finish line, but the gap between geographies, the gap between ideologies and understanding is definitely closing. And with every step as this gap closes, we know that, for the generations to come, we are leaving a world better than the one we inherited.

<sup>1</sup> [www.cottonaustralia.com.au](http://www.cottonaustralia.com.au): Cotton Annual 2013

<sup>2</sup> [www.cottonaustralis.com.au](http://www.cottonaustralis.com.au): Cotton Annual 2013

<sup>3</sup> [www.statista.com](http://www.statista.com): Article by Felix Richter, Data Journalist- Brands Widely Expected to Act Environmentally Responsible

<sup>4</sup> Source: USDA

# The Israel Cotton Sector and the Better Cotton Initiative (BCI)



Jonathan Spenser  
Israel Cotton Production  
and Marketing Board Ltd.



The Israel Cotton Production & Marketing Board (ICB) is a unique, farmer-owned producer organization that represents all cotton farmers in Israel. ICB's goal is to support Israeli cotton and field crop growers by providing services that promote profitable and sustainable cotton production. ICB's objective is to preserve cotton as an alternative of choice for Israeli field crop growers.

In that capacity, the key role of the Board is to handle the organized marketing of cotton. The Board, moreover, represents the cotton growers on all matters, and coordinates relationships with the government, international organizations, research and development institutions in Israel and other supply chain players. The Board comprises different activities: cotton sorting and classification; marketing; finance; production practices and pest management; and R&D and extension services.

ICB's growers focus on Extra Long Staple (Pima) and Long Staple (Acalpi) cotton and have achieved record-breaking yields and world class qualities. ELS cotton

yield development has been continuous and consistent; yield now reaches 1,940 kilograms of lint/hectare per year on average for both types, demonstrating a significant upward trend. Substantial improvement in staple length and strength are also apparent, making Israeli cotton the best of its kind. Israeli ELS cotton has become a best-in-class product, competing head-to-head against the finest cottons in the world. Israel's Pima is held in the highest esteem in the marketplace and considered of paramount value to the industry.

All Israeli cotton is exported. The main destination markets are China, India, Europe and additional countries in East Asia and South America. Israeli cotton is marketed to spinners throughout the world in collaboration with the renowned and highly respected international company Otto Stadlander GmbH.

In 2015, ICB approached the Better Cotton Initiative (BCI) to discuss producing Better Cotton in Israel. BCI



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we partner with the Better Cotton Initiative to improve cotton farming globally



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is a not-for-profit organization “stewarding the global standards for Better Cotton, and bringing together cotton’s complex supply chain, from the farmers to the retailers. BCI exists to make global cotton production better for the people who produce it, better for the environment it grows in, and better for the sector’s future, by developing Better Cotton as a sustainable mainstream commodity”. This led to ICB joining BCI as a member organization. Subsequently, cotton farmers in Israel produced their first cotton harvest licensed as Better Cotton, and produced one of the highest yields among BCI partner countries. The entire Israeli cotton crop, which is produced by ICB growers and marketed via the board, is now licensed “Better Cotton” according to BCI’s Principles and Criteria.

ICB shares BCI’s values and is committed to BCI’s requirements regarding sustainable agricultural practices, including rational pest control and usage of agrochemicals, precise application of irrigation and water conservation, fair treatment of employees, a safe work

environment, involvement in the community and more. ICB realizes that agriculture has a profound impact on the physical and human environment, and is working to improve its practices by constantly adjusting and fine-tuning its use of inputs and respecting its natural surroundings and the community.

Water conservation, one of BCI’s leading principles, has long been practiced in Israel, due to its limited arable land and water resources, harsh soil, a small labor force and a hot and arid climate. To address these issues, Israel has developed innovative agricultural technologies and methods. Israel is at the forefront of irrigation and water management technologies, one of which, drip irrigation, is used in cotton cultivation worldwide. In addition, Israel’s cotton growers use 100% recycled water.

As one cotton grower from central Israel describes: “Every drop of water is accounted for. Water meters are linked to our computerized controllers and we have full command of the water we apply.”



He continues, "Joining BCI has assisted us to work in a more methodological manner. We are committed to a set of requirements determined by the organization, which relate to precise application of irrigation water and water conservation, among other requirements."

The Head of Extension Services for the cotton sector at the Israeli Ministry of Agriculture describes how growers apply precise irrigation: "We use multiple methods to monitor cotton development and determine precise amounts of water required for irrigation in every plot. We measure plant height, leaf water status and use satellite imagery. BCI requirements provide a framework and assist us to operate in an orderly manner."

