

CHENG WOI TAN
and
PAMELA NOWICKA

The
COTTON
STORY

From Seed to Shop

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PARTRIDGE

INTRODUCTION

As part of the Nukleus commitment to sharing information and learnings, we are proud and happy to give this book to the world.

We have gathered the best of our blogs, and additional work, here, in one easy-to-use resource.

This book is a simple way for you to discover the realities of cotton production in a world dominated by the interests of a few, mega-powerful corporates. Like Monsanto.

They are stuck in an old destructive model...where profit is everything, and the environment and people are powerless pawns, to be used up and thrown away.

Economics is their religion. Money is their God. Nothing else matters.

An ever-growing number of citizens and businesses, like Nukleus, disagree.

We understand that life on this planet...your life, animal life, bird life...cannot survive the onslaught of chemical toxins being sprayed onto plants, poured into rivers...trickling down into groundwater, polluting ecosystems and killing human and animal life.

We understand that these impacts are happening terrifyingly fast...and that we need to take action fast too.

Topsoil is being eroded by chemical farming. Mountains of used clothes end up in landfill...cheap throwaway 'fashion' which will take decades to decompose....

We believe we all have a responsibility to change this. Otherwise the future, for us, and our kids, is, to put it bluntly, bleak.

WHY WE VALUE VALUES

All organisations have values, implicit, explicit or both. Values contribute to the brand, the company culture and why people buy a particular product, rather than something similar.

At Nukleus we understand that you're concerned about the impacts of your purchases, and we do our best to make our products as environmentally and socially just as possible.

For us, being successful in business does not mean we give up all moral values. It means we have an opportunity to use the brand to promote environmental and social justice.

The people who produce the cotton we use are people, just like us. Farmers and factory workers have their hopes, fears, dreams and responsibilities, like us. They have families, concerns about schooling for their kids or relatives. They may be worried about a sick relative, they may be looking forward to a celebration, a wedding, religious festival, or a birthday.

These people are trying to lead decent lives, like us...paying bills, cooking food, looking after kids or older relatives, trying to figure out life on a daily basis, the way we all are.

Recognising our common humanity means that we **MUST** treat each other with respect and dignity...not just our close family, relatives, colleagues and friends, but those whose labour we rely on to make our products. They may live in different countries, with different customs and beliefs, but under the skin, we are all the same. We can all experience, hunger, pain, joy and delight. We can be energised or exhausted, happy or depressed. We all bleed.

This recognition of our common humanity is key to the values we espouse in our working life and in our relationship with the producers and workers in the supply chain. And it's not just about people, but about the environment too. From soil, to water, to air, to the myriad creatures and organisms which make up the biosphere, we don't see the planet as an infinite resource to be used up, polluted then discarded, in the quest for profit. It's a precious place, and it's our duty not to wreck it with dangerous chemicals or by using up natural resources.

There are so many differences between organic cotton and conventional cotton, the crop rotation system, pesticides used or not, and the residue left in the fabric. In some cases conventional cotton may even look better because of the chemicals and dyes used. But the *chi* is different, and for intimate apparel, this is also an important issue.

This planet is a beautiful place, and it is our responsibility not to destroy it as we do business. Being an ethical company, being values-driven, means that we don't have a gimmicky 'looking good' approach to CSR. It's in our organisational DNA, as important to us as the air we breathe.

Integrity means walking the talk of fairness. We strive to be fair, to producers, customers, and the environment. Maybe we don't always get everything right. We're in a process of evolution. It's a steep learning curve, but our commitment is to continue to learn and improve.

And yes, we're also about fashion, fun, and lifestyle. We want you to like our products, enjoy them, maybe even recommend them to your friends, but most of all we want you to be confident that Nukleus products are not costing the earth. **In our own small way, we hope to be a force for good**, for positive change. We want to use the power of the brand to educate and influence ALL our stakeholders: suppliers, distributors, employees and customers to understand the links of what we all do on a daily basis.

We want to use the power of the brand to help people and the environment. Yes, being organic, sustainable and committed to social and environmental justice is a powerful marketing tool. But, more than that, we believe that **a brand has a responsibility**, a strategic imperative to be truly 'green'.

Sustainability is more a journey than a destination. Here at Nukleus we are on that journey. Sometimes it's difficult, sometimes it's inspiring...but most of all it's a commitment to walk the talk of sustainability and do as much as we possibly can to help people and the environment. We are honored to have your company and support on this great adventure.

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CHAPTER 1

HEALTH -THE TOXIC SOUP
DRENCHING YOUR CLOTHES

Hidden dangers in ordinary cotton products

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HEALTH -THE TOXIC SOUP DRENCHING YOUR CLOTHES

Hidden dangers in ordinary cotton products

10 Things you need to know about non-organic (chemical) cotton

- 1) Ordinary, non-organic cotton, is **chemical cotton**. At every stage in its lifecycle, a huge amount of toxic chemicals have been used, from GM seeds, to pesticides, to finishes on the fabric.
- 2) **Harmful chemicals may be introduced at all stages of the production process**, including fiber processing, yarn spinning, yarn dyeing, fabric manufacture, garment manufacture, garment dyeing, and screen printing.
- 3) The chemical residue of all the products used on chemical cotton cannot be entirely removed because most of the chemicals do not wash out.
- 4) These chemicals can shift from the clothes to our skin and into our bodies when clothes are worn where they can trigger rashes, allergies, and other, long-term, and serious conditions.
- 5) The skin is the largest organ of the human body. Not only does it keep out bacteria, dirt and water, it also lets things in - oxygen, sunlight, and chemicals - think moisturizers and other body-beautiful products. Less a wall, more like a wire fence, many medicines are specifically designed to be absorbed through the skin, from pain-relief plasters, to nicotine patches.
- 6) The chemicals being absorbed from fabrics by the skin include **dioxin** - a known carcinogen and hormone disruptor. According to WHO (World Health Organisation) '*Dioxins [are] considered highly toxic and able to cause reproductive and developmental problems, damage the immune system, interfere with hormones and also cause cancer*'.
- 7) As well as being linked to infertility, decreased sperm count, menstrual problems, and birth defects, dioxins have been linked with diabetes and liver damage and damaging the body's immune system.
- 8) Manufactured by US chemical transnational corporations, Dow and Monsanto, *dioxin was used in chemical warfare* carried out by the US against Vietnam, Cambodia and Laos during the Vietnam War.
- 9) Dioxin has been described as 'perhaps the most toxic molecule ever synthesized by man'.
- 10) Dioxin accumulates in the body over time, adding to the **toxic load/body burden** of artificial chemicals in the body over a lifetime. This is the 'chemical' cocktail which can cause illness and health problems, from relatively mild to terminal.



CHAPTER 2

THE TERRIFYING TRUTH /chemicals -
the environment

(Pesticides, the environment and you. What
chemical companies don't want you to know.)

CHAPTER 2

THE TERRIFYING TRUTH /

Chemicals and the environment

Pesticides, the environment and you. What chemical companies don't want you to know.

Do you ever wonder what happens when pesticides and agrichemicals enter 'the environment'? Nukleus has uncovered facts about toxic pesticides - *information which chemical companies like Monsanto would prefer you didn't know* - which reveal horrific contamination of soil, water, even air, and the widespread destruction of birds, insects and other wildlife.

WE'VE READ REPORTS THAT CHEMICAL COMPANIES LIKE MONSANTO DON'T WANT YOU TO SEE

And what we found shocked even us.

