



SUSTAINABLE AGRICULTURE &  
FOOD SYSTEMS FUNDERS



# COMMON THREADS

**U.S. Foundation Opportunities in Sustainable Fiber and Textiles**

Sarah Kelley | July, 2017





# I. INTRODUCTION

## INSIDE

I. INTRODUCTION.....	2
II. BACKGROUND:..... The Environmental and Social Impacts of Textile Production	4
III. CURRENT LANDSCAPE..... of Organizations & Campaigns	9
IV. OPPORTUNITIES ..... for U.S. Foundations	12
V. CONCLUSION:..... Lessons Learned from the Local Food Movement	15

Over the past four decades, a movement to re-examine, re-localize, and improve the sustainability of food production and processing has grown dramatically in the U.S. and globally. U.S. nonprofits have played a key role in raising public awareness and creating alternatives to entrenched systems of food production and distribution, and U.S. foundations have spurred this movement through significant funding investments.

At the same time, a closely related sector, with equally significant impacts on environmental and human health, has received very little attention from U.S. foundations: fiber and textile production.

The textile and apparel sector has grown rapidly in recent years, driven largely by consumer demand in developed countries for “fast fashion.”<sup>1</sup> Global production of both natural and synthetic fibers has doubled since 1990, reaching 86 million tons in 2011, or nearly 12 kg [26 lbs] per capita.<sup>2</sup> Natural fibers account for 35 million tons, or 40% of the total, while petroleum-derived synthetic fibers account for 60%.<sup>3</sup> These fibers feed a global garment industry that had an estimated value of \$1.2-\$1.7 trillion in 2012 and employs 60-75 million people worldwide,<sup>4</sup> including over 800,000 workers in the U.S.<sup>5</sup>

However, as one recent report notes, “The flipside of this growth and the accelerating production of fashion has been a broadening and deepening track record of poor working conditions and heavy pollution.”<sup>7</sup> Environmental impacts, including land use, water consumption and pollution, heavy use of toxic chemicals, greenhouse gas emissions, and waste generation, along with severe exploitation of both child and adult labor, are the largely unseen costs of the complex global textile supply chain.

This paper argues that U.S. foundations currently have a key moment of opportunity to invest in the sustainable fiber and textile sector in ways that will mobilize consumer awareness and accelerate improvements in many stages of the textile production chain. Such improvements would in many cases tie into and further strengthen the sustainable agriculture movement in the U.S. and abroad. Sustainability in textiles also involves many aspects of toxics reduction and labor issues, thus highlighting the close connections between environmental and human health impacts and presenting opportunities for foundations already involved in environmental health and justice work.



# I. INTRODUCTION Textile Industry Impacts At a Glance<sup>6</sup>

**60%**  
of fibers produced worldwide are synthetic

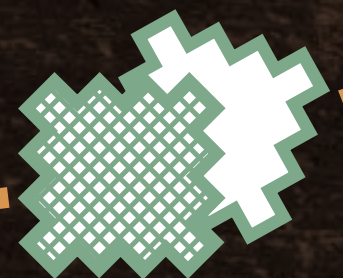
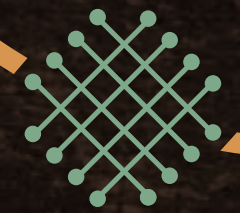


**650-800**  
gallons of water are required to manufacture 1 cotton T-shirt.



**Over 25%**  
of all chemicals manufactured worldwide are used in the textile industry.

Cotton uses **2.3%** of global arable land but accounts for 14% of all agricultural insecticides.



60-75 million people work in the textile industry worldwide.  
**Over 75%** are women.

The textile industry overall accounts for an estimated **5-10%** of global GHG emissions.



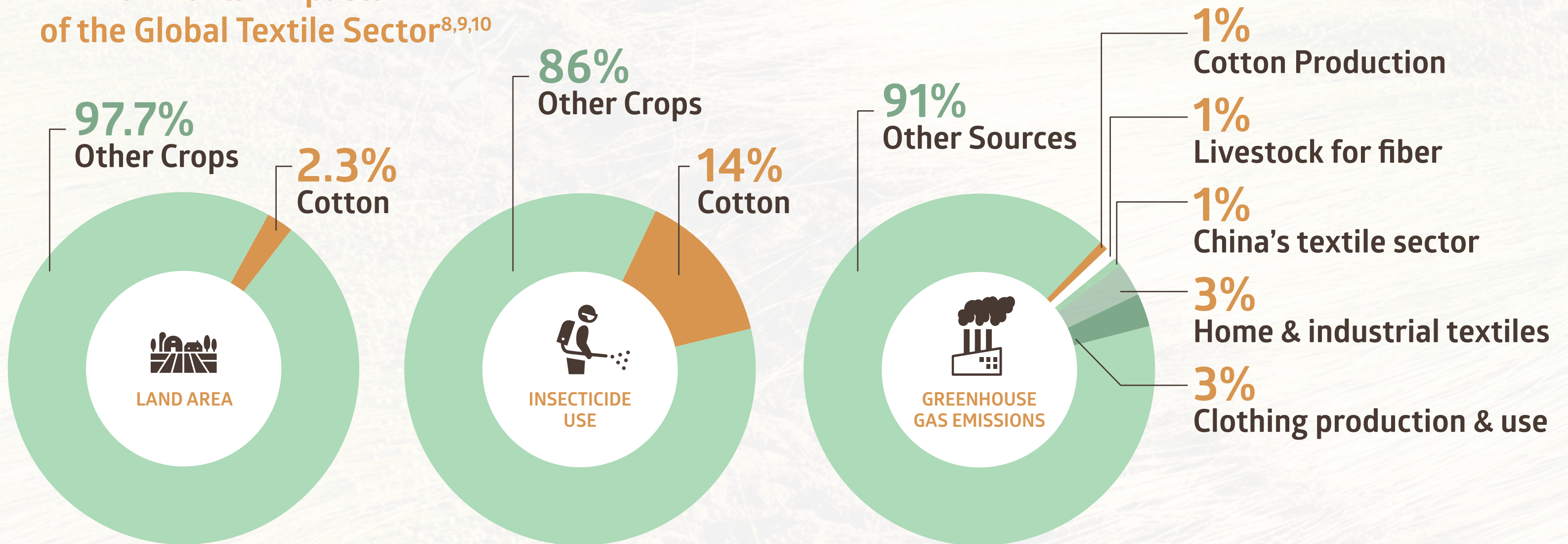
Only 15% of clothing is recycled in the U.S. Americans throw away **70 lbs** of clothing per person each year.





## II. BACKGROUND The Environmental and Social Impacts of Textile Production

### Environmental Impacts of the Global Textile Sector<sup>8,9,10</sup>





## II. BACKGROUND **The Environmental and Social Impacts of Textile Production**

**According to Choudhury,**  
**“The textile industry**  
**has been cited as the**  
**most ecologically harmful**  
**industry in the world....”<sup>11</sup>**

**The industry’s environmental**  
**impacts stem from a combination**  
**of agricultural and chemical factors,**  
**which are in turn closely tied**  
**to human health impacts.**

### **Major areas of impact include:**

#### **LAND USE**

The agricultural impacts of the textile sector are driven by the prevalence of cotton among natural fibers—the crop accounts for almost 85% of natural fibers produced, with smaller percentages from wool, flax, hemp, and other cellulosic (plant-derived) fibers.<sup>12</sup> Cotton’s characteristics—water-intensive, pest-prone, and soil-depleting<sup>13</sup>—result in outsized impacts: according to a 2015 United Nations report, cotton is grown on only 2.3% of the world’s arable land, but it is responsible for approximately 14% of global agricultural insecticide use.<sup>14</sup> Although this percentage has declined over the past two decades, according to the most recent available data cotton still accounts for a greater percentage of insecticide use than either corn or rice, and this global average masks wide variations in the rate of insecticide use per acre in cotton-growing countries.<sup>15</sup> In the U.S., cotton accounts for about for 1% of farm acreage,<sup>16</sup> but 2009 data indicated that North America was responsible for 22% of world total sales of pesticides for cotton,<sup>17</sup> suggesting that the U.S. is a significant contributor to this disproportionate land use impact worldwide. The prevalence of genetically

modified cotton in the U.S. crop—93% in 2016<sup>18</sup>—likely drives extensive application of glyphosate herbicides that contribute to this burden.