Additional BCI values already practiced by cotton growers in Israel, and which are considered to be the key to Israel's successful agriculture, are mutual aid and cooperation: there is ongoing knowledge sharing, professional cooperation, and communication between growers, researchers and extension services, all geared to improving quality and yield. Working with BCI will allow cooperation on a global scale.

In the coming years, ICB intends to develop and adopt an Israeli cotton standard. By the end of 2017, ICB plans to establish this new standard with the aim of benchmarking it with the Better Cotton Initiative principles

Israeli cotton production is considered a worldwide symbol of advanced technology, earning the country an excellent reputation at the marketplace.

ICB applauds BCI's proven ability to improve the reputation of the global cotton sector and enhance ICB's ability to sell and market quality cotton. We also value the efforts of BCI retailer members worldwide that promote cotton implementing sustainable and appropriate agricultural practices.

As an organization that believes in these same values, we believe that we can contribute, from ICB's experience and knowledge in cotton production, to BCI and its members, and benefit from the BCI spirit of excellence in agriculture, environmental conservation, safety standards and wellbeing of the community.

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# ORTA ANADOLU Beyond Denim A Journey Towards Sustainable Cotton



Leon Picon,  
Cotton Purchasing Director,  
Orta Anadolu

There is an increasing awareness nowadays that resources are not infinite and that industrial products and commercial activities have a huge global impact. Orta Anadolu has long been aware of this truth and has come to adapt its policies on sustainability accordingly. “Orta Blu”, Orta Anadolu’s sustainability division, aims to communicate its ongoing efforts in resource and raw material management and its social missions.

Cotton has been among the most strategic topics for Orta Anadolu. Having been the largest component in the cost and quality for denim we produce, our cotton strategies have always been fine-tuned and executed with the utmost consideration. That being said, we have always considered ourselves as part of the cotton growing, processing and trading sectors. That is why we are concerned with, and seek to learn about, every stage of the cotton supply chain, from the seed all the way up to the finished garment and our end consumer.

Back in the day when “Cotton is King” was an undisputed term, cotton enjoyed the lion’s share of global fiber markets. However, that situation has been eroded



over the last two decades, as cotton has faced fierce competition from alternative fibers and has lost significant market share, mainly to manmade fibers. This development has coincided with an increased scrutiny of cotton along the entire supply chain. Being a global agricultural commodity, cotton has come under the microscope for its global environmental footprint, as well as its social side-effects on farming communities. As a result, there is tacit agreement across the board that many issues need to be discussed regarding the cotton industry.

In this context, many fundamentals have changed regarding cotton since the beginning of the current millennium. This new era has been a perfect breeding ground for new cotton initiatives, on both the global and regional levels. Needless to say, this has been the time when the entirety of supply-chain participants

discovered the value of more “sustainable” cotton. For example, the cultivation of organic cotton has spread to many countries and demand for organically-grown cotton, and for garments made from it, has rapidly increased.

Orta Anadolu’s journey towards sustainable cotton had its genesis in 2001, after a number of customers inquired about denim fabrics made of organic cotton. Thus, Orta’s first encounter with organic cotton bales was based on satisfying those pioneering customers. While the broader textile industry became preoccupied with the concept of sustainability in general, we at Orta were inclined to focus on the more specific picture of sustainable cotton. That is how Orta initiated its “Organic Cotton Plan”, procuring a certain percentage of its production needs as organically-grown cotton, independent of the level of its organic denim sales. Orta made this forward-looking decision in order to reduce its environmental footprint and contribute to

the global scale up of global organic cotton production. Between 2006 and 2008, the share of organic cotton as a proportion of all cotton used at Orta increased to almost 7% of its total, a significantly higher level than the specific demand for organic denim fabric during that period.



Things started to change globally, however, as continuing advances in GMO technologies led most cotton-growing countries to prefer adopting Bt. seeds, which significantly limited the potential scalability of global organic cotton production. The combination of higher unit costs associated with organic agriculture practices, along with unmanageable premiums for organically-grown cotton in marketplaces, forced us to limit our organic sourcing to levels that reflected our organic denim orders. As a result, Orta’s organic cotton footprint has been limited to approximately 2% of our total cotton sourcing since 2009.