'AN ASTONISHING PICTURE OF HARM'

One report reveals the way in which most of the developing world's cotton farmers work and the hazardous pesticides which contaminate their environment and threaten their health. It talks about an astonishing picture of the harm caused by pesticides.

EARTH, WATER, AIR, ANIMALS, BIRDS AND INSECTS...AND HUMANS...SICK AND DYING, POISONED BY CHEMICAL PESTICIDES...

According to a report from the UK's Pesticide Action Network, *The Deadly Chemicals in Cotton*, cotton is the world's most important non-food agricultural commodity.'

US\$ 3 billion of chemical pesticides are used in its production every year, of which almost half are considered toxic enough to be classified as hazardous by the World Health Organization (WHO).

Cotton accounts for 16% of global insecticide use – more than any other single crop. Almost 1.0 kilogram of hazardous pesticides is applied for every hectare of cotton.

In India, home to over one third of the world's cotton farmers, cotton accounts for 54% of all pesticides used annually – despite occupying just 5% of land under crops.'

HALF A CENTURY OF POLLUTION: THE TRAGEDY OF UZBEKISTAN

In Uzbekistan, the world's second largest cotton exporter, toxic agrichemicals applied to cotton 50 years ago continue to pollute the country's land, air, food and drinking water. Despite the substantial

damage that these chemicals cause to human health and the environment, Uzbekistan's leaders still allow the use of cotton pesticides so toxic that they were banned under the Soviets.

THE DIRTIEST CROP IN THE WORLD?

- Insecticides account for 60% of all agrichemicals applied to cotton.
- Insecticides act by impairing biological processes such as the nervous and reproductive systems – which are common among all animals; including humans.
- Cotton farmers apply US\$ 1.31 million of insecticides to cotton each year: far more than is applied to any other single crop, making it **the world's 'dirtiest' crop**.
- Despite accounting for just 2.5% of global cropland, cotton is responsible for the release of 16% of global insecticides.

DESIGNED TO KILL

Pesticides are designed to kill *pests*...but the damage doesn't stop there...

They work by impairing biological processes and systems, like reproduction and the nervous system. They affect not only the physiology of the species they are intended to control, but also other species, AND humans.

Of the 201 agrichemicals classified by the WHO as being either 'Extremely', 'Highly' or 'Moderately' hazardous, insecticides are by far the biggest group (52%).

In 1984 in the world's worst man-made chemical disaster, a cloud of toxic gas leaked from a factory in Bhopal, India, manufacturing aldicarb (WHO Ia) and carbaryl (WHO II) for use in Indian cotton production. 20,000 people were killed: 120,000 people were injured.

MONSANTO'S ROUNDUP: CHEMICAL CONTAMINATION ON A GLOBAL SCALE

Glyphosate is the world's best-selling chemical herbicide. Glyphosate-containing herbicides, such as **Monsanto's Roundup** are used in the production of genetically modified crops like chemical cotton in India.

Scientific studies have questioned glyphosate's safety. There have been calls for glyphosate-containing herbicides to be banned in Europe. New research by Friends of the Earth has detected glyphosate residues in the urine of 44 percent of people tested, from 18 different European countries.

WILDLIFE HAS NO ESCAPE FROM THE TOXIC SPRAY

Glyphosate-containing herbicides are used to control plants considered to be weeds. But other plants, animals, insects and micro-organisms are also exposed to glyphosate-containing herbicides:

- insects flying through spray
- from eating treated crops, or by eating prey that has been feeding on treated crops
- chemicals washed by the rain into groundwater, streams, rivers and coastal waters

DID YOU EVER WONDER WHY HUGE CORPORATIONS LIKE MONSANTO TARGET POOR INDIAN FARMERS?

Indian cotton farmers use US\$ 344 million of pesticides annually.

- This is 55% of the country's total expenditure on agricultural pesticide
- Cotton accounts for just 5% of India's total cropland
- A staggering US\$ 235 million is spent trying to control bollworm alone.

WHAT IS HAPPENING TO THE ANIMALS, INSECTS, BIRDS AND OTHER WILDLIFE BEING SPRAYED? THESE WARNINGS ON PESTICIDES GIVE US AN IDEA OF THE HARM THEY CAUSE...

Many different hazardous pesticides used on cotton crops have been detected in rivers, streams and wells in the USA, India, Pakistan, Uzbekistan, Brazil, Australia, Greece and in West Africa.

Endosulfan has adverse effects on aquatic systems, and is highly toxic to fish, birds, bees and other wildlife.

Methyl parathion is highly toxic for aquatic invertebrates, and moderately toxic to mammals such as rats, dogs and rabbits. It has been implicated in the deaths of waterfowl and the acute poisoning of fish, birds, cattle and wild animals. In 1995 a mixture of methyl parathion and endosulfan led to the death of over 240,000 fish in Alabama, when heavy rain washed the pesticides washed from the cotton fields and into rivers.



Herbal pesticide for organic farming/Image: Nukleus

ORGANIC COTTON HELPS WILDLIFE, PEOPLE AND NATURE

Global consumption of cotton has almost doubled in the last 30 years. Purchasing decisions made by consumers directly impact production methods and so both environmental security and social equity.

Organic cotton production works in harmony with Nature, using natural methods of pest control.



A village in rural India that cultivates organic cotton/Image: Nukleus

Consumer demand for organic cotton currently stands at between US\$ 800 million and US\$1 billion, and is growing rapidly.

Organic cotton is environmentally and socially sustainable alternative to chemical cotton.

Demand for organic products among consumers is growing. In a 2005 survey almost half of British consumers reported buying organic products, with many stating environmental concerns.

LOOK FOR THIS SECRET INGREDIENT OF TRULY ORGANIC PRODUCTS

Comprehensive labeling allows consumers to make informed choices about the type of cotton they buy. This ensures transparency and traceability throughout the supply chain. Organic cotton can be a powerful force for improving the lives of millions of cotton farmers.

By buying organic cotton clothing, you are helping make the world a better, more sustainable place.

Pesticides: general term referring to poisonous chemicals designed to kill anything seen as a ‘**pest**’. Includes **insecticides**, aimed at poisonous chemicals designed to kill **insects**. **Herbicides:** poisonous chemicals designed to kill unwanted **plants**.



CHAPTER 3

MNCs, DESPAIR AND FILMING
COTTON FOR MY SHROUD -
GMOs and farmers

CHAPTER 3

MNCs, DESPAIR AND FILMING COTTON FOR MY SHROUD - GMOs and farmers

Farmers' suicides in India have reached epidemic proportions. Filmmaker Kavita Bahl uncovers the truth about the unholy alliance between agrichemical giant Monsanto and the Indian government... and the lies about Genetically Modified Organisms (GMOs)

Filmed entirely in India and self-funded by husband and wife team, Nandan Saxena and Kavita Bahl, *Cotton for My Shroud* lays out the stark reality of life for cotton farmers in India. From 1997 to 2010 (according to official statistics) over 200,000 Indian farmers committed suicide. In the decade from 1991 to 2001 over eight million farmers quit farming. As the voice over comments 'Every summer, the farmer sows hope...every winter he harvests loss...sometimes death'.

Behind the figures are real people, with real lives and families. *Cotton for My Shroud* takes us into the heart of village India where we meet farmers, their families, politicians and police who are involved in these life and death struggles to survive.

The film starts with a TV ad: *'Plant Bt (genetically-modified cotton) and your son will get employment/ you can build a house/marry your daughter/pay off the medical expenses of your aging father.'*

An attractive promise which carries a lot of weight in rural communities. How could it not be true? It's on TV and carries all the implied authority of 'modern', the corporate promise of a better life, not just for the farmer, but for the entire family.