Grazing land for wool production also accounts for significant land use, but with potentially much greater sustainability,<sup>19</sup> and recent research offers evidence that properly managed grazing lands can have positive land use impacts through improved soil health and drainage and may actually mitigate GHG emissions through carbon sequestration.<sup>20</sup> Conversely, although they are often perceived as environmentally-friendly choices, wood-derived fibers like viscose, rayon, modal, and lyocell are in fact creating severe deforestation in many countries. As one example, South Africa, a top exporter of “dissolving pulp,” (the raw material for these fibers), lost 17% of its dense forest cover between 2001-2014.<sup>21</sup> (Some brand name versions of these fibers, such as Lenzing Modal® and TENCEL®, are produced using more sustainable closed-loop approaches.<sup>22</sup>) Hemp and flax grown for fiber account for only a tiny percentage of land use currently, but awareness of cotton’s environmental impacts has led



## II. BACKGROUND **The Environmental and Social Impacts of Textile Production**

to interest in expanding production of these fibers.<sup>23</sup> Finally, although leather production is generally not accounted for in the textile industry statistics used for this overview, it should be noted that leather is another area of overlapping environmental and social impacts between the global food and apparel systems,<sup>24</sup> as the livestock industry accounts for 26% of total global land use and 33% of global cropland use,<sup>25</sup> generates 14.5% of global GHGs,<sup>26</sup> and results in additional burdens from water and chemicals used in leather processing.

### **CHEMICALS AND TOXICS**

In addition to its heavy use of pesticides and insecticides, the textile sector creates a huge impact on both environmental and human health through the extractive supply chain for petroleum-based synthetic fibers and the chemicals used in processing both natural and synthetic fibers. According to research conducted by Bluesign, “Approximately 25% of the chemicals manufactured globally are applied in the textile industry.”<sup>27</sup> Key categories of problematic substances include surfactants, used in detergents and wetting agents; salts like sodium chloride and sodium

sulfate, used in dyeing; heavy metals such as cobalt and copper, also used in dyes; complex chemical mixtures used in wet processing;<sup>28</sup> and water-repellent coatings and other treatments that utilize perfluorinated and polyfluorinated compounds (PFCs).<sup>29</sup> Dozens of studies have established associations between these chemicals and increased rates of bladder, lung, colorectal, and breast cancers in textile industry workers.<sup>30</sup>

### **WATER CONSUMPTION AND POLLUTION**

Considering the entire cotton textile production chain (farming, spinning, wet processing, etc.), Chapagain et al. found that “Cotton consumption is responsible for 2.6% of the global water use.”<sup>31</sup> However, this global average masks wide variations in water use efficiency among cotton-producing countries,<sup>32</sup> as well as local examples of severe water depletion including the case of the Aral Sea,<sup>33</sup> the production of irrigated cotton in Arizona,<sup>34</sup> and the unfolding impact on Ethiopia’s Lake Turkana from the construction of the Gibe III dam for cotton irrigation.<sup>35,36</sup> Overall, according to Choudhury, “It takes approximately 2,500-3,000 L [650-800 gal] of water to manufacture a single cotton shirt.”<sup>37</sup> In

addition to water consumption, water pollution—from fertilizer and pesticide runoff and wastewater discharge from processing facilities—is a second major concern. In China, which is responsible for approximately 50% of global textile production, the textile industry ranked third among all industries in its level of wastewater discharge and second for chemical oxygen demand loading,<sup>38</sup> a measure of water pollution and an indicator of low oxygen availability for aquatic life.

### **ENERGY USE AND EMISSIONS**

Several studies have estimated energy use overall in the textile sector.<sup>39</sup> However, documented estimates for greenhouse gas emissions from the industry are difficult to obtain. According to a 2010 article in the industry publication *Textile World*, “Apparel and textiles account for approximately 10 percent of the total carbon impact,”<sup>40</sup> although the article provides no documentation and does not specify whether this estimate includes the agricultural components of the textile industry. A 2011 report from the Carbon Trust estimates that the production, purchase, and use of clothing leads to the release of over 850 Mt



## II. BACKGROUND **The Environmental and Social Impacts of Textile Production**

CO<sub>2</sub> per year (around 3% of global CO<sub>2</sub> emissions),<sup>41</sup> but this report does not include agriculture or take into account textiles for home and industrial use. A second Carbon Trust report assigns a further 0.8% of global CO<sub>2</sub> emissions to cotton production, while the FAO's 2013 "Tackling Climate Change Through Livestock" report attributes approximately 0.8% total anthropogenic GHG emissions to livestock used for fiber production.<sup>42,43</sup> Finally, a 2005 study found that CO<sub>2</sub> emissions were much higher for synthetics than natural fibers: 9.52 kg of CO<sub>2</sub> per ton of spun fiber for polyester compared to 5.9 kg for conventional cotton and 2.35 kg for U.S. organic cotton.<sup>44</sup>

Using these more thoroughly documented sources helps support a rough estimate of between 5-10% of global greenhouse gas emissions from the fiber and textile industry production chain overall, but more research is needed to develop reliable textile industry emissions estimates that specify contributions from both agricultural and industrial components and highlight opportunities for emissions reductions. As noted above, growing understanding of the potential

of rotational grazing is raising hope that properly managed fiber animal grazing could actually have a net positive impact on GHG emissions through carbon sequestration.

### **LABOR ISSUES**

As in the food system, the global textile supply chain relies on low-cost labor in developing countries and buries many labor abuses in production stages that are far out of sight for the end consumer. According to a February 2015 fact sheet produced by the Clean Clothes Campaign, between 60-75 million people work in the textile, clothing, and footwear sector worldwide.<sup>45</sup> This range represents an increase of 200-275% since 2000, attesting, like the steep increases in natural and synthetic fiber production, to the skyrocketing demand for "fast fashion." These workers, over 75% of whom are women,<sup>46</sup> face a host of issues: forced labor, sexual harassment, extremely long hours and forced overtime, unsafe working conditions, lack of ability to organize, and extremely low wages that result in a situation of "economic exploitation."<sup>47</sup> Other reports detail the particularly tragic exploitation of child labor in cotton

fields in countries around the world.<sup>48</sup> Labor abuses in the textile industry were thrown into stark relief by the April 2013 collapse of the Rana Plaza garment factory in Bangladesh, which killed 1,134 people. Since that time, competing international bodies have certified a small percentage of Bangladeshi factories, but the vast majority of factories there and in other countries still have lax oversight of safety and labor rights.

In the U.S., as of 2016 the textile sector employed 579,300 workers along the supply chain, including cotton and wool production, textile mills, and apparel manufacturing.<sup>49</sup> U.S. textile and apparel jobs declined sharply after the passage of NAFTA in 1994, dropping from over 1.5 million in 1995 to 832,000 in 2002,<sup>50</sup> and declining further during the recession of 2008-09—losses that disproportionately impacted rural areas of the southeastern U.S.<sup>51</sup> Recent sources indicate that U.S. textile sector job losses are leveling off, while U.S. exports of fiber and apparel increased 38% between 2009 and 2015 and investment in textile mills grew by 87% over the same period.<sup>52</sup> These trends suggest that American textile manufacturing



## II. BACKGROUND **The Environmental and Social Impacts of Textile Production**

is becoming increasingly viable as the true costs of overseas production become more apparent to both manufacturers and consumers. However, although U.S. manufacturing of textiles and apparel greatly improves the chances to create transparent supply chains, a 2015 report on extensive wage and safety violations in Los Angeles garment factories makes clear that a “Made in USA” label does not guarantee safe working conditions or fair pay.<sup>53</sup> Such abuses are exacerbated by the prevalence of undocumented immigrants: a 2015 Pew Research Center study ranked the “textile, apparel, and leather” industry group second in the U.S. by share of undocumented immigrants.<sup>54</sup>

