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International Market for Sustainable Apparel

May 2008



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INTERNATIONAL MARKET FOR SUSTAINABLE APPAREL

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Elaine Lipson is a writer, editor, researcher and communications consultant to the organic products and sustainable lifestyles industries. She specializes in textile art, craft and design and is exploring projects and partnerships integrating her concept of Slow Cloth. Elaine is also an expert in organic food, farming and industry issues and is the author of The Organic Foods Sourcebook. She contributes regularly to EcoSalon.com and has written for Yoga Journal, Ms., Surface Design Journal and many other trade, consumer and Internet publications. From 2005-2007, Elaine was the director of organic alliances and strategic initiatives at New Hope Natural Media, and previously was a senior editor for the original LOHAS Journal. Visit her blogs at lainie.typepad.com.

International Market for Sustainable Apparel

Table of Contents

Chapter 1: Executive Summary	1
Scope and Methodology.....	1
Packaged Estimates 2007 Retail Sales of Sustainable Apparel at \$3 Billion	1
Table 1.1 2007 International Sustainable Apparel Market, by Sales Estimates per Fabric Type, in Millions of Dollars	2
Table 1.2 2007 International Sustainable Apparel Market, by Percentage of Fabric Type	2
Defining Sustainable Apparel	2
Fibers and Materials for Sustainable Apparel	3
Organic Cotton	3
Organic Trade Association Voluntary Fiber Processing Standards Give Way to GOTS	4
Organic Cotton Grows Worldwide to Meet Greater Demand	4
Historic Sales Estimates for Organic Cotton Market	4
Organic Wool.....	5
Other Organic: Linen, Leather.....	5
Hemp.....	5
Commercial Hemp Market for Fiber Is Growing, But Not Without Obstacles	6
Bamboo	6
Silk.....	7
Eco-Friendly Lyocell	7
Recycled Fibers.....	8
Dyes, Processing and Finishing.....	8
Social Justice and Ethical Labor Practices	9
Packaging and Distribution.....	9
Design and Life Cycle.....	9
Categories of Sustainable Apparel.....	10
Standards and Regulatory Framework	10
Organic Standards	10
National Organic Program Standards	11
Labor Standards.....	11
Oeko-Tex Standards	11
The Marketers.....	12
Characteristics of Marketers.....	13
Shift Toward Sustainability for Existing Apparel Designers and Brands	13
Pioneering Organic or Sustainable Marketers.....	13
Twenty-First Century Sustainable Apparel Companies.....	14
Marketing, New Products and Trends	14
Sustainable Apparel Market Now Attracting Designers.....	15
Sustainable Apparel Event at New York Fashion Week	15
Media Coverage Accelerating	15
Trade Magazines Focus on Industry and Supply Chain.....	16
E-Media Presence Via Sustainable Fashion Blogs	16

Chapter 1: Executive Summary [Cont.]

New Products, Trends, and Emerging Designers and Entrepreneurs	17
Developing New Materials for Sustainable Apparel	17
New Trends in Fiber Processing, Dyes, Finishes, and Fabric Treatments	17
Environmental Awareness in Production Facilities.....	17
Who's Making the Clothes, and How Are Workers Treated?	18
New and Emerging Designers, Entrepreneurs, and Collections	18
Sustainable Apparel Supply and Distribution Chain.....	18
Organic Cotton Production Concentrated in India, Turkey.....	19
Hemp Production in China, Europe.....	19
Organic Wool Production Centered in Australia, New Zealand.....	19
Farm-Retailer Partnerships	19
Global Production Capacity Projected to Grow With Constraints.....	20
Table 1.3 Global Sustainable Fiber and Garment Production Capacity (2007-2012).....	21
Mass Market Consumer Goods Retailers Become Major Players in the Market	21
Department Stores Implement Sustainable Apparel or Organic Cotton Programs	22
Outdoor Retailers Lead in Sustainable Apparel	22
Fashion, Baby Clothes in Specialty Boutiques and Shops.....	23
Marketer Websites and Online Eco-Boutiques Making Inroads	23
Market Share by Type of Retail Outlet	24
Table 1.4 Market Share by Retail Outlet of Sustainable Apparel	24
The Sustainable Apparel Consumer.....	24
The Sustainable Apparel Consumer is a Values-Based Shopper.....	24
IRI Data Show Viable Market for Sustainable Products and Packaging	25
Table 1.6 Sustainability Factors Influencing Store Selection: Percent of Consumers	26
Ripening Marketing Opportunities	26
Future Trends and Opportunities	27
Opportunities for Growth and Market Penetration.....	27
Evolving Design Concepts	27
Evolving Technologies and Practices.....	28
Evolving Consumer Expectations.....	29
Consumer Education Essential to Success.....	29
Conclusion: The Future of Sustainable Apparel	30
Chapter 2 Market Definition, Size and Growth.....	31
No Consistent Meaning for "Sustainable".....	33
Fibers and Materials for Sustainable Apparel.....	33
Organic Cotton	34
Organic Certification.....	35
Organic Trade Association Voluntary Fiber Processing Standards Give Way to GOTS	36
Organic Exchange Creates Blended Standard	36
Organic Cotton Grows Worldwide to Meet Greater Demand	37
Table 2.1 Leading Producers of Organic Cotton by Country.....	37
Organic Wool	37
Other Organic: Linen, Leather.....	38
Hemp.....	39

Chapter 2 Market Definition, Size and Growth [Cont.]

