

Sustainable Measures Taken by Brands, Retailers, and Manufacturers

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Abstract Sustainability is a triple bottom line that includes three aspects—namely the environment, economics, and society. A lot of emphasis has been placed on the brands, retailers, and manufacturers because the customers not only purchase their products but also observe the sustainable practices followed by brands, retailers, and manufacturers. Topics discussed in this chapter include the code of conduct for suppliers; supplier rating, which is based on key performance indicators; and incentives for the adoption of best practices, disclosure of carbon footprint, fair trade and social compliance, use of sustainable materials (organic cotton, better cotton, recycled or reclaimed fibers), ways and means of improved water, and material and energy efficiency by brands, retailers, and manufacturers.

Keywords Annual sustainability report · Carbon footprint disclosure · Fair trade and social compliance · Energy efficiency · Sustainable materials

1 Introduction

The entire world seems to be obsessed with single term these days—sustainability. The kind of attention that sustainability has evoked for the past 3 decades or so raises plenty of questions. Customers' increased awareness of sustainability is creating responsible global citizens who have started using sustainability practices to the extent of their personal capacities, but a lot is now expected from these global citizens. Customers and consumers take cues from their brands, retailers, and

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manufacturers about trends, styles, efficiency, technologies, and features. In light of this, we must understand how to measure sustainability.

What are the elements of sustainability? Sustainability is a triple bottom line that includes the environment, economics, and society. How can we understand the interplay of the elements of sustainability? Can sustainability be measured? If so, how can we measure it?

Sustainability can be measured. It considers all aspects related to the quantitative basis of the informed management of sustainability. Many metrics are presently available and many are still evolving. Metrics used for the measurement of sustainability include indicators, benchmarks, audits, indexes and accounting, assessment, appraisal and other reporting systems. For instance, the Consultative Group on Sustainable Development Indicators combine multiple sources of data and form an aggregate sustainability index. Examples of sustainability indices include air quality, energy sustainability, environmental performance, environmental sustainability, environmental vulnerability, and sustainable society, among many other indices. A benchmark is a point of reference for a measurement that assesses trends and measures progress once established. The sustainability performance of a company or organization is measured using sustainability auditing and reporting. ISO 14000, ISO 14031, the natural step, and triple bottom line accounting are some popular auditing procedures. Sustainability indicators can be classified (http://en.wikipedia.org/wiki/Sustainability_measurement) into descriptive indicators (description based), performance indicators (target based), efficiency indicators (improvement based), policy effectiveness indicators (policy based), and total welfare indicators (better off). The latest developments include the Global Reporting Initiative and green accounting, which focuses on environmental reporting and costs.

Lately, many people have been keenly observing the sustainable measures taken by leading brands, retailers, and manufacturers. This chapter highlights some of these sustainable measures, such as those included in Table 1, to form a roadmap. All the measures involved in the roadmap are elaborated in this chapter.

2 Sustainable Measures Taken by Brands

2.1 *Adidas*

Athletes never stop trying to improve their performance. This well-known quote has become synonymous with the sustainable efforts of Adidas, helping the company to win the coveted SAM Gold Class, Sector Leader Award for Sustainability, obtain recognition by the Dow Jones Sustainability Index, and released the highly appreciated Olympic Collection for London 2012 (<http://www.adidas-group.com/en/sustainability/reporting-policies-and-data/sustainability-reports/>). Adidas participates in many industry-wide initiatives related to sustainability, including the Fair Labor Association, Fair Factories Clearinghouse, International Labour Organization

Table 1 Sustainability Measures

Brands, retailers, and manufacturers	Sustainability measures
Brands: Adidas, Burberry, Eileen Fisher, Esprit, Levi’s, Nike, Patagonia, Puma Retailers: C&A, Gap, H&M, JCPenney, Target, Walmart	Supplier rating and auditing system based on certain key performance indicators
	Social compliance and fair wages
Manufacturers: Dystar, Lenzing, MAS Holding, Novozymes	Sustainable materials and life cycle assessment
	Sustainable collection
	Sustainable design tools
	Virtual technology
	Code of conduct or ethical trading policy
	Sustainable standards
	Digital and print campaigns focusing on sustainability
	Carbon footprint disclosure
Energy-efficient practices	

(ILO) Better Work Programme, Zero Discharge of Hazardous Chemicals (ZDHC) Group, and AFIRM Working Group. In addition, Adidas extends its support to the Sustainable Apparel Coalition (SAC) and the Global Social Compliance Programme, and it follows the Global Reporting Initiative guidelines and sustainable reports, the leading international benchmark for sustainability reporting systems.

Adidas has initiated audits of their suppliers on certain key performance indicators and rates them innovatively on their ability to deliver fair, healthy, and environmentally sound workplace conditions in an effective manner. The cumulative score of key performance indicators and the average score are rated as 1C, 2C, 3C, 4C, or 5C, as described in Table 2. Based on the rating, the suppliers are trained to build their capacity sustainably.

Adidas capitalizes on the expertise of their Social and Environmental Affairs (SEA) and Capacity Building and Development teams for the continuous improvement of workplace conditions of their suppliers. The company also has initiated a text messaging system and a worker hotline, through which employee

Table 2 Key performance indicators and scores of Adidas

Key performance indicators	PI score (%)	Rating
i. Management commitment and responsiveness	0–29	1C
ii. Management systems	30–59	2C
iii. Worker-management communication and industrial relations	60–79 (good or better)	3C
iv. Compliance training	80–89 (self-governance)	4C
v. Transparency in communication and reporting	90–100 (self-governance)	5C
vi. Compliance performance		

grievances are sent to the Adidas Group for redress, which has been proven to have a direct impact on workers' attitude. The strategic compliance plans of the suppliers are audited and enhanced by the Adidas Group's SEA team to identify the gaps in the plans and/or their implementation, which are then reported back into the strategic action plan. The report card process of Adidas is very transparent; it is executed by the SEA team, which measures the effectiveness of the compliance systems of the business entities in their daily operations. Fair wages at Adidas are determined from the social dialogue, balanced pay systems, and legal compliances.

Adidas strongly believes that the success of sustainability in innovation basically lies in a combination of the choice and manufacturing of materials and components. Measures, such as avoiding oil-based plastics, thinners, and lighter materials, have a huge impact on the environment. Adidas DryDye technology is a Polyester fabric dyeing process that uses no water (dye is injected into the fabric using compressed carbon dioxide), 50 % fewer chemicals, and 50 % less energy, but it shows greater dye retention in the fabrics than traditionally dyed fabrics; therefore, the technology is a truly eco-friendly process.

The London Olympics 2012 is well appreciated for its use of sustainable materials in the uniforms, torch relay kits, village wear, and training wear. The polo top for game-makers (100 % recycled polyester) and the Fluid Trainer shoe for Olympic volunteers (recycled and eco-friendly materials) boast an upper pattern efficiency of more than 70 %. Adidas achieved a 19 % reduction in the color palette used in the previous 2 years and set an ambitious target of reducing the same by 50 % in the Adidas Sports Performance Division.

