

The Green Leadership Handbook

Green Law and Praxis



Special edition

Chapter 8.2

**"Cotton does not have to be a problematic resource" by
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April 2015

8.2 Cotton does not have to be a problematic resource

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Content

Cotton is a highly significant crop, which at the same time is both indispensable in our daily life and more devastating than most people know. Cotton is a crop that by altered production method can change from being devastating to sustainable.

20% of the world's cotton production is consumed in Europe, in spite of it being a crop that almost entirely is grown in other parts of the world. From my point of view, this fact alone is reason enough for us to take responsibility – although production takes place in other continents.

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More, coordinated means of action are needed

1. Means of action

I believe that the world's overconsumption and negative environmental implications must be addressed simultaneously from different angles. I am convinced that the following topics should be linked to achieve a result that will make an actual difference:

- Politically founded guidelines and prohibitions
- Business leaders take responsibility for the production all the way back to the raw material, while securing that the environment suffers no harm
- Design and sourcing is undertaken following a responsible strategy
- Meaningful consumer information is made available resulting in change of consumer behavior

Information

The purpose of my article is to increase the level of knowledge about conventional cotton versus organic cotton. Knowledge that is both relevant and applicable for the legislator, the business leader, the designer, and the consumer.

This article's focus is on cotton, as this is the most commonly used raw material by the textile industry. In 2012, use of cotton represented 29% of all fiber consumption in the textile industry, including both petrochemical fibers (e.g. polyester) and natural fibers (e.g. cotton, wool, hemp).ⁱ

Significant in size

2. Facts about cotton

Cotton is grown on 5% of the world's total agricultural area. This means that of all the world's cultivated fields on which crops like wheat, corn, potatoes, carrots, rice, and beans are grown, every 20th field is a cotton field.

In other words, cotton is a significant crop and hereby a significant industry. Organic cotton is grown on less than 5% of these cotton fields.

Related to the Hawaii flower

Cotton is a natural fiber and is harvested from the cotton plant. Cotton belongs to the same family as the Hawaii flower. After flowering, a seed the size of a walnut remains on the plant. The cotton fibers are harvested from this seed.

Harvest

The cotton plant is planted in the spring and after approx. 5 months, cotton can be harvested. After harvesting, the fibers are spun into yarn and hereafter woven or knitted into fabric, which is used to create everything from clothing to curtains, bed linen and upholstery.

Long processing chain

A long processing chain with many parts characterizes cotton production, which is different from many other agricultural crops.

As all parts within the process chain in conventional cotton production impact the environment, it is therefore even more important with knowledge, insight, guidelines, prohibition, and control.

The processing chain from the cotton field to the textile importer could look like this:

- Fiber (Farming: Sowing and harvesting. Sold as raw cotton and in bulk)
- Yarn (Spinning mill: Raw cotton is cleaned and spun)
- Material (Weaving mill: Yarn is weaved or knit into rolls of fabric)
- Dye (Dying house: Dye of the cotton happens at yarn level or fabric level)
- Print (Dying house: Print on fabric level or finished product level)
- Finishing: (Dying house or weaving mill)
- Cut and sewing (Sewing mill: Product is sewn and finalized)

- Packaging (Printing house: Packaging is produced and printed)
- Packing and shipment (Packing of the finished product)
- Export (Exporter: Sales and export)
- Import (Textile importer: Import, resale)

Some parts of the processes may happen at the same facility, such as weaving and dying. However, normally the processing chain is long and with many participating parts.

Sun and warm temperatures needed

Growing cotton requires sun and warm temperatures and the crop therefore grows in areas of warmer climates than here in Denmark. The further steps in the production process often take place, although not always, in the countries where the cotton is grown. As illustrated in figure 1, the leading cotton producers are primarily China and India.

World's 10 leading cotton producing countries in 2013/2014 (in 1,000 metric tons)

This statistic shows the world's leading cotton producing countries in crop year 2013/2014. In that year, cotton production in Australia amounted to around nearly 900,000 metric tons. Thus, Australia was the seventh largest producer of cotton worldwide.

