



# FASHION<sub>IS</sub> OLD FASHIONED:

*disruption, sustainability, and  
investment opportunity in the  
fashion and apparel industry*





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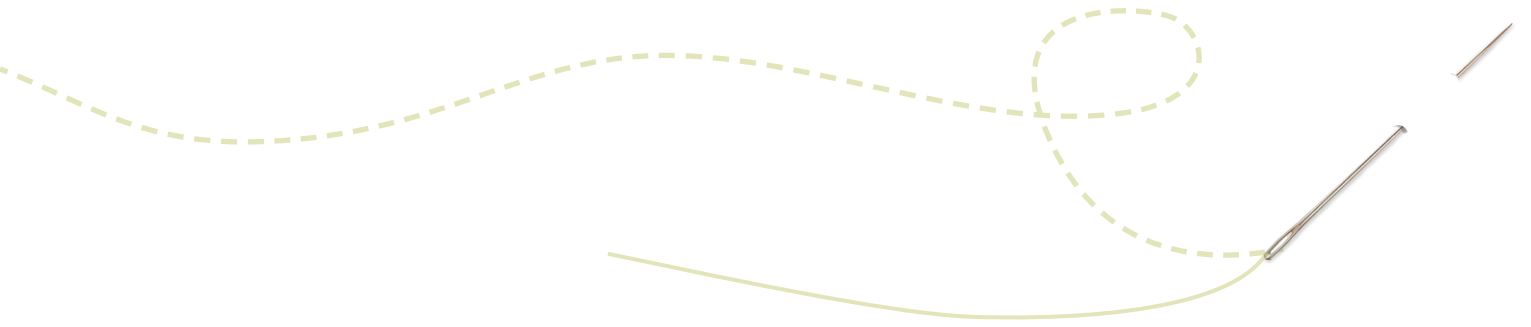
January 2018

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# “The fashion industry is very old fashioned.”

Claire Bergkamp, Head of Sustainability and Ethical Trade at Stella McCartney



For all its glamour, fashion is often overshadowed in the world of impact investing. Over the past decade, the global fashion industry has grown at 5.5 percent annually, according to the McKinsey Global Fashion Index and is estimated to be worth \$2.4 trillion, comparable to the world's seventh-largest economy per GDP.

Its ubiquitous reach means that from the farm fields to the factory floors, the textile industry employs roughly one in six people worldwide across the supply chain. Still, when it comes to an impact lens, such a prominent global industry is often overlooked.

The industry is teetering on a tenuous inflection point due to antiquated and unsustainable practices. Yearly sales growth driven by a fast-fashion mass consumer mindset has masked opaque, interminable supply chains that have woven a dark and spurious side of an industry that consumers have willfully ignored.

While wind, solar, and bioenergy sectors have greedily exploited the opportunity to serve as the poster boys of the green revolution, it is fashion that has the opportunity to impact almost all UNSDGs. From women's economic

development to energy, pollution, toxicity, and waste reduction, along with the preservation of culture and tradition, fashion can bring about far reaching positive labor and environmental change.

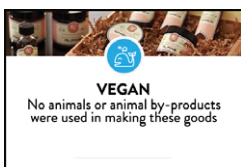
Fortunately, a new generation of brands, textile companies, and NGOs are doing just this by shortening supply chains and using production practices that promote environmental and social progress.

## What exactly is sustainable fashion?

Sustainable fashion (also referred to as ethical fashion) is often associated with a boutique, nascent, and environmentally friendly subset of the behemoth global fashion and apparel industry. Generally speaking, sustainable fashion can be divided into two main umbrella descriptions: environmentally friendly materials and ethical labor practices.



*As investors, consumers, and human beings living on Planet Earth, we are already heavily invested in sustainable and unsustainable fashion. If you own the S&P or if you wear clothes, you are in the game.*



This paper aims to illustrate the scope of sustainable fashion by outlining the traditional industry supply chains and their corresponding challenges. It will highlight solutions, compelling investment themes, and points of entry within this rapidly changing sector. Focus is particularly paid to prospective investment opportunities that can be made by the family office community seeking the triple outcome of 1) improving and mitigating current risks and practices in the fashion and apparel supply chain, often cited as some of the most polluting and harmful on earth, 2) activating, leading, and supporting innovation in the fashion and apparel industry, and 3) preserving capital and generating profit.

In 2011, the global fashion and apparel industry was valued at \$2 trillion and, since 2011, it has consistently grown at a rate of 4% on a yearly basis with no indication of waning.<sup>1</sup> The increase in global population will require increased manufacturing output to account for an additional 1.5 billion people by 2030. The industry is further fueled by a consumer base of shoppers with disposable income and access to debt, a mass consumerism mentality, and a social media-encouraged "buy now, wear once" culture. To keep up with population increase and projected GDP per capita growth, the Global Fashion Agenda and BCG estimate that global fashion and apparel consumption

will increase from 62 million tons to 102 million tons in 2030, a 63% increase from 2017.<sup>2</sup>

The industry's sheer scope and scale have caused rapid globalization of the supply chain, often with the singular focus of meeting demand at the cost of environmental and social standards, making it one of the world's most polluting and harmful industries. In order to meet demand, suppliers have resorted to cutting corners and turning a blind eye to environmental and social ills. Archaic practices that allow for waste, profit loss, and the mistreatment of people and the planet are the cost of doing business in a race-to-the-bottom environment.