Commercial Hemp Market for Fiber Is Growing, But Not Without Obstacles 39
 Table 2-2 Qualities of Primary Hemp Fiber 40
 Bamboo 41
 From Bamboo Plant to Fabric: Imperfect Technologies 42
 Silk..... 43
 Man-Made Fibers and Sustainable Apparel 44
 Fabrics Made From Soy and Corn: The Biotechnology Conundrum..... 45
 Eco-Friendly Lyocell 45
 Recycled Fibers..... 46
 Patagonia’s Common Threads 46
 Recap: Fabrics for Sustainable Apparel..... 47
Dyes, Processing, and Finishing 47
 Natural and Fiber-Reactive Dyes 48
 Using Undyed Fabrics 48
 Finishes and Treatments 49
 Water and Energy Use 49
Social Justice and Ethical Labor Practices 50
 Fair Trade Cotton 51
 Anti-Sweatshop Initiatives 52
Packaging and Distribution..... 55
Design and Life Cycle 56
 “Slow Fashion” and New Design Approaches 57
 The Nau Experiment 58
 Categories of Sustainable Apparel 59
 Clothing for Infants and Children 59
 Women’s and Men’s Yoga Clothes and Casual Wear 60
 Socks, T-shirts, Underwear, Jeans 60
 Outdoor and Athletic Apparel 61
 Women’s High-End or Boutique Fashion Apparel 62
 Menswear 63
Standards and Regulatory Framework 63
 Organic Standards 64
 Organic Resources..... 64
 Global Organic Textile Standard (GOTS)..... 64
 Organic Certification 66
 Sustainable Textile Standards..... 66
 Labor Standards..... 68
 ISO Standards for Production Facilities 68
 Oeko-Tex Standards 68
 Cradle to Cradle Certification 69
Organic Exchange Blended Standard 69
 Anticipate Additional Standards Models and Regulations 70
Size and Characteristics of the Sustainable Apparel Market 70
 Sales Estimate Methodology 70
 Sustainable Apparel Within the Global Apparel Market 71
 Comparisons to Growth and Mainstreaming of Organic Foods Movement..... 71
 Size of Organic Cotton Sector 72
 Organic Cotton Sales Increase at Runaway Pace 73
 Hemp Market Growing at 10 Percent Annually 73

Chapter 2 Market Definition, Size and Growth [Cont.]

Use of Other Sustainable Fibers Also Growing.....	73
2007 International Sustainable Apparel Market Estimated at US\$3.04 Billion	74
Table 2.3 2007 International Sustainable Apparel Market, by Percentage of Fabric Type	74
Table 2.4 2007 International Sustainable Apparel Market, by Sales Estimates per Fabric Type, in Millions of Dollars	74
Packaged Facts Projects Strong Growth Through 2012.....	75
Table 2.5 Projections of Retail Sales for International Sustainable Apparel Market, in Billions of Dollars 2007 - 2012.....	75
Sustainable Apparel Small Fraction of Global Apparel Market	75
Mass Market Retailers Have Greatest Share of Market at 30%.....	76
Table 2.6 Market Share of Sustainable Apparel by Retail Market.....	76
Chapter 3 Sustainable Apparel Marketers	77
Chapter Highlights	77
A Highly Fragmented Young Industry	78
Characteristics of Marketers	78
Pioneering Organic or Sustainable Marketers.....	79
Twenty-First Century Sustainable Apparel Companies.....	79
Shift Toward Sustainability for Existing Apparel Designers and Brands	80
Marketer Profiles: Women's Fashion Clothing	80
Linda Loudermilk.....	80
Bahar Shahpar	81
John Patrick Organic.....	81
Stella McCartney	81
Katherine Hamnett	82
Under The Canopy.....	82
Stewart + Brown.....	83
Seasalt	83
Earth Speaks.....	83
Eileen Fisher	84
Marketer Profiles: Women's and Men's Yoga and Workout Wear, Denim and Casual Wear	84
Blue Canoe	85
Gaiam.....	85
prAna.....	85
Loomstate	86
Levi Strauss	86
Rawganique	86
Edun Apparel and Edun LIVE	87
Hanes.....	87
Coca-Cola	88
Wal-Mart/Sam's Club	88
Hess Natur	90
Marketer Profiles: Outdoor Wear	90
Patagonia	90
Nike	91
Nau.....	92

