



## **Creating Sustainable Apparel Value Chains**

### **A Primer on Industry Transformation**

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## ABBREVIATIONS

3G	Third generation of mobile telecommunications technology
3-D	Three-dimensional space
AAL	Ananta Apparels Limited
AFWA	Asia Floor Wage Alliance
ASEAN	Association of Southeast Asian Nations
BBC	British Broadcasting Corporation
BBS	Bangladesh Bureau of Statistics
BDT	Bangladeshi Taka
BGL	Bangladesh
BGMEA	Bangladesh Garment Manufacturers and Exporters Association
Bn	Billion
BKMEA	Bangladesh Knitwear Manufacturers and Exporters Association
BOI	Board of Investment Bangladesh
BoP	Base of the pyramid
BSCI	Business Social Compliance Initiative
BRIC	Brazil, Russia, India, and China
BSR	Business for Social Responsibility
C	Celsius
CCC	Clean Clothes Campaign
CEO	Chief Executive Officer
CMP	Cut, Make, Pack
CMT	Cut, Make, Trim
CO	Cabinet Office
CSR	Corporate Social Responsibility
Defra	Department for Environment, Food and Rural Affairs
DFID	Department for International Development
e.g.	<i>exempli gratia</i>
EC	European Commission
EPZ	Export Processing Zones
etc.	<i>et cetera</i>
EU	European Union
EIU	Economist Intelligence Unit
ETI	Ethical Trading Initiative
FDI	Foreign Direct Investment
FLA	Fair Labor Association

FMCG	Fast Moving Consumer Good
FWF	Fair Wear Foundation
G8	Canada, France, Germany, Italy, Japan, Russia, United Kingdom, United States of America
GBP	Pound Sterling
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GOTS	Global Organic Textile Standard
GSP	Generalized Scheme of Preferences
Ibid.	<i>ibidem</i>
i.e.	<i>id est</i>
IFC	International Finance Corporation
IFOAM	International Foundation for Organic Agriculture Movements
ILO	International Labour Organization
ILRF	International Labor Rights Forum
IMF	International Monetary Fund
IPE	Institute of Public & Environmental Affairs
ISO	International Organization for Standardization
IT	Information Technology
Kg	Kilogram
KPI	Key Performance Indicator
LED	Light-Emitting Diode
LEED	Leadership in Energy and Environmental Design
LOHAS	Lifestyles of Health and Sustainability
MGMA	Myanmar Garment Manufacturers Association
MIC	Myanmar Investment Commission
N-11	Next Eleven
N/a	Not applicable
NGO	Non-governmental Organization
NPE	Nonylphenol Ethoxylate
OBM	Original Brand Name Manufacturing
ODM	Original Design Manufacturing
OECD	Organization for Economic Co-operation and Development
OEM	Original Equipment Manufacturing
OHS	Occupational Health and Safety
OIA	Outdoor Industry Association
OTIC	Overseas Trade and Investment Center

P	Page
RAGS	Responsible and Accountable Garment Sector
REACH	Registration, Evaluation and Authorisation of Chemicals
RMG	Ready-Made Garments
ROI	Return on Investment
SAC	Sustainable Apparel Coalition
SAI	Social Accountability International
SASB	Sustainability Accounting Standards Board
SCORE	Sustaining Competitive and Responsible Enterprises
SGS	Société Générale de Surveillance
SIB	Social Impact Bond
SITC	Standard International Trade Classification
SME	Small and Medium Enterprises
STeP	Sustainable Textile Production
TGMA	Thai Garment Manufacturers Association
THB	Thai Baht
UK	United Kingdom
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
URL	Uniform Resource Locator
USD	United States Dollar
US	United States
USA	United States of America
vs.	versus
WBCSD	World Business Council for Sustainable Development
WTO	World Trade Organization
WB	World Bank
WRAP	Waste and Resources Action Programme

## 1 AT A GLANCE

### What Is at Stake?

The world’s garment and textile industry plays a very important role in the global economy. Encompassing clothing, textiles, footwear and luxury goods, it reached USD 3 trillion in turnover in 2011.<sup>1</sup> One of the world’s oldest industries, it has alas often turned a blind eye toward its environmental and social impacts and an overall sustainable vision for the industry is still lacking.

Bangladesh and the industry in general have come under special scrutiny since an accident in April 2013 that killed 1,133 garment workers when a factory in Dhaka collapsed. The challenge now facing the industry is to determine what needs to happen to build *sustainable* supply chains where humane working, environmental and cluster conditions are the norm rather than the exception, given that textiles and garments are produced ever faster in global supply chains. Action is necessary in Bangladesh, and other countries can serve as pilot cases for a broader drive toward a sustainable global apparel industry. But we still need to identify which countries are best suited for this role.

The textile and garment industry plays a key role in many emerging economies and finding a way forward is paramount. In Bangladesh alone, home to almost 160 million people, the industry now accounts for almost 20 percent of GDP, 80 percent of total export earnings and over 4 million direct jobs.<sup>2</sup> With over 5,600 readymade garment (RMG) factories and an average of 1,500-2,000 workers per factory, Bangladesh is far ahead of its main regional competitors, namely Indonesia with about 2,450 RMG factories, Vietnam with about 2,000, and Cambodia with 260.<sup>3</sup> Even so, other production locations often face similar social and environmental challenges. The apparel market in China, the world’s leading sourcing spot, is also evolving. China’s luxury-goods market is growing, and is estimated to account for more than 20 percent (USD 27 billion) of global luxury sales by 2015.<sup>4</sup>

While the growth record and projections for the industry in Bangladesh and other countries are impressive, with turnover in Bangladesh alone forecast to triple from 2010 levels by 2020, it is difficult to envision how these projections could be met in reality if health and safety issues are not addressed and the number of future accidents simply tracks the growth path.<sup>5</sup>

This Primer takes a systemic perspective to analyze both the challenges and potential solutions. At stake are the livelihoods and working conditions of millions of workers, a sustainable future for an industry that uses huge amounts of natural resources such as water, energy and chemicals, and serves consumers in advanced economies with fashion products that should be ethically sourced. Based on extensive industry analysis, we cover specific solutions in this Primer that can help to take global apparel value chains to the next level.

The full report is available for download on the Impact Economy website:

[http://www.impacteconomy.com/papers/IE\\_PRIMER\\_DECEMBER2013\\_EN.pdf](http://www.impacteconomy.com/papers/IE_PRIMER_DECEMBER2013_EN.pdf)

## 2 EXECUTIVE SUMMARY

The global textile and garment industry is at a crossroads. It is a three trillion dollar industry that encompasses the manufacturing and selling of textiles and garments, and has long been considered a source of economic progress around the world, historically serving as a catalyst for national development and industrialization. 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. The collapse of the Rana Plaza factory in April 2013 in Dhaka, Bangladesh jolted to life widespread and increasingly prolonged scrutiny of the industry. This incident has brought longstanding questions to the forefront over how to bridge the gap between economic viability and social and environmental performance.

This Primer attempts to sort through the minefield of perspectives, expectations, and challenges that have only grown more complicated in recent months, and provide an evidence-based assessment of the prospect of sustainable value chains in the textile and garment industry. The report is intended for stakeholders in the apparel industry to use as they deliberate how they can achieve the leap forward needed. The findings are based on extensive desk research and informed by evidence gathered from reaching out to over 730 industry stakeholders through an online survey, conducting more than 25 expert interviews and site visits, reviewing over 200 reports on the overall industry or some relevant dimension of it, and leveraging our general insights into innovation, impact, investment and market building. The textile and garment industry is global, but its main production clusters are in Asia, thus the Primer also includes five country spotlights: China and Bangladesh, the industry’s largest sourcing locations; Myanmar and Thailand, production locations in the midst of transition; and Japan, the world’s third-largest apparel market.

Our findings indicate that creating a win-win of raising productivity and competitiveness, as well as social and environmental performance is possible. But an ambitious, systemic approach is needed to achieve industry transformation. This includes pulling the following four levers: (1) fostering total resource productivity and transparency across the supply chain; (2) upgrading the industry infrastructure by (impact) investing; (3) improving working conditions with a new level of ambition; and (4) studying and replicating the best practices of leading producers. In addition to a whole host of leading examples, the Primer also includes four solution spotlights on key enablers of industry transformation, including: (1) using information technology to foster shop floor transparency; (2) the implications of the emerging circular economy on business model disruption; (3) improving the use of chemicals in the manufacturing process; (4) and lessons learned from the RAGS Challenge Fund, an innovative effort to improve industry working conditions.

The Primer concludes that achieving sustainable market transformation is within reach if the opportunity is connected to the generation of greater resource productivity (e.g., lowering the use of water by up to 50 percent, energy by up to 40 percent, and chemicals by up to 20 percent) with an ambitious agenda to improve productivity and working conditions as well as environmental footprints. But seeding success will require focus. The many social, environmental and economic issues that need addressing are disparate, yet they all meet at the manufacturing stage. Moreover, adopting an investment mindset is a crucially required fresh ingredient. Developing industry blueprints for scale as well as engaging in cross-industry collaboration with solution partners from other industries will greatly enhance the prospects of success. From an implementation perspective, and given the complex systemic challenge at hand, solution partners need to enter where they have comparative advantage. Frontrunner companies are great models of best practices, NGOs bring the issue awareness and street credibility, and governments can redefine the rules of the game. Solution-building subsidies from players that can take a longer view, such as philanthropic foundations, can be instrumental in raising the ambition level and creating the inclusive vision and enabling framework required to empower all stakeholders to drive industry wide collaboration beyond crisis management. The industry’s problems are complex, systemic and of great consequence. This means that the solution blueprints and providers must be practical, sophisticated, and able to move with equally impressive scale.



### 3 POINT OF DEPARTURE

Defined as comprising textiles, garments and luxury, the global textile and garment industry reached a turnover of almost USD 3 trillion in 2011.<sup>6</sup> The sheer size of the industry is impressive but so too is the omnipresent role its products play in our daily lives. Next to providing cover and useful items for the quotidian, garment and textiles help us define who we are and aspire to be. Moreover, the industry has been a stepping-stone to development in virtually all countries since it kicked off the industrial revolution in the United Kingdom 250 years ago. Apparel is also a forerunner of globalization, and it was one of the first industries to adopt a global dimension, incorporating developing countries into the supply chain. Considered an important catalyst for national development and industrialization, apparel has been a natural starter industry for export-oriented countries.<sup>7</sup> Today, the industry is undergoing profound change, both reflecting and driving the transformation of the global economy and society.

The apparel industry has closely mirrored the general post-modernization of consumption and production of the past thirty years. Products are turned around faster and faster (and become smaller in the case of some consumer goods such as electronics), and they are largely produced in supply chains spread around the globe. But accelerating product innovation cycles and offshoring have also served to highlight the longstanding and intensifying sustainability challenges in the industry: shortening lifecycles of products that had typically been manufactured in neither a closed loop nor under labor conditions those of us in advanced economies would consider “fair”. The net of these challenges is the creation of additional pressure on social and environmental performance. This state of affairs raises uncomfortable questions. Lower-skilled workers end up operating chemicals, factories, and machinery they are otherwise untrained to handle, and they have to turn out garments in a breathless rhythm even though they often do not make living wages. Social and environmental problems have, as a result, been growing in severity and pervasiveness in apparel producing countries. The Rana Plaza factory disaster that killed 1,133 people in Dhaka, Bangladesh in April 2013 served once again to bring these issues to global attention.<sup>8</sup>

This Primer argues that we are approaching a watershed moment in the global textile and garment industry, and that we need to think through opportunities for vastly improved, and holistic social and environmental performance, alongside growth and competitiveness. The industry has been going through a tremendous innovation cycle for the past twenty years, and there is more to come. Since the 1990s, the advent of fast fashion in particular – referring to fashion products that move quickly from the catwalk to high street stores in order to capitalize on current fashion trends – has led to the transformation of mass consumption and production patterns of apparel in the main markets of Europe, North America and Japan.<sup>9</sup> Previously dusty fashion retail groups have grown in turnover and profits to a point where they now capture the fascination of the world of investments, which is looking for high returns and mega growth stories. Once a fast fashion brand has achieved maximum consumption speed, the next logical growth steps are to (1) move up market, capturing the consumer segments that can afford to pay more and that traditionally shop for luxury items; (2) expand spatially and roll out fast fashion in emerging markets where new middle classes also want to express identity and success through garments; and (3) sell products to women that were formerly geared for men, and vice versa. Pioneers of fast fashion such as H&M, Zara and Uniqlo are doing all of this. They hire high fashion designers to move their brands up market and to better understand value creation in the luxury industry.<sup>10</sup> China, the focus of the first country spotlight below, is forecast to become the world’s largest market for luxury products by 2020, with 44% of all demand for luxury products.<sup>11</sup> And convergence is happening in other ways: next to unisex clothing, women have started shopping for watches, and men have begun buying perfumes. The lines of gender demarcation are blurring.

But there is a fundamental challenge to this story of growth and innovation: the current path of the industry is unsustainable. The collapse of Rana Plaza served to thrust the challenges associated with apparel production back to the top of media headlines around the world. 64.7 percent of respondents to our online survey reported that their operations were impacted by recent negative media coverage. While many are involved in the Bangladeshi textile industry, even firms not located in the country were also impacted by recent coverage. This finding suggests that the effects of negative publicity at the

country or regional level sent deep ripples across the world and global sector at large. This scrutiny has triggered industry-wide action to address fire and building safety.<sup>12</sup> Though a valuable first step, this Primer argues that (1) the industry’s problems are deep and systemic and therefore need to be addressed at the root cause level; and (2) the solutions around the corner are much more powerful than we typically care to imagine. We are ever more convinced that powerful systemic action is the way forward, and that such action is actually now possible.

To get to a higher-level equilibrium in terms of social, environmental and economic performance, we need to be systematic, realistic and strategic. Currently, though, most actors only focus on aspects of the global textile and garment industry (e.g. living wages, child labor, health and safety, aspects of the environmental footprint). They are working on some dimension of a very large problem and limiting their focus to narrow agendas. Much less effort has been spent on understanding and calibrating actions and strategies to maximize the prospect of overall systems change. This fragmented approach loses the prospect of coordinated efforts that result in the resolution of the larger issue of insufficient social and environmental performance, and risks the likelihood of redundant and counterproductive action. The dominant mindset is a significant barrier that prevents apparel from becoming a truly sustainable industry where long-lasting value creation is at the core of business. Moreover, we cannot turn back the clock. Arguments that consumers should shop less are voiced every once in a while, but evidence shows that consumption will not decelerate, absent a major war occurring.<sup>13</sup> In the US, as well as the UK, the average consumer throws away 30 kg of clothes every year, and our wardrobes hold several times the amount of clothes that our grandparents owned.<sup>14</sup>

One of the more intriguing findings from our research is that there is an enormous hidden value-creation opportunity to tap. Water consumption in global apparel production could in many cases be lowered by as much as 50 percent, energy consumption by one third or more, and the use of chemicals reduced by up to one fifth.<sup>15</sup> Not all these costs are internalized of course. Water, for example, is in many cases free and not even metered, but energy and chemicals do cost money as well as create externalities in the environment. As the scarcity of fresh water moves up the development agenda, one can envision solutions to incentivize a more efficient use of water in the textile production process. These changes could jointly unlock massive value added and provide the economic basis for improving working conditions and environmental footprints if accompanied by more modern management techniques that engage with workers on the shop floor. To seize this potential and take manufacturing to the next level, however, a shift in the prevailing mindset is very much needed. We need to start treating the sustainability dimension as the key driver of success it could be.