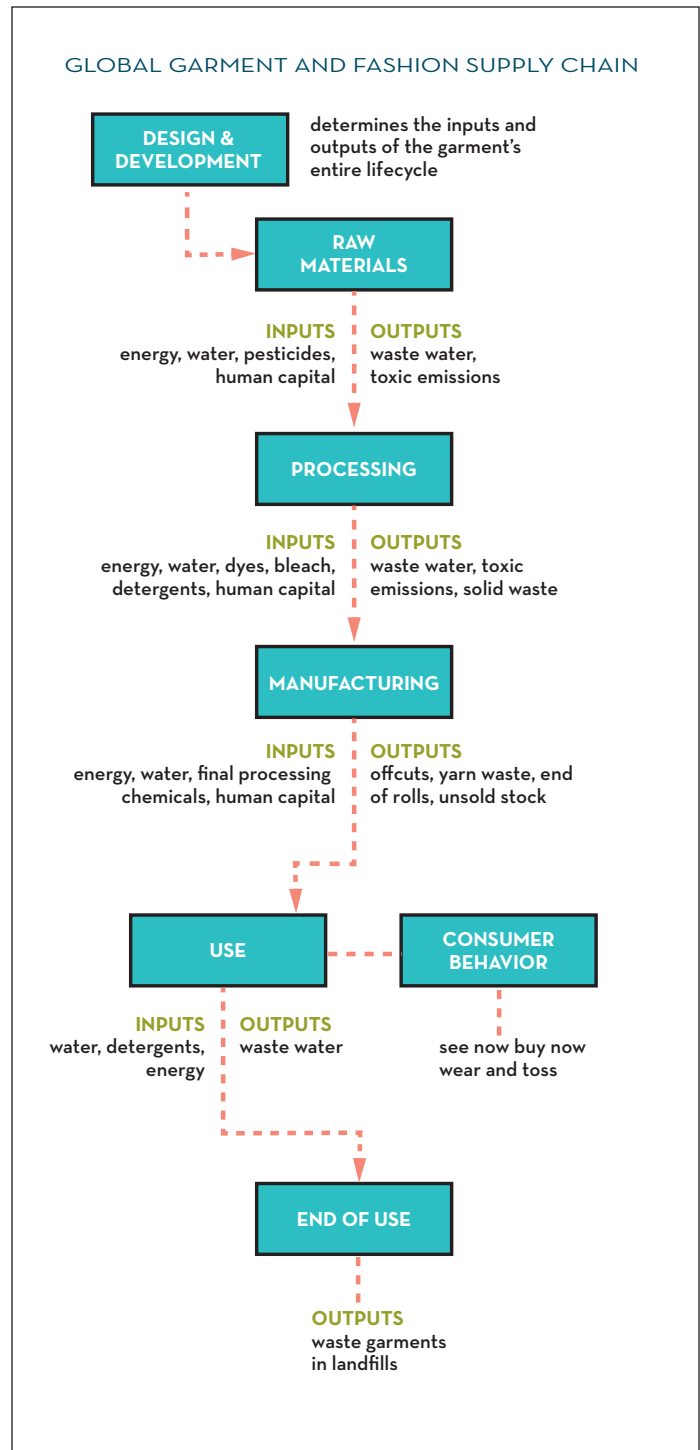
Unlike the growing notion of farm-to-table in the food industry today, the fashion and apparel industry is opaque and segmented, thus concealing negative externalities. The notion of supply chain traceability is still but a nascent reality for both consumers and companies. Even established global brands often are not aware of the details of their supply chains, including the dyes that they use, the waste discharge from the factories, and even the number of factories themselves. Thankfully, similar to the food industry's tremendous progress regarding traceability and consumer awareness, change is already underway. Before serious lasting reforms can be implemented, clear understanding and acknowledgment of supply chain inputs including water, land use, chemical use, energy emissions, and human capital, as well as outputs such as waste and toxic emissions, are required in order to offer fully transparent solutions.

On a macro level, the industry's linear business model of "take, make, and waste" and lack of supply chain transparency have established it as one of the world's worst environmental and labor rights offenders. This linear model is proving inefficient as resources that it "takes" are edging toward scarcity, "making" is becoming increasingly expensive as labor costs rise, and "waste" is exponentially increasing as more garments and supply chain byproducts are sent to landfills, incinerated, or dumped in bodies of water. Continuing with this model in tandem with persisting consumer "fast fashion" behavior will cause profit to drop as production and raw material costs rise due to labor hikes and resource scarcity. Consider that by 2030, it is estimated that fashion brands will see a 3% decline in EBIT, totaling to a \$52.5 billion annual loss in profit across the entire industry.<sup>3</sup> Perhaps it is unsurprising that, according to *McKinsey's State of Fashion* report, "67 percent of executives said conditions for the fashion industry have worsened over the past 12 months" as they grapple with the arduous tasks of unwinding complex supply chains and integrating sustainable innovation into production and core product-design.