Chapter 3 Sustainable Apparel Marketers [Cont.]	
Marketer Profiles: Clothing for Infants and Children	92
Hanna Andersson.....	93
Kate Quinn Organics.....	93
Go Natural Baby.....	93
Chapter 4: Marketing, New Products and Trends	95
Chapter Highlights	95
Fluid and Not Well Developed	96
Marketing Sustainable Apparel	96
FutureFashion Show Puts Focus on Green.....	96
Other Fashion Events Target Sustainability.....	97
Celebrity Participation and Presence.....	98
Reaching Fashion Magazine Readers.....	98
Trade Magazines Focus on Industry and Supply Chain.....	99
Niche/Specialty Magazines Focus on the Art of Sustainability.....	100
E-Media Presence Via Sustainable Fashion Blogs.....	100
Advertising Sustainable Apparel.....	102
Car/Fashion Connections.....	102
New Products, Trends, and Emerging Designers and	
Entrepreneurs	102
Developing New Materials for Sustainable Apparel.....	103
New Fiber: Lenpur.....	103
Regulatory Trends.....	104
New Trends in Fiber Processing, Dyes, Finishes, and Fabric Treatments.....	105
Environmental Awareness in Production Facilities.....	105
Who's Making the Clothes and How Are They Treated?.....	105
New and Emerging Designers, Entrepreneurs, and Collections	106
New Mass Market Collections.....	106
New and Emerging Designers and Entrepreneurs.....	107
Chapter 5: Sustainable Apparel Supply and Distribution	
Chain	109
Chapter Highlights	109
A Complex Network Spanning the Globe	110
Textile Industry Relationships and Structure	110
Industry Organization.....	110
Organic Cotton Production Concentrated in India, Turkey.....	112
Hemp Production in China, Europe.....	112
Organic Wool Production Centered in Australia, New Zealand.....	113
Farm-Retailer Partnerships.....	113
Sustainable Fabric Producers and Wholesalers.....	113
Model of Fiber Pools Developing for Organic Cotton.....	114
Global Production Capacity Projected to Grow With Constraints.....	115
Table 5.1 Global Sustainable Fiber and Garment Production Capacity	
(2007-2012).....	116
The Bluesign Standard and Software for a Sustainable Textile Supply Chain	116

Chapter 5: Sustainable Apparel Supply and Distribution Chain [Cont.]

Distribution and Sales of Sustainable Apparel.....	117
Mass Market Consumer Goods Retailers Become Major Players in the Market	117
Department Stores Implement Sustainable Apparel or Organic Cotton Programs.....	117
Outdoor Retailers Lead in Sustainable Apparel	118
Can Groceries and Fashion Sell Side By Side?.....	119
Fashion, Baby Clothes in Specialty Boutiques and Shops.....	119
Spas, Yoga Studios in Sync With Sustainable Apparel.....	120
Marketer Websites and Online Eco-Boutiques Making Inroads	120
Eco-Retailing Supported By Green Blogs	122
Market Share by Type of Retail Outlet	123
Table 5.3 Market Share by Retail Outlet of Sustainable Apparel	123

Chapter 6: The Sustainable Apparel Consumer125

Chapter Highlights	125
The Sustainable Apparel Consumer is a Values-Based Shopper	126
The Evolution of the Values-Based Shopper	126
Stated Values and Actual Consumer Behavior	127
IRI Data Show Viable Market for Sustainable Products and Packaging	127
Table 6.1 Sustainability Factors Influencing Brand Selection: Percent of Consumers	128
Table 6.2 Sustainability Factors Influencing Store Selection: Percent of Consumers	129
IRI Recommendations for CPG Manufacturers.....	129
IRI Recommendations for CPG Retailers.....	130
Consumer Education Has Room for Improvement.....	131
Table 6.3 Attitudes Toward Sustainability: Percent of Consumers	132
Water Issues Top of Mind Among Environmental Concerns.....	132
BBMG Conscious Consumer Report Warns Against Greenwashing	133
Magazines, Newspapers, and Certifications Inform Shoppers.....	133
Table 6.4 Conscious Consumer Sources for Information About Marketers	134
Drinking Water, Air Pollution Top Concerns.....	134
Table 6.5 Conscious Consumer Top Environmental Issues	134
High Expectations for Sustainable Companies	135
Table 6.6 Desired Company Practices by Conscious Consumers	135
Marketer Lessons: Trust, Personal Benefits, Works in Progress	135
Generation Y: Will They Buy?	136
Iconoclature Identifies Gen Y Groups as Driving Force in Market	136
Natural Marketing Institute Segments Consumers.....	137
Conclusion: Ripening Marketing Opportunities	138

Chapter 7: Future Trends and Opportunities	139
Chapter Highlights.....	139
Unlimited Growth Potential.....	140
Trends in the Global Market.....	140
Opportunities for Growth and Market Penetration.....	142
Gateway Basics.....	142
Statement Clothing.....	143
Office-Appropriate Clothing	143
Specialty Garments	143
Designer Brands.....	144
Evolving Technologies and Practices.....	144
Sustainable Practices May Shift Fashion Cycles and Design Paradigms to Slow Fashion.....	144
Evolving Consumer Expectations.....	145
Changing Strategies for Messaging	146
Challenges to Sustainable Apparel Industry Growth	146
Economic Outlook May Mean Decreased Spending	146
Supply of Certified Organic Fibers Must Continue to Grow.....	146
Regulatory Scrutiny May Increase	147
Consumer Education Essential to Success.....	147
Conclusion: The Future of Sustainable Apparel	148
Special Focus: A Conversation with Apparel Manufacturing Expert Kathleen Fasanella	149
Special Focus: A Conversation with Textile Designer and Organic Fabric Producer Harmony Susalla of Harmony Art	152
Special Focus: A Conversation with Textiles Professor and Sustainable Fashion Expert Janet Hethorn, Author of <i>Sustainable Fashion: Why Now</i>.....	155
Appendix: Addresses of Selected Marketers.....	I

Chapter 1: Executive Summary

This report covers the international retail market for “green” and sustainable apparel. Sustainable apparel is a new, emerging market that includes clothing made from fabrics considered to be more environmentally safe and/or renewable than conventional textiles. Organic cotton is the most established of this family of fibers and fabrics, which also includes organic wool, organic linen, hemp, recycled polyester fleece, some silk, and fabrics made from bamboo, corn, and soy. New fabrics are in development by companies eager to enter this market.