To be sure, an overwhelming majority of corporate CEOs in Accenture’s 2010 Research Study on Corporate Sustainability – 93 percent – responded that sustainability would be critical to the future success of their companies, this despite the then-recent economic downturn.<sup>16</sup> But a 2013 follow-up to the survey revealed that many business leaders “have found themselves stuck on their ascent” to sustainability, “unable to scale sustainability at the pace required to address global challenges.” Respondents to the 2013 survey “described a plateau beyond which they cannot progress without radical changes in market structures and systems, driven by a common understanding of global priorities.”<sup>17</sup>

This Primer seeks to provide an evidence-based analysis for stakeholders in the apparel industry to use as they deliberate how they can achieve the leap forward needed. The Primer leverages our insights in innovation and market transformation and is informed by evidence gathered from reaching out to over 730 stakeholders in the industry through an online survey, conducting more than 25 expert interviews and site visits, and reviewing over 200 reports on the overall industry or some relevant aspect of it. The premise is simple: the key breakthrough ahead of us will be in determining how to finance greater sustainability on a long-term basis by achieving greater value added. This means assessing how fundamental shifts that are moving sustainability from the periphery to the core of value creation can be leveraged in the textile and garment industry. In other words, we need to now determine how global supply chains can be harnessed to drive inclusive value creation in the context of trends such as green growth and total resource productivity and energy efficiency, the rise of the

LOHAS (“Lifestyles of Health and Sustainability”) consumer, and growing demand for affordable products and services at the base of the pyramid (BoP).<sup>18</sup>

Raising the game will be hard work. It will require significant stakeholder engagement across the board. But the good news is that the road ahead for companies, civil society, and government need not be divergent. Rather, an opportunity is now materializing for key stakeholders to leverage the broader economic convergence occurring and catalyze viable, responsible, and systemic industry transformation. The industry is already in the midst of this transformation with the rise of Asia and fast fashion. The signs are emerging on the horizon but a truly future proof industry that unlocks economic, environmental, and social value now rests with our ambition to take a longer view – and our determination to act ever bolder.

### China: Luxury and the Largest Apparel Market of the Future<sup>19</sup>

The apparel market in China is evolving, and is on its way to becoming the biggest apparel market in the world in the coming years. China is currently the market leader in apparel exports to the European Union, with 24 percent of total EU-15 apparel imports in 2010, up from 9.6 percent in 2000.<sup>20</sup>

The changes occurring in the apparel industry in China are tied in large part to the broader social and economic context of the country. The Chinese have experienced tremendous economic growth and urbanization over the past sixty years, with rapidly growing middle- and upper-classes that are projected to encompass 75 percent of the Chinese population by 2025 as a result. These consumers – which demand different types of products, including those associated with the LOHAS segment – are projected to continue to rise.<sup>21</sup> Additionally, demand at the BoP and beyond just the wealthiest Chinese consumers is swelling at increasingly fast rates as hundreds of millions of Chinese step out of poverty.

Researchers at Fortune Asia found that the textile and garment industry, a highly fragmented industry in China with many different producers beyond just state-owned companies, is ripe with opportunity, particularly given the need for consolidation. As a leading executive remarked, “The lack of big companies in the industry is an opportunity.”<sup>22</sup> Correspondingly, a McKinsey & Company survey of Chinese consumers revealed that they were nearly twice as familiar in 2010 with the names of ready-to-wear brands as they were even in 2008.<sup>23</sup> A 2012 survey by KPMG confirmed that brand recognition continues to grow among consumers, as does the importance these consumers place on the luxury variety.<sup>24</sup> Chinese consumers have also become “savvier about the relationship between quality and price” and that internationally well-known brands have “become one of the most important factors in making a purchase.”<sup>25</sup>

What this means for foreign firms looking to penetrate the Chinese market is twofold. First, China’s luxury-goods market is growing, and is estimated to account for more than 20 percent (USD 27 billion) of global luxury sales by 2015.<sup>26</sup> This is not a market that can risk being ignored by Western companies, nor is it one where first movers should chance being unresponsive to the luxury tastes and LOHAS preferences of Chinese consumers; customers that are particularly comfortable with displays of wealth and the purchasing of luxury goods.

The pressure for Western companies to act sooner rather than later is growing, principally because the Chinese government recently announced a “Going Out” strategy as part of the country’s Twelfth Five Year Plan.<sup>27</sup> This scheme is focused on penetrating foreign markets as a way to expand markets for selling and producing goods in light of domestic issues such as excess capacity, rising costs, weak demand in the domestic market, environmental restrictions, appreciation of the Chinese currency, and inadequate infrastructure.<sup>28</sup> For domestic and foreign firms alike, competition will increasingly not suffer any boundaries.

## 3.1 Buyers and Producers in a Global Landscape

The key development of the past 30 years consists of the emergence of buyer-led global supply chains producing textiles and garments in ever accelerating design, production and distribution cycles. To grasp upgrading opportunities in the apparel industry, let us first consider the key features within its value chain, as visualized in the figure below. The value chain ranges from the production of raw

materials (i.e. natural as well as manufactured fibers) to the manufacture of a wide variety of semi-finished and finished products.<sup>29</sup> Downstream parts of the textile and garment industry, such as the clothing industry, consume the output of the upstream parts such as fabrics of all types and colors. Inputs from the agricultural sector, such as natural fibers like cotton or wool, are used in the production of textiles and garments, as well as inputs from the chemical industry, such as artificial fibers and chemicals used for dyeing.<sup>30</sup> There are significant opportunities to optimize the environmental and social footprint, yet seizing them requires a focus on front-of-pipe technologies that minimize the use of chemicals through intelligent design of products, production processes and choice of chemicals. Fresh water is key to the production process so minimizing usage can similarly improve the environmental footprint of production as well as reduce costs where water is not provided for free; cost savings can also be achieved with greater energy efficiency.

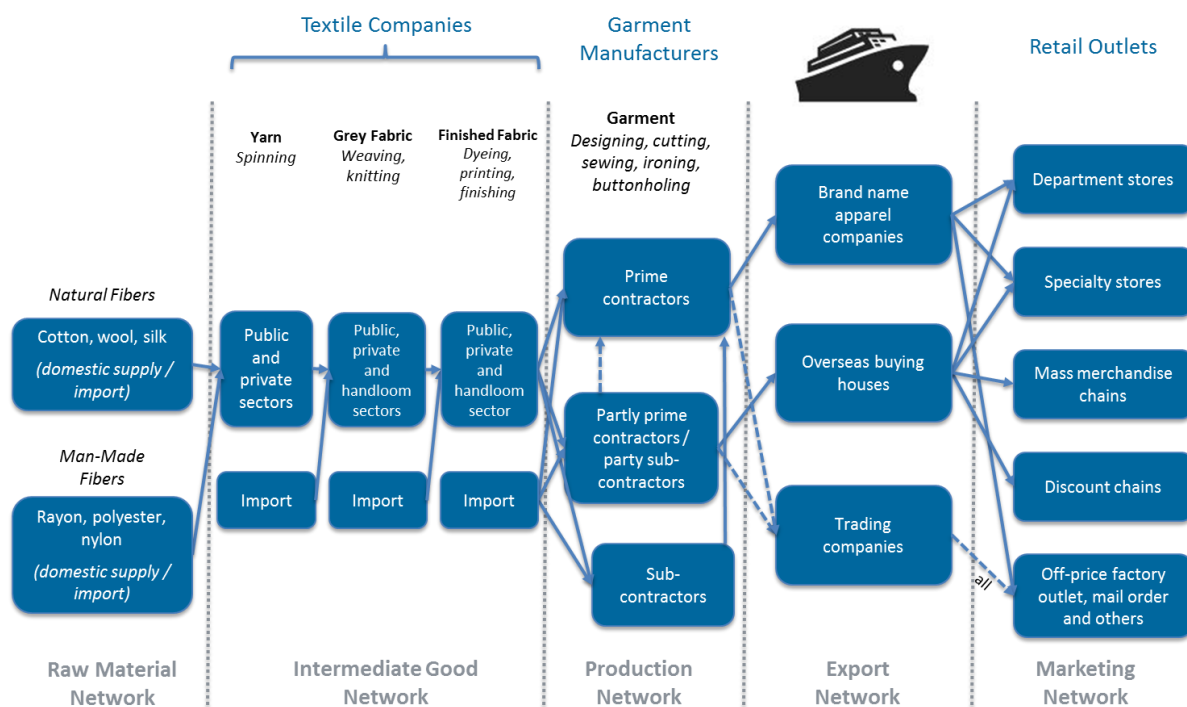


Figure: The Apparel Value Chain <sup>31</sup>

One of the reasons that resource-optimizing production is not standard in the industry relates to offshoring to locations with, in many cases, lower availability of skilled labor and significantly less stringent local environmental and labor requirements. The many shifts in the locations of the most significant apparel exporting countries and regions and their main end markets have been driven by preferential tariff treatment and cost as well as proximity to consumer markets and ability to provide unique value adds.<sup>32</sup> The world's largest consumer markets are the European Union, the United States, and Japan.<sup>33</sup> In 2012, the European Union (EU-27, including intra-EU-27 trade) accounted for approximately 40.2 percent of total world apparel imports of USD 423 billion, while the United States accounted for 20.8 percent, and Japan for 8.0 percent. The United States, the EU-27, and Japan together represented over two-thirds (69 percent) of world apparel imports in 2012, down from 82.4 percent in 1995. Notably, the US's share of global apparel imports steadily declined from a peak of 33.9 percent in 2000 to 20.8 percent in 2012. Japan, discussed in the country spotlight below, dropped similarly from 11.5 percent in 1995 to 8 percent in 2008.<sup>34</sup> Apparel import penetration is generally very high, but varies significantly across the main consumer countries.

The world's largest developing producer countries are China, Bangladesh, India and Turkey. After a period of tremendous growth, Bangladesh is the world's number two sourcing hotspot today. The industry currently accounts for about 20 percent of GDP, 80 percent of total export earnings, and over

4 million direct jobs.<sup>35</sup> The country’s apparel industry, which is the main driver of GDP growth in Bangladesh, is expected to double in turnover by 2015 from 2010 levels, and triple by 2020. In fact, South Asia has been one of the leading manufacturing sectors in terms of its contribution to output, employment and trade. South Asian countries, specifically Bangladesh, India, Indonesia, Vietnam, Pakistan and Sri Lanka, compete with one another in the global market. South Asia’s global exports of textiles and clothing increased substantially over the past decade. The industry has offshored most of its production to developing countries in the past thirty years, and low-income countries currently account for three-quarters of world clothing exports.<sup>36</sup>

### Japan: Offshoring and the Fast Fashion Revolution

Japan is one of the biggest players in the global textile and garment industry. It accounts for eight percent of imports (consumption), and is third to only the EU and US in terms of market size.<sup>37</sup> Moreover, Japan has traditionally set the bar in terms of high quality textile and garment production facilities – the quality of certain products needed in high-end Western brands is so high that they source from Japan regardless of price. Despite that, there has been little investment into the local industry and it is now going through the process of being offshored.

To further complicate the picture, the Japanese fashion industry is currently in a process of reducing its high sourcing concentration on China, which provides roughly 90 percent of garment imports.<sup>38</sup>

The motivations prompting this shift include mainly increasing labor costs associated with manufacturing in China, and possibly rising adversarial relations between Japan and China due to territorial disputes. This could have a major impact on regional supply chains and installed production capacity: Japan is the world’s second largest clothing importer from China, with Southeast Asian countries currently only accounting for 7 percent of its imports. Japan’s strategic outlook could easily double or triple the total current exports from these countries, putting price pressure on European and US importers sourcing from Asia.

An additional variable worth considering is that the tastes and preferences of the Japanese consumer are changing. For example, Uniqlo, a leading Japanese apparel firm, is now the largest clothing chain in Asia. Uniqlo focuses on offering fewer products at lower prices. Mr. Tadashi Yania, the President and CEO of Uniqlo, stated in a recent interview, “In general, the apparel industry isn’t about continual process improvement or making the perfect piece of denim, it’s about chasing trends. At Uniqlo we’re thinking ahead. We’re thinking about how to create new, innovative products [...] and sell that to everyone.”<sup>39</sup> Uniqlo’s success highlights the rise of fast fashion, and the challenge of factoring sustainability into the equation. Where Japanese consumers were previously mainly motivated by quality, price and fashion are now also influencing decisions. A 2010 survey of Japanese consumers found that 51 percent cited good/low prices as the feature they liked about the stores they shop at most often, a jump from 38 percent in 1999.<sup>40</sup> Next to fast fashion, they now consider factors such as fabric and functionality to a larger extent. A moderately growing economy, shifting purchasing channels (i.e. internet shopping is on the rise), and the desire to maximize the value of a purchase are all factoring into the changing preferences on display.<sup>41</sup>

## 3.2 The Bleeding Edge: Key Social and Environmental Issues

The general importance of the textile and garment industry for development cannot be overestimated, given its ability to absorb unskilled labor into formal employment. For countries that have experienced an industrial revolution, the apparel industry has almost always spearheaded the shift.<sup>42</sup> Next to providing large numbers of unskilled jobs in developed and developing countries alike – 82.6 percent of respondents to our online survey ranked “providing an opportunity to work and gain a salary” among the top three positive contributions of the global textile and garment industry for workers – the apparel industry provides a context where relatively modern technology can be deployed at low investment cost and be used to drive development dividends through backward and forward linkages with the economy.<sup>43</sup> Looms and other machinery are often 40 years old or more, and deploying newer equipment can create tremendous productivity and efficiency gains.



While apparel exportation is often a source of economic progress for the country in which production takes place, apparel also has a track record of poor working conditions and heavy pollution in developing markets. The Rana Plaza accident has already led buyers such as Wal-Mart to stop purchasing from factories in multi-story buildings and the incident is itself emblematic of many of the recurring social and environmental challenges the industry and developing countries unfortunately face as they grow their economies.<sup>44</sup> Labor rights, wage levels and health and safety are the leading social issues to be sorted out, and attaining greater productivity will be essential to rendering them financeable. Labor rights, understood in the broader sense to include child labor, forced labor and migrant labor, are the predominant issue in the local context of the textile and garment industry.<sup>45</sup>

Wage levels are another high priority and contentious topic, and there is intensifying discussion about living wages. For example, the Bangladeshi parliament passed the Bangladesh Labour (Amendment) Bill on July 15, 2013 in response to domestic and international pressure. Bangladesh recently paid the world’s lowest minimum wages for garment workers, at about USD 38 a month. The minimum monthly wage for the country’s garment workers was raised by 77 percent to BDT 5,300 (USD 68) effective December 1, 2013 following numerous workers’ protests that forced about 250 garment factories to close temporarily.<sup>46</sup> The only way to raise wages systematically without simply setting in motion a wave of relocation and subcontracting is to raise productivity. The goal in many producer countries has to be to break out of the low skill/low wage strategy. Currently, occupational health and safety (OHS) is a key focal point in the industry, showcased most recently by Rana Plaza. According to the ILO, work-related accidents and disease continue to be serious problems and are caused by a wide range of endemic factors, including a widespread lack of compliance with health and safety standards at factories.<sup>47</sup> A lot of work lies ahead on this front. In Bangladesh, a vast majority of the more than 5,600 factories producing for export need upgrading. And the sector is growing. If we simply extrapolate on this trend, there could be more than 12 million workers and over 10,000 factories in the country by 2020, unless significant factory consolidation takes place. The case of Bangladesh is discussed in the country spotlight below.