Adidas's concept of Design for the Environment is an approach for the systematic application of environmental and human health considerations at the product design stage, with an aim to avoid/minimize significant environmental impacts and increase resource efficiency at all stages of a product's life cycle. Adidas's Element Soul, part of the Spring/Summer 2013 collection, is made up of sustainable fabrics and accessories manufactured using recycled polyester and soybean-based foams, with a one-piece injection mid-sole. The shoe contains only the essential items, resulting in a lighter shoe—two-thirds the weight of a standard shoe. All fabrics and apparel contain significant amounts of sustainable content, such as organic cotton, Better Cotton, and recycled polyester, which are manufactured using environmentally friendly dyeing processes (DryDye).

The Adidas Group is increasingly using virtual technology to reduce energy, materials, and waste generated and the quantity of physical samples required to design and sell new products. Through this paradigm shift in sampling, Adidas has been able to produce 600,000 fewer samples in the years 2011 and 2012 compared to 2010. The company has also introduced a three-dimensional design tool and started virtual product sales in more than half of the markets around the world. The company developed an innovative web-based catalogue to aid the sales of the Rockport Spring/Summer 2012 collection and was able to reduce the physical collections by 39 %. Standardized hand-tags across genders and business units, as well as single-wall transportation cartons with thinner and less paper than the

double-wall heavy cartons in the retailing and packing sections, are other initiatives taken by the Adidas toward reducing the environmental impacts of its activities.

In addition, Adidas has initiated attempts to reduce color-material combinations, trained cotton farmers through the Better Cotton Fast Track Program, encouraged suppliers to become members of the Better Cotton Initiative, established partial to full traceability of more sustainable materials (apparel products), reduced energy emissions in core suppliers, and achieved a Leather Working Group (LWG) silver or above rating for leather tanneries.

Implementation of green design requirements for new supplier buildings is another sustainable initiative of Adidas. Its unique *GreenENERGY* Fund, a global sustainability venture capital fund for energy efficiency and renewable energy projects, is being used to retrofit Reebok and Rockport stores in the United States. The Adidas Group is determined to reduce waste at their facilities. For example, canteen wastes are used for the production of bio-gas and electricity, and single-use paper cups were replaced with reusable cups made out of the materials left over from the paper production process. The company has established a Centre of Excellence in Retail and set up a Best Practice Library that allows sharing of current best practices, tools, and key performance indicators related to sustainability across the Adidas retail business. Adidas also has green teams that create awareness on sustainability, develops green ambassadors, and assists in waste collection. Adidas is committed to reducing not only the company's carbon footprint but also the information technology footprint by the use of green power management options for desktops and laptops, virtualization of servers, and data center consolidation.

2.2 Burberry

Burberry, founded in the year 1856 by Thomas Burberry, has become a well-known fashion label for innovative and functional (outdoor and extreme) purposes, particularly for the iconic Burberry coats and jackets in its collection (http://www.burberryplc.com/corporate_responsibility/burberry-beyond). With a strong commitment to ethical trading, sustainability, and environmental friendliness, Burberry has become a member of the UN Global Compact and uses the compact's ten principles. The company is an active member of both the Ethical Trading Initiative and Business for Social Responsibility, achiever of the Carbon Trust Standard, and is listed on the FTSE4Good Index. Burberry is also a member of the LWG, which supports improvements in transparency in the leather industry. Burberry does not use sandblasting on any of its products, manufactured or outsourced.

Even though the majority of Burberry products are manufactured in the Europe through outsourcing or near-sourcing, all of the Burberry suppliers are governed by the group's ethical trading policy, which also includes four policies on bribery and corruption, foreign contract labor, unauthorized subcontracting, and animal welfare to make the practices more ethical.

Table 3 Scope and significance of Burberry's commitment

Policy	Scope	Significance	Focus areas
Burberry Impact	Ethical trade and environmental sustainability aspects	Provides meaningful and lasting improvements to workers' employment and work-place conditions; reduces the environmental impact	People, product, process, and property
Burberry Engage	Encourages its associates to connect with Burberry Beyond framework	Volunteering programs, harnessing talent to give back to local communities	Inspiring young people in their local communities
Burberry invest	Supports innovative organizations and holds events in communities worldwide	Burberry donates 1 % of group profits before tax to charitable causes	Burberry Foundation assists young people in arts and design, oriented towards employment

Burberry Beyond, an initiative of the Burberry, encompasses all of the activities related to Burberry's commitment to driving positive social, cultural, and environmental impact globally, as monitored through policies such as Burberry Impact, Burberry Engage, and Burberry Invest (Table 3). Burberry also supports the next generation of creative talent through scholarship funds at the Royal College of Art (UK) and Ball State University (US).

2.3 Eileen Fisher

Eileen Fisher's Sustainable Campaign focuses on storytelling and 50% of its print advertisements carry an ampersand symbol [3], which signifies the information about the sustainable choices behind the clothing and the partnership with artisans of Spain and the holistic Bluesign standard. The company highlights the brand's mission to empower the women and girls and support leadership in women and girls by donating 10% of proceeds to them. Eileen Fisher's recycling initiatives have grown large, its profits from recycled clothing continues to support programs for women and girls.

Supplementing the print advertisements, digital campaigns feature the sustainable initiatives, in-store newspapers enable customers to read articles and interviews with Fisher, and various activities are featured on social media platforms such as Twitter and Facebook.

Eileen Fisher has become the first company to have Bluesign certified silks and also the first American fashion company to become a member of Bluesign. In addition, the company assesses water and energy usage to reduce the impact on

manufacturing. Customers who purchase products made from recycled materials receive rewards, which they can use in the showrooms or for online purchases.

Eileen Fisher's slogan is "The biggest change starts with the smallest act." The company has many sustainable options for consumers, such as wash less, switch to cold water, choose products from plants not petroleum, line dry, steam instead of iron, hand wash instead of dry clean, and green dry clean. The company supports traditional crafts and cultures throughout the world. At present, 25 % of Fisher's collections are made from sustainable materials, including fair-trade organic cotton knits, Bluesign certified eco-dyed silk, organic cotton, linen and wool, and sustainable and recycled fibers and coloration processes. Currently, Eileen Fisher makes seamless sweaters (knit garments without any seams) with fewer production stages and reduced waste.

Eileen Fisher's Peru Project focuses upon fair-trade wages and organic cotton as a part of a company-wide commitment to make fair-trade Peruvian knits as an important part of the sustainable collection. Eileen Fisher's Peruvian partners follow the guidelines of the Fair Trade Federation, who are committed to provide fair wages, support safe and healthy community workplaces, supply financial and technical support, ensure environmental sustainability, respect cultural identity, offer public accountability and transparency, build direct and long-term relationships, and educate the consumers.