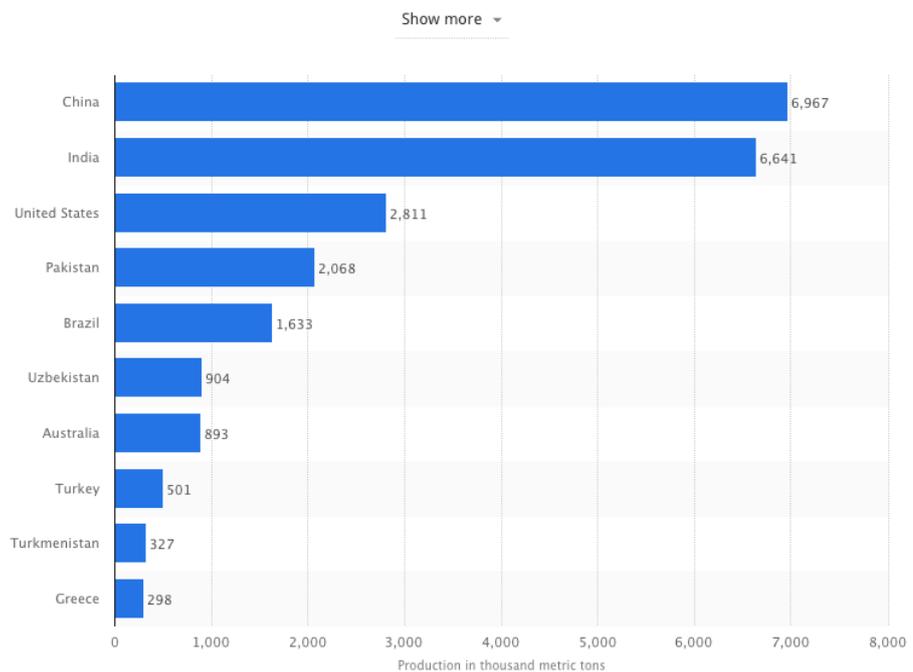


Figure 1: World's leading cotton producers (Source: www.statista.com ⁱⁱ)

How much?

In 2012, the world's fiber consumption was 83 million tons. 52 million tons were petrochemical fibers and the remaining 31 million tons were natural fibers. Within natural fibers, cotton fibers contributed with 24.5 million tons. Since the 1950s, the cotton production has almost quadrupledⁱⁱⁱ.

In Europe, Portugal is a recognized textile country, however, with cotton mostly imported from countries like India. Normally, cotton is imported in bulk and all the further processes from spinning to finishing are then handled locally in Portugal.

Use of toxins

There are significant differences in environmental impact caused by conventional cotton production and organic cotton production. The following section contains information on conventional cotton production.

10% of the world's total consumption of pesticides along with 16% of the world's consumption of insecticides are used on the cotton fields.

Mono-cropping

3. Conventional cotton production is highly problematic

Furthermore, conventional cotton plants are often mono-crop, meaning that it is the only crop grown repeatedly in the same field. Conventional cotton plants are also often only grown for one year.

Mono cropping is an agricultural technique, which is effective and financially attractive (in the short term) but which destroys both the organic balance and dilutes the natural nutrients in the ground. The result of mono cropping is a more fragile eco-system with increased dependence on pesticides and artificial fertilizer.

The second most polluting industry

Conventionally grown cotton is the world's second most polluting industry, right after the oil and gas industry^{iv}. It is therefore about time that we increase the general knowledge about these facts, of which we should all be aware.

GMO

95% of the cotton-seed market for conventional cotton production is controlled by the large enterprise, Monsanto, who is known for their GMO business (Genetically Modified Organism).

The GMO industry has a worrying reputation about having led cotton farmers to financial ruin, when the GMO-seeds did not fulfill the goal of saving the farmers' expenses on pesticides. This has led to farmers buying both more expensive sowing seeds in addition to their existing expenses for pesticides.

Death and sickness

In addition to the debt spiral and financial ruin, the cotton farmers and workers also experience increased levels of sickness. The incidence of cancer in the mouth and respiratory tract is more frequently observed among the world's millions of cotton workers, than in other industries. These types of cancer, often referred to as cotton lungs, are among the reasons why the work of conventional cotton workers is called 'Slow death work'.

Each year 25 to 77 million agricultural workers are poisoned from working in the conventional agricultural production (All crops included). Acute symptoms for pesticide poisoning are headache, vomiting, shaking, loss of coordination, labored breathing, stroke and death.

On a yearly basis, 20,000 deaths among cotton workers are believed to be related to pesticide poisoning^v. In spite of this, fields are continuously sprayed by workers not using protective equipment, often in large quantities and with pesticides, which today are prohibited for use in the EU.

4. Cotton is everywhere in our daily lives

We love cotton

In spite of debt, sickness and immense environmental impact, the cotton industry remains very large and cotton itself continues to be our all-time preferred natural fiber.