Social and environmental issues are the bleeding sustainability edge of the industry and need to be sorted out. But looking at the organizational capacity of the leading actors working on labor rights, living wages and health and safety, it is difficult to imagine how their already insufficient capacity to address these issues could grow in parallel without any structured effort to render some of them larger and more effective. This means that additional capacity needs to be brought on stream to be able to improve social and environmental performance. A mindset shift towards understanding that sustainability can be a source of economic benefits is a necessary condition to generating the extra bandwidth. According to one expert responding to our survey, “Constant improvement of performance regarding surface problems like worker safety and worker rights should be seen as a competitive advantage.”<sup>48</sup>

### Bangladesh: Growing Fast, But Not Sustainably

In Bangladesh, the textile and garment industry has become both a major contributor to development since its beginnings in the mid-1980s, and a constant reminder that globalization has a dark side as well.<sup>49</sup> The industry has grown tremendously and now accounts for about 20 percent of GDP, 80 percent of total export earnings, and over 4 million direct jobs.<sup>50</sup> Respondents to our online survey overwhelmingly anticipate this positive trend in growth to continue over the next 18-24 months, with 52.94 percent expecting their business volume in Bangladesh to at least “remain stable,” and 41.18 percent anticipating an “increase.” Bangladesh’s ready-made garment (RMG) exports reached USD 21.5 billion for the 2012/2013 Bangladeshi July-June financial year.<sup>51</sup> Apparel is the main driver of GDP growth in Bangladesh and has been instrumental in reducing poverty by a third since the 1990s.<sup>52</sup>

Bangladesh has also emerged as the largest production cluster in South Asia, with the exception of China. With over 5,600 RMG factories and an average of 1,500-2,000 workers per factory, Bangladesh is far ahead of its main regional competitors, namely Indonesia with about 2,450 RMG factories, Vietnam with about 2,000, and Cambodia with 260.<sup>53</sup> The Bangladesh market cluster extends across a geographically small area thus facilitating transportation, subcontracting and also advantaging Bangladesh vis-à-vis other volume producers such as India and Pakistan.<sup>54</sup> While the growth record and projections for the industry in Bangladesh are impressive, with turnover forecast to triple from 2010 levels by 2020, it is difficult to envision how this could work in actuality if health and safety issues are not addressed and the number of future accidents simply tracks the growth path.<sup>55</sup> In fact, views on Bangladesh’s potential vary widely. Some, such as former Goldman Sachs chief economist Jim O’Neill, believe the densely populated and youthful country has the potential to become one of the world’s most vibrant economies. He includes Bangladesh in his “Next Eleven” group of countries that he expects to lead the next wave of high-growth economies.<sup>56</sup> Others see Bangladesh as a country whose developmental potential is blocked by political infighting and overstretched infrastructure, with business hindered by red tape, corruption, energy shortages and the ever-present risk of social unrest. The gap between reality and ambition needs to be bridged in order for Bangladesh to become a high-growth economy that benefits the population at large. Well-placed measures are needed that take the industry’s social and environmental performance to the next level in ways that do not undercut its competitiveness. As one respondent to our survey remarked, “If international help is provided to Bangladesh in the form of Generalized System of Preferences (GSP), the country can retain the same growth rate, and the export rate would cross USD 30 billion within the next 5 years.”<sup>57</sup> What’s more, apparel production in Bangladesh is positioned quite competitively in the region. The country has the capacity to increase the quality of goods produced (particularly as Japan and Thailand increasingly offshore production), while still remaining competitive with emerging production clusters such as Myanmar. This should make Bangladesh compelling for investors, particularly those focused on fast fashion and that seek to move up-market.

In our online survey, we asked whether or not respondents are considering moving their activities to another location (i.e. away from Bangladesh) in the next 18-24 months, 91.18 percent said “no.”<sup>58</sup> This is promising for the country but the attractiveness of the market (and its ability to serve as a hub for firms heading up-market) will increasingly be called into question the more growth and development tests the limits of already severe infrastructure deficits. Sustainable supply chains with corresponding upgrading of physical infrastructure and human capital will be key to overcoming these limitations and avoiding the prospect of Rana Plaza type incidents multiplying in number.

## 4 CHANGING CONSUMPTION AND PRODUCTION PATTERNS

Evidence suggests that raising the social and environmental performance of the textile and garment industry, and generating the level of productivity and competitiveness needed to make industry transformation actually viable, is possible. However, the problem is systemic in nature, which means the response needs to be as well, and sustainable value creation lies at its core. This section looks at the trends influencing the need for transformation such as the rise of the virtuous consumer market and fast fashion, key developments in supply chain rationalization and the need for new sources of credit, and how a focus on supply chain transparency is impacting reputational risk.

### 4.1 Fast Fashion vs. Virtuous Consumers

Driven by the desire to be the first to hold a new piece of affordable fashion in their hands, over 3,000 shoppers stormed the opening of a new Primark store on Oxford Street in London in April 2007 – injured staff, trampled shoppers, and stunned security guards emerged in their wake.<sup>59</sup> In many industries, sustainability issues are transforming industries by moving mainstream. Not so in the textile and garment industry (for now). The success of several ethical clothing brands, such as Patagonia, is both a testament to the power of consumer demand and green credentials, as it is a reminder of what makes a niche different from the mainstream.<sup>60</sup>

Notwithstanding, sustainability considerations have begun to raise the stakes in the industry as well, mirroring a broader trend. After surveying 8,000 consumers in 16 markets, the public relations consulting firm Edelman found that interest in sustainability through consumerism continues to rise.<sup>61</sup> Since 2008, 86 percent of consumers report that they believe companies should focus as much on social impact as they do on their core business responsibilities. But while many people express interest in buying sustainably, Deloitte found that only about 20 percent actually end up purchasing a sustainable product. The Deloitte study concludes that the disconnect between what people say they want in a product, and what they actually purchase, points to significant market growth potential in the LOHAS segment.<sup>62</sup> Complicating the situation, many consumers are willing to consume more sustainably but not at a higher price.

These trends are by no means limited to the developed world. There is some evidence to indicate just the opposite: According to researchers, middle-class consumers in middle-income countries like Brazil, China, India, Indonesia, Malaysia as well as the United Arab Emirates are more likely to be inclined towards companies and products with a purpose than their developed-country counterparts.<sup>63</sup> While this may at first sound surprising, the proliferation of the sustainable consumer in these emerging markets is supposedly so strong that the Edelman study labels them “Purpose Bull Markets.” The consumers in these “bull markets” are much more likely to act on their interest in sustainable products. In fact, the “sustainable” label in many countries is really a proxy for high quality. Such proxies provide valuable guidance for consumer decisions where consumer protection and product health and safety legislation are weak. Sixty-two percent of “bull” consumers make sustainable purchases monthly, compared to 37 percent elsewhere.<sup>64</sup>

There is little indication thus far that consumer demand in the textile and garment industry alone will affect the production process upstream. This is an important consideration to be aware of as we consider the prospect of industry transformation. For now it seems that sustainable consumer fashion is a small niche, despite many laudable attempts to educate the public. Most consumers want fast fashion at cutthroat prices rather than demanding better wages for workers and safer working conditions.<sup>65</sup> Buyers tend to source fashion-sensitive products from suppliers that can deliver in a flexible and speedy manner, and basic products are sourced from countries with the lowest-costs. This dynamic is more complicated than a first glance would suggest, provided the important differences between fast fashion and quick response. Fast fashion emerged from quick response but they are distinct concepts. Quick response is associated with replenishment purchases for basic products. Fast fashion is quick response in new merchandise (with little or no replenishment), involving shipping fewer pieces in a great variety of styles, and at a higher frequency. In both cases, the volatility in sourcing volumes and required delivery speed can put significant stress on producers. They typically



outsource part of the orders they get, often to sweatshop style factories that are characterized by poor working conditions and whose role in the fulfillment of orders remains invisible to the buyer abroad.

## 4.2 The Case for Supply Chain Transparency

While sustainable consumption practices will no doubt move mainstream over time, a much more compelling reason to now engage in industry transformation has to do with managing risk and securing efficiency gains. The roles and relationships among national and global lead firms, apparel manufacturers, and intermediaries in the textile and garment industry have become increasingly blurred in recent years.<sup>66</sup> After the long recession in the main consumer markets resulting from the 2008 financial crisis, the intensity of competition has increased: “survival of the fittest” is the name of the game. Supply chain rationalization is a way to stay competitive and it is changing the face of the industry.<sup>67</sup> By “trimming the fat,” lead firms are increasingly confining their relationships to their most capable and reliable suppliers and are significantly reducing the size and scope of their supply chains. Simplicity is king. Buyers want to deal with fewer, larger, and more capable suppliers, who are strategically located near major markets around the globe. As buyers seek to consolidate the number of wholesalers they source from, they demand a more comprehensive line of clothing, accessories, and footwear from these wholesalers.<sup>68</sup>

Coinciding with supply chain rationalization and lean manufacturing, attention to sustainability and transparency in business is advancing along a broad front. Growing consumer demand for higher social and environmental standards across the board has increased the need for supply chain transparency in both the United States and in Europe, affecting the textile and garment industry in the process. Respondents to our online survey ranked “ensuring transparent supply chains” as the most powerful tool by far for achieving a competitive and responsible global solution.<sup>69</sup> Beyond emerging consumer consciousness, environmental compliance requirements and social initiatives in apparel are moving center stage because of the work of advocacy groups and the role model effect of the more ambitious corporate social responsibility (CSR) programs of some companies, such as Nike or Patagonia.<sup>70</sup>

Important political efforts that change framework conditions are underway as well. At a local level, California Governor Arnold Schwarzenegger signed “The California Transparency in Supply Chains Act of 2010” into law on September 2010.<sup>71</sup> The legislation is intended to provide public information about the activities manufacturers engage in, and to monitor their supply chains to prevent human trafficking and slavery. Disclosures allow businesses and consumers to make more informed decisions regarding the products they choose to purchase and the companies with whom they choose to conduct business. The role information technology can play in achieving transparency at the shop floor level is discussed in the solution spotlight below.

At the federal level in the US, the Obama administration expressed its concerns about abuses in the industry with the symbolic decision to suspend 37-year-old trade privileges that provided duty-free treatment with Bangladesh in June 2013, pressuring factories and brands to comply with safety standards.<sup>72</sup> While they affect less than 1 percent of Bangladesh’s exports of goods, as garment was never part of the preferential treatment, Obama’s sanctions have added to the visibility of poor working conditions in the industry and informed deliberations at the European Union, which is also weighing a similar option to suspend Bangladesh’s trade preferences.<sup>73</sup>

Transformation efforts are also underway at the industry level. For example, the Sustainable Apparel Coalition (SAC) is an industry-wide group of over 100 leading apparel and footwear brands, retailers, suppliers, nonprofits, and NGOs working to reduce the environmental (and social) impacts of apparel and footwear products around the world.<sup>74</sup> The coalition’s ambitions are high and the tools at the disposal of its members are very useful for creating transparency around product design and production decisions, especially in terms of their environmental impact.

One necessary condition to achieve progress is the adoption of a front-of-pipe perspective, which is the focus of Bluesign. Founded in 2000 by a group of textile and chemical experts and controlled by SGS, a global certification service provider, Bluesign is a firm that operates a label that begins at the front of the pipe with chemical inputs that have an enormous impact on environmental pollution and

worker health and safety. Bluesign utilizes a comprehensive process – in partnership with the chemical industry, brands, textile and garment suppliers – that creates transparency mainly about environmental impacts, and helps define appropriate processes and provide a screened shelf of chemical inputs. This process can be the catalyst to significantly increase total resource productivity and can lead to significant cost reductions down the road. Such a front-of-pipe approach that operates with optimized production processes and a pre-approved shelf of chemicals that minimize environmental impacts is the only way to have environmentally sustainable processes in place when orders scheduled for fast turnaround hit the producer.

Where Bluesign’s main strength lies on the environmental side, Fair Wear Foundation is an international nonprofit verification initiative dedicated to enhancing workers’ lives around the world.<sup>75</sup> Fair Wear Foundation is based in seven European countries and works with companies and factories to improve labor conditions for garment workers together with its 90 member companies, and is considered a frontrunner in working with brands on labor conditions in their supply chain. They represent over 120 of mostly up market and specialty clothing and sports brands with 15 production countries in Asia, Europe and Africa, including Bangladesh. Member products are sold in over 20,000 retail outlets in more than 80 countries around the world; however, the large buyers are absent from the membership, raising questions about how the key elements of the Fair Wear process could be further mainstreamed. Furthermore, while the most commonly cited responses in our online survey to the question “which are in your opinion are the most influential and promising standards?” were the Fairwear Foundation, Fair Labor Organization, Bluesign, GOTS, and the International Labor Organization (ILO) standards, nearly a quarter of respondents reported that they did not know or that they did not believe that any standard currently exists that is influential or promising in the global textile and garment industry.

Labor conditions and living wages are undergoing significantly higher scrutiny in the aftermath of the Rana Plaza accident in Bangladesh. The accident has led buyers to take action on safety in the textile and garment industry in Bangladesh. They have committed to a mainly European buyer-funded Accord on Fire and Building Safety in Bangladesh on the one hand, and the Alliance for Bangladesh Worker Safety led by US buyers on the other.<sup>76</sup> Both focus on the currently most visible problem, namely building and fire safety.

## Technology for a Leap Forward on Shop Floor Transparency

A major problem in the apparel industry is what insiders call “audit fraud.”<sup>77</sup> The term refers to the practice of inspecting an apparel factory that is not compliant with social and/or environmental requirements and to either detect no non-conformities although they are apparent, or to note only easily fixable and relatively minor instances of non-compliance. For example, UK sustainable fashion journalist Lucy Siegle once wrote about an auditor nicknamed “Eyewash” because he would ignore serious violations but would routinely check a factory’s medical kit and note that it was lacking eyewash.<sup>78</sup> While documenting the actual working conditions in apparel factories is a difficult task – a respondent to our online survey commented that one of the worst practices of the industry is “copying [credentials] using the Internet and creating fake certificates via Photoshop” – there are now interesting efforts under way to leverage the power of information technology to create greater transparency.<sup>79</sup> For example, LaborVoices, a privately-held for-profit social enterprise based in California, USA, began conducting a pilot in 2012 covering more than 20 factories with over 300 garment workers in Bangalore.<sup>80</sup> Using a secure communication platform to both send and receive messages, the software application is accessible to workers free of charge through their mobile phones and programmed in regional languages. The goal is to record local voices and conduct direct educational messaging on issues such as local labor laws, human rights, freedom of association and collective bargaining, while protecting worker anonymity to hedge against reprisals. The sender dimension of the platform is a simple IT-based form of delivering information or training to enable workers to access relevant information with catalytic implications. Gathering first-hand, real-time information on working conditions inside factories from workers is a potentially very powerful and disruptive way to increase supply chain transparency. Kohl Gill, CEO and Founder of LaborVoices describes the firm’s mission as follows: “We, at LaborVoices, help bring more transparency into supply chains by providing what has been missing all along, an early warning system based on direct feedback from factory workers. We help our customers obtain strong safety standards and decent working conditions by empowering workers through their own voices.”<sup>81</sup>

Aggregating information across factories, geographies, and industry segments through a bottom-up and mobile phone based mechanism can in principle generate a metrics-based stream of intelligence on corporate supply chains with clear action implications, provided a critical mass is reached. LaborVoices’ business model consists of offering buyers direct and exclusive access to this intelligence on the factories they source from for an exclusive period of time. Exclusivity is time limited though, and the information is ultimately published more broadly – thus incentivizing proactive action or reactive damage control, depending on what the case may be. In their pilot, LaborVoices reports collecting quantitative records of wages and hours, as well as overtime wages and hours, and over ninety audio testimonials on working conditions inside Bangalore factories of workers who chose to step out of anonymity to make their voices heard.<sup>82</sup> Combining top-down efforts to enhance transparency via resourcing inspection capabilities with bottom-up mechanisms revealing the worker perspective have, in practice, the potential to improve social auditing significantly and enable more effective compliance with codes of conduct in workplaces where the manufacturing of apparel is underway.<sup>83</sup> While it would be naïve to assume that technology is a panacea for industry transformation, the overall march toward ubiquitous, low-cost, and real-time information gathering devices around the world opens up exciting new possibilities to support other measures to achieve supply chain transformation with transparency around shop floor conditions and direct worker perspectives.