### WASTE AND RECYCLING

As in the food movement, issues of waste and recycling in the textile industry have been gaining attention as a critical part of the overall supply chain. According to statistics from the Council for Textile Recycling, the

average American throws away 70 pounds of clothing every year,<sup>55</sup> equal to roughly 191 T-shirts per person.<sup>56</sup> A 2012 *Atlantic* article noted that “Americans recycle or donate only 15 percent of their used clothing, and the rest—about 10.5 million tons a year—goes into landfills, giving textiles one of the poorest recycling rates of any reusable material.”<sup>57</sup> These landfilled textiles account for approximately 5.2% of municipal solid waste.<sup>58</sup> Of clothing and textiles that are donated, only 10-20% are resold in the U.S. as secondhand clothing. The unsold donations are then either exported overseas or sold for industrial re-use as rags, stuffing, or insulation.<sup>59</sup> In response to this issue, there is growing interest in increasing textile recycling rates and developing more “closed loop” approaches in the textile sector. Emerging research on the issue of “microplastic” ocean pollution, created in part by laundering clothing made from polyester, nylon, and other synthetics, has added to textile waste issues as well.<sup>60,61</sup>





# III. CURRENT LANDSCAPE of Organizations & Campaigns

Addressing these severe and linked environmental and social impacts requires identifying insertion points in a complex and entrenched global supply chain. Over the past decade, a constellation of nonprofit/NGO organizations focused on sustainable textiles and apparel has emerged in the U.K. and internationally. The U.S. continues to have much lower levels of awareness and activity around the issue, but momentum is building. The approaches used by these organizations can be roughly grouped as:

- 1) Industry-facing programs that focus on assessing or certifying fiber production or supply chain improvements, and
- 2) Consumer-facing labels and awareness campaigns that aim to drive change through increasing demand for sustainably-produced goods

As in the local and sustainable food movement, a basic goal of these nonprofit efforts is to change the established practices of for-profit businesses. In the context of sustainable textiles, “brands”—meaning well-known clothing producers and retailers like Levi’s, Gap, Nike, or H&M—are the most visible element of the supply chain to consumers. They are thus the focus of many of the campaigns and certification efforts described below. These brands have a critical role to play in influencing, as well as being influenced by, consumer demand.

**NONPROFITS involved in certification and labeling efforts, listed here roughly in order of the supply chain from fiber production to apparel production, include:**

- **Textile Exchange:** A Texas-based organization formed in 2002 to boost organic cotton supply that now also leads standard development for other fibers like down and wool and plays a hub role with its annual international Textile Sustainability Conference.

- Several international NGOs, including [Better Cotton Initiative \(BCI\)](#), [Cotton Made in Africa](#), [Fairtrade International](#), and [Demeter International](#), which manage cotton standards or can certify crops, the multi-stakeholder [Organic Cotton Accelerator](#), and the [Global Organic Textile Standard \(GOTS\)](#), which applies to finished products. Organic cotton can be certified by government bodies like the United States Department of Agriculture or nonprofits like GOTS, while the emerging [Sustainable Agriculture Network](#) coalition is developing standards to certify whole farm approaches.<sup>62</sup>
- [Responsible Sourcing Network](#) (a project of [As You Sow](#)): A certification initiative focused on the spinner stage of the supply chain, with a current goal of tracing cotton picked with forced labor in Uzbekistan and a longer-term plan to launch a branded cotton yarn product from certified mills.



### III. CURRENT LANDSCAPE of Organizations & Campaigns

- **Natural Resources Defense Council (NRDC)**  
**Clean by Design:** An industry-facing initiative focusing specifically on improving the sustainability of Chinese textile mills and helping brands identify the most sustainable Chinese suppliers.
- **Bluesign:** An additional mill-focused certification system for sustainably-produced textiles, which works with mills to certify that all raw materials and substances applied meet sustainability criteria. Bluesign also offers a consumer-facing label.
- **Sustainable Apparel Coalition (SAC):** A relatively new organization that has gained traction with its Higg Index, a suite of self-assessment tools for measuring environmental and social sustainability throughout the supply chain. The Higg index is now used by over 150 companies, representing a conservative 40% of the apparel and footwear market.<sup>63</sup>
- **Cradle to Cradle Products Innovation Institute (C2C) and Fashion Positive:** A “closed-loop” advocacy organization that bridges the gap between industry-facing and consumer-facing efforts. Its Fashion Positive program works with textile and apparel companies to identify C2C-approved suppliers and is currently working to develop a “library” of C2C approved materials for designers. C2C also leads the Circular Innovation Working Group and runs an emerging consumer-facing social media campaign.
- **Ceres:** A Boston-based nonprofit working with corporations and investors to expand sustainable business practices that has included some specific focus on the footwear and apparel industry and been an advocate of moving from audit-based to more collaborative models of supply chain improvement.
- **Trucost:** A U.K.-based organization that pioneered a system of natural capital accounting, which attaches a monetized value to environmental costs, and is now developing a specific apparel and footwear version of the system.
- **Canopy and Rainforest Action Network:** Two smaller nonprofits that have carved out specific niches focusing on the environmental impacts of textile fibers that are derived from wood, especially rayon, viscose, modal, and lyocell.
- **Fibershed:** A California producer-led nonprofit working to develop regional and regenerative value chains that operationalize community driven soil-to-soil textile systems, with a focus on soil carbon restoration on working lands. The organization also works with over 50 self-organized Fibershed affiliate projects in 6 countries.

#### Established and emerging CONSUMER-AWARENESS CAMPAIGNS include:

- **Clean Clothes Campaign:** Headquartered in the Netherlands, the Clean Clothes Campaign is an alliance of organizations in 16 European countries that focuses on the rights of workers in the garment industry.



### III. CURRENT LANDSCAPE of Organizations & Campaigns

- **Greenpeace Detox:** A highly visible U.K.-based campaign focused on the links between global clothing brands' manufacturing practices and water pollution. The campaign led several brands to develop The Joint Roadmap towards Zero Discharge of Hazardous Chemicals (ZDHC), an industry-facing protocol, which was at first welcomed but has since been criticized by Greenpeace for a lack of progress.<sup>64</sup>
- **Fashion Revolution Day:** A fast-growing global campaign that marks the anniversary of the Rana Plaza factory disaster, April 24, with a social media campaign demanding transparency from brands with the hashtag #whomademyclothes?
- **Remake:** An emerging California-based nonprofit focused on telling the stories of the people in the global textile and garment industry as a tool to build empathy and a conscious consumer movement. Unlike other advocacy campaigns, Remake also works within brands to build employee and management commitment to sustainable approaches.

#### OTHER ORGANIZATIONS involved include:

- **Ecotextile News**, a provider of technical news and updates for the industry.
- The **Council of Fashion Designers of America** and its **CFDA/Lexus Eco-Fashion Challenge** for designers.
- Academic institutions including Rhode Island School of Design, California College of the Arts, Parsons, Pratt, and Fashion Institute of Technology, all of which are incorporating sustainability issues into their training for aspiring fashion designers.
- For-profit consulting firms working with businesses to improve sustainability in textile production, such as **Oakdene Hollins** (U.K.) and **Pure Strategies** (U.S.).

Foundations currently involved include the European corporate foundations C&A Foundation, H&M Conscious Foundation, and Shell Foundation, as well as the Ellen MacArthur Foundation, which has been a key driver of “circular economy” approaches and recently launched a new **Circular Fibres Initiative**. In the U.S., a small number of grants have been made in this area to date by funders including the Schmidt Family Foundation, the Cordes Foundation, the Blackie Foundation, the Jena and Michael King Foundation, the Island Foundation, the Eileen Fisher Community Foundation, and the Patagonia Grants Program, which has recently expanded its focus on fiber and textiles. Early information on wood-derived fibers was supported by the Lisa and Douglas Goldman Fund and disseminated by the former **Sustainability Funders** network. The **Sustainable Agriculture and Food Systems Funders (SAFSF)** has, over time, featured several workshops and site visits on the topic of sustainable fibers and textiles.<sup>65</sup> SAFSF is currently assembling a resource hub on fiber and textiles funding on its site, and plans to offer future learning opportunities and resources to support U.S. foundation involvement in this area.