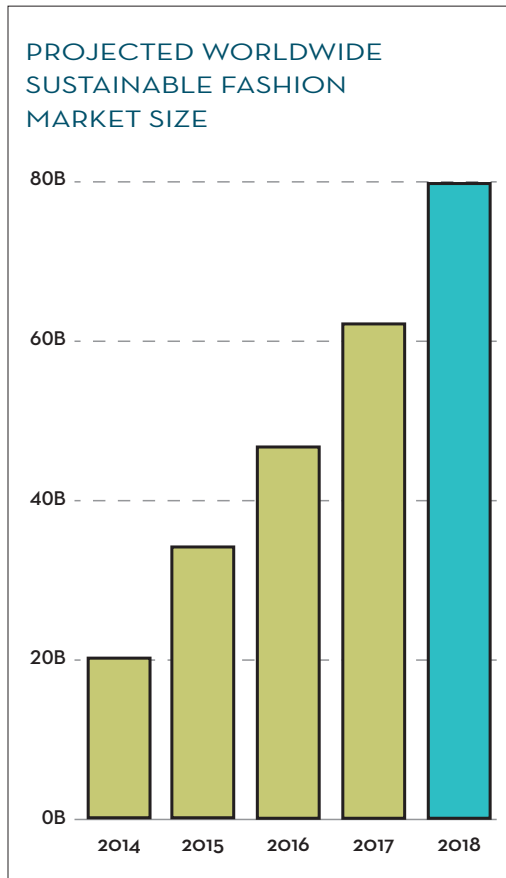
On a micro level, the problems in the supply chain include overuse of natural resources and chemical inputs, mistreatment of workers, pollution of water and air, a lack of proper systems to maximize recycling efforts, and overconsumption. Rectifying these issues is meaningful to the bottom line. It is estimated that the world economy could save upwards of \$186 billion annually should sustainability and labor inefficiencies such as proper allocation of resources and fair treatment of workers be effectively addressed.<sup>4</sup>

## Closing the Loop.

Unveiling the opaque yet interconnected web of supply chains and implementing disruptive business solutions at each juncture can serve as a path for companies to increase profitability, reduce risks for investors, stabilize the future of the industry, and rehabilitate our planet. To



tackle these issues is, yes, sustainable. It is also sound business management where compelling investment opportunities lie. Rapid advancements in material science and technology have created ideal circumstances to disrupt the status quo, which many leading social entrepreneurs have jumped at.



## From the Runway to the Rack to the Dumpster

Waste is a major reason fashion and apparel is considered among the world's most unsustainable industries. Each year in the US alone, 13.1 million tons of textile waste is created, with 11 million tons ending up in landfills.<sup>5</sup> The fast fashion trend exacerbates this problem. The average number of collections for brands has been on the rise, from two per year in 2000 to five per year in 2011.<sup>6</sup> There are now more collections than seasons and, simultaneously, seasons (characterized by weather patterns) are becoming erratic and increasingly inconsistent.

Much of the world has responded positively to fast fashion as it allows access to the hottest trends for incredibly low prices. A mass market mindset has led to consumers treating low priced garments as disposable, tossing them after only an estimated seven to eight wears.<sup>7</sup> This means that, today, clothing is kept for about half as long as it was 15 years ago.<sup>8</sup> If the current rate of disposal continues, it is expected that the industry's waste, from production to end-of-use, could increase by 60% by 2030. This would add 57 million tons of waste annually, bringing the industry's total waste to 148 million tons.<sup>9</sup>

### YOUR CONSCIENCE VS. YOUR 8 DOLLAR T-SHIRT.

*Do consumers really want sustainable fashion?*

**87%** will purchase a product because a company advocated for an issue they cared about and 76% will refuse to purchase a company's products or services upon learning it supported an issue contrary to their beliefs



**63%** of Americans are hopeful businesses will take the lead to drive social and environmental change moving forward, in the absence of government regulation

**78%** want companies to address important social justice issues

Key findings from <http://www.conecomm.com/research-blog/2017-csr>



# Operating Inefficiencies in the Supply Chain

## AN OVERARCHING LACK OF TRANSPARENCY

To bring a single dress, shirt, shoe, or pair of jeans to market requires a long, opaque, and complex supply chain. Supply chains are so involved because of diffused skill sets and manufacturing capabilities, particular to certain nations, as well as the fact that fashion houses own very little of their supply chain leaving them to contract out the work to hundreds of farms and factories. As a result, large multi-national companies potentially work with over 1,000 different facilities before the final product is ready to be shipped to the distribution centers. This multi-factory system, and linear supply chain, can often leave companies in the dark as to where their raw materials are actually sourced and provides them plausible deniability when labor and environmental abuses take place. Distributed supply chains, where the companies have no or little ownership, also allow brands to easily swap contractors in order to find cheaper options, thus creating a 'race-to-the-bottom' downward pressure throughout the supply chain. The result is suppliers forced to cut corners in order to meet lower prices and maintain contracts.

*A note to readers: Many of the problems that are mentioned in regards to one part of the supply chain also relate to other issues in the supply chain. This is important to keep in mind throughout the paper in order to gain a full understanding of how interrelated the operating inefficiencies and stages in the supply chain are.*

## RAW MATERIAL CULTIVATION

43% of our clothing is created from natural fibers, such as cotton, wool, leather and wood, while the other 57% of fibers are synthetics derived mostly from petroleum.<sup>10</sup> As demand for clothing grows, so will the demand for these various raw materials. In addition to growing

demand remains the worrisome fact that the global population is also on the rise. As more people need to be housed and fed, the industry is facing increased competition over already stretched natural resources. Such stresses are likely to cause major disruptions and that could potentially derail systems throughout supply chains in the coming decades.