To tip the balance in the de facto information technology arms race between the ever-lower cost of misinformation and prospect of greater transparency, the logical next step is to involve mobile phone operators in the solution design. The mobile telecom industry can be a catalyst for enabling higher performance in global value chains (and beyond), especially in developing markets where the deployment of mobile telecommunications networks has surpassed traditional fixed-line technology.<sup>84</sup> Simple, inexpensive and convenient to use access to mobile networks is now widely available, even in remote areas; soon it will be possible for everyone and everything to be connected.

Research suggests that new mobile services could create potential annual livelihood benefits to workers globally of USD 7.7 billion by 2020, while also enabling a further USD 30.6 billion in benefits to organizations through improved productivity with an estimated 174 million in new service connections.<sup>85</sup> Accenture and Vodafone also argue that mobile communications can significantly improve working life and deliver commercial benefits to organizations in emerging and transitional economies, such as new job opportunities; improved working conditions; provision of timely, relevant training services; and secure delivery of wages using mobile money transfer solutions.<sup>86</sup> The potential is real. Also worth considering is the prospect of bottom up communication tools, such as a LaborVoices type solution on the shelf of Bangladesh’s largest operators such as Grameenphone, Robi Axiata, Banglalink, Airtel, Citycell and Teletalk. Not only can shop floor transparency then become a reality on a broad front, but there is business potential as the operators get ready to provide data services with the advent of 3G in Bangladesh.<sup>87</sup> In short, when assessing transformative solutions, we also need to consider the potential of cross-industry collaborations, reaching outside the customary set of stakeholders.<sup>88</sup>

### 4.3 The Hidden Treasures of Resource Productivity

Total resource productivity measures the production of goods with a given use of resources and externalities such as environmental impact. Utilizing as few resources as possible during a complete production process automatically involves cost efficiency, with decreased environmental impact (i.e., the money and externalities saved need to be evaluated against the investments required to raise total resource productivity). In the context of textile companies, water emissions can often be enhanced by up to 50 percent through the use of sustainable components, the optimization of production and the use of wastewater treatment technology. Included here are the return of purified water into the water cycle as well as the reduction of the aquatic environment impact to a minimum. Energy use can be reduced by up to 40 percent and chemicals by up to 20 percent.<sup>89</sup> The implications of the industry’s future shift to a circular economy are discussed in the solution spotlight below. But let us first look at a practical example.

MAS Holdings in Sri Lanka is a compelling illustration of the potential economic value that can be derived from upgrading.<sup>90</sup> MAS Holdings is the largest and, considered by some, best clothing manufacturer in Sri Lanka. It is focused on sustainability, efficiency, low environmental impact – and it is profitable. The MAS Intimates Thurulie factory, a 10,000-square-meter facility that has roughly 1,300 employees, is MAS Holdings’ top plant, which is Leadership in Energy and Environmental Design (LEED) Platinum certified.<sup>91</sup> The factory cost USD 2.66 million to build, or 25 percent more than conventional factories in Sri Lanka. The following details on the Thurulie factory provide a sense of what is possible in terms of environmental performance:<sup>92</sup>

- ◆ Passive design reduces heat loads; efficient evaporative cooling equipment maintains an indoor temperature of 27° to 29.5°C (compared with 35° to 36°C in an average Sri Lankan garment factory), while consuming only 25 percent of the cooling energy of an average factory.
- ◆ Planted trees around the building ensure shading of the complex and grounds and keep the building an estimated 1 to 2°C cooler.
- ◆ A thermal roof load, the largest contributor to heat gain and indoor discomfort in the tropics, is controlled by a combination of green roofs, photovoltaic roofs, and cool roofs. Green roofs cover 1,757 square meters of the building. They are installed on concrete decks over short span spaces in the administrative wing. Covered with turf and plants, the high thermal mass of this roof absorbs heat without transmitting it into the building. The cool roof is a lightweight metal roof assembly over the long span production halls. With a solar reflectivity index of 79, the roof reflects nearly eighty percent of solar energy.
- ◆ The energy sources are photovoltaic and hydroelectric power, which are renewable and carbon neutral. The rooftop photovoltaic system with output of 25.6 kilowatts covers ten percent of the plant’s power needs. A small hydroelectric power plant connected to the public grid provides the other ninety percent of the factory’s power.

- ◆ Smart lighting is used as well. Work areas are illuminated with task lighting – high-efficiency T5 tubes and LED lamps mounted on the sewing machines – focusing the correct amount of light at needlepoint. This system requires about half the normal number of light fixtures. Design features optimize natural light use.
- ◆ Sewing machines with direct-drive servo motors were chosen for energy efficiency, yielding a 15-30 percent energy reduction in sewing.
- ◆ Every drop of water that enters the site is managed through rainwater catch systems. Consumption of potable water is about half that of comparable plants.
- ◆ Generated energy from solar and hydropower not used by the factory on holidays and weekends is sold back into the main power grid of Sri Lanka.

### Apparel Business Model Disruption Through the Emerging Circular Economy

Economic progress over the past three hundred years has been driven by a linear logic: economic growth largely as a function of one-time use of additional factors of production. This model served humanity well until the mid-twentieth century, when the finite nature of resources and the impact of human activity on the planet came to the forefront. Looking ahead, estimates indicate that from 2010 to 2025, food caloric consumption could increase by 24 percent, food spending by 57 percent, packaging by 47 percent, and end-of-life materials by 41 percent.<sup>93</sup> One can only imagine what this trajectory means under the current population growth scenario of 9 billion by 2050.

In response to growing resource constraints, production in a variety of industries is now gradually shifting to a circular model, from cradle to cradle instead of cradle to grave. This means that attention is increasingly focusing on the total resource productivity of the factors of production through materials, product and process innovation, and the avoidance of unnecessary waste (i.e. in packaging, as well as the reuse of waste and extension of the product lifespan). In apparel, the current industry model is similarly structured so that raw materials are utilized to manufacture goods that are then sold, used, and discarded as waste.<sup>94</sup> The advent of “fast fashion” has led to even greater throughput of resources via apparel value chains. Researchers argue that fast moving consumer goods (FMCG) industries, including fashion, will move from the current model where 80 percent of consumer goods are not recovered (and 18 percent recovered for decomposition, and 2 percent for reuse) to a model where non-recovery drops to 50 percent in the near term.<sup>95</sup> In this view, the shift to a circular economy results in a USD 595-705 billion cost savings opportunity, of which 10 percent is in clothing.<sup>96</sup> Some countries already have high collection rates of used clothing (i.e. the UK with 65 percent).<sup>97</sup>

While we do not know how fast the transition to more circular business models will happen, we do know that the next generation of sustainable apparel will need to not only comprehensively tackle working conditions and environmental footprints along the entire supply chain, but also have to shift from a linear economic model to a circular one. Two circular models seem to show particular promise in these current, early days of circularity: optimizing end-of-use by raising collection rates and recycling, and finding ways to have clothes circulate longer via collaborative consumption models;<sup>98</sup> radically greater resource efficiency in the production process could serve as a third possible circularity model. It is logical that once some leading players in the industry manage to integrate circularity in their business models, this will alter their cost structure, with the potential to create comparative advantage that forces other players to adapt as well. However, how soon such a development will take place is difficult to forecast.

## 5 KEY LEVERS OF INDUSTRY TRANSFORMATION

Trends such as the rise of Asia, fast fashion and increased transparency of supply chains are priming the industry, raising the bar for greater social and environmental performance. More and more, a win-win of raising productivity and competitiveness *as well as* social performance is possible. This naturally raises the question of how to actually seize this opportunity. Accordingly, this section switches gears and identifies a few key points of leverage that can facilitate industry transformation. Our research identified a series of levers that have the potential to make a disproportionately positive contribution relative to resources and efforts deployed, provided a critical mass of stakeholders engage. While it is not necessary for any one producer, buyer, or stakeholder to “pull” all of the levers, it is important that all of the levers are being pulled. In addition to joint action and stakeholder engagement, the following actions are critically needed:

1. Look across the supply chain to foster total resource productivity and transparency;
2. Upgrade the industry infrastructure by investing;
3. Improve working conditions with a new level of ambition; and
4. Study and replicate the best practices of leading producers.

To grasp possible futures as a country moves up the development ladder, see also the country spotlight below on Thailand.



### Spotlight Thailand: Moving up the Ladder – Retail Gateway to Asia

While already a major global exporter of goods, Thailand boasts the second largest retail market in South East Asia, growing by 7 percent in 2012 to reach USD 44.7 billion (i.e., roughly 16 percent of GDP). According to researchers, Thailand’s retail market is targeted to increase by 15-20 percent in 2013 to reach USD 52 billion due to investment in new local and international retail brands.<sup>99</sup> The growth in retail hints at a broader storyline that suggests that Thailand is poised to become an even more significant player in ASEAN in the textile and garment industry by becoming a kind of distribution center for the region. This shift is a result of successful development and due to the fact that the industry is at a stage where (1) in-country manufacturing is increasingly being replaced by offshoring to neighboring countries, (2) the younger generation is not interested in entering a labor-intensive, low-wage industry like apparel so that the increasing shortage of workers makes a manufacturing market increasingly unsustainable, and (3) the retail sector is rapidly growing. Put succinctly, Thailand is a good example of what happens when a country succeeds in moving up the development ladder. Exports of garments and textiles to the US and EU were down (14.1 percent and 24.3 percent respectively) in 2012. At the same time, “total textile and garment imports were valued at USD 3,806.23 million, an increase of 1.62 [percent] compared to the same period in 2011,” with much of this growth coming from ASEAN.<sup>100</sup> Moreover, the next generation of workers is enjoying the benefits of industrialization and is drawn more and more to higher-wage non-apparel industries, such as automotive and electronics, as well as hospitality and entertainment. Even though this tightening of labor (especially skilled-labor) is unlikely to be critical in the short-term – with the labor force expected to expand by two million until 2017 – an ageing population and the shifting preferences of the next generation will effectively reverse this trend within the decade.<sup>101</sup>

The transformation occurring in Thailand has a number of implications for the apparel industry. Chief among them is that Thailand’s strategic location in the region makes it a natural distribution cluster for exporting apparel to major ASEAN consumer markets like China, Japan, and the Republic of Korea. An industry master plan is needed, as the current business model of a low wage garment manufacturing country is no longer reflecting the reality of the country. Two trends accentuate this need for change: (1) the introduction of a nationwide minimum wage of THB 300 (about 10 USD) per day that came into effect in January 2013, putting high cost pressure on local production, and (2) the pending introduction of a common ASEAN market (scheduled for 2015) that will allow for the tariff-free influx of apparel from lower-wage countries within the ASEAN.<sup>102</sup> As a response, a large wave of offshoring is already underway among mainly large producers. 10 percent of members of the Thai Garment Manufacturers Association’s (TGMA) have already moved their manufacturing operations to other markets, such as Myanmar or Indonesia, further boosting their competitiveness as a design and distribution hub. The number is expected to grow to 25 percent within two years.<sup>103</sup> For many small producers this process will be very challenging, especially without sufficient support from the government and other institutions to understand the regulatory frameworks of the new production locations.

Going forward, Thai producers are well advised to assess the relationship between sustainability standards associated with design, social and environmental performance in production and distribution, and economic competitiveness. Helping to facilitate this transformation is the Overseas Trade and Investment Center (OTIC), an effort by the TGMA.<sup>104</sup> The OTIC is intended “to support manufacturers in setting up off-shore operations, and to help Original Equipment Manufacturer (OEM)<sup>105</sup> companies move to Original Design Manufacturer (ODM)<sup>106</sup> and Original Brand Manufacturer (OBM)<sup>107</sup>. It is in this way that the TGMA is pulling lever #2 in order to help upgrade the Thai textile and garment infrastructure so as to move the Thai apparel cluster to become a logistics hub in a creative and green industry, relying more on alternative energy and a knowledge-based economy.<sup>108</sup>

## 5.1 Lever 1: Fostering Total Resource Productivity and Transparency Across the Supply Chain

A precondition for achieving higher total resource productivity is to understand what is possible. Stakeholders can embark on a three-pronged strategy to lower access barriers to higher performance and compliance with standards for producers; enable education, transparency, and continuous improvement among buyers; and take measures to counteract confusion about the value add of particular standards in efforts to raise the bar.

Voluntary or “private” sustainability standards (hereinafter referred to in shorthand as “standards”) enable governing of value chains, which is especially useful in value chains that are long, cross-border, or unconventional. Standards provide a mechanism that enables producers to learn about consumer requirements in global markets and adjust their setup and processes accordingly. Voluntary sustainability standards are one instrument among a broader set of regulatory options, and their adoption typically requires technical and financial support, as well as training. Given the post-modernization of production and consumption, such voluntary standards have one big advantage: they build on industry expertise, rather than classical regulation that tends to always be several steps behind, as was apparent in the case of the financial services industry during the financial crisis. The use of standards has been expanding rapidly since the 1990s and they are now impacting supply chain management and policy formulation in a number of industries. Additionally, a record of double-digit growth rates in sales of certified products (compared to those of conventional products) in a number of commodities is strengthening the business case for standards and certification (e.g. Organic, Fairtrade, Rainforest Alliance, and Utz Certified).<sup>109</sup>

The experience from other industries has shown that corporate commitments to sustainable procurement – the Mars and Cadbury commitment to the World Cocoa Foundation, or Unilever’s engagement in sustainable sourcing of agricultural raw materials – can have a transformational impact.<sup>110</sup> In the case of the World Cocoa Foundation, Mars was the initiator but manufacturers started cooperating as they discovered that an increase of production volume (e.g. training of small scale farmers, better input factors and organization) was beneficiary to corporate business growth and helped to improve the reputation of the brand.<sup>111</sup> Standards and measurement methodologies in global apparel can be useful to gain transparency about the improvement potential a buyer has along different dimensions in the supply chain, such as health and safety, water, energy, waste or chemicals. Initiatives such as the Sustainable Apparel Coalition are useful because they put tools at the disposal of firms to engage efficiently in such optimization processes. However, being held accountable with external reporting, as in the case of Fair Wear and other standards, is also important for making sure that action does not remain at the level of self-education and piloting, and that a better state of practice becomes the new normal over time.

## 5.2 Lever 2: Upgrading Industry Infrastructure by (Impact) Investing

Supply chain upgrading will require significant investments. However, mobilizing capital is challenging in the context of an industry where buyer-supplier relationships typically follow a transactional rather than a long-term mindset and investment targets are located in high-risk emerging markets with volatile order books. Yet, considering the significant financial returns and social impact of value chain upgrading, developing or otherwise engaging in an impact investment strategy for the textile and garment industry is both feasible and a key part of the way forward. Allocating pilot capital can help to achieve a proof of concept.