## IV. OPPORTUNITIES for U.S. Foundations

The field of sustainable textiles is still in its early stages in the U.S. A wide variety of strategies and approaches have the potential to support and amplify both supply-chain-focused and demand-side efforts to improve the sustainability of textile production. Given the extensive environmental, social justice, and health-related impacts detailed above, the sector presents opportunities for foundations involved in environmental health and justice work as well as for those engaged in sustainable agriculture.

### **A. WORK WITH ESTABLISHED ENTITIES TO LINK, ALIGN, AND CLARIFY EXISTING U.S. EFFORTS**

As is clear from the list of organizations above, a complex landscape of organizations and certifications has already evolved, with much overlap in the clothing brands being targeted. While respecting the varied approaches and pre-existing cooperation among existing nonprofits, U.S. funders could work collaboratively with these players to identify ways to link, align, and more clearly communicate the goals and messages of this emerging movement. The [Environmental Paper Network](#), funded by the Lisa &

Douglas Goldman Fund, provides one important model for this approach.

### **B. SUPPORT MARKET RESEARCH AND TESTING TO ASSESS CONSUMER AWARENESS AND MESSAGE EFFECTIVENESS**

As noted above, a variety of consumer-facing sustainable textiles campaigns have been launched in the U.K. in recent years, with some beginning to make inroads into the U.S. To inform and strengthen such efforts, broad-based consumer surveying and message testing for the U.S. is needed. The market research conducted by the nonprofit [FoodRoutes](#) Network, which found that “freshness” was the one concept that resonated with consumers across the country, provides one model for the type of research needed.<sup>66</sup>

### **C. AMPLIFY NEWS AND MEDIA COVERAGE OF THE ISSUE**

As mentioned above, Ecotextile News provides detailed and comprehensive reporting on all aspects of the sustainable textiles movement, but this coverage is targeted at and largely accessible only to industry

insiders. Issues of environmental pollution, labor exploitation, and waste generation in the textile industry still receive very limited coverage in the mainstream press. More focused and consistent coverage could help increase consumer awareness and drive change in textile production practices. The [Food and Farm Communications Fund](#), established by the 11th Hour Project and several foundation partners, provides one model for amplifying coverage and awareness.<sup>67</sup>

### **D. COMMISSION A REVIEW OF U.S. FEDERAL, STATE, AND LOCAL POLICIES AFFECTING THE SUSTAINABLE TEXTILES MOVEMENT**

The 2014 report “New England Food Policy: Building a Sustainable Food System,”<sup>68</sup> funded by the Henry P. Kendall Foundation, provides a comprehensive scan of policies affecting the development of a more sustainable food supply chain in the U.S. A similar review of policies impacting the production, processing, distribution, and recycling of textiles in the U.S. could highlight many areas for advocacy and help mobilize the interest of policymakers and regulators. The recent



## IV. OPPORTUNITIES for U.S. Foundations

announcement of plans to initiate renegotiation of the North American Free Trade Agreement (NAFTA),<sup>69</sup> which has had a profound impact on the textile and apparel sector, makes this area especially timely.

### **E. SUPPORT MORE WORKER-FOCUSED FACTORY SELF-ASSESSMENT APPROACHES (VS. AUDITS)**

As noted in a 2015 article in *The Atlantic*, a brand's "first tier" suppliers—the factories that cut and sew the actual products—are often "not where the bulk of problems exist" in terms of worker rights abuses. A system of subcontracted materials suppliers means that "traditional factory audits by both brands and NGOs often miss instances of trafficking deeper down the supply chain."<sup>70</sup> As a result, as Ceres' 2014 Footwear and Apparel sector report notes, "Many companies are now taking a more proactive engagement approach, in which they partner with suppliers to provide resources, expertise and other forms of support to address these issues."<sup>71</sup> A 2012 report from Ceres and Levi Strauss & Co., "Improving Workers' Well-Being: A New Approach to Supply Chain Engagement," offers one model of a "paradigm shift that ramps up the role

of companies from passive compliance monitoring to active development and implementation of specific programs to address the needs of workers and their communities."<sup>72</sup> U.S. foundations could help support such approaches, which require "partnerships with NGOs in the communities where factories operate"<sup>73</sup> and could have the added benefit of helping such NGOs address both social and environmental issues in their communities.

### **F. HIGHLIGHT AND ACCELERATE THE GROWING TREND OF RE-SHORING**

As global trends have affected the economics of producing textiles and apparel in the developing world, and as consumer demand for more sustainably-produced products has slowly begun to increase, a small vanguard of companies has been engaged in a deliberate process of "re-shoring," or bringing textile and apparel production stages back to the U.S. In this area, foundations could support case studies, market research, investment opportunity analyses, and other documentation that would help make the case for for-profit businesses to consider re-shoring.

The [Carolina Textile District](#), a network of textile businesses re-creating a supply chain for American production, offers one successful case study.<sup>74</sup> The re-shoring approach can also include rebuilding local fiber production. Growing interest in U.S. cultivation of hemp for fiber has particular potential to expand this trend, and especially to benefit rural economies, as described in Patagonia's video "[Harvesting Liberty](#)." As an initial step, foundations can support local efforts to begin reconnecting fiber farmers with existing pieces of local textile supply chains, an approach used by [Southeastern Massachusetts Agricultural Partnership](#) at its recent regional Fiber and Textile Roundtable.

### **G. EXPAND EFFORTS TO PROMOTE TEXTILE WASTE REDUCTION AND RECYCLING**

In the U.S. food movement, the release of the 2012 NRDC report "[Wasted: How America is Losing up to 40 Percent of Its Food from Farm to Fork to Landfill](#)" sparked a revolution in awareness of the issue of food waste. The issue of waste in the textile and apparel sectors is similarly in need of exposure. A 2014 report commissioned by the Sustainable Apparel Coalition



## IV. OPPORTUNITIES for U.S. Foundations

focused on the possibilities for recycling both pre- and post-consumer textile waste into new yarns. The report led to a Recycling Innovation Working Group, now renamed the Circular Innovation Working Group and led by Cradle to Cradle.<sup>75</sup> Other emerging initiatives include state and municipal textile recycling programs in Massachusetts, Texas, San Francisco, and elsewhere and corporate in-store take-back initiatives like Patagonia's [Worn Wear](#) initiative and Eileen Fisher's [Fisher Found](#) program, which is working to scale up its three-pronged approach for reselling like-new, renewed, and entirely remade garments.

The [ReFED project on food waste](#), launched by the Betsy and Jesse Fink Foundation and now supported by a collaborative of fourteen foundations, offers one model for systematically approaching the issue of textile waste, while [Closed Loop Partners](#) has piloted an integrated financing model with a \$100 million loan fund, venture fund, and foundation, all focused on accelerating recycling technologies for a range of consumer products, including apparel.





## V. CONCLUSION **Lessons Learned from the Local Food Movement**

### **I. INCORPORATE A FOCUS ON JUSTICE AND ACCESS UP FRONT**

The U.S. food movement was slow to bring the voices of those most affected by injustice in the system directly into the conversation. While it may be the case that issues of daily access and availability are more urgent in the case of food than for textiles, the textile industry, like the food industry, rests on a foundation of low-wage (at best) agricultural and processing jobs that, globally, are overwhelmingly held by people of color. In apparel production, gender discrimination combines with racism to fuel the exploitative labor practices described above. Issues of justice and equity within the industry are thus no less important to address if the industry is to see real change in linked social, human health, and environmental impacts. Foundations can play a valuable role by working with nonprofits operating in the sustainable textiles sector to find ways to bring the voices of those most affected by pollution, toxics, and labor issues in the textile industry to the table in the early stages of program design and movement-building.