2.4 *Esprit*

"Social and environmental commitment is part of Esprit's DNA"—this has been a motto of Esprit to implement and ensure sustainability in their operations (<http://www.esprit.com/company/sustainability>). To Esprit, sustainability means creating high-quality fashion that one can enjoy for a long time, and the company strongly believes that the people who make the company products must be treated fairly and respectfully along with the environment. This commitment means there should be no child labor, no forced labor, legal compensation, no involuntary overtime, no illegal or disciplinary deductions from wages, strict adherence to local law and regulations, no workplace discrimination, safe and healthy working conditions, no use of restricted chemicals, and minimized damage to the environment. Esprit's other initiatives include support for the Business Social Compliance Initiative and ZDHC, and the company is a founding circle member of the SAC.

The SAC was founded by a group of sustainability leaders from global apparel and footwear industries (<http://www.apparelcoalition.org/>). It seeks to identify common metrics and approaches to reduce the social and environmental impacts of apparel and footwear products. The major focus of the SAC is on the Higg Index, which measures the environmental impact of apparel and footwear products.

Esprit's mission statement of the year 1990—*Be informed, be involved, make a difference*—paved the way for the designers to look beyond the gamut of fashion and pay attention to the social and environmental impacts of apparel manufacturing.

As a result, the organic collection by Esprit was launched in the year 1992, projecting Esprit as a pioneer in the sustainable apparel market. Esprit uses organic cotton certified by the Global Organic Textile Standard, with traceability throughout the production process. In addition to organic cotton, Tencel, organic linen, and organic wool are also used by Esprit for the production of garments. Recycled wool is made from wool waste, coming from pre- and post-consumer waste that would otherwise be going to landfills.

Esprit's Beachwear Collection 2012 was manufactured using recycled nylon fibers with a blend proportion of 70 % recycled nylon, subsequently enhanced to 82 % recycled nylon and 18 % spandex in the Beachwear Collection 2013. Some Esprit clothing items are manufactured using 100 % recycled polyester and cotton fabric wastes. Recycled collections show impressive results in the lifecycle assessment (LCA), with up to 75 % less use of water compared to the conventional products, facilitating the Global Recycle Standard certification.

Esprit has also been a part of I:Collect (I:CO), a Swiss-based recycling startup that resells clothing in the second-hand or vintage markets, since 2011 to encourage the people to bring back and deposit their old clothes and shoes in exchange for discount coupons to purchase new products. Esprit offers various sponsorships and talent competitions and also conducts workshops, giving young professionals a chance to present themselves to a broad audience.

Esprit supports sustainability awards as well as sustainable design competitions for young designers. The EcoChic Design Award supported by the Esprit is a sustainable fashion design competition organized with an aim to inspire young fashion designers to create mass-market clothing with minimal textile wastes.

2.5 *Levi's*

The Dockers Wellthread process is a classic example of how Levi Strauss is working to make its products more socially and environmentally sustainable (<http://www.levistrauss.com/sustainability/>). This groundbreaking approach combines sustainable design and environmental practices, with an emphasis on supporting the well-being of the employees involved in the garment manufacturing. The Dockers design team aims for novel design concepts, as well as a reduction of water and energy use in manufacturing processes, including garment-dyeing with cold-water pigment dyes and salt-free reactive dyes.

The Levi's Waste<Less collections feature aesthetic and durable denims made from recycled wastes—specifically, an average of eight recycled plastic bottles (12–20 oz.) per pair of jeans that are dyed using less water. In the year 2012 alone, the Levi's brand made 29 million Water<Less units, which translates to saving more than 360 million liters of water.

Levi's has developed a unique, long-staple yarn for its premium Wellthread. These extremely long staple cotton fibers are easily recycled and every garment has 100 % traceable components.

Levi's is also one of the six apparel companies working with the National Resources Defense Council on a pioneering initiative to reduce the environmental impact of textile mills in China. The company's other sustainable initiatives include The Future of Sustainable Fashion (trends that impact the fashion industry), A Care Tag for Our Planet (requesting that people act and drive change) and Lifecycle of a Jean (LCA and environmental impact over the lifespan of a pair of Levi's jeans and Dockers pants), which give a roadmap for reducing the carbon footprint. Levi's is also actively engaged in supporting the International Labor Organization's Better Work program, as well as the BSR Apparel Mills and Sundries Working Group, which aim at improving working conditions and the supply chain for textile mills and sundry/component parts suppliers. Levi's has a reputation for its social concerns, including Health Enables Returns (also known as the HER project), which coordinates general and reproductive health training for female factory workers in Pakistan and Egypt and combats HIV/AIDS in South Africa.

The LCA for Levi's 501 jeans and Dockers Original Khakis gives an in-depth understanding of the climate change, water usage, and energy impacts of these products, revealing that 58 % of the energy and 45 % of the water used during the lifetime of Levi's jeans occurs during the consumer use phase. Keeping this in mind, company has initiated a global dialogue with consumers, Care for Our Planet, to educate how caring for clothes affects the environment. Through this initiative, Levi's encourages the consumers to wash less, wash in cold water, line dry when possible, and donate clothing to a charity when no longer needed. Levi's also launched a contest, Care to Air, to find a better way to air dry jeans, as well as every other article of clothing that typically ends up in the dryer. Levi's has established a partnership with Goodwill in the United States to encourage consumers to increase the lifecycle of a pair of jeans by donating them, as well as piloting projects in which old jeans are reused as building insulation and other materials.

Levi Strauss launched the code of conduct—"the code that launched a thousand codes"—a pioneering concept to developing a comprehensive responsible global sourcing program. In 1991, Levi's created *Terms of Engagement* (now popularly known as the Sustainability Guidebook), which was a first for the apparel industry, outlining expectations from their business partners in practices pertaining to everything from worker rights to the environment. It is based on the United Nations Universal Declaration of Human Rights and International Labor Organization Core Conventions. Strict water quality standards were subsequently added, along with strengthening of the protection of workers' rights to form unions and conduct collective bargaining. Levi's is also a member of the Fair Factories Clearinghouse, which is dedicated to improving workplace conditions.

Levi's was one of the first apparel companies to release the names and locations of all of their active, approved owned-and-operated, contract, and licensee factories that manufacture and finish Levi's, Dockers, and Signature by Levi Strauss products. The Levi Strauss Foundation focuses on funding programs that strengthen worker rights and improve the working and living conditions for the people who make their products.

Levi's has been aggressively pursuing ways to reduce their carbon footprint by shifting from the most carbon-intensive modes of transport (air and trucking) to less intensive modes (rail and ships). In addition, the company also focuses on reducing energy use at their large-scale distribution centers by overhauling the lighting (installing efficient lighting systems that yield savings from 20 to 40 %), updating the maintenance programs to increase the efficiency of air-conditioning units, installing Forest Stewardship Council-certified wood flooring, and adding denim recycling stations. Levi's is reducing the number of hangtags on each garment from an average of three to two, and the company also began printing the size and care information directly onto garments.