Let us unpack the rationale. Providing investment capital for upgrading the physical infrastructure of factories provides a way to move beyond a reactive compliance approach. This is an important lever to drive industry change on the ground. The opportunity is conceptually straightforward: investment capital is scarce and expensive in developing markets. But given the generally low resource productivity in the industry, there is a win-win opportunity to improve social and environmental conditions while also enabling producers to save money and/or capture a higher margin by entering higher-value added



production. For example, one expert interviewee was very bullish about upgrading and pointed out how an investment of USD 80,000 in a pilot factory to replace machinery dating from the late 1960s with machinery from the late 1990s unlocked cost savings exceeding USD 500,000 over a subsequent 12 month period.<sup>112</sup> There is no logical reason why such investment opportunities, if properly packaged, should not also be able to attract capital from impact investors on a massive scale, as the impact investment market continues on its growth path.<sup>113</sup>

Adopting an investment mindset is a core ingredient in the industry transformation formula. This is not bound to be a simple opportunity from the perspective of pure investment though: each company has its own problems, uncovering investment opportunities can be costly, and one of the most critical challenges is local management bandwidth and transparency. To see how such an impact investment strategy can play out in practice and create dynamic social and environmental benefits, consider the Ananta Apparels Limited (AAL). AAL is among the top 10 of woven product manufacturers in Bangladesh and one of its leading apparel exporters.<sup>114</sup> The company specializes in denim products with monthly production capacity of 1.8 million woven bottoms across three factories comprising 850,000 square feet of space and employing about 13,000 workers. Major customers include leading retail brands such as H&M, GAP and Bestseller Group. AAL has embarked on an ambitious expansion plan: Phase one will primarily involve the relocation of AAL’s existing casual woven bottoms factory to a new custom built facility in Kanchpur, south of Dhaka, thereby replacing its original factory in downtown Dhaka. In a country where 90 percent of buildings are not compliant with the building code, this is an opportunity to provide adequate physical infrastructure.<sup>115</sup> The project will cost approximately USD 24.4 million, up to USD 8 million of which the IFC has committed to provide a financing package for. The expected social and environmental impacts include approximately 1,500 new jobs; technology transfer as AAL intends to adopt global best practices in terms of lean manufacturing concepts, factory efficiency, worker productivity and energy efficiency standards of the overall industry; new local supply chain linkages because the project will generate incremental business for medium and small enterprises in the value chain, including accessory and package suppliers, service providers and logistics support. Moreover, the government stands to benefit once the project generates tax revenues.

Our research indicates that the time is ripe for this next generation of investments in the textile and garment industry. Factories and supply chains are teeming with turnaround opportunities, which investors have not yet grasped, especially where the fundamentals of products and processes that make heavy use of energy, scarce natural resources and low-skilled labor create a strong opportunity for financial returns and social impact.

### 5.3 Lever 3: Improving Working Conditions with a New Level of Ambition

Labor conditions are a top stakeholder concern and improving working conditions must be a top priority as a result. Workers in the textile and garment industry, of whom eighty percent are women, typically suffer from widespread insufficient health and safety conditions, violations of labor rights (e.g. wages, child and forced labor), inadequate housing, transport, healthcare and childcare, as well as gender discrimination. At the same time, there are issues with absenteeism and insufficient workforce productivity. We gained a more nuanced perspective of this issue with our online survey. In it, while labor rights and wage levels are perceived as two of the three most important social and environmental issues to address, we found that respondents differed on the third: globally, environmental issues take precedence, while in Bangladesh building safety is more important, closely followed by fire safety. Gender issues are notably perceived as being more pressing in Bangladesh than globally. Regardless of geography though, relentless short-term demand in the garment industry has meant a much greater focus on production rather than worker health and safety. One of the respondents to the online survey said her worst fear is that various emerging markets “will just continue in the same sweatshop pattern that we see now.”<sup>116</sup> The garment industry in many textile and garment producing countries outside of advanced economies grew extremely fast, and neither physical infrastructure nor human capital managed to keep up. While competitive private enterprise is the principal source of economic growth,

wealth, and jobs, this does not automatically lead to an improvement in working conditions or sustainable livelihoods. Allocating resources to achieve substantial and wide-ranging improvement is a necessary part of any credible next generation solution leading to a more sustainable apparel industry.

There are two main solution vectors. First, at the root of the problem is a widespread perception that decent work and competitive enterprises are in conflict with each other. Actions that aim to improve working conditions or safety are assumed to create additional cost burdens for enterprises when they can actually yield productivity returns. Research by the International Labour Organization (ILO) and others suggests a potential mutually beneficial scenario. Improving workers’ voice, empowerment, and skills through participatory management is a means by which to enhance working conditions and achieve efficiency improvements at the same time. Yet, the benefits that responsible practices generate for companies and workers alike are often systematically discounted.

Better Work is a promising blueprint for illustrating the way forward on improving working conditions and productivity. A partnership between the International Labour Organization (ILO) and the International Finance Corporation (IFC), Better Work seeks to combine the ILO’s expertise in labor standards with the IFC’s acumen in private sector development. Better Work’s training offering for all levels of a factory is instrumental in achieving a step change in working conditions. The training curriculum includes human resources management, Occupational Safety and Health (OSH), negotiation skills, training of trainers, supervisory skills training, preventing and addressing sexual harassment, and training on worker’s rights and responsibilities. Better Work builds on the respective strengths of the ILO and the IFC by highlighting the need for effective interventions to combine expertise in social dialogue and the application of labor standards with a private-sector development and investment mindset (as well as a vision of enhancing total resource productivity and environmental impact). The main challenges of this approach, though, are its resource intensity and ability to embed it in factories for the long term. Newly established best practices could otherwise be abandoned once there is a change in management. One potential route that emerged in our analysis is the prospect of combining the upgrading of factory infrastructure and working conditions with assuming (minority) ownership positions in factories. The rationale is straightforward: a one-time upgrade – in many cases subsidized by philanthropic, development finance, or public sector funding – needs to be locked in. One way to anchor such accountability is via bringing in investors who systematically pay attention to and track extra-financial “impact” variables at the manufacturing stage, such as working conditions or environmental footprint.

Next to a mutually enabling approach linking working conditions and productivity, grasping the role of gender is similarly crucial. In an industry where the workforce is composed predominantly of women, worker empowerment means women’s empowerment. There are 4 million garment workers in Bangladesh alone (out of a total labor force of 47.3 million), representing more than 90 percent of the country’s labor force in manufacturing. Women constitute over 3.2 million or 80 percent of this labor force.<sup>117</sup> This contrasts with female labor force participation of just under 30 percent in the country overall.<sup>118</sup> What’s more, working in apparel requires highly structured processes and precision, valuable skills in any post-garment career. The average household size in Bangladesh is 4.8 people. This means that the livelihood of 15.5 million people depends substantially on women working in the garment sector, or roughly 10 percent of the country’s population.<sup>119</sup>

Women play an important role in the modernization of gender roles and society. For example, while unaccompanied women on the street are not aligned with traditional conservative values in Bangladesh, they are a logical social consequence of the expansion of the readymade garment sector, still a fairly recent phenomenon. In spite of their important economic contribution, however, women remain easy targets for exploitation and discrimination in factories, and their needs are not met on a systematic basis. Often unmarried and with poor education or training, women enter urban employment at the average age of 19 and with a comparative disadvantage in terms of pay, working conditions and the possibilities of promotion. They are typically concentrated in unskilled, low-paid, and often casual or informal work, including home-based work throughout the industry. Women’s employment in the export-oriented garment industry has narrowed the gender gap in many spheres,

yet it remains visible with far too few women in supervisor and management positions. Most workers typically have little voice and influence in their workplaces and they are often denied the right to join a union or to organize. As a response, the Asia Floor Wage Alliance (AFWA), an international alliance of trade unions and labor rights activists who campaign for living wages for all garment workers, has developed the Asia Floor Wage calculation to compute what constitutes a living wage across Asia.<sup>120</sup>

The way the apparel work force is managed in many emerging market production locations is creating structural tensions that also play out in the factories, at home, and on the way to and from work. For example, factories often do not provide sanitary napkins or subsidize their cost even though menstrual-related absenteeism is common. Ignorance about health related rights such as maternity leave, factory child-care facilities, or nursing breaks is widespread. In Bangladesh, the combination of garment workers’ long working hours and long waiting hours at state hospitals renders the hospitals practically inaccessible for the majority of factory workers. According to national legislation, factories with more than 300 workers should have a full time doctor for their workers. Most factories fail to fulfill this requirement and only provide a clinic room with very basic medicines.

As mentioned above, gender discrimination emerged in Bangladesh as an especially important issue in our online survey. Corroborating evidence is solid. For example, of a total of 988 factory workers interviewed for another study, almost a third of the women reported sexual advances and being touched inappropriately at their workplace (297 and 290 respectively).<sup>121</sup> In addition to other forms of punishment such as being made to stand on tables, workers reported being subjected to threats.<sup>122</sup> Of those interviewed, almost half (484) reported being threatened with losing their jobs, and over a third (333) reported threats of being sent to prison or threats of being forced to undress (328).<sup>123</sup> There are large differences within the industry with respect to harassment and gender based violence. If we stick with the case of Bangladesh for a minute, we must also note that while verbal harassment and physical abuse seem to be widespread, rape is relatively rare and limited to smaller factories. More common is the use of highly sexualized vocabulary and body language as a means to discipline female workers, creating a hostile, intimidating and sexually charged environment. Night work is associated with high risks of sexual assault or rape, with those working in the factories that are not in Export Processing Zones (EPZ) being the most vulnerable.

These observations offer a number of implications. Any engagement strategy that does not aim to simply manage the problem needs to be absolutely realistic about the point of departure for female workers, and the contribution which skill training and productivity enhancements can make to both business and society. A 2.0 strategy needs to contribute to strengthening the position of women beyond the factory gates in order to be able to foster the long-term sustainability of the industry. This means that next gen strategies need to assess the extent to which programs that are focused on working conditions and education are actually contributing to solving gender-related issues. Actors should also be prepared to take additional action where needed, and understand the dynamics associated with larger shifts that touch political empowerment and the societal fabric. Our research suggests this will require a departure from the currently prevalent modus operandi. Several expert interviewees pointed out that interventions in the industry that address working conditions often look at the problem through a “labor” prism, as opposed to fully grasping the gender dynamic and the limitations that result from traditional trade union structures that do not fully represent women’s voices. To achieve industry transformation, a new level of ambition is required for improving working conditions. Productivity and gender are both keys. Successful implementation will require transcending longstanding adversarial NGO-private sector relations to enable a quality rollout in a sufficient number of factories to set in motion a change process on a much larger scale. Moreover, improving working conditions cannot be disassociated from upgrading production inputs, processes and infrastructure, as illustrated below with the solution spotlight on chemicals, a key factor driving worker health and safety.

### Chemicals: An Overlooked Factor Influencing Worker Health and Safety

The apparel supply chain is very resource intensive. This also applies to the use of chemical inputs. According to Greenpeace, approximately 25 percent of globally manufactured chemicals are used in the textile and garment industry.<sup>124</sup> Between 100 and 1,000 grams of chemicals are used to produce 1 kilogram of fabric.<sup>125</sup> Many of these chemicals have adverse effects on human beings. Exposure to chemical substances in textile products may result in considerable negative health outcomes, which range from acute poisoning to long-term consequences such as cancer. Accordingly, a next gen strategy for engineering sustainable apparel supply chains must take into consideration the impact of the use of chemicals and their contribution to worker health and safety objectives, consumers, and the environment in general.<sup>126</sup>

Moreover, global regulation is uneven. With the introduction of stricter regulation in Europe via the new European Chemicals Law REACH (Registration, Evaluation and Authorization of Chemicals), many chemical producers have moved their production sites to Asia.<sup>127</sup> China has become the largest market for textile chemicals, as evident in ever-growing apparel and textile production and huge production of synthetic fibers and cotton.<sup>128</sup> China's textile industry now uses about 42 percent of the world's textile chemicals.<sup>129</sup> In fact, most of the industry growth in the past 25 years has been driven by Asia, which now receives almost half of global chemical sales.<sup>130</sup> REACH-like legislation has recently come under discussion in Asia, namely in Japan with the amendment in May 2009 of the "Chemical Substances Control Law" of 1973, in China with the proposed amendment in May 2009 of the "Measures for the Environmental Administration of New Chemical Substances" of 2003, in Taiwan with the draft "Guidelines for Existing Chemical Substance Nomination and New Chemical Notification" announced in April 2009, and in India where a consultation process of the draft "National Chemicals Policy" began in 2012.<sup>131</sup>

A few things can be done with regards to chemicals in the production process. First, process optimization can reduce the amount of chemicals required to manufacture a given product, often generating savings of up to 20 percent.<sup>132</sup> Substituting hazardous chemicals for other agents in the production process that are less dangerous is also a viable tactic. Some chemicals used for textile production are known to have intrinsic hazardous properties that make their release into the environment of particular concern. A large number have never been properly tested for their safety.<sup>133</sup> Training should also be a consideration. After the offshoring of production to emerging markets, textile workers are regularly insufficiently trained in how to work with hazardous chemicals and typically lack adequate protection when handling these dangerous substances. The value creation logic of the industry after the advent of fast fashion is important to understand when seeking to upgrade environmental performance and worker health and safety. The short timeframe inherent to producing fast fashion (i.e. only about 14 days for a fast fashion retailer such as Inditex/Zara) means that there is no time to systematically test the end product. Researchers found that the residue of a variety of hazardous chemicals was present in clothing made by 20 global fashion brands.<sup>134</sup> In addition, not all chemicals that are used during the manufacturing process leave traces on the end product that is shipped, despite their having a substantial impact on the environment through water discharge at the production site. Selecting the least hazardous chemical inputs rather than focusing on testing the output product is one potential way forward. As chemical suppliers do not publicly disclose the composition of all chemicals used in the production process for reasons of confidentiality, industry transformation will be difficult to achieve without the involvement of these players.<sup>135</sup> On top of efforts directly targeting worker and consumer health and safety, a logical first step would be to systematically quantify the cost savings potential resulting from optimized processes, which would show the economic upside of better practice and would work towards the dissemination of information about the shelf of comparatively safe chemical inputs.

## 5.4 Lever 4: Replicating Best Practices of Leading Players

Breaking out of the mold of constantly reinventing the wheel is key to achieving scale. There is a lot to be learned from best practices in social and environmental performance and value added creation. A meaningful way of keeping the cost of learning down is to get involved in pilot initiatives that draw from the lessons and practices of others. Fire and building safety in particular is an area where this lever is being pulled with work that is underway to improve the state of affairs. To address the issue fire and safety, 32 brands recently signed a legally binding *Accord on Fire and Building Safety*, which was initiated by a group of international labor unions (e.g., Industriall, Global Union and the UNI Global Union) in partnership with leading NGOs (e.g., Clean Clothes Campaign and the Workers’ Rights Consortium).<sup>136</sup> US retailers and apparel brands subsequently formed the *Alliance for Bangladesh Worker Safety* to tackle the same issues in a non-legally binding structure more adapted to the realities of the US legal system.<sup>137</sup> Both the Accord and the Alliance are direct responses to the Rana Plaza accident. As one respondent to our online survey commented, “Every company with a link to textile and Bangladesh is affected by the Rana Plaza disaster – as this is a symptom of an industry and not a single accident.”<sup>138</sup>

What is now needed, though, is movement towards a next generation initiative that takes a broader view of enhancing social, environmental and economic performance. Several building blocks were discussed in the preceding sections of this Primer, and there are additional initiatives to consider. For example, the Responsible and Accountable Garment Sector (RAGS) Challenge Fund, supported by UKaid from the Department for International Development (DFID), and its grantees can provide valuable lessons to explore for upgrading activities in the field.<sup>139</sup> RAGS was established as a grant fund with GBP 3 million to support eligible projects over a three-year period (2010-2013). It supports the work of a wide range of organizations in the garment supply chain, including large and small businesses, labor, fair trade and other non-governmental organizations. The common denominator is the effort to catalyze better working conditions for workers in readymade garment production industries in low-income countries in Asia and Sub-Saharan Africa, which supply the UK market. The lessons learned from RAGS are discussed in the solution spotlight below.

The coalition between a development agency and a leading nonprofit illustrates the value the development industry can bring to the process of industry transformation, and not just to leave this challenge for business to handle completely on its own. This situation is particularly true for addressing the human capital gap. Without technical skill, the ability to enter higher value added production and raise productivity hits bottlenecks. Without management skill, adversarial labor relations lock up all parties into unproductive patterns of behavior and low efficiency. This undercuts the ability to pay higher wages. The shift of the global apparel industry to the developing world has historically meant a tremendous loss of knowledge and skill. However, the vision of a sustainable global apparel industry will require greater skill at all levels – from selecting and deploying chemicals at the beginning of the pipe to in-country pre- and post-production services such as design and quality testing. This requires human capital on a massive scale.