The concept of sustainability in clothing is not based on material alone. Other dimensions include environmentally safer processing, dyeing and finishing treatments, ethical labor and fair trade practices, environmentally responsible packaging and distribution, and a design philosophy that reduces excessive consumption based on rapidly changing trends.

Scope and Methodology

The information contained in this study was compiled from both primary and secondary sources. Primary research included consultation with industry experts and on-site inspections of major retail outlets. Secondary research entailed analysis and synthesis of information collected from the industry-dedicated trade press, apparel and organic-product trade associations, retail journals, marketer publications and press releases, and other relevant sources. Sales figures are based on a comprehensive evaluation of various current market estimates and growth trends as put forth in the trade literature.

Packaged Estimates 2007 Retail Sales of Sustainable Apparel at \$3 Billion

Packaged Facts research shows that 2007 was the first year that the sustainable apparel market became cohesive enough for a global retail sales estimate (the exception is the organic cotton market, for which historical data do exist). Organic cotton is the most significant sector within sustainable apparel, accounting for close to 70% of the market.

Table 1.1
2007 International Sustainable Apparel Market, by Sales Estimates
per Fabric Type, in Millions of Dollars

Type of Fabric	Sales in Millions
Organic fibers (primarily cotton)	\$2,100
Hemp	250
Bamboo	250
Lyocell	210
Recycled Polyester Fleece	200
Soy-based	27
Other	10
Total	\$3,047

Source: Packaged Facts

Table 1.2
2007 International Sustainable Apparel Market,
by Percentage of Fabric Type

Type of Fabric	Percentage of Market
Organic fibers (primarily cotton)	68.8%
Hemp	8.2%
Bamboo	8.2%
Lyocell	6.9%
Recycled Polyester Fleece	6.6%
Soy-based	.9%
Other	.4%
Total	100%

Source: Packaged Facts

Defining Sustainable Apparel

The greening of the apparel industry is a significant and evolving trend that is likely to affect every facet of this \$450 billion global industry. Companies are under both internal and external pressure to:

- reduce the environmental impact of growing, processing, treating, and dyeing fibers;
- reduce energy use and environmental impact of manufacturing and shipping clothing;
- eliminate exploitation and inequities in labor practices;
- innovate and adopt design strategies with sustainability in mind.

These companies are therefore eager to show consumers a new, sustainable approach to fashion without sacrificing style or profit. To make substantive changes in the industry is a massive undertaking, however, that will require commitment, innovation, and investment at every link in the chain from design to retail.

Fibers and Materials for Sustainable Apparel

In the past few years, designers with an interest in sustainability have graduated from organic cotton to a family of fabrics that includes: organic cotton, organic wool, organic linen, bamboo, some types of silk, synthetics made from soy, corn, and recycled plastics, fabrics made from recycled waste fabrics or old clothing, sustainably tanned leathers from organic animals, and Tencel (a brand name for lyocell, a man-made fiber). Some fabrics have a stronger claim to limited environmental impact than others.

Organic Cotton

Organic cotton is, by far, the most established fiber used for clothing and associated with sustainability. There is growing awareness of conventional cotton as an intensively farmed agricultural product and organic cotton as an important alternative. In fact, cotton ranks as one of the most pesticide-intensive crops grown commercially. Increasing organic cotton acreage can make a major contribution to reducing the use of pesticides, thus reducing greenhouse gases and protecting water, air, soil, and wildlife. In addition, most conventional cotton is also grown with genetically modified seeds, a technology prohibited in organic production.

Confusion does exist within the garment industry, however, regarding use of the organic label. As an agricultural product, cotton sold as organic in the United States must meet all of the legal standards mandated by the Organic Foods Production Act of 1990. These standards were finalized in 2001 and implemented in 2002 (see www.ams.usda.gov/nop for details and information). The National Organic Program (NOP) of the United States Department of Agriculture (USDA) is the oversight body. The broad strokes of organic standards in the United States and in most parts of the world include:

- No use of toxic and synthetic pesticides, fertilizers, herbicides
- No genetic modification
- No irradiation

- No use of sewage sludge as fertilizer
- No antibiotics or growth hormones given to livestock
- Access to pasture for livestock
- Audited farm plans and independent third-party certification

Organic Trade Association Voluntary Fiber Processing Standards Give Way to GOTS

USDA organic standards apply only to the cotton fiber, not to processing or finished garments. In this absence of organic fiber processing standards, the Organic Trade Association (OTA), the organic industry's primary trade association, developed a set of voluntary guidelines called the American Organic Fiber Processing Standards. These guidelines are still available through OTA, but upon finalization of the more recent Global Organic Textile Standards (GOTS), OTA now defers to those. The GOTS standard is gaining visibility and acceptance, and is likely to become more recognizable around the world in years to come.