Orta Anadolu experienced few developments in terms of sustainable cotton sourcing between 2009 and 2011, at which time cotton certified as being compliant with Better Cotton Standards started to be recognized as viable sustainable cotton, commercially available from a limited number of origins. Better Cotton Initiative (BCI), in its initial implementation phase, came out with a very bold declaration: **“BCI aims to transform cotton production worldwide by developing Better Cotton as a sustainable mainstream commodity”**. Orta Anadolu subsequently decided to monitor BCI closely and made its first commercial Better Cotton procurement from Mali in 2011.

With the exception of a few forerunner brands and retailers, demand for Better Cotton at that time was almost non-existent. Despite this tepid reception for





Better Cotton, Orta staked a bold position on being one of the strongest supporters of Better Cotton. Without regard to our order books, Orta made an official announcement that a minimum of 5% of cotton used in the production process would be procured from Better Cotton sources. After years of stellar global demand growth for Better Cotton, the numbers have more than confirmed this strategic decision. Today, Orta's own pro-

***There is no longer any doubt that global cotton supply chains will need to move towards more sustainable practices in the years to come.***

ducer Units throughout Turkey who implement the Better Standard System. By 2016, IPUD's activities had already reached almost 5% of the national cotton area, with a target of 20% of Turkish national cotton acreage by 2020. It is understandably with pride that Orta counts itself among the initiators of IPUD, the first and only sustainable cotton growing platform and network in Turkey.

In addition to our involvement at the Turkish domestic level, Orta has been honoured with an invitation from BCI to participate as a Council Member, representing the Suppliers and Manufacturers category. In addition, Orta Anadolu has participated in two election processes, in 2013 and 2015, and has served as one of the Suppliers and Manufacturers representatives on the BCI Council since 2011. Being part of the Council and having worked alongside of the inspiring BCI leadership team all the way through the implementation phase



urements represent almost 25% of the total amount of cotton it uses.

Intrigued by BCI's strong rationale and solid membership base, Orta started to consider initiating Better Cotton implementations in Turkey. Following a series of productive meetings with BCI, the National Cotton Council of Turkey and a number of prominent Turkish textile manufacturers, Orta commissioned the first country scoping report on Better Cotton Implementation in Turkey in 2011. This scoping report was the first milestone in the establishment of İyi Pamuk Uygulamaları Derneği (IPUD). IPUD (the Good Cotton Practices Association of Turkey) was officially established in 2013 and shortly thereafter signed a strategic partnership agreement with BCI. As BCI's strategic partner in Turkey, IPUD is the entity responsible for implementation and extension of Better Cotton practices on a national level by providing support to those

(2010-2012), the expansion phase (2013-2015) and right up to the mainstreaming phase (2016 - ongoing) has been an extraordinary journey.

There is no longer any doubt that global cotton supply chains will need to move towards more sustainable practices in the years to come. Every step forward in terms of sustainability will enhance the added value to cotton: as lower unit costs to growers; safer trading conditions provided to traders, manufacturers and brands; reduced social and environmental costs for government agencies; and an increased perception of cotton as being a natural and renewable fiber. And last, but by no means least, sustainability is a direct path to a substantially cleaner and better environment for generations to come.

Useful links: [www.ortaanadolu.com](http://www.ortaanadolu.com)  
[www.ortablu.org](http://www.ortablu.org), [www.iyipamuk.org.tr](http://www.iyipamuk.org.tr)



# Warangal Project - Driving Real and Lasting Change



Phil Townsend,  
Sustainable Raw Materials  
Specialist,  
Marks and Spencer

Cotton is a hugely important raw material and it plays a major role in the economies and social welfare of many countries, providing a livelihood for hundreds of thousands, if not millions, of small-scale farmers. However, the environmental impact can be significant. It can take up to 2,700 litres of water to produce one conventional cotton t-shirt, which is equivalent to what an average person might drink over three years! At M&S, we recognise the important role we need to play in driving demand for cotton to be produced in more sustainable ways.

Cotton makes up a significant proportion of the raw materials that we use in our Clothing and Home products and we know our customers love the look and feel of cotton. As a responsible retailer, we've been working hard under Plan A, our eco and ethical programme, for ten years, to address many of the social and environmental issues associated with garment manufacturing, including cotton and wood sourcing, ethical and eco model factories and the use of dyes and finishes.

With regard to cotton, we have committed to source 70% of our cotton from sustainable sources by 2020, and we recognise BCI, Fairtrade, organic and recycled as more sustainable cotton options.