How easy is it for people who have lived a traditional life, with little or no access to the internet, and who live in a rigidly feudal and hierarchical society, to contemplate that what they are seeing is a glossy lie? *'Last year Bt let us down badly'* says a grieving widow, whose husband killed himself. *'For two years it did not grow'.*

An activist comments, *'The introduction of hybrid [Bt] seeds has trapped farmers. Initially they advertised aggressively: plant this seed, plant that seed. They trapped us. Even if we try to break free we do not know the way out. The fertility of our land has reduced. Pest infestation has increased. The farmers are unable to find a way out.'*

Activist Vandana Shiva contextualizes the issue. *"Every government extension agency is selling the seeds of Monsanto – non-renewable, unreliable, untrusted seeds'.*

'We see bullock carts laden with raw cotton as Shiva continues, 'India lost its freedom to Britain for two hundred years. Now we face another kind of slavery. Anyone who controls the seed and agro chemical industry controls our agriculture.'

A key issue brought out in the film is the high input costs which farmers are faced with with Bt cotton and the low selling cost. Traditional cotton seeds were around Rs 30/kg. Initially the Bt seeds

were Rs 200/kg. Now they are around Rs 5000/kg... and it takes 1 kg of seeds to sow an acre of land. Fertilizer used to cost Rs 30 per sack. Now it's Rs 200. Pesticides used to be Rs 30/liter. Now the average cost is Rs 15,000 per liter.

The input cost for the farmer has increased around five hundred fold, while the output on parched and degraded has decreased significantly.

While companies claim that Bt seeds will yield 25 quintals of cotton per acre, *farmers report an average yield of one quintal per acre*. Faced with a debt of Rs 60,000, and produce which will fetch, at best Rs 30,000, it is hardly surprising that some farmers are so overwhelmed by their situation that they kill themselves.

Two other factors came into play: an overnight rush into cash crops, to the exclusion of food crops, and the total disappearance of any kind of non-agricultural occupation like traditional weaving, carpentry, and blacksmiths.

A politician observes, *'Farmers do not have a strong lobby. Big industrial houses and MNCs have a strong lobby, and a strong influence on the policies.'*

Vandana Shiva explains, *'Globalisation transformed agriculture into a huge market for the global seed industry, which happens also to be the global agri-chemical industry....They realized how important control over seed is because it's the first link in the food chain. You control seed and you control agriculture. They started to buy up small local seed companies, so today five giant seed companies control the seed supply to the world'.*

Monsanto controls 95% of all GM seeds sold in the world.

A bureaucrat comments, *'There is a nexus between MNCs, our bureaucracy and our political setup.'* The unfortunate cotton farmers are caught in this web of globalisation, vested interests, relentless lies and ruthless profiteering, paying with their misery and lives to fill the coffers of wealthy bureaucrats, wealthy MNC workers and the global fashion industry.

This film is a searing indictment of greed. Passionate, well researched and simply told, we are given a rare access into the lives of those whose voices are rarely heard...Indian cotton farmers and their families. And this process is not just about what's happening in India, with cotton. It's a global phenomenon.

Filmmaker Kavita Bahl explains how the film came about.

Why did you make this film?

The answer involves our ethics and philosophy about life. Both Nandan Saxena (my husband and co filmmaker) and myself subscribe to the Cree saying:

*"Only when the last tree has died and the last river
been poisoned and the last fish been caught
will we realize that we cannot eat money".*

In India, a country where farmers, the life-nourishers, are giving up on life...what can be worse? We asked ourselves- what are we waiting for? For the Cree saying to come true...we hope not!

We are both children of teachers. Perhaps, this genetic code helps us survive in a very materialistic world.

How have audiences reacted to the film?

People, especially in countries other than India, have queries related to the choice and right of the farmer over his/her crop, etc. They need to understand the relationship between the land and the farmer in India; the farmer's total dependence on the State for what to grow and how to grow; the hand-in-glove relationship of the Indian Government with the multinationals. Our audience at London (*Cotton for My Shroud* was the Headline Film at the Investigative Film Week) was shocked after watching the film and discussed the issues with us at length.

Why did you decide to self-fund the film?

Self-funding was not a choice- it was a path. Seeking funds for such films is a Herculean task in this country. There are hardly any funds for the documentary and thousands vie for the small tid-bits of the same pie. We just decided to go ahead on our own and *Cotton for My Shroud* was the result. All our savings have gone into making this film. It has hurt our bank balance but not our spirit.

You mention that there is a demand for the French, Spanish and local language versions. Can you say more about this?

Making the film in English is essential but not enough. It helps it travel and reach a wider audiences in cities- both in India and abroad. The film addresses not only policy-makers but also farming communities in India, since it is about their seed freedom. Many do not understand English, so we need local language versions.

French and Spanish versions are required to screen it in nations which are either pro/against genetic modification. This Indian story is relevant to all countries which have farming communities, governments and multinational corporations. Our films are often used as learning and advocacy tools by NGOs and various organisations working towards policy matters. The language versions are required to take the film to the grassroots.

A team is required to see that the films are made professionally and within the given time frame. Besides the professional charges to be paid to the translator and voice-artist, each language version film has to be re-edited.

Congratulations to all involved in this project. Is there likely to be a follow-up?

Follow-up shall definitely be done. Hopefully, we shall have some funds in place for it. People who appreciate *Cotton for My Shroud* should ideally help the farming communities by bringing out their voice through the film. Amen.



CHAPTER 4

EVERYTHING YOU NEED TO KNOW
ABOUT GMOS - GMOs and health

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EVERYTHING YOU NEED TO KNOW ABOUT GMOS - GMOs and health

Nukleus is committed to empowering our customers on the importance of using organic cotton. Key to understanding the cotton issue is to understand the seeds issue. In this chapter, we look at seeds and GMOs. We were startled and shocked by what we found and decided to share so you can make more informed choices about the kind of cotton products you buy and why organic cotton is safest.

WHAT EXACTLY ARE GMOS?

GMOs (Genetically Modified Organisms) have been created by the GM (genetic modification) process. According to *GMO Myths and Truths*, a heavily researched and sourced report produced by the [Non GMO Project](#):

GM is completely different from natural breeding and poses different risks. Natural breeding can only take place between closely related forms of life (e.g. cats with cats, not cats with dogs; wheat with wheat, not wheat with tomatoes or fish).

But **GM crops have had genetic material from other species inserted into them** e.g. non-plant into plant, with the hope that this will give the target plant specific properties. But there can be unexpected and unwanted changes in the GMO plant. These could include toxic and allergenic effects, poor crop performance, and generation of characteristics that harm the environment. This is a far-cry from the corporate ballyhoo in the case of cotton, about increased yield. With organic cotton, you can be sure that your cotton garment is safe and not harming the environment.

FOREVER POISONED

These unexpected changes are especially dangerous because they are **irreversible**. Even the worst chemical pollution diminishes over time as the pollutant is degraded by physical and biological mechanisms. But GMOs are living organisms. ***Once released into the ecosystem, they do not degrade and cannot be recalled, but multiply in the environment and pass on their GM genes to future generations.***

Nukleus thinks the environment is too important to risk this kind of contamination.

POTENTIAL HEALTH HAZARDS

Corporates say that their GMOs are safe. We're not so sure. When independent scientists in France analyzed data on GM Bt maize they found that **Monsanto's own feeding trial on rats revealed serious health effects – including liver and kidney toxicity – that had been hidden from the public.**

This is relevant to GM/Bt cotton for two reasons: cotton seeds are used in animal and human food products and so enter the food chain. Secondly, if the company information on maize was inaccurate, how do we know what the potential health hazards of Bt cotton are? At Nukleus we would rather be safe than sorry.