Organic Cotton Grows Worldwide to Meet Greater Demand

Organic cotton production began alongside organic food production. In the United States, organic cotton has been, and still is, primarily grown in Texas. In 1993, the Texas Organic Cotton Marketing Cooperative was formed and still produces 80% of U.S.-grown organic cotton. Meanwhile, organic cotton production also began and has grown in other traditional cotton-growing areas of the world. Turkey is the largest producer of organic cotton, followed by India and China.

Historic Sales Estimates for Organic Cotton Market

According to advocacy and education group Organic Exchange, retail sales of organic cotton products (including apparel, home textiles and personal care products) were estimated at about \$250 million in 2001. By 2006, retail sales reached \$1.1 billion globally. Organic Exchange estimates that sales reached close to \$2.0 billion in 2007, an 83% increase in sales from 2006 to 2007. Packaged Facts estimates a slightly higher estimate for 2007 for retail sales of organic cotton apparel alone, at \$2.1 billion.

Organic Wool

Like organic cotton, organic wool must be sheared from sheep raised according to USDA organic standards. Organic livestock must eat only organic feed grown on certified organic farmland or grazeland, must have access to the outdoors, cannot receive antibiotic or growth hormones and still be sold as organic, and must be treated humanely. As with plant crops, certification is required and processors and handlers must be certified for the end food product, but not the end fiber product (except voluntarily).

According to “Organic Wool Warms Up the Organic Fiber Industry,” in the January/February 2008 issue of *Organic Processing* magazine, Vermont Organic Fiber Co., based in Middlebury, VT, “was the first, and is currently the only, company to develop commercial supplies of organic wool yarns and fabrics and bring them to market.” The company doubled its growth in 2006, according to the article, and now works with more than 130 companies manufacturing products using certified organic wool from both U.S. and international farms. While organic wool production is not at the level of demand or supply of organic cotton, interest and supply are growing.

Other Organic: Linen, Leather

Linen, especially blended with silk or cotton, adds potential for appealing fabrics in the sustainable textile sector. Flax/linen has a very long tradition of being produced without chemicals, but like other fabrics, chemical processing has been introduced for efficiency, speed and volume in textile manufacturing. Organic linen is a very small niche but could easily grow significantly.

Organic leather – tanned without toxic chemicals and produced from organically raised animals – is a smaller niche still. The labor-intensive process and reduced dye and texture options suggest that organic leather will have hurdles to overcome for wide acceptance. It’s likely to be an artisan product in very limited quantity, but available to designers as a leading-edge design and sustainability statement.

Hemp

The sustainable fashion movement is helping to solve the image problem of industrial hemp. Often associated with burlap textures or rope, not to mention an erroneous association with marijuana, hemp can also be made into high-quality, attractive, fashionable textiles.

According to the Hemp Industries Association, “hemp fiber is longer, stronger more absorbent and more insulative than cotton fiber.”

In addition, hemp meets sustainability criteria as a crop that is grown largely without chemical inputs. For this reason, there hasn't been a strong drive toward organic certification of hemp, but there is some value in meeting organic standards.

Commercial Hemp Market for Fiber Is Growing, But Not Without Obstacles

Though it is not legal to cultivate hemp in the United States, hemp is commercially grown in more than 30 countries worldwide, primarily in Eastern Europe, Canada, Russia, and China. Canada, which decriminalized hemp production in 1998, is a good example of the kind of growth and economic impact that legal hemp farming can have: According to the Canadian Hemp Trade Alliance, production grew from 4,000 acres in 2000 to more than 24,000 acres in 2005.

The Hemp Industries Association (HIA), a trade association representing the interests of the hemp industry, estimates the North American retail market for hemp textiles and fabrics exceeded \$100 million in 2007, and predicts an annual growth rate of about 10% for hemp textiles as well as other hemp products.

Bamboo

For bamboo fabrics, the chief claims to sustainability lie with the bamboo plant itself. Extremely fast-growing, and therefore highly renewable, bamboo can be grown commercially without dependence on pesticides or other chemical inputs. Though bamboo is not being certified as organic at this time, extensive pesticide use is not generally involved in bamboo farming. That said, some manufacturers make claims that bamboo is never grown with pesticides and is “naturally organic,” which are exaggerated claims.

Most bamboo is grown in China, and labor concerns apply here as well – workers are usually women and children and conditions are sometimes difficult to fully monitor.

Packaged Facts includes fabrics made from bamboo in the family of sustainable materials, with the caveat that, typically, the process of turning woody, coarse stalks of bamboo into soft and supple fabric is done with substantial chemical inputs and high water use. Given the lack of transparency in processing facilities in China, it is difficult to ascertain the actual

environmental impact. For this reason, some manufacturers, such as outdoor wear manufacturer Nau, are not currently using bamboo.