2.6 Nike

A designer's knowledge of the Materials Sustainability Index and Higgs Index is an added advantage for designing sustainable products. The product creation teams at Nike use the Nike Materials Sustainability Index (Nike MSI) to select environmentally friendlier materials (<http://www.nikeresponsibility.com/report/content/chapter/our-sustainability-strategy#sthash.m4MQWpf7.dpuf>). Each material's impacts are assessed in four areas: energy, chemistry, water, and waste. The weighting of these environmental factors gives the MSI value: the higher the value, the better it is in terms of sustainability.

Being a company that is committed to sustainability, Nike has released an updated version of the MAKING app, adding new features and a roster of additional materials commonly used in footwear and apparel to help designers make sustainable design decisions from head to toe. MAKING is powered by data from the Nike MSI, a database built on materials research and analysis. Additional features of MAKING include the following:

- (i) Inclusion of 20 materials commonly used in footwear, including rubber, ethylene-vinyl acetate foam, and zinc
- (ii) Deeper insights on the materials, including insulation, waterproof, and absorbance
- (iii) Tips for improving the environmental impact of designs
- (iv) A comparison tool to measure the sustainability attributes between materials
- (v) The ability to select/filter materials for apparel, footwear, and all materials categories.

These data have been made public with the goal of helping to lead industry sustainability efforts and provide designers and product creators with guidance in selecting materials with lower environmental impacts.

Nike has created the awareness on sustainability across the globe in a positive manner (<http://www.nikeresponsibility.com/report/content/chapter/our-sustainability-strategy>), such as with its sports jerseys for the 2010 FIFA World Cup that were made from recycled plastic bottles and Flyknit, an innovative manufacturing process

that reduces wastes in knitted fabrics used in the upper parts (shoe uppers) of the shoes. Other sustainable efforts from Nike include the exploration of new materials and manufacturing processes through their Sustainable Business and Innovation Lab, toward a leaner and greener supply chain.

Nike has been using an innovative technology, ColorDry, which replaces water with recyclable CO₂, thus reducing energy use and eliminating the need for auxiliaries in the process. Compared to the traditional dyeing methods, the ColorDry process reduces dyeing time by 40 %, energy use by ~60 %, and the factory's carbon footprint by 25 %.

2.7 Patagonia

Patagonia was one of the first apparel manufacturing companies to initiate sustainable efforts, during the early 1990s. Patagonia's mission is to "inspire and implement solutions to the environmental crisis." The company hopes that these solutions will inspire others to follow their lead (<http://www.patagonia.com/>). Patagonia has been a pioneer on numerous environmental and social fronts since its inception, including the following:

- Using only organic cotton in cotton products since 1996
- Redefining corporate transparency through its Footprint Chronicles
- Launching the Common Threads Partnership to invite customers to take mutual responsibility for the entire lifecycle of the company's products through the 5Rs (reduce, repair, reuse, recycle, and reimagine)
- The first brand member of the Bluesign system
- One of the first California companies to switch to wind energy and on-site solar energy systems
- Launching \$20 Million and Change, a fund to help like-minded responsible start-up companies
- One of the first U.S. outdoor apparel companies to introduce Fair Trade Certified garments
- The first outdoor clothing manufacturer to manufacture fleece made from postconsumer recycled plastic soda bottles
- One of the first companies to use hemp, recycled nylon, recycled polyester, and Tencel

Patagonia's most recent initiative is working with The Nature Conservancy and Ovis XXI, representing fifth-generation ranchers, to regenerate overgrazed grasslands in Argentina, where it sources its merino wool. The company also takes responsibility for every garment at the end of its life by taking it back for recycling or repurposing. Patagonia co-founded 1 % for the Planet, Freedom to Roam, The Conservation Alliance, and the SAC, the company is a founding member of the Fair Labor Association.

Fig. 1 Patagonia's *Don't Buy This Jacket* Campaign (<http://www.treehugger.com/corporate-responsibility/patagonia-dont-buy-our-jackets.html>)



Patagonia's other sustainable campaigns, such as *Buy Less* and *Don't Buy This Jacket* have positive impacts on customers' awareness of sustainability. The campaign was inspired by the enormous response to its provocative *Don't Buy This Jacket* (<http://www.treehugger.com/corporate-responsibility/patagonia-dont-buy-our-jackets.html>) promotional advertisement, which asked customers to think twice about whether they needed a new jacket (Fig. 1). The *Better Than New* advertisement celebrated the resale of well-used, long-surviving Patagonia clothing. Patagonia's *Buy Less* campaign aimed at asking the customer whether they really need that several-hundred-dollar new parka. Indirectly, the message suggests that a customer could repair and keep using the \$700 Patagonia parka he or she already has instead of buying a new one. The company also has produced a series of videos to show customers how to fix things themselves. Patagonia's new campaign, *The Responsible Economy*, asks consumers and businesses alike to rethink disposability for more effective resource allocation.

2.8 Puma

Puma, another sportswear manufacturer, is committed to working in ways that contribute to the world by supporting creativity, sustainability, and peace. The company aims to stay true to the values of being fair, honest, positive, and creative in decisions and actions taken (<http://about.puma.com/sustainability/>). PUMAVision lays the foundation for all the activities, a concept that guides with its three core programs of PUMA.Creative, PUMA.Safe, and PUMA.Peace. PUMA.Safe comprises initiatives and commitment for environmental protection and improved working conditions, with a focus on implementing cleaner, safer, and more sustainable systems and processes within the supply chain. PUMA.Peace supports the global day of ceasefire on September 21 every year through its initiative One Day One Goal, which aims at bringing people together to play football, with an idea that

the power of sports could unite people in peace. PUMA.Creative emphasizes creativity as the core competence of the brand, aiming to bring together artists and different organizations for mutual creative exchange and offering them an international platform.

Puma's Bring Me Back program has played a significant role in the recycling process. Puma's InCycle is a sustainable collection that includes shoes, apparels, accessories, and home insulation materials made up of either biodegradable polymers or recycled polyester and organic cotton. Puma also introduced a successful program called Cradle-to-Cradle, certified collections of lifestyle sneakers (biodegradable; a blend of organic cotton and linen with the biodegradable plastic AP-INAT Bio sole), the legendary Puma Track Jacket (recyclable; made up of 98 % recycled polyester and 2 % elastane), shirts (biodegradable), and backpacks (recyclable; polypropylene), with facilities to collect them back from the general public. Puma's Re-suede uses 100 % recycled materials and an outsole of rice-husk fillers instead of rubber components.

Many retailers take measures to follow these sustainable options by modifying retail outlets. The Puma stores feature a range of products made from organic cotton as well as Puma's Wilderness Collection, which is primarily sourced and produced in Africa using sustainable materials. The sustainability measures implemented in the Puma's Sustainable Store in Bangalore include constructing the building with recycled steel from old DVD players, bicycles, and tiffin boxes; using porotherm blocks in the shell of the building, which were made of silt; using furniture and fixtures made of recycled wood and low-volatile organic compound paint; reducing artificial lights by supplementing with access to natural lighting in the interior; installing a foam roof on the building for insulation; cooling the retail showroom without air-conditioning (natural cooling) by underfloor air distribution systems combined with air passing through an underground tunnel; generating energy by the pedal powers of customers entering the store; and using 100 % solar-powered energy and occupancy sensors.