HAZARDS OF Bt CROPS

Bt cotton is a genetically modified form of cotton, produced by Monsanto. Bt stands for *Bacillus thuringiensis*, bacteria which produces toxins harmful to moths, butterflies and other insects. In Bt cotton, genes from *Bacillus thuringiensis* have been inserted into the genetic material of the cotton plant.

With GM Bt crops the plant is engineered to express the Bt toxin in every cell. **The plant itself becomes a pesticide, and people and animals that eat the plant are eating a pesticide.**

GM Bt crops have many adverse health effects when fed to laboratory animals, including:

- **Toxic effects on the small intestine, liver, kidney, spleen, and pancreas**
- **Disturbances in the functioning of the digestive system**
- **Reduced weight gain**
- **Immune system disturbances**

These effects have been demonstrated from eating Bt products. And, while we do not eat clothes, the skin is the body's largest organ, easily **absorbing** substances. Some may cause allergies, while over a longer time, exposure to toxic products can cause even more serious health problems. With organic clothing, you can have peace of mind.

GM Bt crops also have toxic effects on butterflies and other non-target insects, beneficial pest predators, bees and aquatic and soil organisms. At Nukleus, we don't want to damage ecosystems in this way, and believe we should preserve them by growing organic cotton.

GM COTTON AND 'SAFE' HERBICIDES

Over 75% of all GM crops, including Bt cotton, are engineered to tolerate herbicides, particularly *Roundup*, produced by Monsanto. *Roundup* is based on the chemical glyphosate and marketed as a "safe" herbicide.

But many independent studies show that Roundup poses **serious health hazards**, including endocrine (hormone) disruption, DNA damage, cancer, birth defects, and neurological disorders.

And if glyphosate remains in GM food, it would seem reasonable to assume that it remains in cotton fibers too...Organic cotton is not sprayed with these kinds of toxins, which is one of the many reasons we at Nukleus advocate its use.

IMPACTS ON FARMERS' HEALTH...

A report by doctors in Argentina showed the following health problems in people exposed to spraying of agrichemicals (mostly glyphosate) on GM Roundup Ready (RR) soy: **increased incidence of birth defects, miscarriages, infertility, cancers, DNA damage (which can lead to cancer and birth defects), neurological developmental problems in children, kidney failure, respiratory problems, and allergies.**

In one area, **birth defects increased fourfold and rates of childhood cancers tripled** in only a decade in areas where rice and GM soy crops are heavily sprayed. Is this happening in cotton farming communities in India and elsewhere? Until data is collected, we can't be sure...but we know that organic cotton farmers and their families are safe from these serious health risks.

AND ON YOU....

These issues are relevant not only to people living where GM crops are grown, but for consumers who eat products made from crops sprayed with agrichemicals. **GM crops do not break down glyphosate, but absorb it, so the toxic chemical remains in the plant and is eaten by people and animals.** It would seem logical to assume that Bt cotton would similarly be imbued with these toxins. With organic cotton, you are safe from potential hazards.

GM CROPS: A SOLUTION...OR A WORSE PROBLEM? WHAT DO FARMERS SAY?

*“Over the past decade, corporate and government managers have **spent millions trying to convince farmers and other citizens of the benefits of genetically modified (GM) crops. But this huge public relations effort has failed to obscure the truth: GM crops do not deliver the promised benefits; they create numerous problems, costs, and risks; and ... consumers and foreign customers alike do not want these crops.***

*“It would be too generous even to call GM crops a solution in search of a problem: These crops have failed to provide significant solutions, and **their use is creating problems – agronomic, environmental, economic, social, and (potentially) human health problems.**”*

– National Farmers Union of Canada

At Nukleus, we have spoken with many Indian farmers and they agree.

To the ordinary person, wandering in the mall or shopping in a market, these concerns may seem distant. But they are real and important, which is why we at Nukleus believe that organic cotton – non-GMO, not sprayed by toxic chemicals, is best. By choosing organic cotton products you can have peace of mind, and don't need to be concerned about toxins in your body, the environment, or affecting the health of farmers. We wear clothes all our lives, against our skin and there's no reason to jeopardize our health to look good. Sometimes safe is just a lot better than sorry.

We are heavily indebted to our friends at the Non GMO project for their work and the report. We would highly recommend them as a trusted resource for accurate and credible information on GMOs, presented in an accessible and coherent form.



CHAPTER 5

THE TRUE COST OF COTTON - GMOs and Monsanto

CHAPTER 5

THE TRUE COST OF COTTON - GMOs and Monsanto

You're a small-scale farmer in India.



For the small scale farmer, debt is a huge problem/Image: Pamela Nowicka

You used to combine growing cotton with growing food crops, but then the government started telling you about a new wonder cotton which would make you rich. Ads appeared on TV...happy farmers, like you, only with plenty of money for daughters' weddings and for parents healthcare crops. The ads, from companies like Monsanto - American, 'modern' and therefore good in your eyes - promised a better, more successful farming life if you used their special genetically modified (GM) Bt cotton seeds. You trusted them, turned over your entire crop production to cotton....and, then, as the years progressed, like tens of thousands of small scale farmers, you started to wonder what you'd let yourself in for.

The ads hadn't explained how costly the new Bt seeds would be and that producing chemical cotton is an expensive process, with no guarantee of success.

According to a farmer in the 2007 documentary *Cotton for My Shroud*, seeds used to be 30 Indian Rupees (rs) per kg. Then hybrid seeds went on the market at around 200 rs per kg, then Bt seeds cost 4-5000 rs per kg. This huge increase in the cost of basic seeds is out of all proportion to an increase in yield. And with one kg of seeds needed to sow one acre, farmers are facing a substantial outlay. Fertilizer, which used to cost 30 rs per pack is now rs 200.

Most shocking is the increase in the cost of pesticide. Previously pesticide was around 30 rs per liter. But with the advent of Bt GM cotton, the average cost of pesticide produced by transnational agrichemical giants like Bayer, DuPont, and Monsanto, is around rs 8000 to 15,000 per liter.

Simultaneously, the output and fertility of the land has decreased, as the soil is weakened by continual sowing and re-sowing with the same, chemically dependent cotton crops. Soil has no chance to replenish itself as it is not possible to plant alternative crops due to high outlays. Overuse and over-reliance on scarce water supplies means that irrigation becomes increasingly difficult.

As one farmer observes, *'You keep sowing an unprofitable crop and your loss keeps growing. Those who accumulate heavy losses, when the banks shut their doors, go to moneylenders. If the debt is unpaid the moneylenders take their land, and house.'*

And if the cotton crop survives and the market price is reasonable, the corporate lobby applies pressure to government, and cotton is imported. Local rates crash again and more farmers die. A report submitted to the Indian parliament suggested that there were around 291,000 farmer suicides from 1995 till Aug 2011... about one suicide every 30 minutes.

Countries like the US, which gives \$4 billion subsidy to its cotton farmers, are constantly scouting for new markets. Under pressure from the WTO (World Trade Organization), the Indian government removed all quantitative restrictions on imports. Cheap cotton from rich countries benefitting from substantial subsidies, made cotton production even less profitable for Indian farmers.

And the trend of expensive Bt cotton continues to this day. Vivekananda Nemana of the blog [India Ink](#) reports that at a recent UN summit on GMOs in Hyderabad, south India, organized by the

pro-biotechnology International Service for the Acquisition of Agri-Biotech Applications (ISAAA), representatives from the group said GM cotton was a success. Farmers no longer suffered from bollworms, which once ruined large sections of their crop, and saved time and money.