### **II. STORIES OVER STATISTICS**

In a 2012 keynote at the Sustainable Agriculture and Food Systems Funders Forum, Angela Park, a leading expert on diversity in the environmental field, noted, “The climate movement allowed itself to be pigeonholed, because the issue was framed in such a left-brained way.” Considering the relevance of this lesson for the food movement, Park observed, “Food is simultaneously intimate and far away—how can we bridge that gap with stories?”<sup>76</sup> Similarly, to create real environmental and social change, the sustainable textiles movement must work to ensure that it uses effective communication to make the hidden textile supply chain more real to consumers, while drawing on research showing that guilt-based approaches are not effective in changing behavior.<sup>77</sup> Communications organizations like Remake are already working to create emotive content to address this need, but more deliberate support for such approaches is needed.

### **III. MIND THE MOVEMENT**

In his 2013 article “Who’s Minding the Movement?,” food movement veteran Andy Fisher raised concerns

about the U.S. food movement that have relevance for the growing efforts on textile sustainability in this country. Focusing on the landscape of organizations involved, Fisher perceived “a lack of clarity as to who will provide the unifying vision and direction to help these organizations become more powerful than the sum of their collective parts.” In particular, he wrote, “Policy change has not fully materialized as a force for uniting us, as it has for the feminist and environmental movements . . . instead, we have generally opted for the low-hanging fruit: Public education, market-based change, and individual small and medium-sized projects . . .” as opposed to systemic policy or tax reform efforts. In the years since Fisher’s article, interest in coordinated, policy-focused movement approaches has grown dramatically in the U.S. food movement. Efforts such as the [ReFED](#) coalition’s coordinated “Roadmap”<sup>78</sup> for reducing food waste and the [National Sustainable Agriculture Coalition’s](#) campaign to make the local food movement’s voice heard in 2018 Farm Bill negotiations have helped unify a range of nonprofit advocates, while foundations have responded with a greatly increased focus on funding policy approaches. At this early



## V. CONCLUSION **Lessons Learned from the Local Food Movement**

stage in the movement for a more sustainable fiber and textile system, U.S. funders have an opportunity to help established entities in the field of sustainable textiles develop the “sophisticated political analysis and strategic thinking”<sup>79</sup> needed to identify unifying movement goals and messages and accelerate the pace of change.

### **CONCLUSION**

The U.S. movement to improve the sustainability of fiber and textile production and processing is still in its early stages. While some may perceive the need for clothing as less urgent than the daily need for food, the environmental damage and labor abuses perpetuated by current textile and garment production practices are no less real, and the connections to consumers’ daily lives no less immediate. U.S. foundations

currently have a key moment of opportunity to invest in the sustainable fiber and textile sector in ways that will mobilize consumer awareness and accelerate improvements in many stages of the textile production chain. Consumer awareness is beginning to grow, new non-profit and for-profit entities are rapidly emerging to address this issue, and post-election emphasis on U.S. manufacturing and jobs may provide additional momentum. Working with established and emerging organizations in this growing field, U.S. foundations are well-positioned to draw on key lessons from the sustainable food movement and accelerate the development of a coordinated movement that harnesses consumer demand for clean, ethical, and sustainably-produced textiles as a force for environmental and social change.





# ENDNOTES

<sup>1</sup>The term “fast fashion” describes an apparel production model that emphasizes short turnaround times from design to finished goods, continuous creation of new styles, and very low-cost finished products. The Spanish retailer Zara is generally credited with driving this trend, along with low-cost retailers like H&M and Forever 21. However, the approach has influenced consumer expectations in all segments of the apparel industry, from department stores to luxury goods.

<sup>2</sup>Deloitte, “Fashioning Sustainability 2013: Redesigning the Fashion Business,” 2013, 5.

<sup>3</sup>Deloitte, “Fashioning Sustainability,” 5.

<sup>4</sup>Lina Stotz and Gillian Kane, “General Factsheet Garment Industry, February 2015,” Clean Clothes Campaign, 2015. [cleanclothes.org/resources/publications/factsheets/general-factsheet-garment-industry-february-2015.pdf](http://cleanclothes.org/resources/publications/factsheets/general-factsheet-garment-industry-february-2015.pdf)

<sup>5</sup>United States Department of Agriculture, Economic Research Service, “U.S. Textile and Apparel Industries and Rural America.” [www.ers.usda.gov/topics/crops/cotton-wool/background/us-textile-and-apparel-industries-and-rural-america.aspx](http://www.ers.usda.gov/topics/crops/cotton-wool/background/us-textile-and-apparel-industries-and-rural-america.aspx)

<sup>6</sup>GRAPHIC SOURCES: Left to Right:

- Deloitte, 5.
- Food and Agriculture Organization of the United Nations, International Cotton Advisory Committee,

“Measuring Sustainability in Cotton Farming Systems: Towards a Guidance Framework,” (Rome, 2015), 5,14. [www.fao.org/3/a-i4170e.pdf](http://www.fao.org/3/a-i4170e.pdf)

- A.K. Roy Choudhury, “Environmental Impacts of the Textile Industry and Its Assessment through Life Cycle Assessment,” in Muthu, Subramanian Senthilkannan (Ed.). Roadmap to Sustainable Textiles and Clothing: Environmental and Social Aspects of Textiles and Clothing Supply Chain. (Springer-Verlag Singapur, 2014), 10.
- Stotz and Kane, CCC Factsheet.
- Bluesign technologies, “Selecting Dyes and Chemicals to Minimise Environmental Impacts,” Presentation to Apparel & Footwear International RSL Management Group (AFIRM) Restricted Substances List (RSL) Seminar. September 27, 2007. [afirm-group.com/presentations/2007/Bluesign%20Presentation%201.pdf](http://afirm-group.com/presentations/2007/Bluesign%20Presentation%201.pdf)
- Choudhury, “Environmental Impacts of the Textile Industry,” 6.
- Carbon Trust, “International Carbon Flows: Clothing,” 2011. [www.carbontrust.com/media/38358/ctc793-international-carbon-flows-clothing.pdf](http://www.carbontrust.com/media/38358/ctc793-international-carbon-flows-clothing.pdf)
- P.J. Gerber et al., “Tackling climate change through livestock: A global assessment of emissions and mitigation opportunities,” Food and Agriculture Organization of the United Nations (FAO), Rome, 2013. xii. [www.fao.org/docrep/018/i3437e/i3437e.pdf](http://www.fao.org/docrep/018/i3437e/i3437e.pdf)

• Carbon Trust, “International Carbon Flows: Cotton,” 2011. [www.carbontrust.com/media/38354/ctc794-international-carbon-flows-cotton.pdf](http://www.carbontrust.com/media/38354/ctc794-international-carbon-flows-cotton.pdf)

• Linda Greer et al., Natural Resources Defense Council, “NRDC’s 10 Best Practices for Textile Mills to Save Money and Reduce Pollution,” Version 2.0, July 2013. 7, 31. [www.nrdc.org/sites/default/files/responsible-sourcing-guide.pdf](http://www.nrdc.org/sites/default/files/responsible-sourcing-guide.pdf)

• Valerio Zaffalon, “Climate Change, Carbon Mitigation And Textiles,” *Textile World*, July/August 2010, Vol. 160, Issue 4, 34.

• Stotz and Kane, CCC Factsheet.

• Elizabeth Cline, “Where Does Discarded Clothing Go?,” *The Atlantic*, July 18, 2014. [www.theatlantic.com/business/archive/2014/07/where-does-discarded-clothing-go/374613/](http://www.theatlantic.com/business/archive/2014/07/where-does-discarded-clothing-go/374613/)

<sup>7</sup>Maximilian Martin, “Creating Sustainable Apparel Value Chains: A Primer on Industry Transformation,” Impact Economy, Dec. 2013, 2. [www.impacteconomy.com/papers/IE\\_PRIMER\\_DECEMBER2013\\_EN.pdf](http://www.impacteconomy.com/papers/IE_PRIMER_DECEMBER2013_EN.pdf)

<sup>8</sup>FAO, “Measuring Sustainability in Cotton Farming Systems,” 5, 14.