We sleep in cotton, dry ourselves in cotton, we wear cotton, we sit in cotton, we have cotton in our hands (towels, kitchen towels, blankets, bags) and we wrap our babies in cotton from the moment they are born. Naturally, it is quite understandable that cotton is included as a large part of our lives, as cotton is soft and easy to use, it absorbs well, it is easy to wash and it can last for a long time.

Even though consumers knew about all the downsides, I do not believe that they would stop their purchase of cotton products. I believe that they would switch to buy products made from organically grown cotton.

Effect on people

Does it affect us (Consumer of cotton textiles)? Here I am thinking about all the pesticides and the other chemicals and heavy metals, which are used in the coloring and the finishing processes. Many different tests have identified residues of pesticides and toxic coloring in cotton textiles made from conventionally grown cotton. The skin is our body's largest organ and is affected by both the good and bad materials we surround us with.

Suspicion

Many investigations, tests and studies increase the suspicion of pesticides causing hormonal imbalance, being carcinogenic (causing cancer) and to be a source of allergy.

Greenpeace

In 2012, Greenpeace^{vi} conducted a series of comprehensive tests of 141 pieces of clothing from the world's largest clothing brands. 63 %, i.e. close to two in three pieces of clothing contained dangerous chemicals, suspected of being carcinogenic.

5. Organic cotton

Balance

Organic cotton production means that the cotton plant is grown without the use of pesticides, insecticides, herbicides, defoliants and fertilizers. In

fact, the characteristics of ecology are the respect of the balance of the earth and an intact ecosystem.

**Crop rotation
Poly-culture**

In organic cotton production, the plant is perennial (grown for several years) and the fields often have crop rotation or one or more different crops in the same field (poly-cropping/poly-culture), where each crop contributes to and draw different nutrients from the ground. As an example, a combination of cotton-beans-cotton plants or cotton-beans-rice-cotton plants is often used. Both systems are perfect examples of agricultural production with optimal terms for the ground.

**Environmental
impact**

In terms of water and energy consumption, organic cotton agriculture uses less water and energy in comparison to conventional cotton agriculture. Furthermore, organic cotton production emits up to 94% fewer greenhouse gasses than conventional cotton production^{vii}.

Fewer human costs

It is not only the environment and the ground that benefits from organic cotton production. For the many workers in the cotton industry, a shift to organic cotton production would have significant advantages. The cotton industry is often an industry where workers typically live 'on-site' next to the fields. This means that the family grow their own crops and keep their domestic animals like goats next to the fields. In these cases, organic agriculture has a decisively positive influence on the health of the worker's family.

6. Certification of organic cotton

Problems

Cheating, empty promises, good intentions and long action plans. These factors are often what meet the insightful consumer, creating confusion. In spite of all the good intentions, restrictions, talks and meetings, few changes are reflected and noticeable in the above-mentioned statistics.

The consumer is met with a violent reality from the cotton industry. Headlines such as "113 seamstresses deceased in collapsing building due to lack of maintenance and bad working conditions", "Greenpeace finds toxic chemicals in children clothing from world's largest brands ", "Pesticide consumption is rising again after 15 years of decline from 1996 to 2011", "Pesticides kill the bees". Also less clear headlines appear – such as "GMO – good or bad"^{viii}.

Solution

From my point of view, there is only one solution. Responsible production. Related to cotton production, this only solution is organic production. Organic production that is certified and controlled throughout the entire chain of processes from the farmer to the brand importer.

Control and trust

To secure the right level of authenticity, control is paramount. Several standards today have none or only internal audit and control,

which from my point of view, is problematic. How can consumers trust good intentions alone? They need facts, proof and results. Precisely as needed in other areas. I believe consumers are best served with standards and certifications with embedded external control and audits.

International and recognized standards

Within cotton production, the GOTS standard is a possibility for certifying organic cotton. GOTS (Global Organic Textile Standard) is an international and recognized standard, originating out of Germany. This standard is very comprehensive and holds a zero-tolerance towards the use of elements such as pesticides, heavy metals, PVC and nickel^{ix}.

Two strong 'legs'

In addition, GOTS is "two-legged"; One leg regulates the environmental aspect and the second leg regulates the aspect of social responsibility. The environmental regulation includes a range of zero-tolerance requirements in all parts of the supply chain. The social responsibility regulation includes several mandatory claims on issues such as pay, and requires compliance with the ILO (International Labour Organization/UN) regulations on age and working conditions.

Comprehensive certification

The GOTS standard regulates the entire supply chain – i.e. from the farmer to the spinning mill, to the dyeing factory, to the sewing factory through to the brand holder and importer. In each process, strict requirements and several zero-tolerances must be met.