BCI's overarching goal of growing cotton in a more responsible way to minimise the impact on the environment has made it a key partner in helping us progress towards our 2020 target. We have been working with the BCI and WWF on projects with farmers in India to produce cotton in a more sustainable way, by using less water, fewer chemicals and pesticides, and with a lower carbon footprint, which is better for the health of cotton farming communities and the environment as a whole.

The project involves working with over 18,500 farmers in Warangal, India who have received BCI licences on over 20,000 hectares of cotton fields across nearly 250 villages. The first harvest of better cotton was produced in 2010 and the project has gone from strength to strength.



In 2015, I was fortunate enough to visit the project site and, after working on it remotely for several years, I was really keen to see it for myself and meet the people involved.

One of the most impressive things about this project is the number of different people involved in making it a success. WWF has two teams involved - one in the UK, which oversees the project, and the other in India, which focuses on implementation and tracking progress. There are also several local partners, including a leading NGO in India, that is there to help establish and strengthen farmer cooperatives, and the Indian Council of Agricultural Research (KVK), the science and research centre which provides education and support to farmers to help them improve their crop management. And, of course, all the field facilitators, cooperatives and the farmers themselves, without whom the project would not be possible. BCI works with all these key players at each stage in the cotton production chain and the most notable thing about the trip was getting to see how the BCI model had motivated all these different groups to deliver amazing results.

This project is moving towards its final phase in 2017. The lasting ambition of this partnership is to ensure the Better Cotton programme becomes self-sustaining through the strengthened Cooperative Societies formed through the project. It will also ensure responsibilities to comply with the Better Cotton Standard System are handed over responsibly. What the project has shown is that, by combining the skills and expertise from WWF and M&S, we have been able to support farmers in developing a strong sense of purposeful, impactful and successful sustainable business practices.

This project is a great example of different partners working towards a common goal to produce better cotton and we're proud that it is one of our most successful and impactful sustainable raw material stories. We originally committed to source 25% of our cotton from sustainable sources by 2020 but the enormous progress made in projects like this has enabled us to be more ambitious, and I'm pleased to say that we have reached 48% this year and so we are making great progress towards our 2020 goal of 70%.



When I arrived at the project sites and spoke to the farmers, the benefits that the project is having were immediately clear. They told me about the Farmer Telephone Helpline that was set up by KVK to deliver instant technical support to them for a whole range of queries, such as guidance on farm management practices. From this helpline, a weekly newsletter is published to help others understand more about the most common questions asked. I saw various methods of Integrated Pest Management (IPM) including pheromone traps for boll worm, insect paper traps, refuge crops and others, all of which are more environmentally-friendly alternatives to chemical pesticides. Importantly, most farmers in the project benefited from yield increases which has meant that their net income has increased both from more cotton crop and less expenditure on chemical fertilizers and pesticides. So a win-win for everyone!

The success of BCI and other sustainable cotton standards like Fairtrade and organic have meant that thousands of farmers and their communities are being impacted in a positive way.

Consumer demand for sustainable products is only going to increase, and as demand for sustainable raw materials grows, projects like this demonstrate that brands and retailers have a clear way forward – collaborating to drive real, lasting change. We are all on a journey and we still have a lot of work to do - sustainable cotton still only represents around 15% of total cotton production. But if we can all learn from projects like this, we will be able to accelerate change across the global cotton community.

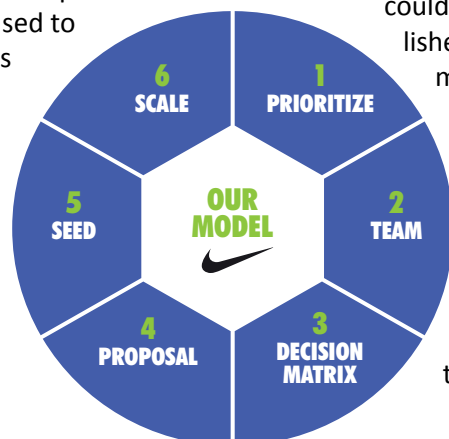
# Case Study

# NIKE INC'S Sustainable Cotton: How Sustainable Cotton became Business as Usual

## Introduction

At Nike, Inc. sustainability is a catalyst for revolutionizing the way we do business and an opportunity that's been integrated across our business. Recognizing our corporate growth and ambitious sustainability goals require us to accelerate efforts to reduce dependence on constrained resources, we've set a bold ambition to double our business with half the impact. With the biggest environmental impact of our products coming from materials used to make them, much attention is on sourcing better materials, such as our commitment to source 100% of all Nike's cotton more sustainably by 2020.

