



Summary Sheet: Organic Cotton Solutions

ISSUE	DESCRIPTION OF ISSUE	ORGANIC COTTON SOLUTION	REFERENCES/RESOURCES
On-farm	Includes issues and challenges faced by farmers (before the farm gate).		On-farm
Climate change	Relates to fossil fuel use, land clearing, monoculture and agrichemicals.	Organic agriculture (esp. low-tillage) responds to and mitigates against climate change. Organic agriculture reduces energy requirements for production systems by 25 to 50 percent compared to conventional chemical-based agriculture. Reducing GHGs through their sequestration in soil has even greater potential to mitigate climate change. Carbon is sequestered through an increase of soil organic matter content.	<p>FAO (2008). Low Greenhouse Gas Agriculture. ftp://ftp.fao.org/docrep/fao/010/ai781e/ai781e00.pdf</p> <p>Commission on Climate Change and Development: The Human Dimension of Climate Adaptation (2009)</p> <p>Textile Exchange (2009) Making Informed Choices - Climate Change. http://organicexchange.org/oecms/images/stories/documents/climate.pdf</p>
Water consumption and contamination	Consumption: Growing of cotton on irrigated land consumes large amounts of water. As well as causing local water shortages, irrigation can lead to environmental damage and in some cases catastrophes. Agrochemicals damage the soil which turns into lower water retention.	Organic agriculture (when carried out properly) retains moisture in humus layer - reducing need for water. Organic soil has higher water retention (up to 30%).	<p>UNESCO-IHE (2005). The water footprint of cotton consumption. http://www.waterfootprint.org/Reports/Report18.pdf</p> <p>FAO (2008). Low Greenhouse Gas Agriculture. ftp://ftp.fao.org/docrep/fao/010/ai781e/ai781e00.pdf</p>
	Contamination: Fertilisers and pesticides contaminate water and groundwater. Runoff can contaminate neighbouring land.	No pesticides - no contamination.	Soil and More, International http://www.soilandmore.nl/

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Seed supply and diversity	<p>Increasing dominance of genetically modified (GM) cotton seed - can result in loss of diversity and local/native species of cotton. Limited, if any, access to organic seed - limits farmers choice. (even availability of non-GM seed for organic production is difficult in some areas, let alone availability of organic seed).</p> <p>R&D going into GM seed development - means less money / attention on improving non-GM seed. This leads to a dependency on a small number of patented brands/company monopolies.</p>	<p>Recognising the role local, native or specially bred seeds play for a specific region - longer term optimisation. Maintaining variety for species biodiversity and optimum gene pool.</p> <p>A strong organic sector will require access to organic or non-GM seed. Some countries such as Turkey and Egypt 'seed save' from year to year, other countries such as India rely on hybrid non-GM seed procurement annually.</p>	<p>Out of Hand: Farmers Face the Consequences of a Consolidated Seed Industry (2009). Kristina Hubbard, National Family Farm Coalition</p> <p>The future of seeds and food (2009). Published by the No Patents on Seeds Coalition</p> <p>Pierre J., Hofs J. (2010). <i>Astylus atomaculatus</i> (Coleoptera: Melyridae): Abundance and Role in Pollen Dispersal in Bt and Non-Bt Cotton in South Africa. <i>Environ. Entomol.</i> 39(5): 1523-1531.</p>
GM cotton	GM cotton makes up 43% of the worlds cotton. GM cotton is found in at least 10 cotton growing countries now - and trialled in others. The lobby promoted GM (supported by multinational agrichemical suppliers) is very powerful yet long-term benefits are yet to be confirmed.	<p>Organic production does not permit the use of GMO. Some countries are GM-free (e.g. European Union, Turkey, Syria, Egypt) which is a good starting point for transition to organic.</p> <p>There is a strong resistance to GM amongst the populations in many countries and a public call for improved labelling.</p>	<p>Greenpeace: Picking Cotton; The choice between organic and genetically-engineered cotton for farmers in South India (2010). GRL-TN 03/2010</p> <p>Textile Exchange (2009) Making Informed Choices - GMO. http://organicexchange.org/oecms/images/stories/documents/GMO.pdf</p> <p>http://www.monsanto.com/newsviews/Pages/india-pink-bollworm.aspx</p>