## DEFORESTATION

Cotton is not just a water-intensive crop. It is also land intensive. So too are wool, leather, and wood based fibers such as viscose, rayon, modal, tencel and lyocell, which make up 15% of natural fibers used in fabrics.<sup>11</sup> In order to grow cotton, raise sheep and cows for leather and wool, and source these wood based fibers, trees must be cleared and cut down. As cotton, leather, and wool have become increasingly valuable, so too has the land necessary for cultivation, linking the crop and livestock raising to the deforestation of some of the Earth's oldest and largest forests. To meet global demands for the wood pulp and fibers, production is expected to double by 2050,<sup>12</sup> leaving more forests to be logged in the name of fashion. Leather production in particular has been linked to deforestation in parts of the Amazon which is being turned into





cattle ranches at an alarming rate. Leather production's greenhouse gas emissions are double fold as they are reducing a carbon sink while the cows' digestive system is emitting methane, a greenhouse gas that is 25 times as potent as CO<sub>2</sub>.<sup>13</sup> Instead of being logged for raw textile materials, these forests need to be preserved to protect valuable ecosystems and to serve as large carbon sinks that can combat the global rise in greenhouse gas emissions.

### SYNTHETICS

The majority of fibers used in clothing are synthetic fibers, such as polyester. Despite their versatile properties, synthetic fibers are made from petroleum based materials and therefore share the harmful impacts of the fossil fuel industry. These negative impacts include greenhouse gas emissions, water pollution, soil contamination, and land degradation. Synthetic materials are also incredibly energy intensive to produce as the process of extracting petroleum is itself laborious. Polyester, one of the most common synthetic materials, is made of the petroleum derived Polyethylene

terephthalate (PET), which releases antimony trioxide, a toxic chemical, into waterways during distillation and dyeing. Since synthetic fiber is not naturally found in nature, it is also incredibly difficult to break down or recycle, particularly when blended with natural fibers. Fortunately, companies such as Bionic Yarn, Evrnu, and others are working toward reducing the waste of both synthetic and natural fibers.

### PROCESSING & MANUFACTURING

Once the raw material fibers are collected, they are sent to "Tier 2" suppliers for processing i.e. dyeing, spinning, weaving, etc. and, from here, the fabric is sent to manufacturing facilities where "Tier 1" suppliers cut, sew, buttonhole, glue, weld, seam, etc. In assessing the fashion supply chain, it is important to consider the many hidden layers within this process; in particular subcontracting, a hiring practice used to subvert auditing rules and labor and environmental regulations, is commonplace through the supply chain.

### WATER & CHEMICALS

Subcontracting, while typically used to hide labor violations, is increasingly employed to under report environmental outputs given how resource intensive the industry is. Converting a raw material into a fabric often requires as much as 26–40





gallons of water for only two pounds of fabric. In 2015, it was estimated that 61.7 billion pounds of textiles were dyed. This required over 1.3 trillion gallons of water and 3.7 billion pounds of process chemicals to dissolve the dyes.<sup>14</sup>

Compounding the issue, is the many processing factories which continue to use freshwater rather than a form of recycled water. Since many of these factories are also located in regions without accessible drinking water, communities are competing with the plants for clean water. Additionally, many processing and manufacturing facilities do not have adequate wastewater treatment and often discharge the wastewater into the near river, lake, or ocean. This dumping even occurs at facilities that have “capture systems” as production rates far outpace capacity, resulting in factories releasing what cannot be captured into local waterways. This wastewater often contains toxic dyes, bleach detergents, and harmful chemicals such as mercury. Releasing these chemicals threatens community drinking supplies with cancer-causing carcinogens and other harmful toxins that can cause major damage to human health.

Already roughly 1 in 10 people on Earth today lack access to clean water. The World Economic Forum Water Resource Group projects that access will only worsen by 2030 and four billion people will live in high water stressed areas. If the fashion industry continues business as usual it will consume an additional 39 billion cubic meters of water by 2030. Combined with human health needs, the demand for global freshwater will exceed supply by 40% in 2030.<sup>15</sup>

Of the natural fibers used in clothing, 60% is cotton, which is also the most water-intensive fabric to cultivate; 2.2 pounds of cotton could require between 2,600–5,300 gallons of water.<sup>16</sup>

The cost of addressing the negative externalities of cotton production is not factored into its price, leaving governments, taxpayers, and communities to pay for the damage. If cotton were not so heavily subsidized and these externalities were incorporated into the price of cotton, conventional cotton would cost much more than organic cotton. Producing cotton in these water scarce regions is a red flag for investors as it puts production, and therefore the rest of the supply chain, at risk. Instead, investors and brands should look to support organic cotton and other more environmentally sound practices.





## LABOR

Throughout the entire industry supply chain, 60–75 million people are employed, and 28 million of those are employed in the processing and the manufacturing stages. The myriad of contracting work and subverting auditing contributes to the mistreatment of these millions of employees. The mistreatment includes low wages, long working hours, and an inability to form unions. Employees are often forced to work in unsafe conditions, which is especially dangerous for employees in processing plants due to their frequent interactions and contact with harmful chemicals, such as dyes. While these abuses are prevalent in the processing and manufacturing stages, similar abuse also occurs in the raw material stage.