<sup>9</sup>Expert Panel on Social, Environmental and Economic Performance of Cotton Production (SEEP), International Cotton Advisory Committee, “Fact Sheet on Pesticide Use in Cotton Production,” April 2012. [www.icac.org/wp-content/uploads/2012/04/seep\\_pesticides\\_facts2.pdf](http://www.icac.org/wp-content/uploads/2012/04/seep_pesticides_facts2.pdf)

[www.icac.org/wp-content/uploads/2012/04/seep\\_pesticides\\_facts2.pdf](http://www.icac.org/wp-content/uploads/2012/04/seep_pesticides_facts2.pdf)

<sup>10</sup>GREENHOUSE GAS EMISSIONS PIE CHART SOURCES:

• Carbon Trust, “International Carbon Flows: Clothing” and “Cotton”

• Gerber et al., “Tackling Climate Change Through Livestock,” 18.

• Greer et al., “NRDC’s 10 Best Practices,” 7, 31.

• R. Kirchain et al., “Sustainable Apparel Materials,” MIT, October 2015, 9. [msl.mit.edu/publications/SustainableApparelMaterials.pdf](http://msl.mit.edu/publications/SustainableApparelMaterials.pdf)

<sup>11</sup>Choudhury, “Environmental Impacts of the Textile Industry,” 5.

<sup>12</sup>Food and Agriculture Organization of the United Nations, International Cotton Advisory Committee, “World Apparel Fiber Consumption Survey,” July 2013. [www.icac.org/cotton\\_info/publications/statistics/world-apparel-survey/FAO-ICAC-Survey-2013-Update-and-2011-Text.pdf](http://www.icac.org/cotton_info/publications/statistics/world-apparel-survey/FAO-ICAC-Survey-2013-Update-and-2011-Text.pdf)

<sup>13</sup>World Wildlife Fund, “Cotton Impact,” [www.worldwildlife.org/industries/cotton](http://www.worldwildlife.org/industries/cotton)

<sup>14</sup>FAO, “Measuring Sustainability in Cotton Farming Systems,” 5, 14.

<sup>15</sup>SEEP, “Fact Sheet on Pesticide Use in Cotton Production,” 3.

<sup>16</sup>U.S. Census of Agriculture, “Specified Crops by Acres Harvested: 2012 and 2007,” [www.agcensus.usda.gov/Publications/2012/Full\\_Report/Volume\\_1\\_Chapter\\_1\\_US/st99\\_1\\_037\\_037.pdf](http://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1_Chapter_1_US/st99_1_037_037.pdf)

<sup>17</sup>SEEP, “Fact Sheet on Pesticide Use in Cotton Production,” 3. (Latin America, including Mexico, is classified separately from North America in this source; hence the “North America” category includes only the U.S. and Canada.)

<sup>18</sup>United States Department of Agriculture, Economic Research Service, “Adoption of Genetically Engineered Crops in the U.S.,” last updated, July 2016. [www.ers.usda.gov/data-products/adoption-of-genetically-engineered-crops-in-the-us.aspx](http://www.ers.usda.gov/data-products/adoption-of-genetically-engineered-crops-in-the-us.aspx)

<sup>19</sup>Beverley Henry, “Understanding the environmental impacts of wool: A review of Life Cycle Assessment studies,” Australian Wool Innovation & International Wool Textile Organisation, May 2012, 45. [www.iwto.org/sites/default/files/files/iwto\\_resource/file/Understanding%20Wool%20LCA%2020120513.pdf](http://www.iwto.org/sites/default/files/files/iwto_resource/file/Understanding%20Wool%20LCA%2020120513.pdf)

<sup>20</sup>Daniel Kane, “Carbon Sequestration Potential on Agricultural Lands: A Review of Current Science and Available Practices,” National Sustainable Agriculture Coalition, November 2015. [sustainableagriculture.net/wp-content/uploads/2015/12/Soil\\_C\\_review\\_Kane\\_Dec\\_4-final-v4.pdf](http://sustainableagriculture.net/wp-content/uploads/2015/12/Soil_C_review_Kane_Dec_4-final-v4.pdf)

<sup>21</sup>Mike Gaworecki, “Dissolving pulp: a growing threat to global forests,”