	<p>'Contamination' issues are double-edged: (1) if organic cotton is contaminated by GM, organic certification is lost. (2) Due to patent on GM seed if organic (or non-GM) cotton is found to contain GM, farmer can be accused of 'breach of patent'.</p>	<p>Preventing contamination of organic cotton, by GM, preserves non-GM seed varieties.</p>	<p>Li G., Feng H., Gao Y., Wyckhuys K., Wu K. (2010). Frequency of Bt Resistance Alleles in <i>Helicoverpa armigera</i> in the Xinjiang Cotton-Planting Region of China. Environ. Entomol. 39(5): 1698-1704.</p>
	<p>Evidence now of secondary pest attack and pests exhibiting resistance to GM (i.e. Bt) cotton. Research in India and China.</p>	<p>Risk management - if GM fails farmers require alternatives. Seed banks of organic and range of seed varieties critical.</p>	
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On-farm	Includes issues and challenges faced by farmers (before the farm gate).		On-farm
Pesticides	<p>Threat to farmer health and safety (exposure - handling, application)</p> <p>Threat to farmer family health and safety (residue levels, storage, contaminated containers being reused).</p> <p>Threat to ecological health and safety - flora and fauna (livestock, aquatic and terrestrial organisms).</p>	<p>Organic agriculture does not permit the use of synthetic pesticides.</p>	<p>EJF and PAN UK (2007). The deadly chemicals in cotton. http://www.ejfoundation.org/page97.html</p> <p>OE (2009) Making Informed Choices - Pesticides. http://organicexchange.org/oecms/images/stories/documents/pesticides.pdf</p> <p>OTA Site: http://www.ota.com/organic/environment/cotton_environment.html</p> <p>PAN UK(2006). My Sustainable T-</p>

	<p>Aldicarb, parathion, and methamidophos, three of the most acutely hazardous insecticides to human health as determined by the World Health Organization, rank in the top ten most commonly used in cotton production. All but one of the remaining seven most commonly used are classified as moderately to highly hazardous.</p>		<p>shirt. http://www.pan-uk.org/Projects/Cotton/Resources/downloads/mst.htm</p> <p>Textiles Intelligence (2008). Green Textiles and Apparel. http://www.researchandmarkets.com/reports/590380</p>
Fossil fuels	<p>Rising cost of fossil fuels affecting costs of farm machinery, fertilizers, and other resource-intensive farming activities. Nitrogen synthetic fertilizers are a major contributor to increased N₂O emissions, which are 300 times more potent than CO₂ as greenhouse gas, which is ominous for global warming.</p>	<p>Organic is knowledge-intensive (i.e. requires special skills and knowledge of farming techniques). Knowledge is renewable - resources based on oil are not renewable, expensive and unequally available to farmers worldwide.</p>	<p>FAO (2008). Low Greenhouse Gas Agriculture. ftp://ftp.fao.org/docrep/fao/010/ai781e/ai781e00.pdf</p>
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On-farm	<p>Includes issues and challenges faced by farmers (before the farm gate).</p>		On-farm
Soil degradation	<p>Reduced soil fertility due to inappropriate use of synthetic fertilizers. Synthetic agrochemicals damage the soil which turns into lower water retention, higher agrochemical need.</p>	<p>Too much nitrogen is detrimental to soil fertility. Nitrogen encourages foliage growth and not necessarily cotton fruit production.</p>	<p>Helvetas (2009). Impact of Organic Cotton in Burkina Faso. http://www.organiccotton.org/oc/Library/library.php</p> <p>Salem Y. Lakhal et al. (2009) Comparing conventional and certified organic cotton supply chains.</p>