One of the paramount problems many of the industry's employees face is the lack of a living wage. Labour Behind the Label, an NGO focused on workers' rights in this industry, defines a living salary as

"One which enables workers to meet their needs for nutritious food and clean water, shelter, clothes, education, health care and transport, as well as providing a small discretionary income."

The costs associated with these needs varies country to country. Many factories fail to even comply with the minimum wages that are mandated by government. For example, in India 51% of factories do not comply with wage laws. Even if the factories did comply, established minimum wages are only half of what would constitute a living wage.<sup>17</sup>

Many of the employees in processing and manufacturing facilities are trafficked or migrants who are working under forced labor conditions. Under these conditions, employees are often coerced into work via threats of violence and accumulated debt. Employers may also coerce their employees by holding their travel documents or threatening to have them deported. Often those of disadvantaged backgrounds or immigrants are more likely to be trafficked and pressured to work under these conditions. Immigrants and the destitute poor are far less likely to be working under a formal employer contract that would outline their working hours and wages. Without these legal contracts, it is difficult for employees to retaliate against their employers and, therefore, they have no choice but to work under exploitative conditions.

Part of what influences factory owners to use such methods of employment is pressure from brands to drive down costs. Employing trafficked and migrant workers allows companies to avoid paying a minimum or living wage while also skirting other labor laws. Another tactic to keep costs low while still meeting demand is to contract part-time workers and homeworkers. Similar to trafficked or migrant workers, these employees work in what's considered the 'grey economy' and have little protection from governments that often have weak or non-enforced labor laws. This leaves workers with little leverage in negotiating not even the most basic salaries and protections. Under the current business model, the prevailing



wisdom is such that improving conditions would drive cost too high and the factory could risk losing lucrative contracts to a cheaper factory. Of course, investing in employee well-being can offset higher wages through increased productivity. In a 2015 study, researchers from the University of Warwick found that giving employees time to decompress and refuel on food and drinks, increased their happiness and resulted in a 12% increase in productivity resulting in longer term profitability.

Of the employees in the industry, 80% are female, which leaves women disproportionately impacted by abuses of power and labor inefficiencies. For example, non-compliance minimum wage rates in Pakistani females is 87% versus only 27% for Pakistani men. Women also experience more sexual harassment, physical abuse, threats of termination,

and verbal abuse. In fact, women are hired more in the garment industry because of cultural stereotypes which considers them to be passive and unresponsive to this unfair treatment in the workplace.

The disconnect between fashion companies and the processing and manufacturing facilities obfuscates the true labor practices and allows an entire network of modern slavery to serve as the backbone to the global fashion apparel industry. This is not only dangerous for the workers, it is also dangerous for the clothing brands as well. Being associated to modern slavery can lead to lawsuits from employees and consumers, public pressure, and negative publicity. Thus being connected to these companies exposes investors to reputational risks.











*"We need to rethink sustainability. Commit to buying clothing and other materials that are just one stream, so you know where they will go when you are done with them. The worst offender from a waste perspective is a cotton/poly blend, or any organic/synthetic mix, as it cannot be recycled, nor can it go back to the earth to replenish the cycle."*

Zem Joaquin - Ecofabulous & Founding Board Member of Cradle to Cradle Product Innovation Institute @ecofabulous @zem @c2ccertified

## Sustainable fashion isn't just ethics, it's good business

Over the past decade we've seen Whole Foods lead the organic foods revolution. We've seen Tesla drive the electric car movement. And now we are on the cusp of a major shift in the fashion industry towards environmental and ethical production. According to McKinsey & Company the seismic shift has already begun; "Sustainability in fashion retail is one of the most important trends of the future of the industry." The trends are clear: sustainability is the future of fashion.

As consumers we can no longer take an "out of sight out of mind approach" to how our clothing is made. If fashion is a defining part of who we are and how we represent ourselves, shouldn't we wear clothing we believe in?

A commitment to change starts with innovative sustainable materials, brands whose socially conscious ethos are core parts of their identities, and NGOs who continue to push for stronger

*The risk to the fashion industry's bottom line, to our planet, and to our health is real. Sustainable fashion means getting rid of operating inefficiencies. It means removing the blinders.*

## FASHION AND APPAREL INDUSTRY SIZE AND REACH



**\$2.5**  
TRILLION INDUSTRY



FASHION CONTRIBUTES  
**20%**  
OF INDUSTRIAL  
WATER WASTE



FASHION CONTRIBUTES  
**10%**  
OF GLOBAL  
CARBON EMISSIONS



**85%**  
OF TEXTILES ARE  
SENT TO LANDFILLS



AN ESTIMATED  
**150** MILLION  
LIVES ARE TOUCHED BY THE  
GLOBAL GARMENT INDUSTRY  
EVERY DAY

*“The hottest buzzword in luxury fashion right now is sustainability. Don’t expect that to change” –The New York Times*

environmental regulations and working conditions. To win the future, companies must innovate and respond to shifting consumer habits by authentically engaging with consumers who are becoming wiser about their purchasing habits and more mindful of living healthier lifestyles that correspond to their values.

Finally, the power is in our hands. Now it is up to us as consumers and investors to accelerate the change we want to see in the industry. It’s time to stand up for what we value, to vote with our wallets and investments, to support the future of sustainable textiles, and to wear what we believe in without compromising style.