Silk

The use of silk in the family of sustainable fibers definitely adds a component of luxury and potential for a greater range of fashionable styles. Here too, however, there are concerns about conventionally processed silk; primarily, these are a history in the silk industry of child labor and exploited laborers, and harm to the silkworms. There is some alternative wild silk production, in which the silkworms are not harmed; called peace silk, vegan silk or muga silk, these fabrics are used by sustainability-minded designers, but are expensive and a niche segment. Labor issues can be difficult to monitor in China, where much silk is produced.

Fabrics Made From Soy and Corn: The Biotechnology Conundrum

Fabrics made from byproducts of soy or corn are designed to replace synthetic polyesters made from a petroleum base. These technologies are being developed by multinational agribusiness companies like Cargill, which have an existing investment in corn and soy crops. However, the elephant on the fashion runway is the fact that most corn and soy grown by these companies is genetically modified. Genetically modified organisms (GMOs) – prohibited in organic production – are those where genes have been spliced across species, and the practice is of great concern to environmentalists as well as to many “green” consumers.

Eco-Friendly Lyocell

Lyocell, marketed primarily under the brand name Tencel, is an intriguing man-made fiber in terms of sustainability. Just as for rayon, wood pulp is the primary source of cellulose; Lenzings, the German company that owns the Tencel brand, has its forests certified by the Forest Stewardship Council for sustainability. Lyocell manufacturing differs from rayon, however. The processing system recovers and reuses more than 99% of the solution (a relatively mild but not entirely benign chemical) that breaks down the cellulose and turns it into fiber. There are no byproducts or waste residue, and the resulting fabric is biodegradable.

Lyocell is versatile in terms of final fabric and use and has industrial applications as well. It can be successfully blended with organic cotton or other fibers. Water is used in processing, but manufacturers say the process uses less water than other textile processes. Lyocell has a tendency to pill, and the dyes and finishes used to make an attractive final product are not

always as eco-friendly as the manufacturing process. Buyers should make choices that address this concern.

Recycled Fibers

Fabrics can be made from recycled materials in several ways. Plastics can be reclaimed and remade into polyester, as has been done for some time with polyester fleece made from plastic soda and water bottles. Waste fabric in the manufacturing process can be used to make a unique and separate product, usually limited in color and texture to the source material. Old clothes can be reclaimed and recycled into new fabric either in their entirety or in pieces used in original designs.

Using pre-existing materials is obviously a huge environmental plus, but there are still environmental costs in collecting, transporting, cleaning, reclaiming, and remaking the fiber. Still, it's an area of great interest to sustainable apparel advocates and presents creative design challenges to fabric technologists and designers alike, while expanding the repertoire of materials available.

Dyes, Processing and Finishing

It's possible to make vast environmental shifts by choosing a better source fiber for garments. Organic cotton is an alternative to chemically intensive and genetic-modification-dependent conventional cotton growing. Bamboo and hemp are easily grown, highly renewable plant sources. Lyocell can be made from well-managed forests.

The journey from field to fabric can either continue with minimal negative impact on the environment, or with substances and systems that are less than sustainable. A tremendous number of options are available to process, finish, color, and texture fabric, but many have high environmental consequences. As interest in sustainability grows, more options will become available with environmental responsibility in mind. At every decision point, the sustainable manufacturer and marketer must view choices through this lens, make the best possible choices in the present, and continue to explore innovations for the future. This is a complex area of textile production, but one that it is essential for marketers to understand and address by choosing low-impact dyes, minimally harmful finishing methods, and facilities that are committed to responsible management of waste, chemicals, and resources.

Social Justice and Ethical Labor Practices

Textile production also involves people, and sustainability has come to include ethical issues. Social justice has become an important consideration for the entire garment industry, and must be an absolute priority for those who aim for true sustainability. As more and more textile and clothing manufacturing takes place in developing countries, issues of fair wages for workers, fair prices for farmers, child labor, slave labor, the right to organize for workers, and appropriate, healthy, non-exploitive working conditions have all come into the spotlight.

Packaging and Distribution

The distances that garments travel and the methods used to transport them are critical to efficient use of resources. Marketers should explore ways to maximize efficiency and limit waste. Minimizing dependence on energy-intensive activities like overnight shipping can help achieve this.

Packaging – including outer packaging, hang tags and labels, and even bags used at the retail location – should also take environmental factors into consideration. Can packaging be streamlined? Can plastics be avoided? Can recycled materials and low-impact inks be used? Though these seem like minor details, they can help establish the sincerity and commitment of a brand that identifies itself with sustainability.

Design and Life Cycle

The fashion industry operates on a rapid cycle of new garment design, mass production, acquisition and disposal. A new approach is being defined by some sustainable apparel advocates as “slow fashion.” The cycle of change could be slowed down, in favor of well-made clothing in styles that have longevity, with new fashions in colors and styles based on compatibility with last year’s looks.

At its most comprehensive level, sustainable design takes into account the entire life cycle of the garment. Can it be made to require fewer washings, an enormous use of water and energy? Is it recyclable or biodegradable at the end of its life? Is it comfortable, appropriate, attractive, expressive? Can it be repaired or refitted easily? Is it made with craftsmanship and skill?