# ENDNOTES

- Mongabay, Oct 30, 2014. [news.mongabay.com/2014/10/dissolving-pulp-a-growing-threat-to-global-forests/](https://www.mongabay.com/2014/10/dissolving-pulp-a-growing-threat-to-global-forests/)
- <sup>22</sup>Laura Repas, "Lenzing's CanopyStyle Audit: Results Released," May 24, 2017. [canopyplanet.org/canopy-media/lenzings-canopystyle-audit-results-released/](https://canopyplanet.org/canopy-media/lenzings-canopystyle-audit-results-released/)
- <sup>23</sup>Rona Kobell, "Hope for Hemp? A Misunderstood Plant Prepares for its Comeback." Abell Foundation, March 2017. [www.abell.org/publications/hope-hemp-misunderstood-plant-prepares-its-comeback](http://www.abell.org/publications/hope-hemp-misunderstood-plant-prepares-its-comeback)
- <sup>24</sup>Food and Agriculture Organization of the United Nations, "Global Hides and Skins Market: Review of 2004-2007 and Prospects for 2008." [www.fao.org/fileadmin/templates/est/COMM\\_MARKETS\\_MONITORING/Hides\\_Skins/Documents/Market\\_review\\_hides\\_and\\_skins\\_-\\_2008.pdf](http://www.fao.org/fileadmin/templates/est/COMM_MARKETS_MONITORING/Hides_Skins/Documents/Market_review_hides_and_skins_-_2008.pdf)
- <sup>25</sup>Food and Agriculture Organization of the United Nations, "Livestock and Landscapes," 2012. [www.fao.org/docrep/018/ar591e/ar591e.pdf](http://www.fao.org/docrep/018/ar591e/ar591e.pdf)
- <sup>26</sup>Gerber et al., "Tackling Climate Change Through Livestock," xii.
- <sup>27</sup>Linda Greer et al., "The Textile Industry Leaps Forward with Clean By Design: Less Environmental Impact with Bigger Profits," Natural Resources Defense Council, April 2015, 7. [www.nrdc.org/international/cleanbydesign/files/cbd-to-scale-report.pdf](http://www.nrdc.org/international/cleanbydesign/files/cbd-to-scale-report.pdf)
- <sup>28</sup>Choudhury, "Environmental Impacts of the Textile Industry," 7.
- <sup>29</sup>Danish Environmental Protection Agency, "Survey of Chemical Substances In Textiles," 2011. (English Summary pgs. 11-14.) [www2.mst.dk/udgiv/blikationer/2011/09/978-87-92779-37-3.pdf](http://www2.mst.dk/udgiv/blikationer/2011/09/978-87-92779-37-3.pdf)
- <sup>30</sup>Singh, Zorawar and Pooja Chadha, "Textile industry and occupational cancer," *Journal of Occupational Medicine and Toxicology*, Vol. 11, Issue 39, August 15, 2016. [occup-med.biomedcentral.com/articles/10.1186/s12995-016-0128-3](http://occup-med.biomedcentral.com/articles/10.1186/s12995-016-0128-3)
- <sup>31</sup>A.K. Chapagain et al., "The water footprint of cotton consumption: An assessment of the impact of worldwide consumption of cotton products on the water resources in the cotton producing countries," *Ecological Economics* 60 (2006), 186–203. [waterfootprint.org/media/downloads/Chapagain\\_et\\_al\\_2006\\_cotton.pdf](http://waterfootprint.org/media/downloads/Chapagain_et_al_2006_cotton.pdf)
- <sup>32</sup>FAO, "Measuring Sustainability in Cotton Farming Systems," 21 (table).
- <sup>33</sup>Chapagain et al., "The water footprint of cotton consumption," 187.
- <sup>34</sup>Abrahm Lustgarten and Naveena Sadasivam, "Why are federal dollars financing this thirsty crop in Arizona?" *Grist*, May 27, 2015. [grist.org/climate-energy/why-are-federal-dollars-financing-this-thirsty-crop-in-arizona/](http://grist.org/climate-energy/why-are-federal-dollars-financing-this-thirsty-crop-in-arizona/)
- <sup>35</sup>Sandra Postel, "Dam on Ethiopia's Omo River Causing Hunger and Conflict," *National Geographic Water Currents*, December 2, 2015. [voices.nationalgeographic.com/2015/12/02/dam-on-ethiopias-omo-river-causing-hunger-and-conflict/](http://voices.nationalgeographic.com/2015/12/02/dam-on-ethiopias-omo-river-causing-hunger-and-conflict/)
- <sup>36</sup>International Rivers, "The Downstream Impacts of Ethiopia's Gibe III Dam: East Africa's 'Aral Sea' in the Making?," January 2013. [www.internationalrivers.org/sites/default/files/attached-files/impact\\_of\\_gibe\\_3\\_final\\_0.pdf](http://www.internationalrivers.org/sites/default/files/attached-files/impact_of_gibe_3_final_0.pdf)
- <sup>37</sup>Choudhury, "Environmental Impacts of the Textile Industry," 10.
- <sup>38</sup>Greer et al, "The Textile Industry Leaps Forward with Clean by Design," 5.
- <sup>39</sup>Ali Hasanbeigi, "Energy-Efficiency Improvement Opportunities for the Textile Industry," Lawrence Berkeley National Laboratory, September 2010. LBNL-3970E. [www.energystar.gov/sites/default/files/buildings/tools/EE\\_Guidebook\\_for\\_Textile\\_industry.pdf](http://www.energystar.gov/sites/default/files/buildings/tools/EE_Guidebook_for_Textile_industry.pdf)
- <sup>40</sup>Zaffalon, "Climate Change, Carbon Mitigation And Textiles," 34.
- <sup>41</sup>Carbon Trust, "International Carbon Flows: Clothing," 2011.
- <sup>42</sup>Gerber et al., "Tackling Climate Change Through Livestock," xii.
- <sup>43</sup>Carbon Trust, "International Carbon Flows: Cotton," 2011.
- <sup>44</sup>Nia Cherrett et al., "Ecological Footprint and Water Analysis of Cotton, Hemp and Polyester," Stockholm Environment Institute, 2005. [www.sei-international.org/mediamanager/documents/Publications/SEI-Report-EcologicalFootprintAndWaterAnalysisOfCottonHempAndPolyester-2005.pdf](http://www.sei-international.org/mediamanager/documents/Publications/SEI-Report-EcologicalFootprintAndWaterAnalysisOfCottonHempAndPolyester-2005.pdf)
- <sup>45</sup>Stotz and Kane, CCC Factsheet.
- <sup>46</sup>Bruce Wallace, "Most Bangladeshi garment workers are women, but their union leaders weren't. Until now.," Public Radio International, The World, Sept. 16, 2015. [www.pri.org/stories/2015-09-16/most-bangladeshi-garment-workers-are-women-their-union-leaders-werent-until-now](http://www.pri.org/stories/2015-09-16/most-bangladeshi-garment-workers-are-women-their-union-leaders-werent-until-now)
- <sup>47</sup>Stotz and Kane, CCC Factsheet, 18.
- <sup>48</sup>Environmental Justice Foundation, "The Children behind Our Cotton," 2007. [freesetglobal.com/uploads/images/tees/resources/The-Children-behind-Our-Cotton.pdf](http://freesetglobal.com/uploads/images/tees/resources/The-Children-behind-Our-Cotton.pdf)
- <sup>49</sup>Jeff Price, "2016 State of the Textile Industry," *Textile World*, May 23, 2016. [www.textileworld.com/textile-world/features/2016/05/2016-state-of-the-u-s-textile-industry/](http://www.textileworld.com/textile-world/features/2016/05/2016-state-of-the-u-s-textile-industry/)
- <sup>50</sup>USDA ERS, "U.S. Textile and Apparel Industries and Rural America."
- <sup>51</sup>USDA ERS, "U.S. Textile and Apparel Industries and Rural America."
- <sup>52</sup>Price, "State of the Textile Industry."
- <sup>53</sup>Garment Worker Center (GWC), UCLA Center for Labor Research and Education, and UCLA Labor Occupational Safety and Health, "Dirty Threads, Dangerous Factories: Health and Safety in Los Angeles' Fashion Industry," December 2016. [garmentworkercenter.org/wp-content/uploads/2016/12/DirtyThreads.pdf](http://garmentworkercenter.org/wp-content/uploads/2016/12/DirtyThreads.pdf)
- <sup>54</sup>Drew DeSilver, "Immigrants don't make up a majority of workers in any U.S. industry," Pew Research Center, March 16, 2017. [www.pewresearch.org/fact-tank/2017/03/16/immigrants-dont-make-up-a-majority-of-workers-in-any-u-s-industry/](http://www.pewresearch.org/fact-tank/2017/03/16/immigrants-dont-make-up-a-majority-of-workers-in-any-u-s-industry/)
- <sup>55</sup>Council for Textile Recycling, "The Facts About Textile Waste" [Infographic], 2015. [www.weardonaterecycle.org/about/issue.html](http://www.weardonaterecycle.org/about/issue.html)
- <sup>56</sup>Catherine Straut, "Spring Cleaning Alert: We Know Where Old Clothes Go to Die—and the Numbers Will Shock You," *Elle*, June 6, 2013. [www.elle.com/fashion/shopping/news/a14882/spring-cleaning-old-clothes-recycle/](http://www.elle.com/fashion/shopping/news/a14882/spring-cleaning-old-clothes-recycle/)
- <sup>57</sup>Cline, "Where Does Discarded Clothing Go." Atlantic's source: U.S. Environmental Protection Agency, "Advancing Sustainable Materials Management: Facts and Figures," 2015. [www.epa.gov/wastes/nonhaz/municipal/pubs/2012\\_msw\\_fs.pdf](http://www.epa.gov/wastes/nonhaz/municipal/pubs/2012_msw_fs.pdf)



# ENDNOTES

<sup>58</sup>Council for Textile Recycling, [www.weardonaterecycle.org/about/issue.html](http://www.weardonaterecycle.org/about/issue.html); SF Environment, Press Release, "San Francisco Launches Zero Waste Textile Initiative to Keep Apparel, Footwear, Linens Out of the Landfill," January 15, 2014. [www.sfenvironment.org/news/press-release/san-francisco-launches-zero-waste-textile-initiative-to-keep-apparel-footwear-linens-out-of-the-landfill](http://www.sfenvironment.org/news/press-release/san-francisco-launches-zero-waste-textile-initiative-to-keep-apparel-footwear-linens-out-of-the-landfill)

<sup>59</sup>Council for Textile Recycling, "The Life Cycle of Secondhand Clothing" [Infographic], 2015. [www.weardonaterecycle.org/images/clothing-life-cycle.png](http://www.weardonaterecycle.org/images/clothing-life-cycle.png)

<sup>60</sup>Mark Anthony Browne, "What Comes Out in the Wash," *New York Times*, November 28, 2015. [www.nytimes.com/2015/11/29/opinion/sunday/what-comes-out-in-the-wash.html?\\_r=0](http://www.nytimes.com/2015/11/29/opinion/sunday/what-comes-out-in-the-wash.html?_r=0)

<sup>61</sup>Nicholas Bruce et al., "Microfiber Pollution and the Apparel Industry," Patagonia and Bren School of Environmental Management, University of California, Santa Barbara, March 2017. [brenmicroplastics.weebly.com/uploads/5/1/7/0/51702815/bren-patagonia\\_final\\_report\\_3-7-17.pdf](http://brenmicroplastics.weebly.com/uploads/5/1/7/0/51702815/bren-patagonia_final_report_3-7-17.pdf)

<sup>62</sup>Sustainable Agriculture Network, "2017 SAN Standard: Raising the Bar on Sustainability Standards," September 21, 2016. [san.ag/web/2017-san-standard-](http://san.ag/web/2017-san-standard-)

[raising-the-bar-on-sustainability-standards/](http://www.raising-the-bar-on-sustainability-standards/)