The farmers themselves told a different story. According to one, T Venkatesh, *'We're getting higher yields, but we're not better off. Our costs have gone up much faster than the price of cotton.'*

Another farmer, Srinivas Reddy agreed. *'We buy our seeds on the black market and we pay three, sometimes five times as much as we did for normal seeds. But nobody is selling non Bt seeds anymore.'* Costs for farmhands and pesticides had also gone up, he said.

In June 2013, the news magazine *India Today* reported that Andhra Pradesh faced an acute shortage of Bt cotton seeds, driving up black market prices to as high as 2,000 rupees per packet and leading to a profusion of bootlegged seeds.

Though proponents of GM agriculture, as well as some independent studies, say that higher yields offset the costs of the seeds, farmers have seen other costs rise as well. The Andhra farmers said their crops were now affected by aphids, which replaced the bollworms that Bt cotton was designed to resist. The new pesticides require fewer applications, they said, but are far more expensive.

'The old pesticide used to cost us 200 rupees per liter,' said one farmer, who has been planting Bt cotton for six years. *'Now I have to pay between 2,000 to 3,000 rupees. And I need to apply it more and more every year.'*

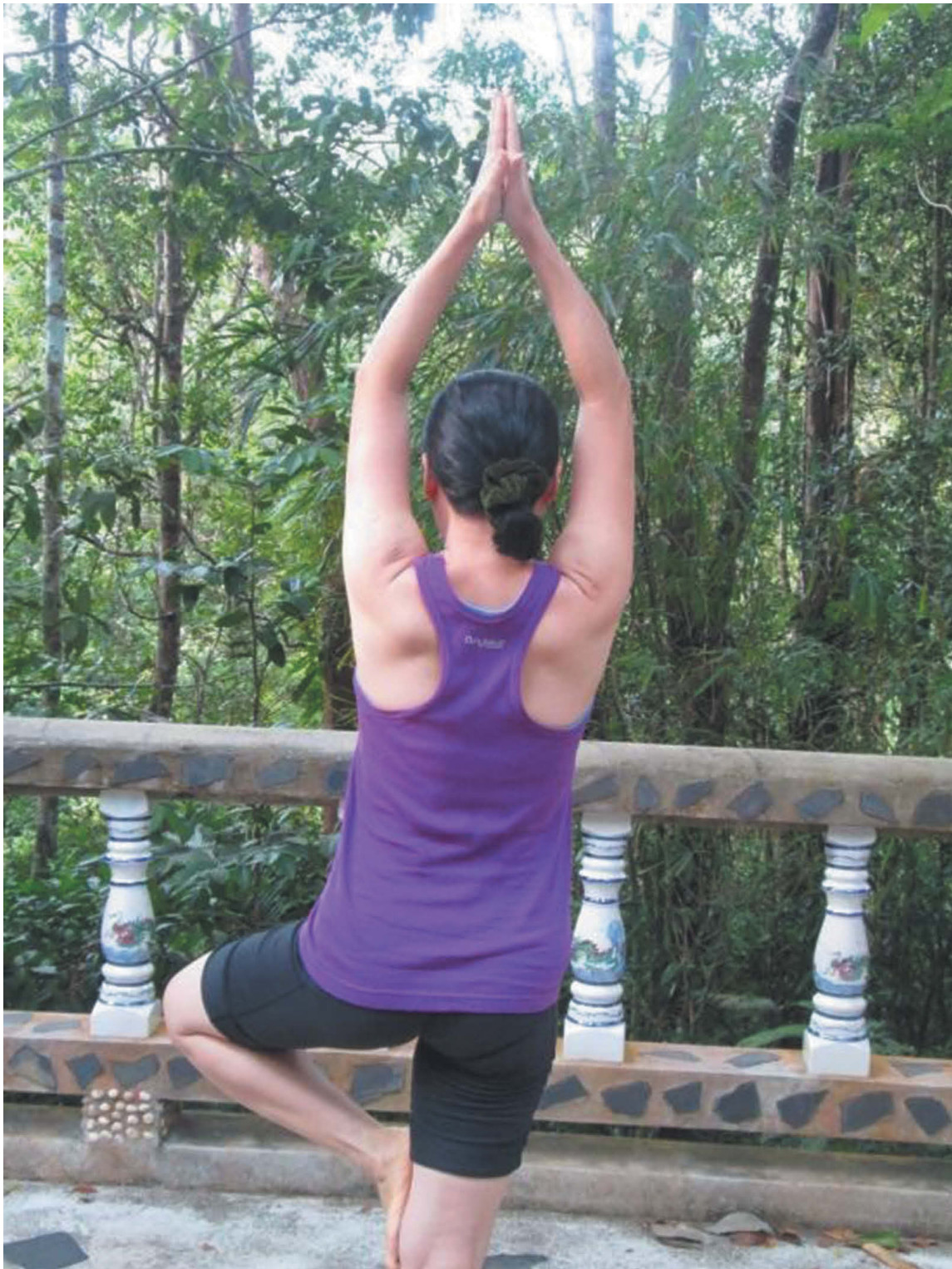
Some critics of GM seeds see a never-ending cycle of rising costs – and debts – for farmers.

'Farmers buy the seeds, and the costs of the pesticides, which they buy from the same companies, are probably tenfold what they used to pay,' said Shivani Shah, a campaigner for Greenpeace in India. *'So it's creating a system of dependency. It is a deliberate idea of increasing costs and increasing royalties – there is no intention of reducing those costs through economies of scale.'*

Lim Li Ching, a researcher with the Third World Network, a nonprofit devoted to developmental issues, said the increased costs from the rise of aphids was an expected turn of events. *'As ecologists have pointed out from the start, you take out a target pest, you're likely to have secondary pests coming because that's how ecology works: you vacate one niche, you'll have another niche take its place,'* she said.

Higher seed and pesticide costs have left small farmers in India – and other developing countries – more vulnerable to failed monsoons and other climate change-related dangers.

For small farmers, the consequences can be tragic. When weak monsoon rains led to crop failures in 2005, hundreds of debt-ridden Bt cotton farmers in the states of Andhra Pradesh and Maharashtra committed suicide by drinking pesticide. A PBS documentary on the suicides by Chad Heeter reported that the indebtedness was largely due to expensive GM seeds and pesticides. And each growing season, the suicides of indebted cotton farmers continue.



Not all cotton needs to cost the earth/Image: Pamela Nowicka

We salute and support the organic cotton farmers of India, who are struggling so valiantly to make a decent living for themselves and their families...and we salute our fans who make this possible. Buying organic cotton items may cost a little more, and we are all financially challenged. But spending a little more cash is an investment in our health, and the future, for ourselves and the planet...because we're worth it.



CHAPTER 6

8 THINGS EVERY PARENT NEEDS TO KNOW ABOUT CHILDREN'S RISK OF TOXINS

Pesticides and health risks - children

CHAPTER 6

8 THINGS EVERY PARENT NEEDS TO KNOW ABOUT CHILDREN'S RISK OF TOXINS - Pesticides and health risks- children

Every parent wants to do their best for their children. But how do you make those important choices? How do you factor in the potential benefits to your child in what you do for them? Nukleus has extensively researched this important issue...and we were concerned about what we discovered...

YOUNGER...AND MORE VULNERABLE

According to *Pesticides and You, Beyond Pesticides/National Coalition Against the Misuse of Pesticides*

- 1) Children are more susceptible to asthma and other respiratory problems.
- 2) In terms of food, children are more susceptible to environmental toxins than adults.