For example, pesticides are prohibited in the cotton agriculture and the use of heavy metals is prohibited in the dyeing process. In some cases, entire production techniques or parts hereof can be prohibited – as is the case today with the use of fluorescent coloring.

Prohibition

All parts of the supply chain are controlled and cross-checked by independent auditors, appointed by GOTS. All certified parties must comply with all the requirements in the GOTS standard. All members can be verified via the publicly accessible database on the GOTS website.

Look up The Organic Company - DK21797

<http://www.global-standard.org/public-database.html>

The Organic Company was certified for the first time 5 years ago. It was a very comprehensive process with lots of forms to fill in and even more processes we had to get aligned and structured around – such as 'track and trace' and labelling of boxes.

Difficult and financially challenging

The challenge with certification is the difficulty of all the extra work and the financial expense. Although I chose to believe that the certification is worth all the trouble, I do understand why a certification may not be one of the first tasks initiated by smaller startup businesses.

With more insight, consumers would chose organic

7. Communication, trust and credibility

I am convinced that far more consumers would chose organic cotton if they knew about the significant negative impact conventional cotton production has.

The largest and most important point is the lack in communication. Consumers are simply not knowledgeable enough to interpret what is real, what is hyped by the media, and what is utterly false. Moreover, how can consumers figure out the market when even professionals cannot?

Diffuse communication on sustainability

I often read articles and statements mentioning the word 'sustainability' – often without any substantiating or exact evidence and almost always without comparison or the right context.

The concept 'sustainability' is in fact fantastic and the triple bottom line^x – i.e. where the environment, social responsibility and the economy are linked, is undoubtedly the future. However, these remain good intentions and pure strategy until concrete actions and targets have been set.

This is also where the lack of communication comes into play. Many parties (businesses, journalists etc.) speak from a strategic and actually on a quite diffuse account. The consumer is left with many unanswered questions about: When are your actions sustainable and when not? How does one act to become sustainable – and who is in fact sustainable?

Sustainability

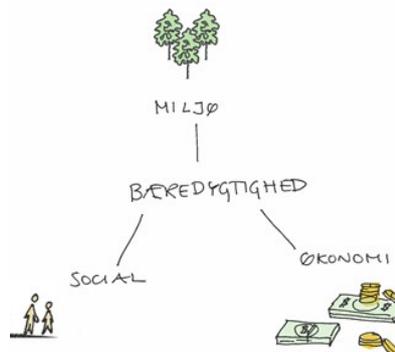


Figure 2: The Bruntland report illustrating sustainability (Source: The Bruntland report)

Myths

From time to time, we hear about the challenges hindering a process change or the initiation of a new process. In cases when large, medium-size, international and national textile businesses abstain from pursuing organic production, their arguments often sound like, "Organic production is less optimal as there is less yield from the fields than with conventional cotton".

This is merely a myth! Several years have already passed since the yield from organic fields matched the level of yield made with conventional cotton. Previously, this fact was true, but this no longer holds true.

Another myth is: "There is insufficient supply of organic cotton". The mechanisms of supply and demand also dominate the organic market place and supply will therefore adjust to meet the demand – at least over time.

H&M is a good role model

A large company not limiting itself by myths is H&M. H&M is the world's largest buyer of organic cotton^{xi}. With an increase in purchase of organic cotton from 2012 to 2013 of 29%, this company must be considered a true role model for other textiles companies.

The 'careless' overconsumption must end

8. A more sustainable development

Trade is important. Furthermore, there is nothing wrong with continued production of and trade with various products. Finally, consumption must not become a foul word.

It is the way we produce and consume which need to change radically. The careless overconsumption and the environmentally damaging production with so fatal consequences for our planet must end. This needs to happen now and, by unchanged behavior, not least in the generations to come.

I imagine....

For a moment, I imagine a world where we consume far less but instead we consume better products – 'where less is more'. A world where it actually has importance how the raw materials are extracted, where production and working conditions has importance and where we are willing to pay the true value of the goods. Where the price on raw materials actually represent the work put into the extraction and where the finished product hereby is priced fairly according to this.

I image how the world economy will prosper with growth in quality and fair prices combined with a decline in resource consumption and misfortune. I imagine a world coming together and taking on shared responsibility – both for the condition of the world of today and the condition we leave to the generations to come.

We consume more than we have

Although my conception may be only imagination, we sincerely must take action now to avoid coming generations suffering from behavior of today. To make today's consumption of nature's resources sustainable – we would need to have at least 1.5 planets available – at least in theory^{xii}.