<sup>63</sup>Mary Mazzoni, "The Higg 2.0 Index and the Journey to an Industry-Wide Sustainable Apparel Standard," *Triple Pundit*, February 19, 2014. <http://www.triplepundit.com/special/sustainable-fashion-2014/higg-2-0-index-journey-industry-wide-sustainable-apparel-standard/>

<sup>64</sup>Greenpeace International, "Progress and hurdles on the road to Detox," December 9, 2011. [www.greenpeace.org/international/en/campaigns/detox/water/detox/intro/Progress-and-hurdles-on-the-road-to-Detox/](http://www.greenpeace.org/international/en/campaigns/detox/water/detox/intro/Progress-and-hurdles-on-the-road-to-Detox/)

<sup>65</sup>Sustainable Agriculture and Food Systems Funders, 2016 Forum Agenda. [www.safsf.org/2016forum-program/](http://www.safsf.org/2016forum-program/)

<sup>66</sup>Justine Williams, "Authenticity and Success in Marketing 'Local' in Retail Grocery Settings: A summary of research findings and the experiences of local food retailing projects," North Carolina Growing Together Research Brief, September 2013. [www.ncgrowingtogether.org/wp-content/uploads/2013/09/NCGT-Research-Brief-Authenticity-and-Success-in-Marketing-Local-FINAL-9-2013.docx](http://www.ncgrowingtogether.org/wp-content/uploads/2013/09/NCGT-Research-Brief-Authenticity-and-Success-in-Marketing-Local-FINAL-9-2013.docx)

<sup>67</sup>Food and Farm Communications Fund, "Home." [foodandfarmcommunications.org/](http://foodandfarmcommunications.org/)

<sup>68</sup>American Farmland Trust, Conservation Law Foundation, Northeast Sustainable Agriculture Working Group, "New England Food Policy: Building a Sustainable Food System," March 2014. [www.clf.org/wp-content/uploads/2014/03/1.New\\_England\\_Food\\_Policy\\_FULL.pdf](http://www.clf.org/wp-content/uploads/2014/03/1.New_England_Food_Policy_FULL.pdf)

<sup>69</sup>Julie Hirschfeld Davis, "Trump Sends Nafta Renegotiation Notice to Congress," *New York Times*, May 18, 2017. [www.nytimes.com/2017/05/18/us/politics/nafta-renegotiation-trump.html](http://www.nytimes.com/2017/05/18/us/politics/nafta-renegotiation-trump.html)

<sup>70</sup>Gillian B. White, "All Your Clothes Are Made with Exploited Labor," *The Atlantic*, June 3, 2015. [www.theatlantic.com/business/archive/2015/06/patagonia-labor-clothing-factory-exploitation/394658/](http://www.theatlantic.com/business/archive/2015/06/patagonia-labor-clothing-factory-exploitation/394658/)

<sup>71</sup>Ceres, "The Ceres Roadmap for Sustainability: Sector Performance—Footwear and Apparel." [tools.ceres.org/roadmap-assessment/sector-analyses/footwear-apparel](http://tools.ceres.org/roadmap-assessment/sector-analyses/footwear-apparel)

<sup>72</sup>Levi Strauss & Co. and Ceres, "Improving Workers' Well-Being: A New Approach To Supply Chain Engagement," April 2012, 17. [www.enterrasolutions.com/media/docs/2012/09/ceres-lsco-whitepaper-2012-04-17.pdf](http://www.enterrasolutions.com/media/docs/2012/09/ceres-lsco-whitepaper-2012-04-17.pdf)

<sup>73</sup>Levi Strauss & Co. and Ceres, 17.

<sup>74</sup>Wealthworks, "Rethreading a textile heritage: One stitch at a time," July 2016. [www.wealthworks.org/sites/default/files/resources/carolina7-28-16.pdf](http://www.wealthworks.org/sites/default/files/resources/carolina7-28-16.pdf)

<sup>75</sup>Cradle to Cradle Products Innovation Institute, Fashion Positive, "Apparel Recycling Innovation Working Group," 2015. [static1.squarespace.com/static/5339c75ae4b0341009f4fb8f/t/55b2cbd9e4b03ed343f5d352/1437780953274/Recycling+Innovation+Working+Group+Fashion+Positive.pdf](http://static1.squarespace.com/static/5339c75ae4b0341009f4fb8f/t/55b2cbd9e4b03ed343f5d352/1437780953274/Recycling+Innovation+Working+Group+Fashion+Positive.pdf)

<sup>76</sup>Angela Park, Keynote, "Everybody's Food Movement." Sustainable Agriculture and Food Systems Funders Forum, June 2012. [vimeo.com/46472431](http://vimeo.com/46472431)

<sup>77</sup>Susanne C. Moser And Lisa Dilling, "Communicating Climate Change: Closing The Science-Action Gap," In J.S. Dryzek et al., Eds., *The Oxford Handbook of Climate Change and Society*, 2011. [sciencepolicy.colorado.edu/admin/publication\\_files/2011.30.pdf](http://sciencepolicy.colorado.edu/admin/publication_files/2011.30.pdf)

<sup>78</sup>ReFED, "A Roadmap to Reduce U.S. Food Waste by 20 Percent," 2016. [www.refed.com/downloads/ReFED\\_Report\\_2016.pdf](http://www.refed.com/downloads/ReFED_Report_2016.pdf)

<sup>79</sup>Andy Fisher, "Who's Minding the Movement?" *Civil Eats*, March 14, 2013. [civileats.com/2013/03/14/whos-minding-the-movement/](http://civileats.com/2013/03/14/whos-minding-the-movement/)



# ACKNOWLEDGEMENTS

Special thanks to the many people who have provided support for this paper:

## **Denise Porché**

Executive Director, and the Board of the Island Foundation

## **Virginia Clarke**

Executive Director, and the staff and Steering Committee of the Sustainable Agriculture and Food Systems Funders

## **REVIEW COMMITTEE MEMBERS**

**Sarah Bell**, 11th Hour Project

**Rebecca Burgess**, Fibershed

**Virginia Clarke**, Sustainable Agriculture and Food Systems Funders

**Steph Cordes**, Cordes Foundation

**Amy Dickie**, California Environmental Associates

**Sarah Hayes**, Patagonia

**Ellen Martin**, Closed Loop Partners

**Lewis Perkins**, Cradle to Cradle Products Innovation Institute

**Alli Rowe**, Patagonia

## **AND MANY OTHERS WHO HAVE PROVIDED INFORMATION, ENCOURAGEMENT, AND EARLY REVIEWS:**

Pam Allen, Lisa and Douglas Goldman Fund; Ayesha Barenblat, Remake; Courtney Bourns, Henry P. Kendall Foundation; Amy DuFault, Amy DuFault Consulting; Linda Greer, Natural Resources Defense Council; Kathleen Grevers, Rhode Island School of Design; Greg Horner, Cedar Tree Foundation; Jacqueline Jackson, TruCost; Christine James, John Merck Fund; Patricia Jurewicz, Responsible Sourcing Network/As You Sow; Kristen Lang, Ceres; Lisa Myers, Patagonia; Dawn Oliveira, Oliveira Textiles; Angela Park, Mission Critical; Alan Phipps, Pure Strategies; Cynthia Power, Eileen Fisher/Fisher Found; Shona Quinn, Eileen Fisher; Mike Roberts, Teknor Apex Company; Karen Schwalbe, Southeastern Massachusetts Agricultural Partnership (SEMAP); Hilde Steffey, Farm Aid; Page Stites; and Andria Winther.

## **COPYEDITING**

Randy Meaney

## **GRAPHIC DESIGN**

Tonja Larson, Ladywithafan Design

## **PHOTO CREDITS**

Cover, Left to Right: Photos 1, 4: Photo by Paige Green Photography, courtesy of Fibershed.

Photo 2: Photo by Karen Schwalbe, courtesy of Southeastern Massachusetts Agricultural Partnership (SEMAP) Pages 14, 16: Photos by Paige Green Photography, courtesy of Fibershed

## **CONTACT**

Sarah Kelley, [skelley@islandfdn.org](mailto:skelley@islandfdn.org)