For impact investors there are an abundance of opportunities not only to support promising startups and brands but to invest in alignment with values.

For starters, those currently investing in fashion and apparel should identify companies already in their portfolio and assess what they are doing to address sustainability. Investors new to the space can invest in brands that are addressing the critical issues above, thus directing capital away from the bad players with the hope that those companies will eventually shift practices in order to stay competitive.

New paradigms will only transpire when business, consumer, and investor trends align. Dozens of companies are already leading the way. We hope that this paper will further shed light on the leading innovators in the space and galvanize the investor and family office community.

Following is a summary of a few companies that have received recognition for their promise in transforming the industry.





# MEET THE INNOVATORS

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LABOR	Nest
NEW MATERIALS	Modern Meadow, Bolt Threads
THE INVESTOR	Cordes Foundation
MULTI-BRAND RETAILER	Maison de Mode
MONO-BRAND	Misha Nonoo
WASTE	Evrnu
THE CONNECTOR	GCU Fair Fashion Center
INNOVATIVE PRODUCTION METHODS	Nimbly

## LABOR

### NEST: EMPOWERING ARTISANS

Nest is a nonprofit building a new handworker economy to increase global workforce inclusivity, improve women's wellbeing beyond factories, and preserve important cultural traditions around the world. In partnership with public and private sector collaborators, Nest's programs are bringing radical transparency, data driven development, and fair market access to a fragmented industry, enabling handwork's unmet potential to improve our world.

In America, 52% of all small businesses are home-based and the majority are women, yet archaic laws and regulations are stifling economic opportunity and creating unequal pay. Nest has pioneered an innovative approach to bringing critical business development and radical transparency to this huge network of home based workers in the craft sector, creating economic opportunity many, including the American textile and artisan producers who once worked in the manufacturing industry. Nest tackles the issue from both sides: working directly with artisan workers on business development and skill building, while also partnering with major brands who source their work (including Target, West Elm, Patagonia and others). Nest's workforce transparency and protection for workers increases global

brands' confidence in establishing sourcing relationships from cottage industry businesses in their supply chains, which leads to greater economic opportunities for millions of workers (mostly women) worldwide. This multilateral approach ensures limitless reach and scale for its beneficiaries, but also sustainability for the organization.

Nest has also created a Nest Guild, a global network of more than 400 artisan business based in over 50 countries around the world. While employing artisans practicing diverse crafts from shibori dying to hand reed weaving, Guild businesses are unified in their common goals for business growth and social improvement in their local communities.



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## NEW MATERIALS

*“We need more innovation in the chemical recycling space. And this is a billion dollar idea for whomever gets this right”*

Anonymous. Large Fashion Brand Executive.

### 2018'S HOTTEST FASHION TREND: LAB COATS

Perhaps you are an ethical fashion fan staunchly opposed to animal cruelty and environmental degradation...but you still appreciate a beautiful Hermes bag or silk scarf. Soon enough, you will likely be able to enjoy both while wearing or supporting your conscience. How? Welcome to the age of biofabrication, thanks to companies like Brooklyn-based **Modern Meadow** which grows bioleather in a laboratory, without using animals. Specifically, Modern Meadow designs and engineers the DNA of yeast to produce collagen. They then ferment the yeast, much like you would brew beer, to grow billions of collagen-producing cells. They purify this collagen and assemble it into unique material structures. It is then tanned and finished using efficient and ecologically-minded processes, creating a world of bioleather materials called Zoa.



Care for a silk scarf made without spiders and, instead, in yeast? Check out companies like **Bolt Threads** which is focused on genetically engineering next-generation polymers with unprecedented capabilities, such as recombinant spider silk. The Emeryville, California-based company has raised \$40 million so far from investors such as Foundation Capital, Formation 8 and Founders Fund, as well as from government grants.

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## THE INVESTOR

### MEET THE CORDES FAMILY



The Cordes Foundation is leading the way in family foundations pledging 100% Impact. Ron, Marty, and their daughter Stephanie run the family foundation together and are vocal about their realization, early into the foundation's inception that they wanted philanthropic capital and investment capital to work hand-in-hand.

Today, foundation investments have an outsized focus on female-founders and sustainable fashion, making them a clear leader in this investment space.



## MULTI-BRAND RETAILER

### OMNI-CHANNEL SUSTAINABLE LUXURY PLATFORM SHOWS IT'S CHIC TO BE GREEN

Amanda Hearst and Hassan Pierre's "one stop shop" for luxury ethical fashion has made impressive strides since launching in 2012. The Maison de Mode founders decided to fuse memorable brick-and-mortar pop-up shopping experiences—often featured during notable events like Art Basel Miami—with a sleek, user-friendly e-commerce platform that showcases an exceptionally curated line-up of ethical fashion brands and Maison de Mode exclusives (which consistently sell out within days—a testament to the founders' marketing prowess). The site and pop-ups include unique ready-to-wear brands, fine jewelry, accessories, and home goods. Items are tagged with respective sustainability criteria including recycled, organic, artisanal, made in the USA, cruelty-free, fair trade, and the butterfly



mark (which signifies brands making positive social impact).