	<p>Loss of topsoil and soil erosion.</p> <p>Environmental impacts of fertilizers include: runoff into streams; possible contamination of water as well as eutrophication, and penetration to underground water tables.</p>	<p>Organic preserves topsoil, reduces erosion. Builds the soil and mitigates erosion, greater water retention, and biodiversity.</p> <p>Healthier soil does not need such levels of agrochemicals, higher yields.</p>	<p>http://www.organiccotton.org/oc/Library/library.php</p> <p>Soil and More, International http://www.soilandmore.nl/</p> <p>Textile Exchange: Farmer Tool Kit online</p>
Loss of Biodiversity	<p>Destroys biodiversity due to high synthetic agrochemical use, monoculture and GM seed usage.</p>	<p>Organic farming systems promote, conserve, and enhance biodiversity. Farms are treated as systems, not as monocultures. Use of natural vegetation/border crops, less removal of native vegetation.</p>	<p>Wildlife Conservation Society: http://www.wcs.org/conservation-challenges/local-livelihoods/farming-communities/conservation-cotton.aspx</p> <p>FAO (2008). Low Greenhouse Gas Agriculture. ftp://ftp.fao.org/docrep/fao/010/ai781e/ai781e00.pdf</p>
Farmer income	<p>Studies demonstrate that, in the majority of cases, organic systems are more profitable than non-organic systems.</p>	<p>Studies demonstrate that, in the majority of cases, organic systems are more profitable than non-organic systems. This is due mainly to lower up-front costs of inputs and premiums at point of sales.</p>	<p>FAO(2009). Compared Farm Profitability . ftp://ftp.fao.org/docrep/fao/010/ai781e/ai781e00.pdf</p> <p>Salem Y. Lakhal et al. (2009) Comparing conventional and certified organic cotton supply chains. http://www.organiccotton.org/oc/Library/library.php</p> <p>Agrocel (2005).Agrocel Organic Cotton Farmer Project. http://www.bdsknowledge.org/dyn/bds/docs/detail/430/4</p>

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On-farm	Includes issues and challenges faced by farmers (before the farm gate).		On-farm
Building farmers' capacities	Too many cotton farmers are trapped in poverty, debt cycles, and committing due to high cost of farm inputs and low profits. Indicators of 'development' show the lowest scores in rural areas.	Higher price for organic, in combination with income security via longer term contracts or partnerships to help farmers plan ahead and invest in farm businesses; help rural communities help themselves through trade.	<p>University of Greenwich, Natural Resources Institute: Agricultural Extension, Advisory Services and Innovation</p> <p>Organic & Fairtrade Competency Centre, Helvetas: Organic Business Guide, 2010</p> <p>FAO: The market for organic and fair-trade cotton fibre and cotton fibre products, Study prepared in the framework of FAO project GCP/RAF/404/GER, 2009</p>
Farmer suicides	200,000 Indian farmers have ended their lives since 1997. At least 17,368 Indian farmers killed themselves in 2009, the worst figure for farm suicides in six years, according to data of the National Crime Records Bureau (NCRB). Investigates reported the following as reasons for suicides : There was little credit available. What was available was very costly. There was no advice on how best to conduct agriculture operations. Income through farming was not enough to meet even the minimum needs of a farming family. Support systems like free health facilities from the government were virtually non-existent and withdrawal of government support.	No reported suicides on organic cotton farms.	<p>IFPRI: Bt Cotton and farmer suicides in India http://www.ifpri.org/publication/bt-cotton-and-farmer-suicides-india</p> <p>Vandana Shiva http://www.voltairenet.org/article159305.html</p> <p>Mott Macdonald India Agri Impact Assessment -II (Agrocel) 'More from the Cotton Fields', 2007 (example of study into suicides - amongst other things - on Agrocel organic farms.</p>

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Labour standards on the farms	Labour issues are found in cotton growing in some areas - as with most agriculture in poor rural areas. Issues include terms and conditions for seasonal and contract workers. Child labour and bonded labour in Uzbekistan are under the spotlight.	Organic cotton farmers are more likely to work co-operatively, observing labour issues and democratic rights. They tend to have more money available for their children's education. Organic - fairtrade observes labour conditions and encourages spending on community needs - such as schooling for children.	<p>Environmental Justice Foundation: Slave Nation - State Sponsored Forced Child Labour in Uzbekistan's Cotton Fields (among other reports)</p> <p>Textile Exchange: Assessing Sustainability Report 2010 (available online)</p>
Farmer/ community food security	Not favoured since dependence on one crop.	Favours food security through rotation, intercrops and other 'system' crops (less dependence on just one crop). High-value crops (sesame) may be sold as export and crops such as legumes, cereals and pulses enter domestic markets.	<p>Salem Y. Lakhali et al. (2009) Comparing conventional and certified organic cotton supply chains. http://www.organiccotton.org/oc/Library/library.php</p> <p>United Nations (UNEP): Organic Agriculture and Food Security in Africa, 2008</p> <p>PAN: Fibre, Food & Beauty http://www.pan-uk.org/food/fibre-food-beauty</p> <p>Textile Exchange: Crop Diversification Baseline and Follow up Reports, 2009 & 2010 (available online)</p>