3 Sustainable Measures Taken by Retailers

3.1 C&A

Sustainability is one of the underlying principles behind the C&A business model, which is coordinated by Sustainable Business Development (<http://www.c-and-a.com/uk/en/corporate/company/our-responsibility/>). C&A is committed in their responsibilities towards employees, customers, and the people who are involved in the entire supply chain by dealing with important matters concerning the environment, product safety, and employment conditions. A few of the sustainable measures taken by C&A include the following:

- Supporting the fight against Sumangali schemes (a form of bonded labor in India)
- Not accepting cotton originating from Uzbekistan
- Ceasing the purchase of sandblasted jeans
- Using products that only contain down feathers from birds primarily raised for meat production
- Using leather and skins from animals that are primarily raised for meat production
- Having zero tolerance of child labor
- Assisting the investigation by EEB commissions on the fire at Tazreen Fashion in Bangladesh
- Signing the Accord on Fire and Building Safety for implementation
- Following ILO standards on minimum wage
- Donating during natural calamities, such as earthquakes
- Operating training centers for youths on reading, writing, mathematics, and various trades.

The C&A Code of Conduct was developed in the year 1995, specifying both social and ecological standards in the supply chain. It also addresses issues such as waste avoidance, recycling, and energy saving. The Code of Conduct is monitored by the Service Organisation for Compliance Audit Management and an independent organization. C&A's environment protection strategy pursues two main objectives: reduction of total energy consumption in all relevant areas and meeting remaining energy needs from renewable resources with low CO₂ emissions. The European Crisis Management Team assists in the management of an unforeseen crisis, such as the spread of H1N1 virus and protection of workers in production facilities performing sandblasting operations.

Organic cotton plays a key role in C&A's sustainability strategy, such as the initiative in its new Bio Cotton range. C&A is one of the global market leaders for organic cotton, selling 110 million garments a year—nearly 38 % of total cotton sales in the year 2013. Farmers are trained in collaboration with organizations such as Textile Exchange and CottonConnect to cultivate the use of natural pesticides and fertilizers, reduce health risks, and protect the soils, fresh water, and revenue streams. Water Footprint Network demonstrated that organic cotton creates five times less gray water pollution from pesticide run-off than conventional cotton farming.

C&A is known for its sustainable supply chain. The company monitors and collaborates closely with suppliers in an effort to both validate and significantly advance social and environmental performance throughout the supply chain. C&A neither accepts nor sells products made of real fur, Angora rabbit fibers, or wool fibers from sources where mulesing practices are applied. C&A requires that all of its products and their manufacturing, use, and disposal/recycling processes are in full compliance with all the applicable legislation, as well as the latest version of the C&A Restricted Substance List policy.

3.2 Gap

Gap Inc. has been recognized by the Ethisphere Institute, an American management consulting firm, as one of the world's most ethical companies for 8 years in a row, reflecting that the company lives up to its promise "to do more than sell clothes" (<http://www.gapinc.com/content/csr/html.html>). Gap's sustainable initiatives include the following:

- The human resources strategy is based on UN Guiding Principles on Business and Human Rights.
- Gap is the first American retailer to set minimum and standard hourly rate (wage) for US employees.
- Gap currently employs 70 % female workers in its retail and corporate offices. The PACE program, which has been operational since 2007, provides female garment workers with technical skills to move up in the workplace and better their own lives, the lives of others, and the community in terms of communication, management of finances, problem solving, nutrition, and hygiene.
- Gap also works with local organizations and development experts to address the root cause of child labor in a regional education initiative that helps raise awareness on how to avoid traffickers.
- Gap was among the first US companies (along with Walmart and Children's Place) to contribute US\$40 million to the victims of the Rana Plaza factory collapse in Bangladesh in April 2013.
- Gap stores and distribution centers incorporate the use of renewable energy, energy saving, and waste reduction.
- Human rights strategies focus on two key areas: vendor engagement and fire and building safety, as per the Human Rights Policy and Code of Vendor Conduct.
- The company is one of the founding members of the ILO's Better Work Program and is now a member of its Advisory Council.
- Gap has been transparent in reports of social and environmental impacts since 2003.
- The company reports to the Carbon Disclosure Project, and their score has been increasing every year.

Gap has "greened" its largest San Francisco building through a series of measures, including the way the employees sort and dispose of waste. Gap also developed a sustainable fiber toolkit for designers and merchants across their brands to highlight the environmental and social impacts of natural, manufactured, and alternative fibers. Another sustainable avenue is Gap brand's Wise Wash denim (www.gapinc.com), which was launched in the year 2012. Wise Wash (Fig. 2) is a manufacturing process that uses low-impact manufacturing techniques, consuming less energy and water than conventional wet processing.

Fig. 2 *Wise wash* of Gap
 [<http://www.gapinc.com/content/csr/html/environment/product.html>]



3.3 H&M

H&M has been designing collections made out of the sustainable materials since 2007. H&M's continuous commitment to more sustainable fashion was reinforced by two collections, Conscious and Conscious Exclusive, launched in 2014. Using two new sustainable materials, organic leather, from the Swedish leather supplier Tärnköping, and organic silk, the collections exhibit the range of possibilities of the sustainable fashion (<http://about.hm.com/en/About/sustainability.html>).

H&M, the world's second largest clothing retailer, introduced a garment collecting initiative in 1,500 stores. The remaining 1,300 shops are expected to follow the practice to change the mindset of the customers, so that they can see their old clothes as a resource rather than throwing them into the garbage or letting them pile up at the back of their closet. Customers can go to any participating H&M store with their old clothes and hand them over at the cash desk, in exchange for redemption vouchers for a new purchase. H&M sells the donated clothes to I:CO. Clothes that are in poor condition are either converted for other uses, such as cleaning cloths, or recycled into textile fibers. H&M is well known for its sustainability, as demonstrated by the following initiatives:

3.3.1 Providing Fashion for Conscious Customers

- Using only more sustainable cotton—the largest user of recycled cotton, organic cotton, and BCI cotton
- Supporting innovation in sustainable fibers—Tencel, recycled wool, organic linen and hemp, recycled polyethylene terephthalate
- Promoting more sustainable leather—leather shoes are made from LWG-certified leather and water-based adhesives
- Inspiring customers to join conscious actions—HIV/AIDS awareness, H&M for Water, supporting children's rights with UNICEF in India and Bangladesh, reuse and recycle initiatives, climate and water-conscious garment care
- Introducing Conscious wash and care instructions—Ginetex Clevercare label

- Setting industry standards for measuring product sustainability
- Collaborating with the French government in product LCA
- Providing sustainability training for buyers and designers
- Increasing knowledge among sales advisors about the sustainability works
- Translating the new sustainability website into multiple languages.