Image: Pamela Nowicka

- 3) Weight for weight, children eat more food and drink more water than adults, so they take in more pesticides and toxic chemicals relative to body weight.
- 4) Their organ systems are still developing, so are more vulnerable and less able to detoxify hazardous chemicals.
- 5) But how does this affect the clothes they wear?.....
Children's skin absorbs more than adults

Children are smaller than adults and so have a larger surface area to body mass ratio. The WHO's (World Health Organization) report *Children Are Not Little Adults*, says that children have a higher proportion of skin to body size. This means they have a greater ability to absorb substances through the skin than adults.

6) *Babies and toddlers have proportionately two to three times more skin area*

Babies have a surface area to volume ratio three times that of adults and in toddlers the ratio is twice that of adults. Also, children tend to have more skin exposed and more cuts, abrasions and rashes than adults; this could easily lead to increased dermal absorption as a proportion of body weight.

7) **Windows of vulnerability**

Children are often at a different and increased risk from environmental hazards. Their developing organs have “*early windows of great vulnerability*” during which exposure to toxins can cause great damage. These have no parallel in adult physiology and create unique risks for children exposed to hazards. ***During these early years, exposure to even mild chemical irritants can have significant effects on respiratory development.***

And even ‘inert’ ingredients in pesticides can cause problems.

8) Glyphosate (Round-up): Glyphosate is one of the most commonly used pesticides. Exposure to glyphosate can cause asthma-like symptoms and breathing difficulty. Studies have linked “inert” ingredients in Round-up, to pneumonia, excess fluid in the lungs, and damage to mucous membrane tissues and the upper respiratory tract.



Image: Pamela Nowicka



Image: Pamela Nowicka

But most parents are not aware of these facts and how they can effect their children.

So what can parents do to safeguard their children from the toxic soup in their clothes?

THE NATURAL THERAPY PRACTITIONER

Local mum and cranial sacral therapy practitioner, Ms Mianjoo has two children, Qing Yun, 9, and his sister Huian, 3. *I know about issues like GMOs and pesticides in cotton because I lived in the UK. Public awareness in Europe is much higher compared with Malaysia. I understand the way they treat the cotton - bleaching it to make it white, dyeing and using chemicals in the factory, growing the cotton using so many pesticides which drain into the water sources for the local community...*

'I'm mainly concerned about the producers and the environment, though. I would go for organic cotton if it was available, but here it's difficult. Even in the UK you have to go to special shops. It's not readily available for the consumer.'

PINK...AND FLOWERS...SOMETHING BEAUTIFUL

'Cost is not so much an issue', continues, Ms Mianjoo, 'if it's a luxury and a privilege, I'd think twice, but if it's only ten to twenty percent more expensive, that's fine for me. But I don't want very plain, or brown. Can it be pink? With flowers? Something beautiful? Why is organic dull and brown and plain?'

THE EXPAT MOMMA

An expat from the US, Laurel Stelzer, mother of Miles, 4 and Hazel, 2, has a blog, *Penang Momma*, offering hints and tips for expats. *'I understand why, from an environmental perspective, people want to avoid chemicals for children and why they might choose organic cotton.'*

She mulls it over. *'Once it's harvested, it's very processed, probably quite a lot of chemicals unless it's organic...I'm going to talk myself into buying! But I don't really know what kind of impact it would have, or personal benefit to the child. And I hadn't even thought about buying organic cotton underwear. I didn't know it was available here. I rarely go to malls. There was a place in Gurney where I got a few things, but it's not like I need to put my newborn in organic clothes...'*

WHAT IS THE SOLUTION?

Concerned parents may want to consider using organic cotton products for their children's clothing.



CHAPTER 7

CANCER, PESTICIDES AND YOU -
Health risks - adults

CHAPTER 7

CANCER, PESTICIDES AND YOU - Health risks - adults

Did you know that many chemicals used on crops, including cotton, cause cancer?

A new report *Breast Cancer Pesticides and You* from *Pesticide Action Network (PAN) Asia*, shows just that. And women and children are the most at risk.



Image:Nukleus

WORRYING FINDINGS

Rates of breast cancer are escalating throughout Asia in the wake of rising use of pesticides and other chemicals.

Pesticides that cause cancer, disrupt the natural hormone system or alter the development of the mammary gland and contribute to the global epidemic of breast cancer.

There are critical periods when exposure to even very low levels of pesticides can result in breast cancer later in life: in the womb, early childhood, menarche, the age of first childbirth, and around menopause.

Around one hundred common pesticides are linked to breast cancer...causing mammary tumors or growth of breast cancer cells in laboratory tests, or elevated rates of breast cancer in exposed women.

Other lifestyle factors like lack of exercise, being overweight and eating meat and animal products have been shown to cause around half of cases of breast cancer...

SO WHAT CAUSES THE OTHER HALF?

Some chemicals have been identified as either mammary carcinogens or likely to be contributing to breast cancer because of their influence on naturally occurring hormones.



Image:Nukleus

Common chemicals in daily life.... including pesticides

These chemicals may include flame retardants, pharmaceuticals, solvents, dyes, benzene, polycyclic aromatic hydrocarbons (PAHs), bisphenol A and phthalates which are used in plastics, parabens, styrene, mercury, and pesticides.

Many pesticides known from laboratory studies to cause mammary tumours in rodents have been poorly, if at all, studied from a human breast cancer perspective. And cotton is one of the most pesticide intensive crops on the planet.

Can we assume these chemicals are safe? Or is ‘better safe than sorry’ a better approach?

MORE CHEMICAL AND PESTICIDE USE = MORE CANCER

The increasing incidence of breast cancer, and other cancers, has paralleled the global proliferation of synthetic chemicals since World War 1.

As countries industrialize and take up industrial agricultural practices, their breast cancer rates escalate towards those of the already chemicalized societies of the western world.



Image: Nukleus

Pesticides Accumulate In Your Body..

Many chemicals, including pesticides, persist in the environment, accumulate in body fat, and can now be found in the breast tissue of women the world over.

The more pesticides you're exposed to...the more likely you'll get cancer

Pesticide exposure, in combination with genetic pre- disposition, age at exposure, and hormonal condition, has a cumulative effect on breast cancer risk. The lag in time between the chemicalization of agriculture and the escalation of breast cancer rates is accounted for by the typically late onset of breast cancer—over 78 percent of breast cancer cases occur in postmenopausal women.

How pesticides are involved in breast cancer

A growing body of evidence, backed by laboratory studies, links exposure to pesticides with breast cancer. While a simple ‘cause and effect’ relationship between individual pesticides and breast cancer

is difficult to demonstrate, studies suggest a number of ways in which pesticides may be instrumental in the breast cancer epidemic...

By initiating cancer...many common pesticides have caused tumours in lab animals

By causing mutations in a gene, chromosomal damage, DNA damage, or formation of free radicals that cause oxidative stress leading to cancer. Pesticides have caused increased incidence of mammary tumors in rats and/or mice in laboratory studies.



Image: Nukleus

Pesticides compromise the immune system by weakening the immune system and affecting a woman's defence against cancer, for example, by reducing the ability of Natural Killer T-cells to destroy tumour cells.

Pesticides disrupt the body's hormones by disrupting the endocrine (hormone) system in MANY ways.

The endocrine system is a complex system of glands and hormones that regulates various biological and physical processes. These glands include the hypothalamus, pituitary, thyroid, pancreas, adrenal, testes and ovaries.