I believe that Inge Røpke, economics professor at Aalborg University, uses the right words:

We should manage with other measures than GDP

"Each time new GDP-numbers are published, they are intensively covered by the media and reported in every detail. It should also be quite natural that we, as a minimum, pay this much attention to our consumption of the earth's resources and our waste production," says Inge Røpke, who specializes in sustainability^{xiii}.

"We sincerely lack a type of thermometer to measure the impact of how large a part of the biosphere we actually consume. Here, the organic footprint is a good, popular indicator," says Røpke, who furthermore propose to supplement this with analyzes of the correlation between economic activity and the consumption of various groups of materials such as metals, construction materials, bio mass and fossil fuels.

What does it take?

What does it take to increase the demand for organic cotton? In addition to improved communication and knowledge, there are other factors of importance – to me anyway and to my business THE ORGANIC COMPANY.

Design

The first factor is design. Or as Dansk Design Center (DDC – Danish Design Center) so nicely puts it "design is the result of conscious and creative work with an idea, a problem or a wish for transformation. The result, material or immaterial, must be characterized by aesthetics and create added value"^{xiv}.



Figure 3: Examples of products from THE ORGANIC COMPANY

Behavior is reflected in the product

When I work with a given product, I make the extra effort to read and learn about the behaviors related to the product, just as I specifically prioritize a minimalistic and harmonious design of the final product.

This is a virtue, and from my point of view, a sign of respect for the material and the consumer. My designs and our company speak to the group of customers who want both more and better, which according to forecasts and futurists (such as Futurenavigator), is an increasing group of consumers.

More parameters are needed

Furthermore, I believe that the organic brands should work with more parameters than 'just' the organic element – just as other skillful and well respected brands do.

Quality

The second parameter I work with is quality. Products of good quality are used repeatedly and simply last longer. Again, this is respectful for the material and the consumer and, to me, it also makes sense that products last for more than a generation. In addition to ecology, design and good quality, THE ORGANIC COMPANY also focuses on functionality. Most products are designed to be used for more purposes than just the obvious use.

About the writer:

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THE ORGANIC COMPANY was founded by Joy back in 2007 from the dream of contributing with stylish design combined with responsible production. THE ORGANIC COMPANY offers home accessories, from aprons and towels to bags and blankets. All items are designed from scratch and produced in the best of quality. The products are currently selling in 16 countries. Customers in Denmark range from the Louisiana museum shop and the Guldsmeden chain of hotels to trendy gågrøn! in Jægersborggade in Copenhagen. THE ORGANIC COMPANY is GOTS certified as one of currently 13 businesses in Denmark.

ⁱ dnfi.org

ⁱⁱ <http://www.statista.com/statistics/263055/cotton-production-worldwide-by-top-countries>

ⁱⁱⁱ dnfi.org

^{iv} Fashioning Change

^v ejfoundation.org

^{vi}

Http://www.greenpeace.org/denmark/Global/denmark/Kemi/2012/dokumenter/121120_Toxic_Threads_The_Big_Fashion_Stitch-Up.pdf

^{vii} soilassociation.org

- viii Politiken, Greenpeace, Reuters, globalresearch, nature.com
- ix Read more at global-standard.org
- x Bruntland report
- xi organic exchange
- xii global footprint network
- xiii Extract from article in raeson.dk/19-08-2014
- xiv DDC (Danish Design Center)

About the Green Leadership Handbook

The Green Leadership Handbook is a business handbook directed at top executives in the private and public sector. The book contains a wide array of examples of how organizations have implemented a 'green' transition. There are contributions from top executives, researchers, NGOs, politicians, lawyers and experts from many different business sectors and many different countries.

- The first part of the handbook focuses on Green Leadership skills. The green transformation of business requires new management initiatives in all companies, both public and private. There is a need for new skills and tools to understand how and at what rate the green transition should be incorporated into the corporate strategy and practice.
- The second part of The Green Leadership Handbook focuses on Green Law and Practice. The green management decisions can be inspired by lessons learned from existing green initiatives as well as new possibilities within the legislation aimed at the realization of a global green transition of business.

The Green Leadership Handbook has since 2009 been published in Danish by the publishing house Andersen with special editions in English. It is updated four times a year with new articles. You can order the handbook as a one year subscription to either the printed publication (3480 kr.) or to the internet version (2980 kr.) or both (3980 kr.) by sending an email to: era@greenlawandpraxis.dk



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