## Industry Transformation Building Blocks – Lessons Learned from the RAGS Challenge Fund

A key question facing industry transformation in apparel concerns how to move from discrete projects, typically focusing on either social or environmental performance, to a self-organizing and scaling model where best practices gradually expand their footprint and become the new normal over time. Important bridging elements to achieve this have come into view, and the challenges and contributions of the Responsible and Accountable Garment Sector (RAGS) Challenge Fund are worthwhile to briefly consider. Funded by the UK Department for International Development (DFID) and managed by Maxwell Stamp PLC from 2010-2013, the fund is now closed. RAGS grant funded 11 projects aimed at improving conditions of vulnerable workers in the readymade garment (RMG) production sector that supplies the UK market in Bangladesh, India, Lesotho and Nepal with almost GBP 3 million.<sup>140</sup> The interventions of the projects illustrate several of the levers identified in this Primer as key elements to progress, and included: providing training for managers in production, quality management and human resources (i.e. efficiency and productivity techniques that can help to reduce working hours and raise productivity thus enabling higher wages); taking a proactive perspective on gender and enabling women to better self-organize and articulate their collective voice; and shortening supply chains by raising transparency (i.e. with respect to the role of informal homeworkers normally at the mercy of middlemen and invisible to multinational buyers and their inspection teams).<sup>141</sup>

The achievements of RAGS were presented at a dedicated event in London on November 28, 2013 and were perceived as quite impressive: 313,213 workers benefitted from freedom of association, collective bargaining and industrial relations in targeted workplaces; 97,777 workers received higher incomes from efficiency gains; 2,579 child laborers were rescued or withdrawn from targeted factories/workplaces; 893 factory managers and supervisors were trained on gender awareness and homeworker management; and 20,583 new Peer Education Groups were formed in Bangladesh.<sup>142</sup> By targeting development or scaling up of responsible labor practices beyond a single workplace, RAGS made important contributions towards training workers and managers (building skills and capacities), optimizing audit codes and support, and raising awareness about workers’ rights among other qualities. According to RAGS Fund Manager, Dave Runganaikaloo, “The RAGS Challenge Fund was established to act as a catalyst for the identification and implementation of innovative yet realistic and practical solutions for improving working conditions in the RMG manufacturing sector. From this experience, replicable and scalable models could be formulated such that industry (retailers and actors in their respective supply chains) and government (to incentivize SMEs requiring financial support to implement such initiatives) could lead dynamic sustained change in RMG value chains post-RAGS. This will now be put to the test as RAGS enters its final stages and the need for responsible business in the sector is of utmost relevance.”<sup>143</sup>

Even so, a closer look also reveals the challenges any next gen industry transformation model has to address. RAGS is a discrete project without a sustainable long-term financing model; this is simply the way the development industry normally works. However, even if RAGS was not financially independent on standalone terms, financial and technical sustainability plans were built into the funding approval process, and a number of the supported projects have post-RAGS measures for financial continuation from their own and/or other sources of funding.<sup>144</sup> While RAGS has brought about an admirable and positive impact for a large number of workers, the durability of these achievements is less clear once funding ends. Moreover, in an industry where reducing worker turnover at the factory level from 9 percent a month to 5 percent a month is considered a major success, the unavoidable fact is that, on average, everyone trained at considerable expense will most likely work in a new institutional environment within 20 months.

RAGS played an important part in the UK Sustainable Clothing Roadmap – a voluntary clothing industry initiative established and managed by the Department for Environment, Food and Rural Affairs (Defra), but implemented by the Waste and Resources Action Programme (WRAP), Defra’s delivery body, to improve the environmental and ethical performance of clothing.<sup>145</sup> The UK Sustainable Clothing Roadmap has now evolved in the Sustainable Clothing Action Plan (SCAP), with a focus on carbon, water and waste across the clothing lifecycle, leaving issues relating to labor and chemistry to other

players.<sup>146</sup> But the key questions of how to scale the types of interventions RAGS is targeting so they can achieve critical mass (including managing their cost), and how to make them durable in time remain. Our analysis indicates that combining an intervention such as RAGS with an investment mindset will be instrumental to making progress at scale. The next generation of industry transformation efforts will need to build on RAGS but make the linkage between how higher social and environmental performance can actually drive revenue creation via increased resource productivity and savings. We need to be able to solve the dilemma of how assuming control of assets via private equity investments in factories can anchor performance requirements long after a single upgrading project has ended and workers have moved on to new employers.

To facilitate such a transition toward upgrading and impact-oriented management of productive assets, the development industry could consider incentivizing stakeholders to embrace next generation models by co-deploying (impact) investing capital alongside grants, and thereby facilitate capital mobilization by other players, or provide funding incentives for internalizing externalities such as water use, which often do not carry a cash cost in production locations.

## 6 CONCLUSION: WHAT IS THE PATH AHEAD?

The global apparel industry has experienced many new ideas and technologies over the centuries as we have moved from the agrarian to the postindustrial age, changing our tastes and aspirations – serving fundamental human needs in the process. Today, though, changing and often less predictable seasonal consumer demand, a variety of market trends, short product life cycles, and low barriers to entry have all made the industry much more competitive.<sup>147</sup> The demand for socially and environmentally compliant apparel is gradually rising, and vast pockets of potential productivity gains (economic, social, and environmental) remain largely untapped.

The conditions for change are moving into place in the textile and garment industry. The green transformation of the global economy is in process, and the resulting savings potential is considerable in an industry with such low total resource productivity. Blueprints for supply chain transparency do not yet exist but important foundational work is under way. Solutions to social issues are difficult, though social enterprise and impact investing have ushered in an era of innovation in social service provision and longer-term minded responsible investment capital. And as the information revolution fosters ever-greater transparency, sustainable forms of consumption will catch on eventually. Disruption, in its many forms, is on its way. One respondent to our online survey commented: “Within a 10-20 year period I think the industry will be changed severely by higher customer awareness on labor standards and environmental issues, production techniques such as robotics, 3-D printing and new materials, and increases in costs due to higher raw material prices.”<sup>148</sup> This has every potential to be positive (but disruption also brings with it any number of foreseen and unforeseen perils).

While many consumers either do not care or erroneously assume that luxury means quality all along the supply chain, stepping up the game is nevertheless a good idea. The case rests mainly on total resource productivity and managing reputational risk. Views such as that of an online survey respondent who argued “Social compliance has become a threshold requirement to doing business; you simply cannot compete without it. Therefore, there is no trade-off – social compliance is necessary to success” are not yet the new normal, but will be in due course.<sup>149</sup>

Transforming the global textile and garment industry so that supply chains are transparent, working conditions adequate, and environmental footprints are optimized will require doing a lot of homework and building a coalition for change. The verdict on Bangladesh, whose forthcoming general elections in January of 2014 has served to escalate confusion and tensions in and beyond apparel, is still in question. But industry consolidation and repositioning is already underway in places like China, Japan, Myanmar and Thailand. We do not know how the world will look in 2050, but we do know that there will be demand for apparel products as long as there are people. 9 billion people will have to clothe themselves, not to mention look and feel good while doing it. However, from the stampede of shoppers on Oxford Street, to the rioting of protesters in Bangladesh, the apparel industry of today is not yet up to the task of meeting the demands of this future in a sustainable and profitable fashion. A respondent to our online survey seemed to echo this sentiment in dramatic fashion when he indicated that his worst fear for the future of the international textile and garment industry is that it will “become the breeding ground for modern slavery.”<sup>150</sup>

The puzzle laid before us is complicated, pieces are missing, and the stakes are high. But if we start now, we can begin to link what works, learn from what doesn’t, and wager for a future that is as viable as it is sustainable. The analysis presented here shows that systemic transformation is possible if key stakeholders are bold, cooperate, and dare to act. Change often starts as the lone creative act of a leader or innovator but no transformation was ever achieved without building a grander coalition for change. To be successful, it is not enough for the envisioned change to be “better” than other industry solutions; it must also attract a critical mass of backers, representing the different types of stakeholders discussed earlier. For Bangladesh in particular, the actors that have the greatest ability to contribute to a sustainable sector-wide solution according to respondents of our online survey include: “Bangladeshi government agencies” at 35.29 percent; “buyers network, international corporations” at 26.47 percent; “international foundations” at 2.94 percent; “international NGOs” at 5.88 percent; “local manufacturers” at 8.82 percent; “local suppliers” at 2.94 percent; “multilateral



development actors (e.g. World Bank)” at 2.94 percent; “workers” at 8.82 percent; and other at 5.88 percent.<sup>151</sup> In the preceding sections, the Primer has outlined the main levers that need to be pulled to achieve a sustainable market transformation for the textile and garment industry. The features covered here represent a comprehensive framework for driving towards long-term market transformation. The point though, as echoed throughout, is that movements up market and offshore will only be as competitive as the processes and operations that underpin them are sustainable. In the short term, and as the country spotlight on Myanmar below indicates, simply pursuing the next country frontier is still the dominant *modus operandi*. But the Rana Plaza disaster, and the ongoing fallout and consequences, illustrates that an unrelenting and unforgiving pursuit of growth is simply too risky for the industry to continue.

Fortunately, though, enormous value-creation opportunities are waiting to be tapped – opportunities that will provide the economic and social basis for changing business as usual. Our analysis indicates that the following factors will significantly influence the likelihood of success:

1. Focus is needed. There are many problems, but they all meet at the manufacturing stage. Sorting it out will require a focused and ambitious effort – building on and complementing the work underway on the many issues considered in this Primer.
2. An investment mindset is the key fresh ingredient for fostering total resource productivity and transparency across the supply chain, improving infrastructure and working conditions. In isolation, simply sending more inspectors to police factories, without building long-term mutually beneficial relationships between buyers and producers, will never be able to bring about transformational and sustainable improvements.
3. Fortunately, there are a large number of best practice examples to learn from, some of which were discussed here. Yet, collectively they have thus far not added up to industry transformation. Without industry blueprints for scale as well as cross-industry collaboration with solution partners from other industries such as telecom and healthcare, best practice examples have little chance to scale to a point where market transformation becomes a possibility.
4. Given the complex systemic challenge at hand, solution partners need to enter where they have comparative advantage. Frontrunner companies are great models of best practices; NGOs bring the issue the awareness and street credibility that is needed; and governments can redefine the rules of the game. But, similar to other fields, solution-building subsidies from players with a longer view such as philanthropic foundations will be needed to raise the ambition level and also create the inclusive vision and enabling framework for all stakeholders that can drive industry wide collaboration beyond crisis management.

The mountain of opportunity is coming into view. Favorable trends in green growth and total resource productivity, the rise of the LOHAS consumer, and growing demand for affordable products and services at the BoP are creating an environment that is priming global supply chains to be harnessed to drive inclusive growth. But the mountain is still obscured by uncertainty. As discussed earlier, corporate CEOs have found themselves stuck on the ascent towards sustainability. Radical change in market structures and systems is needed, and a bolder path for the industry needs to be charted. This Primer aims to provide a quick yet substantive overview of the elements that need to be considered on the hike. The summit is transforming before our eyes. And, as it turns out, the opportunity is far higher and more ambitious than anyone ever dared envision.

## Myanmar: Asia’s New Apparel Production Frontier

The reform movement occurring in Myanmar (Burma) is serving to open up a new level of opportunity for a renewed sourcing location in the apparel industry – with the potential to do better than other apparel production clusters that have led to poor social and environmental performance and low value added.

In terms of overall size, Myanmar’s readymade garment industry is currently small, earning about USD 917 million in 2012, progressing from USD 770 million in 2011, with exports to Japan contributing USD 348 million and South Korea a further USD 183 million.<sup>152</sup> According to Dr. Aung Win, vice chairman of the Myanmar Garment Manufacturers Association (MGMA), roughly 350 garment factories currently operate in the country, which is tiny when compared to major sourcing locations in South Asia.<sup>153</sup> Factories are operating based on a Cut, Make, Trim (CMT)<sup>154</sup> approach. Over time, Myanmar aims to upgrade its production systems from a contract manufacturing (more than 90 percent of national factories) to Original Equipment Manufacturing (OEM) and Original Brand Name Manufacturing (OBM) in order to increase value added. This shift will need to be supported by an adapted legislative framework, which in turn depends on strong political will. Estimates for export potential are about USD 5-6 billion even without major upgrading.<sup>155</sup>

Myanmar has a relatively large geographic size (i.e. roughly the size of Germany and Italy combined). With 61 million inhabitants, as well a migrant population, the country has the potential for significant market expansion.<sup>156</sup> It is presently going through a sporadic, and oftentimes controversial, opening up to the world after decades of essentially closing itself off to foreign interests (and vice versa). American sanctions initiated with an arms embargo in 1993 and widened in 2003 to include all new investment, as well as a ban on imports from Myanmar, have had a negative impact on the export capacities of the garment manufacturing industry.<sup>157</sup> GDP growth is forecast to average 6.9 percent a year from 2014/15 to 2018/19, and investment spending is expected to expand by 14.3 percent a year on average (up from 12 percent in 2000/01), with a current interest rate of 13 percent.<sup>158</sup> Current leading investors in the national garment industry are China, Japan and Korea. Most recently, the Myanmar Investment Commission (MIC) has begun to approve foreign investment in the country’s garment manufacturing industry.<sup>159</sup> This has generated major interest from international investors. Beyond foreign direct investment policy changes, other critical features fueling the growth of the apparel industry in Myanmar relate to human capacity and installed infrastructure.

Myanmar is logically positioned to fulfill the basic equipment manufacturing needs that other markets can no longer easily (or affordably) satisfy. But the threat of a growth path that simply leads to a production cluster with thousands of sweatshops, thus recreating the abuses and controversies associated with the apparel industry in neighboring Bangladesh, is very real. A respondent to our online survey commented that one of his worst fears is a “transfer of industry to Myanmar with no local NGOs or unions, [and] exploitation of workers.”<sup>160</sup> Myanmar assumes the ASEAN chairmanship in 2014 and faces an important national election in 2015.<sup>161</sup> As the reform path continues, the garment industry has the potential to grow well beyond USD 6 billion in annual exports – provided upgrading is successful and issues such as compliance with basic worker issues and factory safety standards, standardized payroll, and minimum wages can be addressed productively. Sustainable production is important for social peace, attracting foreign investment and the awarding of duty free access to the EU – all critically needed milestones to kick off substantial sector growth.<sup>162</sup>

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## 8 ACKNOWLEDGEMENTS, AUTHOR INFORMATION, DISCLAIMER

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<sup>27</sup> “Chinese textile sector discusses “Going Out” strategy,” *Fibre2Fashion* (2013), accessed on November 12, 2013, URL: [http://www.fibre2fashion.com/news/textile-news/newsdetails.aspx?news\\_id=148034](http://www.fibre2fashion.com/news/textile-news/newsdetails.aspx?news_id=148034)

<sup>28</sup> “Chinese textile sector discusses “Going Out” strategy,” *Fibre2Fashion* (2013), accessed on November 12, 2013, URL: [http://www.fibre2fashion.com/news/textile-news/newsdetails.aspx?news\\_id=148034](http://www.fibre2fashion.com/news/textile-news/newsdetails.aspx?news_id=148034)

<sup>29</sup> Werner Stengg, “The Textile and Clothing Industry in the EU,” *Enterprise Papers* (2001), accessed on November 14, 2013, URL: [http://www.viva-systems.com/english/enterprise\\_paper\\_02\\_2001.pdf](http://www.viva-systems.com/english/enterprise_paper_02_2001.pdf)

<sup>30</sup> *Ibid.*

<sup>31</sup> Adapted from Gary Gereffi and Olga Memedovic, “The Global Apparel Value Chain,” *United Nations Industrial Development Organization* (2003); Mohammed Haider, “Bangladesh Textile and Garment Industry: Structural Changes and International Competitiveness,” 2009, VDM Verlag Dr. Müller.