It also regulates functions such as physical and mental development, reproduction, metabolism, immunity and behavior.

Researchers who tested 200 pesticides found that more than a quarter had effects on female reproductive cells. Over one third had effects on male reproductive cells.

Monsanto's notorious Roundup herbicide, used extensively in cotton production, contains the active ingredient glyphosate which disrupts female hormones and is implicated in causing breast cancer.

RESEARCH CONTINUES...

The mechanisms by which pesticides might increase the risk of breast cancer through their effects on the hormonal system are varied and complex. It's not possible to give a 'clean bill of health' to any pesticide regarding its relationship to breast cancer.



Image:Nukleus

WHAT CAN YOU DO?

There are many ways in which we can make our bodies stronger and less susceptible to cancers and other serious illness.

*Diet by eating fruit, vegetables, whole grains and pulses and choosing organic as much as possible

*Exercise by taking at least half an hour's exercise (enough to sweat) every day

***Limiting exposure to toxic chemicals** in daily life - by avoiding or minimizing the use of any kind of chemical products.

These include toiletries, cosmetics, cleaning products, flame retardants, plastics and most chemical products found in stores



Image:Nukleus

As you understand more about their health impacts, you can make informed choices for the welfare and safety of yourself and your loved ones.



CHAPTER 8

ORGANIC COTTON - IT'S A HEALTH
THING - Health risks - farmers

CHAPTER 8

ORGANIC COTTON - IT'S A HEALTH THING -

Health risks - farmers

Health is important to all of us. But sometimes we struggle to make healthy choices. We get into bad habits and face the consequences: sickness and crippling medical bills for ourselves or our families.

We can choose. But how would it be to have to work day in and day out with chemicals which you know are toxic, which are destroying your health and that of your family...but to have little or no choice about this?

Imagine having to work in an environment which you knew was making you sick. And imagine that you were so poorly paid that when you got sick, you were unable to afford to pay for the medicine and healthcare which you needed.

This is the grim situation faced by cotton farmers across Africa and Asia growing non-organic cotton. As PAN (Pesticide Action Network) show in their video *Moral Fibre* of farmers in Benin.

'After treatment [of the cotton with pesticide] I feel burning on my arms, I have digestive trouble and dizziness for up to 72 hours. It's so bad that if we weren't dependent on cotton as a cash crop we'd all stop growing cotton,' says one farmer, speaking with his identity concealed. *'After treatment we usually buy concentrated milk and drink that...sometimes three tins to make ourselves feel better.'*

The anonymous farmer's observations are confirmed by British toxicologist, Dr V Howard. 'Organophosphates were developed from nerve gases. People who are exposed from them can get very ill, or die.'

Another farmer, Ernest Agbolewafi, who stopped growing cotton because of the impacts of pesticides on his and his family's health, comments, *'After treatment [spraying the crop] I used to get itching then a bad rash which spread all over my body and began to ooze liquid. One day I fainted. My neighbours took me to the health center, but I didn't know where I was until evening. I'm really anti cotton as a result of my experience.'*

The health impacts of pesticides are not small. According to PAN, 220,000 people have died from pesticide poisoning, while one million have been made ill.

Dizziness, breathing problems, nausea, headaches, and weakness are the result of pesticide exposure, as well as reproductive health issues and impacts on the fetus. In one cotton growing area of Benin, there were 314 acute poisoning cases and 61 deaths.

Farmers cannot afford to buy protective clothing...and even if they do, it's unsuitable for use in tropical climates with high humidity and temperatures around 40C. So it's common for farmers to spend fifty per cent of their income on health care costs, particularly if family members are affected.

As the anonymous farmer observes, *“Pesticide companies should really look at the products they’re making and start making them less toxic. If you sit down and do a detailed costing, I lose a lot of money because of the impact on my health. They should be responsible for public health and develop products which don’t harm people.”*

We may have a long wait before the likes of Monsanto come up with a solution. And of course there is still the question of toxic residues left in cotton clothing...so what is the answer?

“We can’t allow our clothing to kill the people who grow the fiber that goes into it,” says Simon Ferrigno of PAN. While British designer Katherine Hamnett is just one of a growing number of fashion industry leaders who is pushing for change. *“By using organic cotton, I can make clothes without having blood on my hands,”* she says.

At Nukleus we believe that simple changes can make such a huge difference, not just for us at home, but for people far away in other places.

In India, more than 80% of all cotton seeds are now Bt GMOs (genetically modified organisms), largely due to the collaboration between US transnational corporation (TNC) Monsanto and the Indian government. In other countries like Benin and other African nations, Bt seeds are not such a major issue but the farmers are still plagued by the high input costs of pesticides/chemicals.

And the high input costs of growing non-organic or Bt cotton - hugely expensive pesticides and synthetic fertilizers, boosting the profits of TNCs like Monsanto and Bayer - also contribute to farmers’ financial problems and their inability to pay for healthcare.

With organic cotton, using cheaper and natural methods of pest control, and fertilizer, input costs are reduced, so farmers’ profits increase. For the farmers and their families it’s a win-win situation, since they are no longer forced to work with the deadly poisons which are the pesticides. Not only are they healthier, but they have more profits to set aside for other family commitments, like healthcare, or education. A simple and easy solution, not just for the farmers, but for consumers.



Organic cotton farmers in India/Image: Nukleus

Organic cotton clothing gives consumers peace of mind. Not only because of the benefits of wearing a non-toxic product close to the skin, but the peace of mind that we are helping to improve the health of others...and the environment.

With organic cotton innerwear which lies close to the skin and is worn all day long, we know that there are no toxic chemical residues leaching their way from the fibers into our bodies. And, in the same way, during the production process, no toxic chemicals are leaching from the organic cotton factories contaminating the natural environment.