3.3.2 Choosing and Rewarding Responsible Partners

- Implementing a supplier relationship program—survey on the relationship with H&M
- Choosing responsible partners—order placement only occurs after an initial audit and the order is subjected to the full audit program
- Analyzing of supplier management systems
- Measuring sustainability performance
- Rewarding good sustainability performers with better business
- Increasing workers’ awareness of their rights
- Promoting higher wages for garment workers across the country
- Teaming up with the best partners and creating model factories
- Ensuring freedom of association and promoting social dialogue
- Reducing overtime in supplier factories
- Supporting better health for factory workers in Cambodia
- Continuing to promote improved fire safety in Bangladesh
- Continuing to promote an end to the Sumangali schemes in India
- Requesting a ban on Uzbek cotton.

3.3.3 Being Ethical

- Ensuring awareness and understanding of the code of conduct
- Launching a human rights policy based on United Nations guiding principles
- Promoting diversity and ensuring equality amongst colleagues
- Ensuring good workplace relationships and dialogue with colleagues in all markets
- Attracting and retaining talent
- Developing and implementing a new global training system
- Introducing an updated global leadership program
- Reaching over 90 % compliance with the company’s safety standards
- Communicating business ideas through responsible advertising.

3.3.4 Being Climate Smart

- Reducing the operation’s total greenhouse gas emissions
- Reducing electricity use in stores by 20 % per square meter

- Sourcing 100 % electricity from renewable sources
- Choosing and promoting environmentally conscious transportation
- Promoting energy efficiency among suppliers
- Using natural resources responsibly
- Strengthening the communities.

3.4 JCPenney

JCPenney's sustainability activities can be summarized by the following categories (<http://ir.jcpenny.com>):

- **Stores and operations:** JCPenney is committed to increasing operational efficiency, utilizing programs to manage energy consumption, reducing waste, and encouraging recycling across all the stores and logistics facilities. JCPenney has received ENERGY STAR certification for more than 500 locations and earned the ENERGY STAR Sustained Excellence Award for five consecutive years as an acknowledgement.
- **Supplier social and environmental standards:** JCPenney focuses on responsible sourcing and improving social and environmental supply chain standards in collaboration with Bureau Veritas (BV) in performing compliance audits.
- **Product safety:** The company has partnered with the BV's Consumer Products Services to analyze product performance and spot the potential issues and concerns.
- **Ethics:** The company publishes a statement of business ethics.
- **Employment:** JCPenney continually celebrates and enriches its diverse and skilled workforce through business resource teams and continuing education.
- **Community:** JCPenney is known for its grants and sponsorships, disaster relief, in-kind donations, and community engagement.

3.5 Target

Target's most important sustainable effort is the development of the Target Sustainable Product Standard, which was developed in partnership with industry experts, vendors, and nongovernmental organizations toward establishing a common language, definition, and process for qualifying products as more sustainable (<https://corporate.target.com>). Target collects the information from vendors and evaluates a product's qualities against set criteria using GoodGuide's UL Transparency Platform. The standard was first rolled out in three categories: household cleaners, personal care, and beauty and baby care. This tool helps to showcase the authenticity of products while pushing for industry-wide clarity around what really

Fig. 3 Target product sustainability standard (<https://corporate.target.com>)



makes a product sustainable. As the product standard rolls out and matures, it is expected to form the basis for Target's merchandising and product-placement decisions. The Target Sustainable Product Standard (<https://corporate.target.com/discover/article/introducing-the-Target-Sustainable-Product-Standard>) is just one example (Fig. 3) of how Target integrates sustainability in all areas of business, from the way stores are built to the products on their shelves. Using this standard and process, Target tries to incentivize innovation among the vendors and promote continuous improvement in the full assortment of their products.

Target takes its sustainability measures seriously and focuses on four commitments: sustainable living, sustainable products, smart development, and efficient operations. Target empowers both customers and employees to live more sustainably. Examples include the following:

- A reusable bag discount
- Recycling kiosks placed near the entrance of all stores, where guests can recycle bottles, cans, and small electronic devices
- Elimination of the potentially lethal sandblasting process for finishing apparel
- Assuring the ENERGY STAR label for Target stores
- LEED Gold rating for Target stores
- Use of low-wattage light fixtures and motions sensors in refrigerators
- Steps to protect and preserve water resources and the surrounding habitats
- Comprehensive storm water management to reduce and improve the quality of storm water run-off
- Efficient operations by using resources responsibly, eliminating waste, and minimizing carbon footprint
- New packaging designs using fewer components to minimize the volume of trash produced
- Disclosure of the company's carbon emissions each year through the Carbon Disclosure Project link
- Using energy-efficient store designs, new lighting technologies, and experiments with renewable energy
- Designing and building stores with plumbing fixtures that save up to 30 % more water.

Target's commitment to communities goes well beyond sustainability. The company has committed \$1 billion to education by the end of 2015, in addition to the roughly \$4 million a week to the communities to make them safer, happier, and healthier places to live.

3.6 Walmart

Walmart is reputed for its sustainable activities on the social, environmental, and economic fronts (<http://corporate.walmart.com/global-responsibility/environmental-sustainability>). Walmart has been continually focusing on supply chain capacity building, worker safety initiatives, women's empowerment initiatives, community investment programs (e.g. scholarships for migrant workers), anti-human trafficking, stakeholder engagement programs, a global social compliance program, retail market compliance, color-coded factory rating system (95 % green/yellow factories), worker helplines, orange school program (training to selected factories and suppliers, providing hands-on training to resolve high-risk social and environmental violations), violation correction training (in which the factories with higher-risk observations are requested to attend the training for a better understanding of the Walmart ethical practices), supplier development program, supplier roundtable, the Walmart zero-tolerance policy for unauthorized subcontracting, hunger-relief grants (at the local, state, and national levels), disaster relief, and emergency operation centers.

Sustainability 360 is a comprehensive view of the business that integrates the ideas, actions, and enthusiasm of all its suppliers, associates, and customers around the world. Walmart is taking numerous steps to reduce emissions, with technological advances in energy-efficient equipment, focused reduction efforts in refrigerant losses, reduced carbon intensity of utility power, and increased deployment and consumption of renewable energies. Since 2009, the Walmart has been committed to developing a Global Sustainability Index as the new retail standard for the twenty first century. This index is integrated along with the work of The Sustainability Consortium into the business and is tied to buyer incentives and performance evaluations. Sustainable agriculture is a new initiative of Walmart that supports farmers and the farming communities.

4 Sustainable Measures Taken by Manufacturers

4.1 DyStar

DyStar's sustainability strategy is twofold: reduce the company's own environmental impact and help customers to reduce their environmental impact (<http://www.dystar.com/sustainability.cfm>). The company has zeroed in energy,

greenhouse gas emissions, water, and waste as the main environmental impacts to address. DyStar has set an optimistic target of reducing environmental impacts in these four areas by 20 % by the year 2020, with a 2 % annual reduction of the impacts.