FOUNDERS  
AMANDA HEARST AND  
HASSAN PIERRE

Long-time friends, Amanda and Hassan make quite a powerful duo—Amanda previously worked at Marie Claire and focused on sustainable fashion content. Hassan was formerly the creative director and founder of the highly applauded demi-couture label, Way It Should Be, which specialized in repurposing vintage fabrics. Maison de Mode was born when the friends realized there was a significant market void for a high quality platform that showcased sustainable luxury.





MISHA NONOO

## MONO-BRAND

### MISHA NONOO: ON-DEMAND IS IN DEMAND

Misha Nonoo is the epitome of a fashion disruptor. Despite her line having received a number of accolades (by CFDA, Vogue, and Forbes) and much brand recognition, she gave up the traditional wholesale model for something that she felt made a lot more sense: on-demand manufacturing, direct-to-consumer sales, and a season-less, minimalistic, versatile line for the woman on the go.

Today Misha is successfully proving this model, one that is reliant on creative social media marketing and trunk shows for customer acquisition. "Having been a wholesale business with accounts at

Bergdorf Goodman, Neiman Marcus, and Shopbop, the reality of scaling a small business was very difficult to deliver," says Misha. Marketing budgets, excess stock, cash flow are all huge burdens that a young luxury brand faces against the larger maisons. With an on-demand operation, the label is revolutionizing the industry by eliminating waste and shortening lead times for customers to receive orders produced especially for them. This changes the relationship the industry has to seasonality, and lessens price margins for our customers by approaching them directly. "It's no longer about over-produced product that is found everywhere, but instead about nimble and sustainable manufacturing methods to create product when the customer wants it," says Nonoo.







## WASTE

### FASHION-TECH: HIGH-END COTTON FROM COTTON

Companies like Levi Strauss, Adidas, and Stella McCartney recognize the inherent risks to their business if they continue to rely on sourcing new materials. Cotton requires water. Water is becoming scarce. What if new cotton, instead, required old cotton? Meet Evrnu—the only fiber technology that is successfully separating and converting post-consumer cotton garment waste into pulp that is customized to reflect properties of cotton, polyester, and rayon.

Evrnu's leadership is not new to the textile space. Founder Stacy Flynn spent 15 years in fabric production at companies such as Target and Eddie Bauer. During a month-long work trip to China in 2010, Stacy witnessed the mistreatment of textile employees and the environmental implications of her profession. "I could no longer do my job," she says. Today Evrnu works with top brands and is repurposing factories to manufacture this multi-use Evrnu pulp, often bringing jobs to underserved parts of the US.

*"By tackling water conservation through new fiber innovation, the apparel industry has the potential to significantly reduce its water footprint."*

Paul Dillinger, head of global product innovation, Levi Strauss & Co.

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## THE CONNECTOR

### MEET THE SUPPLY CHAIN MATCH MAKER

The Glasgow Caledonian Fair Fashion Center (FFC) focuses on the intersection of profitability and sustainability. With the unique mission to facilitate the incorporation of sustainable practices into fashion, the FFC is proving the business case for sustainability by turning global issues into industry opportunities.

The language of the scientific community and NGOs is different than the language of business. Translation and actionable solutions are required, as is an understanding that profitability is the lever that motivates and the path to scale.

When considering the influence the fashion supply chain has on other industries—from farming and manufacturing to transportation, real estate, and waste management—there are many distinct but entangled elements that must evolve in order to create an industry that is a respectful and regenerative ecosystem that supports people, planet, and profits.

The FFC develops market-based solutions that combine economic value creation with environmental stewardship, social inclusion, and sound ethics to create systemic change in the fashion industry. Changes to each entangled area begins the momentum but it is the power of collective action that will create a Quantum Redesign of the Fashion Industry.

With guidance from public sector organizations like the United Nations and priorities established by the industry's leading executive, the FFC works to moves company initiatives beyond CSR, empowering organizations to embed sustainable practices across all business functions.

Overcoming challenges created by gaps in traditional ecosystems, the FFC creates the enabling space for cross sector collaboration yielding innovative solutions. Through the FFC's partnerships with subject matter experts from a variety of fields, spin off businesses and investment opportunities have been identified.







## INNOVATIVE PRODUCTION METHODS

### ON INNOVATION

A fundamental restructuring is happening in how, where, and when clothes are made. The shift is from long lead times and massive offshore manufacturing facilities (wherever labor is cheap and environmental laws are lax) to responsive, distributed manufacturing. This change is driven by the financial burden of excess inventory and markdowns, the cost of shipping and tariffs, and the missed opportunity of not ordering enough of the right product.

The innovation is a mix of new technologies, like robotic cut-and-sew, and new applications of existing technologies, like on-demand 3D knitting and cut-and-sew. A data-driven blend of just-in-time and on-demand production through a network of micro-facilities in population centers will help brands produce as close to end consumer as possible and as close to the purchase time as possible. Advanced knitting is a particularly interesting category,

as the machine technology is already commercialized but not utilized to its full potential. For example: if you order a sweater from XYZ Brand, it was probably made up to a year ago at a factory in China, regardless of whether you are in Toronto or Tokyo. In the not-too-distant future, the sweater you buy may be knit on-demand to fit your body at a micro-facility down the street as soon as it is ordered.

Sustainable innovation represents significant investment potential across financial, environmental and social metrics. The financial wins will come from brands that leverage this innovation, as well as for the manufacturing and software companies that this ecosystem is built on, such as Nimble. The social impact will come from training and employment in living wage careers in the distributed manufacturing network, although the implications for existing jobs in the developing world must be considered. The environmental result is significantly reduced waste and lowered shipping emissions.