Categories of Sustainable Apparel

Just as with the natural and organic foods movement, certain categories of sustainable apparel have acted as “gateway” categories and are better established. These include baby clothes, yoga clothing, basic underwear and t-shirts, and some outdoor sportswear. The more high-fashion categories of women’s dresses and sportswear, lingerie and menswear are just now developing momentum, but appear to be coming on strong.

The gateway categories began with the most available materials: organic cotton and recycled polyester fleece. For about the past decade, that was pretty much the gamut of available fibers. In recent years, more fibers, more treatments for fibers, and more processing facilities have opened up greater design possibilities, resulting in greater penetration into all fashion categories. At the same time, consumer interest and media focus have risen sharply to help move market development forward.

Standards and Regulatory Framework

Sustainable apparel is an emerging market, and marketers are well ahead of the regulatory framework. There is no one overarching set of standards for sustainable apparel, but there are many sets of standards that apply to one or more of the dimensions of sustainability that we’ve identified – materials, processing, or labor. There are some certifications, such as the McDonough Braungart cradle-to-cradle model, that attempt to cover all aspects of sustainability. In terms of a single stamp or benchmark that will support consumer confidence and protection from fraud in clothing marketed as sustainable, nothing now exists that is widely used.

There are many legal and regulatory statutes around the world that apply to textiles and clothing, and sustainable apparel must obviously meet all requirements and conditions for the country of production, and all import and export laws.

Organic Standards

Organically grown fibers encompass a specific subcategory of sustainable apparel that does have a regulated legal meaning. Organic cotton is the most widely used fiber for sustainable apparel, and has a long track record of successful use in clothing.

In the United States, the organic label for agricultural products is regulated by the U.S. Department of Agriculture. The European Union has its own set of standards, as do Canada,

Japan, and many other countries. In order to export a product to another country and sell it there, it must meet that country's standards. There are some reciprocal agreements in place between countries to facilitate ease of trade.

Organic standards, as noted, apply to the agricultural product itself – cotton, wool or linen -- and not to processing of the fiber or finished garment. However, voluntary standards exist for “organic garments” that cover these aspects of manufacturing. A drive to create a unified standard has resulted in the GOTS, or Global Organic Textile Standard. Visit global-standard.org for the most current version of the GOTS standard.

National Organic Program Standards

Anyone working with organic fabrics and entering into the organic marketplace should have a complete understanding of standards particular to where the fiber is grown and where it will be sold, certification requirements, and international trade requirements before calling a garment organic.

USDA's National Organic Program standards are quite comprehensive. In broad strokes, they prohibit the use of toxic or synthetic pesticides, herbicides and fertilizers; prohibit genetically modified organisms, irradiation, or sewage sludge used as a farm input; prohibit antibiotics and growth hormones in livestock; require access to pasture for livestock; and require a comprehensive farm plan and independent third-party certification by an accredited USDA certifier. All agricultural products sold in the United States as organic must comply with this law. The European Union has similar standards.

Labor Standards

In addition to labor laws particular to each country, as noted above, there are voluntary fair trade certification programs for cotton farmers, and anti-sweatshop initiatives including SA8000 and U.S. Business Principles for Human Rights of Workers in China.

Oeko-Tex Standards

Oeko-Tex is a well-known independent standards and certification program that measures harmful substances in finished garments. Though a very reputable and important certification, it should be clear that much of the activity in textile production that is not sustainable – pesticides, labor conditions, chemical processing – occurs throughout the supply chain, so Oeko-Tex alone can't be considered an adequate measure of sustainability and environmental

effectiveness. Since harmful substances on finished garments is certainly a health concern, the certification is valuable, and at its best when combined with a certified organic fiber or other measures of sustainability in manufacturing.

Cradle to Cradle Certification

McDonough Braungart Design Chemistry, of MBDC, is the for-profit design firm that spun off the nonprofit organization GreenBlue. William McDonough and Michael Braungart are leaders in the sustainable business arena, in part for developing the idea of cradle-to-cradle lifecycles for products and industries. Where products have typically been described with a cradle-to-grave cycle that ends with a disposal problem, cradle-to-cradle envisions products, industries and organizations that continually reuse materials in a closed loop, so no extraneous waste is created.

MBDC has developed, and offers, a voluntary Cradle to Cradle Certification program with four levels of achievement. The graduated levels of certification allow companies to enter the process at an accessible level, while challenging companies already engaged in sustainable design to reach for new heights. At the Basic level, for example, water stewardship and social responsibility (corporate ethics and fair labor statements, third party assessment systems) are not required.

The Marketers

The sustainable apparel industry is highly fragmented, as characterizes a very young industry. Its marketers range from private label lines of the world's largest low-cost mass-market retailer, Wal-Mart, and its competitors, to high-end department stores such as Barney's in New York; from well-known international athletic wear brands like Nike and Patagonia to hundreds of small designer-entrepreneurs; from top-end famous catwalk designers like Stella McCartney and Giorgio Armani to emerging and independent names like Linda Loudermilk; from household names like Levi Straus to newcomers like SeaSalt Organic. Retail outlets include the aforementioned big-box and department stores but also small brick-and-mortar and online eco-boutiques specializing in this category.