A compliance management system coordinates and supports employees to help in accordance with the company's core values and Code of Conduct and Social Accountability. DyStar has implemented a companywide sustainability initiative, the Caring for the Future program. Sustainability councils have been formed as part of these initiatives to identify opportunities for reductions and to enhance sustainability performance with local, regional, and international expertise. DyStar has released an annual sustainability report since 2010 in compliance with the Global Reporting Initiative Guidelines. DyStar also has published a carbon footprint report annually since 2011, in accordance with the Greenhouse Gas Protocol.

DyStar manufactures dyes and chemicals that are engineered to meet legislation such as REACH, voluntary regulations such as Oeko-Tex, or any of the Restricted Substances List of well-known brands and retailers. DyStar is committed to manufacturing products with an eco-clean profile, which shortens production time, decreases the use of water and energy, and provides improved color consistency with a right-the-first-time approach.

DyStar Textile Services supports the brands, retailers, and their industry partners with fast and innovative global solutions to create sustainable fashion. Color Solutions International (CSI) brings the most environmentally friendly and cost-effective solutions into the market and facilitates sustainable fashion. The CSI program includes ColorWall products, approximately 4,000 readymade colors that are updated regularly with the inspirations to provide trend-aligned colors. They are used from design to development and production, thus eliminating costlier and wasteful processes of laboratory trials and color approvals.

Some of the sustainable products in the DyStar line are Levafix, a reactive dye with high fixation levels for cotton textiles; Remazol Ultra RGB reactive dyes (low-impact dyes) for deep shades on cotton; Dianix green range, dispersed dyed polyester textiles that meet the stringent requirements of brands and retailers; Sera Zyme C-PE, which substitutes the conventional scouring with a bio-scouring process, thus providing less process time (7.3 %), less water usage (15.9 %), less electricity consumption (11.3 %), and less steam consumption (19.6 %); Sera Gal G-RFX and Remazol Ultra RGB, which allow the scouring and dyeing processes to be combined, with 38 % less processing time, 24 % less water, 28 % less electricity, and 38 % less steam.

DyStar's Sustainable Textile Solutions (STS) is a team of experts that guides the textile manufacturing units to optimize production, water and energy, and use of chemicals, while reducing the cost and delivering a similar or better quality of goods, as required through consultancy, auditing, and capacity building. The STS team also supports the brands and retailers in their efforts to develop, implement, and communicate Restricted Substances Lists to assure the safety of the consumer, have a minimum impact on the environment, and popularize their efforts. STS provides integrated advice on ZDHC compliance and third-party testing results to

further improve compliance systems, assess the supplier and its full chemical inventory, and provide advice accordingly. STS has been instrumental in the Discharge Data Report, which was recently launched by C&A, H&M, and G-Star Raw. It is a joint roadmap from a group of major apparel and footwear brands and retailers to help the industry towards ZDHC by the year 2020 based on the 11 priority chemical groups detected in wastewater discharge from textile manufacturing processes.

DyStar's Ecology Solutions Team supports textile mills, dyes houses, and laundries with ways to meet the demand for responsible and sustainable production, on issues relating to ecology and chemical legislation, and with recommendations for suitable products to meet the ecological specifications of the Ecoconfidence program.

4.2 Lenzing

The Lenzing Group has published a sustainability report entitled "Focus Sustainability—Taking Responsibility for Our Business" according to the Global Reporting Initiative (<http://www.lenzing.com/en/fibers/botanic/sustainability.html>). Lenzing is committed to sustainability through manufacturing environmentally friendly fibers, such as Tencel, Eurocel, and Modal as alternatives to viscose rayon, whose production involves highly corrosive and toxic chemicals.

For example, the mindset of consumers is to dispose of wipes in the toilet, regardless of whether they are "flushable" or not, which often leads to problems with blockages in public sewage systems. By using Tencel as a short-cut type, biodegradable, strong, and smooth surface, wipes are ideal for skin, prevent skin irritation, and have "flushable" characteristics. Environmental certificates, such as the EU Ecolabel, Nordic Swan, and OK biodegradable from Viçotte or Ecocert, demonstrate the environmentally responsible production of Tencel.

Eurocel is a new cellulosic fiber combined with a European footprint, made in Austria (Sandler AG) in an environmentally responsible process. Production in the Europe translates into shorter delivery distances, which means reduced carbon dioxide emissions during transportation and thus a lower carbon footprint—an approach toward near-sourcing. Additional advantages include improved product properties, such as improved volume, higher tear resistance, and reduced elongation. Eurocel is certified through Oeko-Tex Standard 100, European Ecolabel, Compostable, Vinçotte OK Compost Home, Vinçotte OK Compost, Vinçotte OK Biodegradable Soil, Medically Tested/ITV Denkendorf, US BPI compostable certificate, and Food Contact Compliance Certification to demonstrate its sustainable nature.

Lenzing Modal is produced from indigenous beech wood (100 % natural). Both the pulp and fiber production employ the principles of sustainability and processes are optimized for byproduct recovery. Eucalyptus, primarily used to produce the Tencel fiber, is an interesting raw material because it grows quickly and does not

require any artificial irrigation or genetic manipulation. A comparison of Tencel with conventional cotton revealed surprising results: The use of water and pesticides plays no role in the cultivation of eucalyptus trees and eucalyptus can be planted even in the marginal lands that are not used for the cultivation of the food products. An important asset is that the fiber yield with Tencel is 10 times higher than that of conventional cotton.

4.3 MAS Holdings

In 2006, MAS Holdings launched “MAS Eco Go Beyond,” a community outreach initiative, together with the support of the Ministry of Education of Sri Lanka to create awareness of sustainability among the future generations of the country. MAS Holdings incorporated the concepts from the United Nations Environment Programme Youth Exchange Programme, the Consumer Citizenship Network, and the Looking for Likely Alternative toolkit to develop a sustainability curriculum in Sri Lankan schools. In 2008, the United Nations Educational, Scientific and Cultural Organization used the outlines of the Eco Go Beyond program to develop the Education for Sustainable Development (ESD) Toolkit for the Asia-Pacific region, and recognized MAS Holdings as the best partnership with the private sector for ESD in the year 2009.

MAS Holdings has been working aggressively to identify and minimize the environmental impact of their operations and products (http://www.masholdings.com/responsibility/environmental_sustainability.php). All MAS Holdings facilities are retrofitted for lower carbon, energy, and water footprints. A substantial change has been brought in their products and operations through the strong commitment to certifying all the facilities in Sri Lanka under ISO 14001 by the end of 2012. This led to key achievements, including a reduction of the energy intensity of production facilities by 8 % through intense focus on energy efficiency and establishing energy security using biomass boilers in larger steam-consuming factories. The company’s commitment to ‘build green’ has resulted in all new buildings being designed as green facilities—and thus, MAS Holdings being the first LEED Platinum apparel manufacturer in the world. MAS Holdings has also focused on sustainable products, launching eco-elastics, and carbon-neutral products. The company works with customers to promote organic cotton, BCI cotton, recycled nylon, and recycled polyester to bring more environmentally sustainable products to the market.