<sup>32</sup> In the case of the European Union, all leading apparel suppliers, with the exception of China and Hong Kong, receive either duty-free or preferential tariff treatment. See Gary Gereffi and Olga Memedovic, “The Global Apparel Value Chain,” *United Nations Industrial Development Organization* (2003), accessed on November 14, 2013, URL: [http://www.unido.org/fileadmin/media/documents/pdf/Services\\_Modules/Apparel\\_Value\\_Chain.pdf](http://www.unido.org/fileadmin/media/documents/pdf/Services_Modules/Apparel_Value_Chain.pdf)

<sup>33</sup> For simplicity, we are here focusing narrowly on apparel.

<sup>34</sup> WTO, Apparel represented by SITC Code 84, accessed on November 14, 2013, URL: <http://stat.wto.org/Home/WSDBHome.aspx?Language=>

<sup>35</sup> Asian Development Bank, “Quarterly Economic Update on Bangladesh” (2013), accessed on November 14, 2013, URL: <http://www.adb.org/sites/default/files/pub/2013/ban-qeu-2013-03.pdf> // also BGMEA has data: 79.63 percent of total exports ; BGMEA, Trade Information (2012/2013), accessed on October 25, 2013, URL: <http://bgmea.com.bd/home/pages/TradeInformation#.UgH9sZLOFRs> ; BOI Bangladesh, Prime Minister’s Office, accessed on October 25, 2013, URL: <http://www.boi.gov.bd/index.php/potential-sector/garments-and-textiles>

<sup>36</sup> *Ibid.*; WTO, Apparel represented by SITC Code 84, accessed on November 14, 2013, URL: <http://stat.wto.org/Home/WSDBHome.aspx?Language=>

<sup>37</sup> UNCTAD, “Potential Supply Chains in Textiles and Clothing Sector in South Asia” (2010), accessed on November 14, 2013, URL: [http://unctad.org/en/Docs/ditctncd2011d3\\_en.pdf](http://unctad.org/en/Docs/ditctncd2011d3_en.pdf)

<sup>38</sup> As China tensions simmer, Japan pulls back from “world’s factory,” *Reuters* (2012), accessed on October 23, 2013, URL: <http://www.reuters.com/article/2012/10/23/us-japan-china-firms-idUSBRE89M1GS20121023>

<sup>39</sup> Greg Petro, “The Future Of Fashion Retailing: Part 1 – Uniqlo,” *Forbes* (2012), accessed on November 15, 2013, URL: [http://www.forbes.com/fdc/welcome\\_mjx.shtml](http://www.forbes.com/fdc/welcome_mjx.shtml)

<sup>40</sup> “Insights: The Shifting Japanese Apparel Consumer,” *Cotton Incorporated Supply Chain* (2010), accessed on November 13, 2013, URL: <http://www.cottoninc.com/corporate/Market-Data/SupplyChainInsights/The-Shifting-Japanese-Apparel-Consumer/Japanese-Consumer-10-10.pdf>

<sup>41</sup> *Ibid.*

<sup>42</sup> Mazedul Islam et al, “Textile Industries in Bangladesh and Challenges of Growth,” *Research Journal of Engineering Sciences* (2013), accessed on October 25, 2013, URL: <http://www.isca.in/IJES/Archive/v2i2/7.ISCA-RJEngS-2013-002.pdf>

<sup>43</sup> Impact Economy online survey.

<sup>44</sup> “Before Dhaka Collapse, Some Firms Fled Risk,” *Wall Street Journal* (2013), accessed on October 24, 2013, URL: <http://online.wsj.com/article/SB10001424127887324766604578458802423873488.html>

<sup>45</sup> The ILO Declaration on Fundamental Principles and Rights at Work lists four core labor standards for universal application, which are: (1) freedom of association and “effective recognition” of the right to collective bargaining; (2) elimination of forced labor; (3) effective abolition of child labor, and (4) elimination of discrimination in employment.

<sup>46</sup> Arun Devnath “Bangladesh Raises Minimum Wage for Garment Workers After Unrest” *Bloomberg* (2013), November 14, 2013, accessed on November 15, 2013, URL: <http://www.bloomberg.com/news/2013-11-13/bangladesh-garment-factories-to-stay-shut-amid-worker-protests.html>

<sup>47</sup> International Labour Organization, “Bangladesh Decent Work Country Programme 2012-2015” (2012), accessed on October 25, 2013, URL: <http://www.ilo.org/public/english/bureau/program/dwcp/download/bangladesh.pdf> ; Mazedul Islam et al, “Textile Industries in Bangladesh and Challenges of Growth,” *Research Journal of Engineering Sciences*, February 2013, accessed on October 25, 2013, URL: <http://www.isca.in/IJES/Archive/v2i2/7.ISCA-RJEngS-2013-002.pdf>

<sup>48</sup> Impact Economy online survey.

<sup>49</sup> Mohammad Yunus and Tatsufumi Yamagata, “The Garment Industry in Bangladesh” (2012), accessed on October 25, 2013, URL: [http://www.ide.go.jp/Japanese/Publish/Download/Report/2011/pdf/410\\_ch6.pdf](http://www.ide.go.jp/Japanese/Publish/Download/Report/2011/pdf/410_ch6.pdf)

<sup>50</sup> Asian Development Bank, “Quarterly Economic Update on Bangladesh” (2013), accessed on October 25, 2013, URL: <http://www.adb.org/sites/default/files/pub/2013/ban-qeu-2013-03.pdf> // also BGMEA has data: 79.63 percent of total exports ; BGMEA, Trade Information (2012/2013), accessed on October 25, 2013, URL: <http://bgmea.com.bd/home/pages/TradeInformation#.UgH9sZLOFRs> ; BOI Bangladesh, Prime Minister’s Office, accessed on October 25, 2013, URL: <http://www.boi.gov.bd/index.php/potential-sector/garments-and-textiles>

<sup>51</sup> BGMEA, Trade Information (2012/2013), accessed on October 23, 2013, URL: [http://bgmea.com.bd/home/pages/TradeInformation#.UgJ\\_mZLOFRs](http://bgmea.com.bd/home/pages/TradeInformation#.UgJ_mZLOFRs)

<sup>52</sup> Mazedul Islam et al, “Textile Industries in Bangladesh and Challenges of Growth,” *Research Journal of Engineering Sciences* (2013), accessed on October 25, 2013, URL: <http://www.isca.in/IJES/Archive/v2i2/7.ISCA-RJEngS-2013-002.pdf>

<sup>53</sup> BGMEA, Trade Information (2012/2013), accessed on October 25, 2013, URL: [http://bgmea.com.bd/home/pages/TradeInformation#.UgJ\\_mZLOFRs](http://bgmea.com.bd/home/pages/TradeInformation#.UgJ_mZLOFRs) ; Fair Wear Foundation, “Country Plan Bangladesh 2013” (2013), accessed on October 25, 2013, URL: <http://www.fairwear.org/ul/cms/fck-uploaded/documents/countrystudies/bangladesh/countryplanBangladesh2013.pdf> ; McKinsey & Company, “Bangladesh’s Ready-Made Garments Landscape: The Challenge of Growth” (2012), accessed on October 25, 2013, URL: [http://www.mckinsey.de/sites/mck\\_files/files/2011\\_McKinsey\\_Bangladesh.pdf](http://www.mckinsey.de/sites/mck_files/files/2011_McKinsey_Bangladesh.pdf)

<sup>54</sup> *Ibid.*

<sup>55</sup> *Ibid.*

<sup>56</sup> Goldman Sachs identifies Bangladesh as part of the Next Eleven (N-11); countries that could potentially have a BRIC (Brazil, Russia, India, China)-like impact in rivaling the G7 (Source: Goldman Sachs “BRIC’s and Beyond” (2007), URL: <http://www.goldmansachs.com/our-thinking/archive/archive-pdfs/brics-book/brics-full-book.pdf>);

similarly, JPMorgan identifies Bangladesh as part of the “Frontier Five” key frontier markets in JPMorgan “Ho Chi Minh Trail to Mexico” (2007), URL: <http://at-capital.com/at/JP%20Morgan%20Frontier%20Five.pdf>

<sup>57</sup> Impact Economy online survey.

<sup>58</sup> Impact Economy online survey.

<sup>59</sup> “The battle of Primark: 3,000 customers force their way into new store,” *Daily Mail* (2007), accessed on November 1, 2013, URL: <http://www.dailymail.co.uk/news/article-446932/The-battle-Primark-3-000-customers-force-way-new-store.html>

<sup>60</sup> Yvon Chouinard et al, “The Sustainable Economy,” *Harvard Business Review* (2011), accessed on November 1, 2013, URL: <http://hbr.org/2011/10/the-sustainable-economy/>

<sup>61</sup> Edelman, “Goodpurpose 2012” (2012), accessed on November 1, 2013, URL: <http://purpose.edelman.com>

<sup>62</sup> “Finding the green in today’s shoppers,” *Deloitte*, 2009, accessed on November 1, 2013, URL: [http://www.deloitte.com/assets/Dcom-Lebanon/Local%20Assets/Documents/Consumer%20Business/DeloitteGreenShopperStudy\\_2009.pdf](http://www.deloitte.com/assets/Dcom-Lebanon/Local%20Assets/Documents/Consumer%20Business/DeloitteGreenShopperStudy_2009.pdf)

<sup>63</sup> Edelman, “Goodpurpose 2012” (2012), accessed on November 1, 2013, URL: <http://purpose.edelman.com>

<sup>64</sup> *Ibid.*

<sup>65</sup> Gary Gereffi and Stacey Frederick, “The Global Apparel Value Chain, Trade and the Crisis,” *The World Bank* (2010), accessed on November 7, 2013, URL: [http://econ.worldbank.org/external/default/main?pagePK=64165259&theSitePK=477894&piPK=64165421&menuPK=64166093&entityID=000158349\\_20100427111841](http://econ.worldbank.org/external/default/main?pagePK=64165259&theSitePK=477894&piPK=64165421&menuPK=64166093&entityID=000158349_20100427111841)

<sup>66</sup> Lead firms include retailers and brand owners and are headquartered in the leading markets, namely Europe, Japan, and the United States. These firms tend to perform the most valuable activities in the apparel value chain, namely design, branding, and marketing of products.

<sup>67</sup> Gary Gereffi and Stacey Frederick, “The Global Apparel Value Chain, Trade and the Crisis,” *The World Bank* (2010), accessed on November 7, 2013, URL: [http://econ.worldbank.org/external/default/main?pagePK=64165259&theSitePK=477894&piPK=64165421&menuPK=64166093&entityID=000158349\\_20100427111841](http://econ.worldbank.org/external/default/main?pagePK=64165259&theSitePK=477894&piPK=64165421&menuPK=64166093&entityID=000158349_20100427111841)

<sup>68</sup> *Ibid.*

<sup>69</sup> Impact Economy online survey.

<sup>70</sup> For more information on the programs see company websites, all accessed on November 15, 2013: Nike, URL: <http://www.nikeresponsibility.com/report/> ; Patagonia, URL: <http://www.patagonia.com/us/environmentalism> ; H&M, URL: <http://about.hm.com/en/About/Sustainability.html>

<sup>71</sup> “The California Transparency in Supply Chains Act: New Legislation Requires Disclosures on Corporate Efforts to Eliminate Slavery and Human Trafficking,” *CSR and the Law* (2010), accessed on November 14, 2013, URL: <http://www.csrandthelaw.com/2010/10/the-california-transparency-in-supply-chains-act-new-legislation-requires-disclosures-on-corporate-efforts-to-eliminate-slavery-and-human-trafficking/>

<sup>72</sup> “U.S. Trade Representative Froman Announces Outcome of Generalized System of Preferences Review,” *Office of the United States Trade Representative* (2013), accessed on November 14, 2013, URL: <http://www.ustr.gov/about-us/press-office/press-releases/2013/june/gsp-review-outcome> ; Kim Elliot, “Why Penalizing Bangladesh Isn’t the Answer,” *Businessweek* (2013), accessed on November 15, 2013, URL: <http://www.businessweek.com/articles/2013-06-28/why-penalizing-bangladesh-isn-t-the-answer>

<sup>73</sup> Peter Spiegel et al, “EU considers trade limits on Bangladesh,” *Financial Time* (2013), accessed on November 14, 2013, URL: <http://www.ft.com/cms/s/0/7f6d9cb0-b24d-11e2-8540-00144feabdc0.html#slide0>

<sup>74</sup> For more information see organization website, accessed on November 14, 2013, URL: <http://www.apparelcoalition.org/>

<sup>75</sup> For more information see organization website, accessed on November 14, 2013, URL: <http://www.fairwear.org/>

<sup>76</sup> For more information see organization websites, accessed on November 14, 2013, URL: <http://www.laborrights.org/creating-a-sweatfree-world/resources/bangladesh-fire-and-building-safety-agreement> ; and Alliance for Bangladesh Worker Safety, URL: <http://www.bangladeshworkersafety.org/>

<sup>77</sup> Impact Economy expert interview.

<sup>78</sup> Lucy Siegle, “To Die For: Is Fashion Wearing out the World?”, 2011, Fourth Estate, page 78.

<sup>79</sup> Impact Economy online survey.

<sup>80</sup> LaborVoices, “Bangalore Garment Worker Pilot Report” (2011), accessed on November 29, 2013, URL: <https://s3.amazonaws.com/lv-press-releases/LaborVoices+Bangalore+Pilot.pdf>

<sup>81</sup> Email communication to the author, December 10, 2013.

<sup>82</sup> LaborVoices, “Bangalore Garment Worker Pilot Report” (2011), accessed on November 29, 2013, URL: <https://s3.amazonaws.com/lv-press-releases/LaborVoices+Bangalore+Pilot.pdf>

<sup>83</sup> Clean Clothes Campaign, “Looking for a quick fix: How weak social auditing is keeping workers in sweatshops” (2005), accessed on November 29, 2013, URL: <http://www.cleanclothes.org/resources/publications/05-quick-fix.pdf/view>

<sup>84</sup> Accenture and Vodafone, “Connected Agriculture: The role of mobile in driving efficiency and sustainability in the food and agriculture value chain” (2011), accessed on December 5, 2013, URL: <http://www.accenture.com/SiteCollectionDocuments/PDF/Accenture-Connected-Agriculture.pdf>

<sup>85</sup> Accenture and Vodafone, “Connected Worker: How mobile technology can improve working life in emerging economies” (2013), accessed on December 5, 2013, URL: [http://www.vodafone.com/content/dam/sustainability/pdfs/vodafone\\_connected\\_worker.pdf](http://www.vodafone.com/content/dam/sustainability/pdfs/vodafone_connected_worker.pdf)

<sup>86</sup> *Ibid.*

<sup>87</sup> Mary Lennighan, “Bangladesh’s mobile operators line up for 3G licences,” *Total Telecom* (2013), accessed on December 5, 2013, URL: <http://www.totaltele.com/view.aspx?ID=482790>

<sup>88</sup> To illustrate the potential solution contribution of such cross-industry collaborations, consider also another example, the role of the pharmaceutical industry in dealing with climate change. The impact of climate change on health may alter the pharmaceutical industry in the long term, but is less likely to dramatically alter business or operating models in the immediate future. Companies within the industry will need to understand the issues involved and be prepared to respond and adapt to changing demands. Through planning for the longer term – engaging stakeholders, building resilience, driving science and innovation – the industry can integrate climate change and health into future strategies. See Accenture and GlaxoSmithKline, “Climate Change and Health: Framing the Issue” (2011), accessed on December 5, 2013, URL: <http://www.gsk.com/content/dam/gsk/globals/documents/pdf/climate-change.pdf>

<sup>89</sup> Bluesign, “Water emission – improved protection of the natural circulation,” accessed on November 14, 2013, URL: <http://www.bluesign.com/industry/bluesign-system/principles/water-emission#.UoTo1eJRHwG>

<sup>90</sup> For more information see company website, accessed on November 14, 2013: <http://www.mashholdings.com/>

<sup>91</sup> LEED Rating systems are groups of requirements for projects that want to achieve LEED certification; each group is geared towards the unique needs of a project or building type. See Hansjürg Leibundgut et al, “Clothing Factory in Sri Lanka,” *Holcim Foundation for Sustainable Construction* (2009), accessed on November 14, 2013, URL: [http://download.holcimfoundation.org/1/docs/Book\\_MAS\\_SriLanka.pdf](http://download.holcimfoundation.org/1/docs/Book_MAS_SriLanka.pdf)

<sup>92</sup> *Ibid.*

<sup>93</sup> Ellen MacArthur Foundation, “Circular Economy Report” (2013), accessed on November 29, 2013, URL: <http://www.ellenmacarthurfoundation.org/business/reports>

<sup>94</sup> *Ibid.*, page 15.