Making this commitment led to one of the biggest company-wide sustainability initiatives ever



undertaken and a 6-step model for how to manage systemic materials change across the business.

## Prioritize – Why cotton?

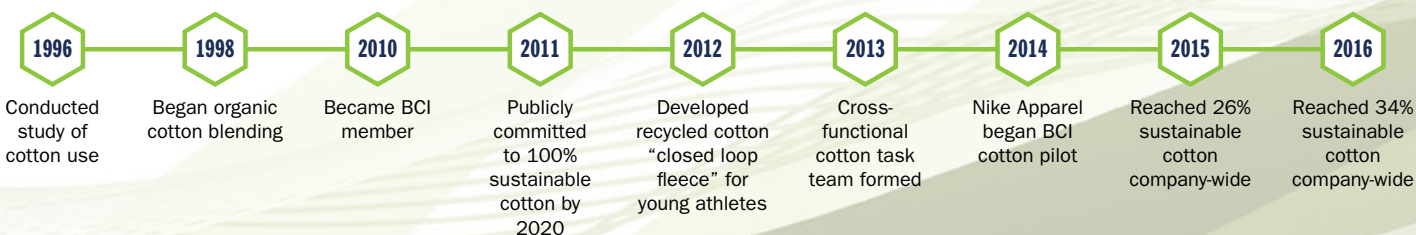
Cotton is one of Nike's top three raw materials. Yet conventional cotton farming can come with a huge water footprint, high pesticide use and pressing social challenges. In fact, more than half of Nike's water footprint comes from cotton farming. Still, we knew cotton could be grown more sustainably, and in 2011 published our commitment to source 100% of our cotton more sustainably by 2020.

"The issue wasn't that conventional cotton sourcing was broken, but that it could break in the future," said then Nike, Inc. VP of Global Sourcing and Manufacturing, Nick Athanasakos. Cotton's intense reliance on water, for instance, could mean problems if the availability of water changed over time. "It was a matter of not putting the business model at risk."



Nike had been blending organic into our cotton products since 1998. Instead of marketing a few all-organic styles, nearly every Nike apparel fabric containing cotton is 10% organic cotton. With this blending strategy, we are consistently one of the top five buyers of certified organic cotton globally. Nike also uses some recycled cotton.

But with limited availability of organic and recycled cotton, we knew we couldn't reach our 100% goal relying on those sources alone. We needed an innovative solution to complement these existing programs and take our sustainable cotton portfolio to scale — without negatively impacting cost or quality.



This comprehensive decision matrix was applied to nine different cotton standards. The Better Cotton Initiative (BCI) surfaced as the most promising standard to fill the gap between our organic and recycled blends and our 100% target.

## What is the Better Cotton Initiative?

BCI is a multi-stakeholder organization with over 1,000 members representing every part of the supply chain, aiming to make mainstream cotton more sustainable. As a standard and robust verification system, BCI works with partners around the world to train cotton farmers to use less water, synthetic pesticides and ferti-

## Team - THE COTTON TASK TEAM FORMS

The mandate for 100% was clear — but the road to get there wasn't. In July 2013, Athanasakos and Chief Sustainability Officer Hannah Jones tasked a group with creating a strategic plan to execute the 2020 target. Sustainable Materials Directors Susanne Wintrich and Cheryl Millard-Nutt gathered a cross-functional team representing Manufacturing, Sourcing, Materials and Sustainability. They also dedicated a project manager, Merrilee Avila, from Sustainable Manufacturing and Sourcing, to keep the project on track.

Involving the business from the beginning helped management understand value in the initiative and helped garner their support. "Because we could see cotton supply risks in the long-term future, we knew enough to say that this was worth putting our effort into," said Susi Proudman, then VP of Nike Apparel Materials. Most importantly, it set the stage for the appropriate parts of the business to take ownership of the program as it matured.

## DECISION MATRIX – Evaluating options

The team began by asking key questions: what is the scope? How exactly do we define "sustainable cotton?" Where does our cotton come from? Who are the players involved? What sustainable cotton options are available? What is a realistic ramp-up schedule?

Finding answers took three months. The team created a decision matrix with 12 criteria covering all environmental, social, quality and cost aspects by which to score each potential sustainable cotton option, weighted according to the importance to Nike and our environmental and social goals.

lizer while improving yields, profitability and livelihoods.

## Proposal – Leadership commitment is KEY

Based on the decision matrix results, the team proposed a portfolio strategy to complement our existing organic and recycled programs by converting the remaining conventional cotton to Better Cotton.