MAS Holdings is committed to gender equality and became a signatory to the UN Global Compact Women’s Empowerment Principles, ensuring that workplace policies and practices are free from gender-based discrimination, as well as ensuring the health, safety, and well-being of all female and male workers. MAS Holdings has established a zero-tolerance policy towards all forms of violence at work, including verbal and physical abuse, and sexual harassment. The company promotes education, training, and professional development for women; conducts training programs that include basic computer skills, English-language skills,

leadership skills, team building, financial management, and sign language training; and creates awareness among all employees on HIV/AIDS. Another important program, Getting More Out of Life, includes a series of programs that aim to improve workers' knowledge of sexual and reproductive health, to achieve the desired behavioral change with regard to reproductive and general health, and to face life events more competently and effectively.

4.4 *Novozymes*

Novozymes is one of the leading manufacturers of industrial enzymes as an alternative to harsh and toxic chemicals (<http://www.novozymes.com/en/sustainability/Pages/default.aspx>). The company's Sustainability Board determines sustainability targets, which are then broken down into four different levels:

- (i) Across the supply chain to ensure the suppliers meet the company's standards
- (ii) Within the company's own operations (energy, water, etc.)
- (iii) The environmental footprint of the customers through the use of eco-friendly products
- (iv) Society-level impacts.

An interesting practice of Novozymes' sustainability targets is the linking of annual employee bonuses to meeting the sustainability targets. If sustainability goals are not met, employees are paid less. Novozymes has framed many concepts to achieve sustainability, including *rethink tomorrow*. *Driving the world towards sustainability* is the specific mission of the company, which includes the aims to become *a voice on the world stage*, *to drive new business from sustainability*, and *to build sustainability capabilities*.

Novozymes is committed to reducing CO₂ emissions across the world. The company started the production of biogas from wastewater treatment in China, generated energy from windmills corresponding to electricity consumption in Denmark, and implemented many water-efficient practices for the reduction of water usage. Novozymes supports international human rights principles and labor standards and contributes to the local communities by enhancing their competency levels in science, environmental responsibility, and innovations.

Novozymes uses LCA to assess the environmental impact of the solutions covering the entire lifecycle from cradle to grave. Novozymes has topped the Dow Jones Sustainability Index in the biotechnology sector for 11 years. Novozymes provides cost-competitive biorefining to produce biofuels and biochemicals, providing a viable, renewable feedstock alternative. The company's bioagricultural products improve crop yields while reducing the environmental impact. Novozymes Taegro is a good example of a bacterial-based biofungicide/bactericide used for suppressing selected soil-borne and foliar diseases on fruit and leafy vegetables.

Table 4 SWOT analysis of various sustainability measures practiced by brands, retailers, and manufacturers

Sustainable measure/initiative	Strength	Weakness	Opportunity	Threat	
Supplier rating	Evaluates supplier's sustainable practices	Frequency of surprise visits by the auditing team to be further increased	Training and capacity-building of the suppliers Targets can be increased every year	Huge competition with many suppliers/brands on the market	
	Supplier's ability to deliver fair, healthy, and environmentally-sound workplace conditions				
	Transparency by the supplier and the auditing agency	All units including outsourcing to be fully audited	Incentives for performing suppliers		
Sustainable materials	Use of organic cotton, better cotton, recycled polyester, and recycled nylon	High cost of organic and better cotton	Increased customer awareness	Voluntary regulations	
	Lifecycle-based assessment				Incentives for the use of sustainable materials
Design tools	List of sustainable materials and processes available for the designer	Lack of designer knowledge on sustainability and sustainable materials and processes	Training programs for designers on sustainability practices	Growing understanding of sustainable materials	
	Computer-aided design tools that include three-dimensional tools				Virtual technology for sample development, modifications, and approvals
Virtual technology	Minimization of physical samples	Customers' mindset	Fast fashion.	Growing security concerns regarding designs/ideas	
	Reduce energy, materials, and waste generation				Surge of e-commerce encourages the use of virtual technology
	Web-based catalog for specific collections				Reduction of color pallets
	Ease of storage, retrieval, and modification		Can be used during sampling, production, approvals, and sales		

(continued)

Table 4 (continued)

Sustainable measure/initiative	Strength	Weakness	Opportunity	Threat
Code of conduct or ethical trading policy	Norms a supplier has to meet	Frequency of surprise visits by auditing team to be further increased All units, including outsourcing, to be fully audited	Training programs on code of conduct Incentives for performing suppliers	Huge competition with many suppliers/brands in the market Cost-cutting measures
	Social compliance, such as fair trade practices			
Sustainable collection	Highlights the sustainability commitment	Higher price tag Less customer awareness	Global Recycle Standard certification	Demand for low-cost, high-quality, and durable clothing
	Highlights the sustainability commitment	Cost of promotion Translation of awareness to purchase depends on the price factor also		
Digital and print campaigns focused on sustainability	Effective impact on the customers	Use of proper methodology/calculations is essential	Global awareness on sustainability Widespread use of internet Use of celebrities	Campaigns must meet the demands of the target audience
	Transparency and commitment to sustainability			
Carbon footprint disclosure	Assists in baseline status and targets to be achieved	Energy efficiency is initially expensive	Voluntary practices. Trading based on carbon credit Incentives for carbon-neutral products/companies	Cost-cutting measures
	Energy efficiency across the processes			
Energy-efficient practices	Use of renewable resources		Growing demand for Energy Star certifications	Cost-cutting measures

5 SWOT Analysis of Various Sustainability Measures Practiced by Brands, Retailers, and Manufacturers

The sustainability measures practiced by brands, retailers, and manufactures can be best understood by analyzing the strengths, weaknesses, opportunities, and threats (SWOT) of an organization, company, industry, technique, practice, or measure. Table 4 shows the SWOT analysis of some sustainability measures discussed in this chapter.

SWOT analysis indicates that the use of sustainable materials and sustainable collections are bound to increase in the future. Digital and print campaigns focused on sustainability inform the customer about the initiatives and lay down the foundation for customers to make sustainable choices. A special mention has to be given for the use of virtual technology because of the prospects and benefits it will have on the sustainability front. Sustainable design tools can be a boon to the LCA initiative because product-making begins at the design stage. A supplier's rating, along with its code of conduct or ethical trading policy, must be made more transparent and has to be incentivized sufficiently. Energy-efficient practices assist in lessening the carbon footprint, which can be seen from the carbon footprint disclosure. In nutshell, all sustainability measures are going to have increased opportunities in the future and can only become more and more transparent.

6 Summary

Sustainable measures practiced by brands, retailers and manufacturers have been on the rise and can only improve in the future. All of these stakeholders often take collective measures to ensure sustainability in the entire value chain, making the system a robust one. The interesting features of such collective measures impose more restrictions and pressure on manufacturers operating in developing countries, which often suffer due to the problems associated with economic and political instabilities, in turn hindering the implementation of sustainable measures with the necessary supports.