<sup>95</sup> *Ibid.*, page 86.

<sup>96</sup> *Ibid.*, page 56.

<sup>97</sup> *Ibid.*, page 56.

<sup>98</sup> *Ibid.*, page 54.

<sup>99</sup> “Thailand Seeks to be ASEAN’s Fashion Hub,” *Fibre2Fashion* (2013), accessed on November 2, 2013, URL: <http://www.fibre2fashion.com/industry-article/48/4752/thailand-seeks-to-be-aseans-fashion-hub1.asp>

<sup>100</sup> *Ibid.*

<sup>101</sup> “Country Forecast Thailand,” *Economist Intelligence Unit* (2013), accessed on November 13, 2013, URL: <http://country.eiu.com/Thailand>

<sup>102</sup> “Minimum Wage Levels Across ASEAN,” *Asean Briefing* (2013), accessed on November 22, 2013, URL: <http://www.aseanbriefing.com/news/2013/04/16/minimum-wage-levels-across-asean.html>

<sup>103</sup> Impact Economy expert interview.

<sup>104</sup> Jonathan Dyson, “Thai garment sector looks to diversify export markets,” *just-style* (2013), accessed on November 13, 2013, URL: [http://www.just-style.com/analysis/thai-garment-sector-looks-to-diversify-export-markets\\_id116500.aspx](http://www.just-style.com/analysis/thai-garment-sector-looks-to-diversify-export-markets_id116500.aspx)



<sup>105</sup> Original equipment manufacturing (OEM) is a form of commercial subcontracting. The supplying firm manufactures a product according to a design specified by the buyer; the product is sold under the buyer’s brand name; the supplier and buyer are separate firms; and the supplier lacks control over distribution.

<sup>106</sup> An intermediate step is original design manufacturing (ODM) where the supplier produces according to the specifications of the buyer, but partially develops the product itself.

<sup>107</sup> Original brand name manufacturing (OBM) is the upgrading by manufacturers from the production expertise of Original equipment manufacturing (OEM) to first the design and then the sale of their own brand products; “Thailand Seeks to be ASEAN’s Fashion Hub,” *Fibre2Fashion* (2013), accessed on November 2, 2013, URL: <http://www.fibre2fashion.com/industry-article/48/4752/thailand-seeks-to-be-aseans-fashion-hub1.asp>

<sup>108</sup> Thai Garment Manufacturers Association and Thai Development Foundation, “Directory 2013-2014,” accessed on November 2, 2013, URL: <http://www.thaigarment.org/index.php/en/tgma-menu/234-tgma-directory-2013-2014>

<sup>109</sup> For example, Fairtrade continued to grow amid the financial crisis in 2009, increasing its global retail value by 15 percent in 2009, and standards are also starting to influence public procurement on a significant scale. For example, the European Commission set the target of 50 percent of ‘green public procurement’ by the end of 2013 for European Union member states (Source: EC Communication, July 2008).

<sup>110</sup> For more information see company websites, accessed on November 2, 2013, URL: <http://worldcocoafoundation.org> ; <http://www.unilever.com/aboutus/supplier/sustainablesourcing/index.aspx>

<sup>111</sup> For more information see company website, accessed on November 2, 2013, URL: <http://worldcocoafoundation.org>

<sup>112</sup> Impact Economy expert interviews.

<sup>113</sup> Maximilian Martin, “Status of the social impact investing market,” *UK Cabinet Office* (2013), accessed on November 2, 2013, URL: <https://www.gov.uk/government/publications/status-of-the-social-impact-investing-market>

<sup>114</sup> CDC Group, “Ananta Apparels, Bangladesh” (2013), accessed on November 2, 2013, URL: [http://www.cdcgroup.com/Global/Case%20Studies/Documents/Final%20CDC-4Page\\_Ananta\\_210513.pdf](http://www.cdcgroup.com/Global/Case%20Studies/Documents/Final%20CDC-4Page_Ananta_210513.pdf)

<sup>115</sup> “Rags in the ruins,” *The Economist* (2013), accessed on May 4, 2013, URL: <http://www.economist.com/news/asia/21577124-tragedy-shows-need-radical-improvement-building-standards-rags-ruins>

<sup>116</sup> Impact Economy online survey.

<sup>117</sup> Bangladesh Bureau of Statistics, “Bangladesh Data Sheet” (2013), accessed on December 1, 2013, URL: <http://www.bbs.gov.bd/WebTestApplication/userfiles/Image/SubjectMatterDataIndex/datasheet.xls>

<sup>118</sup> International Labour Office, “Decent Work Country Profile Bangladesh” (2013), accessed on December 4, 2013, URL: [http://www.ilo.org/wcmsp5/groups/public/---dgreports/---integration/documents/publication/wcms\\_216901.pdf](http://www.ilo.org/wcmsp5/groups/public/---dgreports/---integration/documents/publication/wcms_216901.pdf)

<sup>119</sup> Bangladesh Bureau of Statistics, “Average household size by sex of head of household and residence”, accessed December 3, 2013, URL: [http://www.bbs.gov.bd/RptHIES\\_2\\_1.aspx?page=/PageReportLists.aspx?PARENTKEY=73](http://www.bbs.gov.bd/RptHIES_2_1.aspx?page=/PageReportLists.aspx?PARENTKEY=73)

<sup>120</sup> Jeroen Merk, “A Decent Wage across Borders,” *Asia Floor Wage* (2009), accessed on November 7, 2013, URL: <http://www.asiafloorwage.org/documents/Stitching%20a%20Decent%20Wage%20Across%20Borders.pdf>

<sup>121</sup> War on Want “Stitched Up: Woman Workers in the Bangladeshi Garment Sector” (2011), URL: <http://www.waronwant.org/attachments/Stitched%20Up.pdf>

<sup>122</sup> *Ibid.*

<sup>123</sup> *Ibid.*

<sup>124</sup> Greenpeace “Chemicals Substitution in Textile Industry: Implementing Chemical Policies Into the Textile Supply Chain,” (2013), accessed on November 29, 2013, URL: <http://www.greenpeace.org/china/Global/china/publications/others/2013/20130325-GP-ENG.pdf>

<sup>125</sup> Lacasse and Baumann, “Textile Chemicals: Environmental Data and Facts” *German Environmental Protection Agency*, Springer, New York, 2004, page 609, quoted in: “Chemicals used in textile processing” *Ecotextiles* (2013), accessed on November 29, 2013, URL: <http://ecotextiles.wordpress.com/2013/01/10/chemicals-used-in-textile-processing/>

<sup>126</sup> In addition to textile manufacturing, chemicals in textiles may also cause negative health and environmental impacts for the end consumer. Hazardous substances may be released from textiles during washing, and depending on the effectiveness of waste water treatment, these substances or their break-down products may end up in the water environment. The consumer of textile products may also suffer from negative health impacts

caused by hazardous substances through skin contact; children are especially vulnerable given their proneness to put things in their mouths. See also Swedish Chemicals Agency, “Hazardous chemicals in textiles” (2013), accessed on December 2, 2013, URL: <http://www.kemi.se/Documents/Publikationer/Trycksaker/Rapporter/Rapport-3-13-textiles.pdf>

<sup>127</sup> The new European Chemicals Law REACH (Registration, Evaluation and Authorisation of Chemicals) came into force on June 1, 2007 aiming at improving protection of human health and the environment.

<sup>128</sup> IHS Chemical, “Textile Chemicals” (2010), accessed on December 2, 2013, URL: <http://www.ihs.com/products/chemical/planning/scup/textile.aspx>

<sup>129</sup> Greenpeace “Chemicals Substitution in Textile Industry: Implementing Chemical Policies Into the Textile Supply Chain,” (2013), accessed on November 29, 2013, URL: <http://www.greenpeace.org/china/Global/china/publications/others/2013/20130325-GP-ENG.pdf>

<sup>130</sup> AT Kearney, “Chemical Industry Vision 2013: A European Perspective,” (2012), accessed on December 2, 2013, URL: <http://www.atkearney.com/documents/10192/536196/Chemical+Industry+Vision+2030+A+European+Perspective.pdf/7178b150-22d9-4b50-9125-1f1b3a9361ef>

<sup>131</sup> “Reach-like regulations enacted globally: A regulatory world tour,” ICIS (2010), accessed on December 5, 2013, URL: <http://www.icis.com/Articles/2010/05/31/9362538/reach-like-regulations-enacted-globally.html>

<sup>132</sup> Impact Economy expert interview.

<sup>133</sup> Properties of hazardous chemicals include being persistent (do not readily breakdown in the environment), bioaccumulative (able to accumulate in organisms), and toxic, including carcinogenic (chemicals which can cause cancer), mutagenic (chemicals with capacity to induce mutations and gene-defects), toxic to reproduction (chemicals which can harm the reproductive system) or to the nervous system, or capable of disrupting endocrine (hormone) systems. (Source: Greenpeace, “Hazardous Chemical Pollution of the Pearl River,” *Technical Note 08/2009*, accessed on December 2, 2013, URL: <http://www.greenpeace.org/international/Global/international/planet-2/report/2009/10/hazardous-chemical-pollution-o.pdf>)

<sup>134</sup> The chemicals found included high levels of toxic phthalates in four of the products, and cancer-causing amines from the use of azo dyes in two products. Nonylphenol ethoxylates (NPEs) were found in 89 of the 141 garments tested, showing little difference from the results of a previous investigation into the presence of these substances in sports clothing that was conducted in 2011. (Source: Greenpeace “Toxic Threads: The Big Fashion Stitch-Up” (2012), accessed on December 2, 2013, URL: <http://www.greenpeace.org/international/Global/international/publications/toxics/Water%202012/ToxicThreads01.pdf>)

<sup>135</sup> Swedish Chemicals Agency, “Hazardous chemicals in textiles,” Report 2013, accessed on December 2, 2013, URL: <http://www.kemi.se/Documents/Publikationer/Trycksaker/Rapporter/Rapport-3-13-textiles.pdf>

<sup>136</sup> “Bangladesh Accord on Fire and Building Safety released,” *Industrial* (May 15, 2013), accessed on November 7, 2013, URL: <http://www.industrial-union.org/bangladesh-accord-on-fire-and-building-safety-released>; “We Made It! - Global Breakthrough as Retail Brands sign up to Bangladesh Factory Safety Deal,” *Clean Clothes Campaign* (May 16, 2013), accessed on November 7, 2013, URL: <http://www.cleanclothes.org/news/press-releases/2013/05/16/global-breakthrough-as-retail-brands-sign-up-to-bangladesh-factory-safety-deal>

<sup>137</sup> Alliance for Bangladesh Worker Safety, accessed on November 7, 2013, URL: <http://www.bangladeshworkersafety.org/>

<sup>138</sup> Impact Economy online survey.

<sup>139</sup> Department for International Development, “Responsible and Accountable Garment Sector challenge fund,” (2013), accessed on November 7, 2013, URL: <https://www.gov.uk/responsible-and-accountable-garment-sector-challenge-fund>

<sup>140</sup> Department for International Development, “Responsible and Accountable Garment Sector challenge fund,” (2013), accessed on November 7, 2013, URL: <https://www.gov.uk/responsible-and-accountable-garment-sector-challenge-fund>

<sup>141</sup> Maxwell Stamp PLC, “Responsible and Accountable Garment Sector Challenge Fund (RAGS): Working Together for a Responsible RMG Sector – Lessons Learned,” 2013, Maxwell Stamp PLC.

<sup>142</sup> *Ibid.*, page 48.

<sup>143</sup> Email communication to the author, December 9, 2013.

<sup>144</sup> Impact Economy expert interview.



<sup>145</sup> Department for Environment Food and Rural Affairs, “Sustainable Clothing Roadmap,” (2011), accessed on November 29, 2013, URL: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/69299/pb13461-clothing-actionplan-110518.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69299/pb13461-clothing-actionplan-110518.pdf)

<sup>146</sup> Impact Economy expert interview.

<sup>147</sup> Mazedul Islam et al, “Textile Industries in Bangladesh and Challenges of Growth,” *Research Journal of Engineering Sciences* (2013), accessed on October 25, 2013, URL: <http://www.isca.in/IJES/Archive/v2i2/7.ISCA-RJEngS-2013-002.pdf>

<sup>148</sup> Impact Economy online survey.

<sup>149</sup> Impact Economy online survey.

<sup>150</sup> Impact Economy online survey.

<sup>151</sup> Impact Economy online survey.

<sup>152</sup> Myat May Zin, “Thousands of new factories coming: MGMA,” *Myanmar Times* (2013), accessed on November 2, 2013, URL: <http://www.mmtimes.com/index.php/business/3506-thousands-of-new-factories-coming-mgma.html>

<sup>153</sup> Impact Economy expert interview.

<sup>154</sup> Apparel manufacturers cut and sew woven or knitted fabric or knit apparel directly from yarn. The cut-and-sew classification includes a diverse range of establishments making full lines of ready-to-wear and custom apparel. Apparel manufacturers can be contractors, performing cutting or sewing operations on materials owned by others, or jobbers and tailors who manufacture custom garments for individual clients. Firms can purchase textiles from another establishment or make the textile components in-house.

<sup>155</sup> Impact Economy expert interview.

<sup>156</sup> Population in 2012 (Source: “Myanmar Facts Sheet,” *Asian Development Bank* (2012), accessed on November 7, 2013, URL: <http://www.adb.org/sites/default/files/pub/2013/MYA.pdf>)

<sup>157</sup> “Overview of Burma sanctions,” *British Broadcasting Corporation* (2009), accessed on November 22, 2013, URL: <http://news.bbc.co.uk/2/hi/asia-pacific/8195956.stm>

<sup>158</sup> Jacob Hamstra, “Country Report Myanmar,” *Economist Intelligence Unit*, accessed on November 7, 2013, URL: <http://www.eiu.com/default.aspx>

<sup>159</sup> “Myanmar approves new foreign investments in garment sector,” *Myanmar Times* (2013), accessed on November 2, 2013, URL: [http://www.fibre2fashion.com/news/apparel-news/newsdetails.aspx?news\\_id=152332](http://www.fibre2fashion.com/news/apparel-news/newsdetails.aspx?news_id=152332)

<sup>160</sup> Impact Economy online survey.

<sup>161</sup> “Don’t Ignore Myanmar Politics, Suu Kyi Tells EU,” *Bangkok Post*, accessed on November 15, 2013, URL: <http://www.bangkokpost.com/news/local/379895/don-t-ignore-myanmar-politics-suu-kyi-tells-eu>

<sup>162</sup> David Birnbaum’s Blog, “The Myanmar Garment Industry: A Very Short Study,” accessed on November 2, 2013, URL: <http://www.birnbaumgarment.com/2013/02/28/the-myanmar-garment-industry-a-very-short-study/>