## FASHION FACTS: THE GOOD, THE BAD, THE UGLY

75% of “Generation Y” are willing to pay extra for sustainable products and services, up from around half in 2014 (Mckinsey & Company)

66% of over 30,000 online shoppers polled responded that they were willing to pay more to companies that are committed to positive social and environmental impact, up from 55% in 2014 and 50% in 2013 (Mckinsey & Company)

Globally, artisan production is a \$34 billion dollar industry, and collectively that is the second largest employer in developing countries (U.S. African Development Foundation/Alliance for Artisan Enterprise, July 2014)

Fashion is one of the most polluting industries in the world, second only to oil in terms of its environmental impact. 25% of chemicals produced worldwide are used for textiles and the industry is often noted as the number 2 polluter of clean water – after agriculture (Deloitte, Danish Fashion Institute 2013)

Rural, artisanal fashion, replete with handicrafts and textile-weaving, which may not generate as much revenue, but employs 34.5 million artisans spanning the length and breadth of India’s countryside (Business of Fashion September 2014–Rahul Mishra)

Sixteen of 27 luxury fashion products (59%) tested were positive for one or more hazardous chemicals; these were nonylphenol ethoxylates (NPEs), phthalates, per- or polyfluorinated chemicals, and antimony (Greenpeace 2014)

Continuing Business as usual (BAU), there is need for 2.3 Earths by 2050. Sustainability is a strategic business imperative because of 7 key drivers: rising population, pollution, climate change, increasing energy scarcity, land scarcity, water scarcity and rising wages / worker unrest. (Deloitte 2013)

When a garment is made in the developing world, the average percentage of the final retail cost that goes to the garment worker ranges from 0.5–4 percent (Ethical Trading Initiative 2006)

Resource efficient companies—those that use less energy and water and create less waste in generating a unit of revenue—tend to produce higher investment returns (Harvard Business Review 2012)

7 of 10 businesses are risking their short term profits and medium term survival by not focusing on management of natural resources (Deloitte 2013)

Companies with strong ethical commitments have historically outperformed the average: an index of the World’s Most Ethical Companies showed that these organisations outperformed the Standard & Poor 500 and FTSE 100 every year from 2005 to 2010 (Institute of Business Ethics)

More than half (57%) of all shoppers say “sustainability” claims are influential to their apparel purchase, just 23% “always or usually” buy clothes marketed that way. 26% are willing to pay more for clothes labeled as sustainable or environmentally friendly (Cotton Incorporated Environment Survey 2013)

73% of consumers in the latest research that say businesses are failing to take care of the planet and society (73% of consumers in the latest research that say businesses are failing to take care of the planet and society)

81% of CEOs believe that their company’s reputation for sustainability is important to consumers (Accenture and Havas Media RE:PURPOSE 2014)



# Companies and Non-Profits We Admire

ACQUAFIL • AMADOU • AMBERCYCLE • ANGELA ROI • AMOUR VERT • BIONIC YARN  
• BOLT THREADS • BOTTLE TOP • C&A • CRADLE TO CRADLE • DRAGON • ECO AGE •  
ECOALF • ECOVACTIVE • EILEEN FISCHER • EVRNU • FASHION FOR GOOD CENTER •  
FASHION POSITIVE • FASHION TECH LAB • FOR DAYS • GCU FAIR FASHION CENTER  
• GUCCI • IMPOSTER • H&M • HEIDE MERRIC • HYOSYNG • KARA ROSS • KERING •  
LAZLO • LVMH • MCARTHUR FOUNDATION • MINIWIZ • MISHA NONOO • MODERN  
MEADOW • MYCOTEX • NADAAM CASHMERE • NEST • NISOLO • OSKLEN • PACIFIC  
INSTITUTE • PATAGONIA • PILI-BIO • PLYGENTA • RALLIER • RECOVER • REFORMATION  
• RENEWAL WORKSHOP • SOKO • STELLA MCCARTNEY • STONY CREEK COLORS •  
STUDIO ONE EIGHTY NINE • SUSTAINABLE APPAREL COALITION • TARGET • TERSUS  
• TEXTILE EXCHANGE • VEJA • WESTWARD LEANING • WORN AGAIN.

## Endnotes

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## Acknowledgments

*The Authors would like to thank the following individuals for their generous contributions and expert comments:*

Claire Bergkamp, Stella McCartney

Christian Birkey, Lazlo

Simon Evans, Eco-Age

Alexander Frantzen

Zem Joaquin, Ecofabulous, Cradle to Cradle

Sarah Kelley, Island Foundation

Lewis Perkins, Cradle to Cradle

Cara Smyth and Maggie Kervick,

Glasgow Caledonian University Fair Fashion Center

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Social entrepreneur, impact investor and story teller David Dietz leads strategy and member engagement for NEXUS, a global thought community that brings together leading next gen social entrepreneurs, philanthropists and changemakers to catalyze new leadership and accelerate solutions to

our world's most critical problems. Prior to NEXUS, David was the founder of Modavanti, the internet's largest sustainable fashion retailer, which he launched out of a desire to fuse social good and fashion. David lives in Brooklyn. Ask him about what he's wearing. His clothes always have a story.