In September 2013, leadership approved plans to pilot BCI. To warrant success, they agreed to hire a transition manager for the project, work closely with the BCI organization, and accelerate funding to BCI farmer support. Nike's Global Sourcing & Manufacturing saw the value in ensuring a sustainable cotton source base that could grow with us — BCI's fees were a small price to pay for risk mitigation in the high-risk cotton industry. "It's the cost of doing business, not for today but for tomorrow," said Athanasakos. "The marketplace changes so fast when things hit a certain tipping point, it's way too late. If our resources are constrained, and we aren't in the right zone, we will get left behind."

## SEED – THE PILOT

Team members in Materials Manufacturing identified four fabric suppliers best suited to pilot. They were high-volume, trusted suppliers who were either vertical or had strong relationships with their cotton spinners.

In what would become a hallmark of the program, each vendor set its own BCI targets. "We told each vendor, 'You know your supply chain best. Knowing you need to get to 100% sustainable cotton for Nike by 2020, how quickly can you ramp up with no impact to quality or cost?'" said Avila.

# SEED, SCALE & REPEAT



Nike Apparel (70% of all Nike, Inc. cotton usage) blazed the trail for each brand to seed and scale to 100% more sustainable cotton.

Nike also gave suppliers an incentive of extra points on the Nike Materials Sustainability Index (MSI), a scoring system that reflects the environmental impact of materials used in Nike products.

The pilot launched in early 2014. Just one year later, the four suppliers increased Nike's Better Cotton use tenfold, helping inline apparel reach 33% sustainable cotton (BCI, organic or recycled) for Fall/Holiday 2015. Focusing on four suppliers allowed Nike to work out our processes while supporting the growth of BCI's global supply.

In June 2014 Nike ran for the BCI Council and Proudman, representing Nike, was elected as the chairperson. The move showed Nike believed in the organization and enabled BCI to understand business needs that could drive success.

BCI was maturing and beginning to show its promise overcoming challenges one by one. BCI's market-driven Volume-Based Fee (VBF) replaced the need for Fast Track seed capital. They were able to gain a sought-after foothold in two crucial source countries, Australia and the USA. And as BCI continued to scale globally, supply and demand issues were reduced, allowing Better Cotton to be traded without price premiums in the conventional cotton market.

## SCALE – TRAIN THE TRAINERS

The next step was getting Nike Apparel Manufacturing equipped to expand the program beyond the four supplier pilot. For this, Nike hired Linai Vaz from Nike's Americas Liaison Office (LO) as the project's full-time materials manufacturing transition manager.

Vaz developed "train the trainers" materials for LO Materials Manufacturing teams that focused on simplifying the BCI message, benefits it offered mills, and debunking myths. Then Vaz held a global training summit to pass the baton to managers who would take ownership of and scale the program with minimal support.

Scaling took hard negotiations with some vendors, but ultimately most were receptive. "We have very

good relationships with our suppliers, and many have been working with us for a long time," said William Wu, a Shanghai-based LO material manager. "Sustainability is not only important for Nike, but also for them."

The cotton team then set its sights on expanding BCI to Nike's other business units using cotton, like inline socks and Converse brand. Avila began coaching each business's leaders to identify and onboard suppliers, set annual targets, procure and track their own Better Cotton.

## THE OUTCOMES

With a target to **source 100% of Nike, Inc.'s cotton more sustainably by 2020**, "cotton sourcing" is becoming exclusively "sustainable cotton sourcing". In 2016, 34% of cotton used across all Nike products was certified organic, recycled or Better Cotton, and we're tracking towards 50% in 2017. This means over one million farmers are improving their livelihoods, and Nike is reducing our environmental footprint by thousands of pounds of pesticides and billions of gallons of water annually.

The support of Nike and other brands means more Better Cotton is entering the market. In 2016, about 1.5 million farmers were trained by BCI and nearly 13% of all the cotton produced globally was Better Cotton. By serving on the BCI Council, Growth and Innovation Fund Buyers and Investors, and other committees, Nike is actively helping BCI scale to meet its goal of reaching five million farmers and 30% of the world's cotton supply by 2020.

## A MODEL FOR CHANGE

The project, and its lessons learned, has become a model for how to manage systemic materials change across the business. After years of challenges and opportunities, sustainable cotton is now business as usual at Nike. "We're here to scale, collaborate, and be disruptive. Let's do something revolutionary — not evolutionary," says Cyrus Wadia, VP, Nike Inc. Sustainable Business & Innovation.



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