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Business to business	Includes issues and challenges faced by / between actors within the cotton value chain (buying and selling)		Business to business
In-country subsidies and export policies	In-country subsidies are designed to protect the agricultural sector (within the country). Current procedure does not usually support 'more sustainable' production; it simply creates a less-equal playing field for countries (inevitably poorer ones) to compete in the 'free market'.	Organic cotton value chains can help improve rural economies through trade (not aid) solutions.	Fairtrade Foundation: The Great Cotton Stitch-up. A Fairtrade Report November 2010
Managing market cycles (supply and demand)	The knee-jerk reaction to the peaks and troughs of supply and demand (and associated price volatility) means the market sets the price. This can lead to vulnerability (for both buyers and sellers)	Longer-term, committed value chains can decouple their business from the market and base it on their own predicted business growth. Allowing all parties to plan and produce/buy accordingly.	Organic & Fairtrade Competency Centre, Helvetas: Organic Business Guide, 2010 Textile Exchange: Business model case studies (online)
Labour standards in textile manufacturing	Labour issues have been entrenched in textile manufacturing. Issues include: below minimum wages, poor working conditions, 'sweat-shops', child labour, bonded labour and other breaches of the ILO and human rights.	Organic cotton tends to form part of a more 'ethical' value chain BUT this is by no means guaranteed.	International Labour Organisation (textiles) http://www.ilo.org/public/english/dialogue/sector/sectors/textile/il_oact.htm Ethical Trade Initiative http://www.ethicaltrade.org/ Fairwear Foundation http://fairwear.org/ Cleaner Clothes Campaign http://www.cleanclothes.org/ Maquia Solidarity Network http://en.maquilasolidarity.org/

ISSUES	DESCRIPTION OF ISSUE	ORGANIC COTTON SOLUTION	REFERENCES/RESOURCES
Business to customer/ consumer	Faced by retailers and brands in the marketplace (focus here is exclusively on customer understanding and response to some of the issues above)		Business to customer/ consumer
Traceability/ place of origin	Exposes such as child labour, forced labour, and environmentally damaging practices are affecting reputation and consumer choice.	Organic cotton can be traced back to the producer. Connecting consumer to place of origin and the farmer story builds a more meaningful experience. Organic cotton (especially if coupled with strong social criteria) tends to form part of a more 'ethical' value chain BUT this is by no means guaranteed.	Textile Exchange "Meet the Farmer" online Ethical Trade Initiative http://www.ethicaltrade.org/ Historic Futures - Track and Trace http://www.historicfutures.com/country-of-origin
Risk management	Exposure by the media can cause severe damage to a company's reputation if the issue relates to your business e.g. Child labour in cotton fields - and you are doing nothing to address it.	Organic cotton provides the right message and should be part of a risk/opportunity/CSR strategy.	Ethical Trade Initiative http://www.ethicaltrade.org/
Responsible profit-making	Short term approaches to business and 'profit at all costs' revered in the 80s - 90s does not fit with business in the 21 st century	Organic cotton is an integral part of a more responsible/ sustainable textile strategy.	Textile Exchange: Market Report (annual publication)
Educating / influencing consumers	Issues such as climate change, human rights, and poverty alleviation through trade - are affecting business (trade and CSR) and consumer behaviour.	Labelling, cause-related marketing, etc provide opportunities for consumer education.	Textile Exchange: Market Report (annual publication) Forum for the future: Fashion futures http://www.forumforthefuture.org/projects/fashion-futures