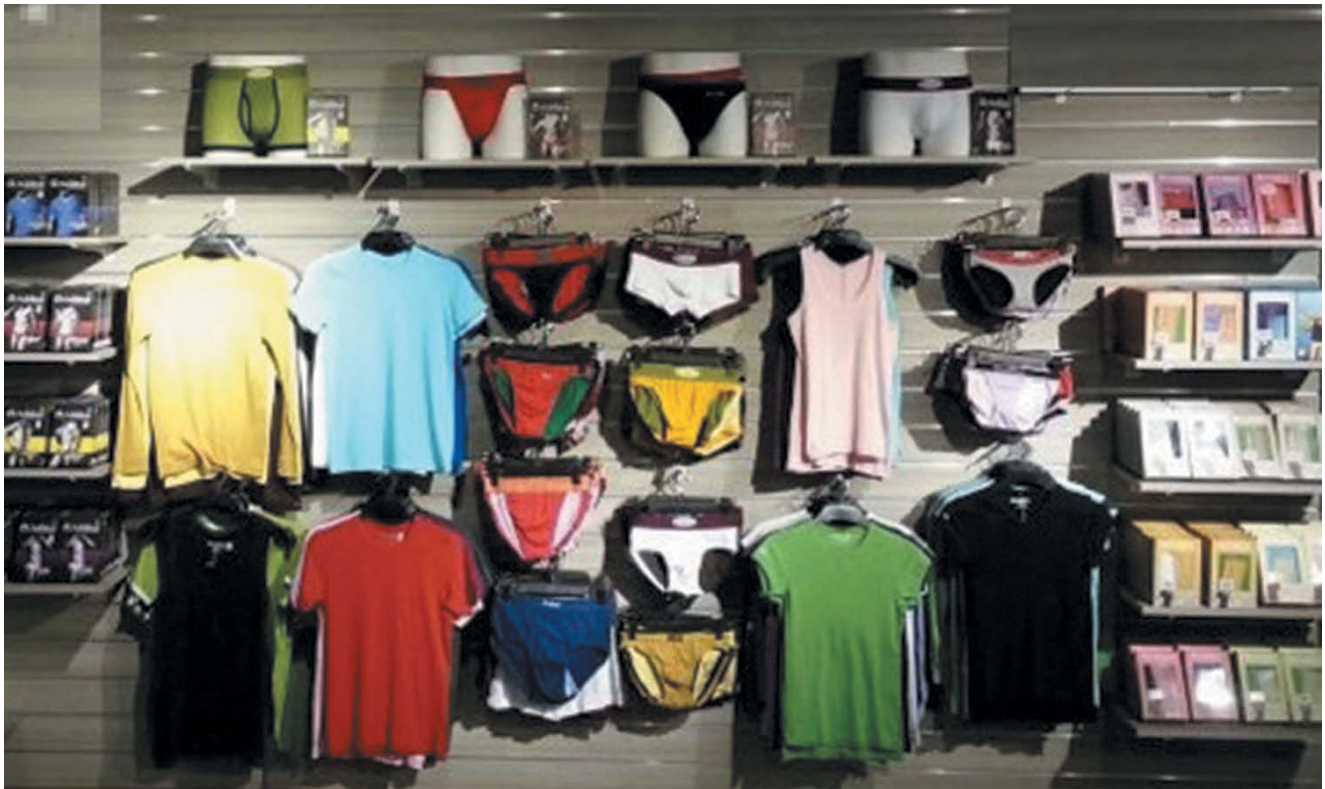


Image: Nukleus

Organic cotton products are a healthy option, for us and the environment. So when you buy organic cotton, you can feel healthier and less stressed...and congratulate yourself on taking action that makes a real and positive difference...to everyone....and the planet.

We all face a confusing array of choices every day. And of course worrying about anything is stressful, and we all want to be less stressed. So doesn't it make sense to make a few easy decisions to improve our health: exercise a bit more, eat more healthy food, cut down on sugar...and buy more organic cotton products?



CHAPTER 9

CAN FASHION EVER BE ETHICAL? -
Unsafe factories/cheap prices...and ethical
fashion as a solution

CHAPTER 9

CAN FASHION EVER BE ETHICAL? - Unsafe factories/cheap prices...and ethical fashion as a solution

Six months on from the collapse of the Rana Plaza garment factory in 2013 in Dhaka, Bangladesh, consumers were treated to a canter round the media opinion paddock of what big brands were or were not doing to prevent a similar tragedy from happening again.

A piece from the UK's *Guardian* newspaper examined how some brands were addressing the issue of dangerous working conditions in Bangladesh. Not enough was the verdict.

When it comes to monitoring working conditions and auditing the supply chain, these global brands with vast revenues struggle to address fundamental issues, wringing their hands in despair - it's the middle man, public pressure to get new designs out for the next season. Not their fault.

It appears to come as some kind of a shock to the highly paid management teams at Gap, Arcadia/Topshop; Walmart/Asda/George et al, that factory safety records are falsified.

That workers are under extraordinary pressure to meet deadlines by working excruciatingly long hours. In unsafe conditions.

That workers are locked inside and emergency exits are locked or blocked. Of course there are no unions (unorganised labour is cheaper) but what can the H&Ms, the Gaps, the Top Shop/Arcadia Group possibly do? They're complying with the laws of the land...

There are sound economic and social reasons why mega brands use workers from the global south to produce their expensively hyped products. Women and child workers have less economic and social power in places like Bangladesh and India. Desperate for any kind of income, they are forced to accept what they can get.

Working conditions are unregulated and therefore bad (kids working in firework factories in India), women are the bottom of the pile (women sit on the ground while men are in chairs in Bangladesh, Indian women eat last, after their male relatives) and unions are more or less forbidden. Corporations are in business to turn a profit, so why would they seriously seek to address these issues?

Gap, Arcadia/Topshop; Walmart/Asda/George etc. have advertising and marketing budgets of mega millions of pounds/dollars/euros. They pay fantastic amounts to supermodels to make their throw-away products seem desirable, aspirational and on-trend.

They jet teams first class across the globe to shoot ad campaigns on idyllic beaches, and hang out in five star designer hotels. They think spending Ringgit Malaysia 1000 on a pair of shoes is a great

idea. So are they the kind of people who are really going to care about some poor Bangladeshi woman, scraping a living to support her family, living in a slum, uneducated...unfashionable, not aspirational and anything but bang on trend?

Intelligent people can make up their own minds about the answers to these questions.

At Nukleus we believe that ethical fashion starts with the values and ethics of sustainability and social and environmental justice. It's not something you can tack on as a piece of CSR gloss to make consumers feel better about clothing that has been produced by modern-day slaves. It's about fundamental values of fairness, justice, equality and stewardship, and translating those values into systems which honor them.

Modern society is built on consumption, a perpetual cycle of work, buy, consume and dispose. This is seen as essential to the ever-increasing economic growth which politicians, business leaders, and a large proportion of humanity itself, say is the only way forward for human progress.

But is continuous growth possible in a finite space? Or has consumerism become a kind of cancer on the body of the planet?

The fashion industry is a key driver in global consumerism, fuelling high street shops and malls, designer boutiques, high end, low end, on-trend, accessible, wearable, designer, boho, classic. Feeding on and promoting our desire to impress, look good, and fit in. And changing every three months to ensure we all buy this season's must have look as we scramble to keep up with the diktats of anorexic fashionistas.

It's cheaper to produce the garments in substandard factories in Dhaka than elsewhere for a reason. No building regulations or safety standards. No workers' rights or unions. A culture where women have little or no autonomy and are therefore forced into low-paid, insecure jobs, in conditions which would not be tolerated in more affluent countries. A bureaucracy and businessmen who will follow the money when it comes to decision-making, rather than values of ethics, fairness and decency.

By cutting costs, a cavalier attitude to health and safety, decent working conditions and basic human rights, the Gaps, Wallmarts (Asda's George label in the UK) H & Ms, Arcadia Group (Top Shop) produce hugely profitable disposable fashion. *And part of the disposability is the invisible non-people who toil to produce these must-have, to-die-for fashion goodies, subsidising transnational profits with their health and lives.*

Six months on from the deadly Rana Plaza factory collapse, Walmart/Asda/George, among others, still had not paid compensation to victims and their families. Why not? Because profit at all costs is their guiding value? Because Bangladeshi workers are disposable? Invisible? Powerless? Because in the David and Goliath battle of Bangladeshi garment factory workers versus one of the richest corporations in the US, there is no contest? *Is this all just a coincidence when global brands decide where to produce their product... or a fundamental reason?*

Six months on from Rana Plaza in 2013, our Facebook feeds were full of reports of a fire in another garment factory in Dhaka, which claimed the lives of yet more innocent workers. *Lessons, it would appear, have not been learned, and more unfashionable, disposable, powerless and innocent people paid with their lives.*

Where profit at all costs is the driving value, anything can be justified in the name of the bottom line.

Is this how we want to live, wearing clothes metaphorically stained in the blood and tears of the workers who've made them? Can we feel good if we know that our fashion is based on others' pain?

Some of us think not, and here at Nukleus we are trying to make a stand for our values, for people and the planet. Because we believe in equality, fairness and justice for everyone and the planet, not just the privileged few. We are doing our best to make this happen at every stage of our production process...from seed to shop, and we truly appreciate the commitment and energy of all involved in this process.

Thank you for caring.