

## Clothing the world: Cotton call to action

### Background on cotton

Cotton is the world’s most abundant and readily used non-food crop and, because of its versatility, one of the most widely traded commodities globally. Its primary use is for clothing and home furnishings, which together account for 95% of its use. Society, therefore, clearly benefits from the provision of cotton. However, cotton production can also have negative socio-environmental impacts. This Action Research Collaboratory (ARC) proposes to look at this through the lens of natural capital, focussing upon soil, water and biodiversity.

The cotton industry has a large impact on water quality, soil fertility, biodiversity and human health through its reliance upon application of large quantities of pesticide. The industry is also highly dependent upon natural capital – this is most apparent in the large volumes of water that are use, but is true of soil and biodiversity too.

### Key issues: the facts

Cotton is a thirsty crop	
73% of global cotton harvest comes from areas under irrigation <sup>1</sup>	8,000 L = Amount of water needed to produce a single pair of jeans <sup>2</sup>

Pests are a huge problem	
Although only 2.4% of the world's cropland is planted with cotton, it accounts for 24% of the world’s insecticide market and 11% of sale of global pesticides <sup>3</sup>	The level of hazard represented by pesticides used in cotton is significant – 1 drop of aldicarb on skin can kill an adult, yet 1 million tonnes are applied in the USA alone <sup>4</sup>

Short-term solutions have negative consequences upon natural capital		
Over use of fertiliser masks the degradation of soil quality	Extensive use of pesticides can cause soil fertility to reduce	Run off from cotton fields into water systems negatively impact local biodiversity and water catchments

<sup>1</sup> Hearn, A.B., 1995: The Principles of Cotton Water Relations and their Application to Management. In: Constable, G.A.; Forrester, N. W.: Proceedings of World Cotton Research Conference - 1: Challenging the Future. Brisbane, Australia, 14-17 Feb. 1994

<sup>2</sup> [http://wwf.panda.org/what\\_we\\_do/how\\_we\\_work/businesses/transforming\\_markets/solutions/certification/agriculture/cotton/](http://wwf.panda.org/what_we_do/how_we_work/businesses/transforming_markets/solutions/certification/agriculture/cotton/)

<sup>3</sup> Meyers, D.; Stolton, S. (Eds.), 1999: Organic cotton: From field to final product. London, Intermediate Technology Publications

<sup>4</sup> [http://eifoundation.org/sites/default/files/public/the\\_deadly\\_chemicals\\_in\\_cotton.pdf](http://eifoundation.org/sites/default/files/public/the_deadly_chemicals_in_cotton.pdf)

To date, the focus of concern for cotton production has rightly been upon social and ethical standards not natural capital. For example Uzbekistan is one of the world's largest cotton exporters, and its cotton has long been used in clothing sold by global brand name retailers. Many human rights organisations, including the Environmental Justice Foundation, Anti-Slavery International and Foreign Trade Association have exposed government sponsored forced labour in the annual cotton harvest. This poses a significant supply chain risk to retailers' reputations, especially since children as young as 10 are involved.

However, there are further risks from the stress that cotton cultivation puts on natural capital. This is not sustainable, either for the cotton industry, for the communities around cotton farms, or for wildlife and ecosystems. In response, some producers are shifting towards 'organic' production methods; this includes the use of only non-genetically modified seeds and growing the plants without the application of synthetic fertilisers or pesticides. This, of course, has consequences upon the resources needed for farmers to collect cotton, apply natural fertiliser, use crop rotation and weed plants manually<sup>5</sup>. These elements all trade off against one another and it is unclear what the best solution might be to sustaining yields in the long term. Each decision also has consequences for the costs and profits of businesses also.

## **What is missing?**

Many of these issues are well known. But there remain some unanswered questions fundamental to securing the sustainable supply of cotton. Although the main issues are well known, are they being sufficiently addressed and are the interlinkages between soil, water and biodiversity being considered? What are the impacts upon the productivity of the cotton; is there potential that is not being maximised because natural capital is not incorporated in the solution space; and what are the implications for business? What are the interventions that businesses are now taking to maintain the productivity, sustainability and profitability of their supply chains, and where are the gaps?

This project will identify these impacts and dependencies upon natural capital and show where the gaps are in current initiatives to address the natural capital issues and where new solutions lie. This will enable business to make better informed decisions about their supply chain investments and sourcing strategies.

## **Call to action**

There is a concern amongst business leaders that we are walking into a disaster on cotton; lessons have been learnt about the range of concerns with the social and ethical consequences of the apparel industry, but the worry is that the natural capital underpinning this sector is largely ignored. There is an opportunity for the industry to proactively manage the risks relating to degraded natural capital and its wider societal impacts.

This fibre is worn throughout the world across socio-economic borders and the demand is only going to go up as populations grow; business needs to ensure the supply is there to meet this requirement. The challenge is great but the benefits could be greater.

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<sup>5</sup> <http://attra.ncat.org/attra-pub/pdf/cotton.pdf>

Business needs to find the most appropriate solutions that have a natural capital focus and that can solve the underlying environmental degradation problem. Many of the current approaches are resource intensive, costly and time-consuming. This Action Research Collaboratory will explore these approaches, identify the gaps in addressing natural capital challenges and determine where business is best placed to focus its investments to secure cotton supplies whilst creating a healthy natural environment from which they are sourced.

## Aim

This Collaboratory will investigate the dependency and impact of cotton upon natural capital, the impact that this has upon business and consider the different interventions that business can make through informed investments and strategic decisions to secure their supply of cotton.

## Framing questions

This Collaboratory will investigate the following questions:

- What are cotton's main dependencies upon natural capital (soil, water, biodiversity)?
- What are the impacts of cotton production upon natural capital?
- What are the implications for business, in terms of sustainability, productivity and profitability? Are there opportunities to bridge yield gaps?
- How do current interventions and initiatives map onto the natural capital challenges?
- Where are the gaps that remain to be addressed?
- What are the appropriate solutions to resolve these?

## How this Action Research Collaboratory will help companies along the cotton value chain

By focusing on three major natural capital components - the health of soil, water and biodiversity - CISL will work with a select group of companies to help them understand the dependencies and impacts of cotton upon natural capital and where opportunities exist to reduce risk and create benefits at the production level of the cotton supply chain. The ARC will examine existing impact/dependencies, identify gaps and propose new approaches to measure and manage the natural capital components that matter to business.

The work of the ARC is designed to complement and add value to the many other initiatives supported by business in the cotton growing areas. It will identify significant impacts (both positive and negative) that current initiatives may have on the long term productivity of natural capital, and propose individual/collective business interventions that focus upon dependencies in order to enhance both natural capital and societal value in the cotton growing regions of East/Southern Africa.

### For more information contact:

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