The consumer searching for a sustainable wardrobe will not find all items, and certainly not all price points, under one roof. The range and variety of sizes and styles available in the conventional clothing industry is not yet available in sustainable equivalents. It is possible, however, to assemble a wardrobe from intimate wear to socks to jeans, shirts, suits, and

cocktail dresses made from the fibers and fabrics that comprise the sustainable apparel family, and many garments that fulfill many or all of the additional dimensions of sustainability discussed in Chapter 2 – low-impact dyes and treatments, socially responsible labor practices and fair trade, and environmentally appropriate packaging and distribution.

Characteristics of Marketers

Some marketers are entering the marketplace identifying and aligning themselves with sustainability as a core value and identity. For these brands, changing the way fashion is made is a basic premise and part of their mission; they do not make clothing with conventional fibers. Others are adopting organic cotton, bamboo, or other fibers and integrating them into existing lines and production systems, and perhaps altering other dimensions of manufacturing and distribution as well. For some of these, these changes represent a sincere and committed drive toward innovation and greater environmental and social responsibility. For others, it remains to be seen whether it is simply an effort to be trendy and on the bandwagon that will evaporate when obstacles present themselves.

Shift Toward Sustainability for Existing Apparel Designers and Brands

The greater part of the industry in dollar value consists of existing apparel companies, or retailers with private label apparel lines, creating sustainable lines. The top five users of organic cotton (by fiber volume) in 2007, according to Organic Exchange, were all major U.S, European or South African corporations originating as conventional manufacturers and adopting organic programs recently: Wal-Mart/Sam's Club, Nike, Woolworth's South Africa, Coop Switzerland, and C&A, a European clothing manufacturer with 931 branches and 34,000 employees. Together, these five users accounted for almost half of organic cotton fiber use.

Other companies converting part of their production to organic/sustainable fibers include Levi Strauss, Eileen Fisher, Marks & Spencer, Nordstrom, Barney's, and outdoor athletic wear maker REI.

Pioneering Organic or Sustainable Marketers

Marketers who enter the market identifying their brand as organic or sustainable tend to be newer brands, with the exception of some pioneering organic cotton clothing companies like Maggie's Organics/Clean Clothes, founded in the mid-1990s as a maker of organic socks and basic underwear, and Blue Canoe, a yoga clothing company that began manufacturing in

1993. Since U.S. federal organic standards were not finalized until 2001, these early leaders helped to define and seed the market for organic cotton farmers, and were the first to begin educating the public about the importance of organic fibers in clothing – an ongoing necessity. Because these companies began with a commitment to social and environmental change, they also have been attentive from their inception to labor issues and additional environmental concerns like sustainable packaging. Their founders and principals have been active in organizations like the Organic Trade Association and Organic Exchange.

Twenty-First Century Sustainable Apparel Companies

The early leaders in clothing made from certified organic fibers clothing mentioned above are all still manufacturing. Ahead of their time, they weathered many years in a market with limited growth. But in the past three years, awareness of fiber production practices, environmental issues, and apparel industry concerns has skyrocketed and made the small industry considerably more competitive while also growing at a rapidly accelerated pace. Many new companies have entered the marketplace with a stated vision and mission of creating sustainable apparel. These include designer brands like Linda Loudermilk and John Patrick Organic, the brand Edun with investor and advocate Bono, the innovative athletic wear brand Nau, the women's sportswear brand Earth Speaks, jeans and casual wear maker Loomstate, women's fashion company Stewart & Brand, and many brands for infants and children. These are primarily relatively small independent companies taking advantage of the wider spectrum of fabrics available today that fall into the sustainable category, and do not limit themselves to certified organic fibers only.

Marketing, New Products and Trends

Marketing of sustainable apparel is fluid and not well developed, because the category is so new. Editorial media coverage is well ahead of advertising. Online media and social media, such as blogs, are important to this sector, and online advertising appears to be well ahead of print advertising. New products and marketing trends divide the category into introductions of basic sustainable apparel lines by mainstream marketers or better-known national and international brands, and designer-entrepreneur efforts that focus on more fashion-forward items manufactured in smaller quantity. In one week in mid-March 2008, for example, J.C. Penney, Banana Republic and GUESS all announced that they would be producing collections of sustainable apparel. At the same time, an increasing number of small

entrepreneurial companies are making sustainability a hallmark of their fledgling brand identity.

Sustainable Apparel Market Now Attracting Designers

Fashion trends typically start with fashion shows featuring the work of top designers, followed by editorial coverage of trends through trade and consumer publications. These filter down to ready-to-wear and the mass market. Fashion sales are driven by constantly changing currents in silhouette, texture, color, fabrics, and mood. Much of what is current is communicated by fashion magazines, and designers and manufacturers invest heavily in advertising and in promoting their designs and brands to editors who may feature them in editorial pages.

The sustainable apparel market is somewhat, though not entirely, different. It began as an alternative to the conventional textile industry and has not, until recently, been trend-focused. Sustainability itself has *become* the trend, and with that acceptance, designers are beginning to align current fashion colors and silhouettes in some of their products. A good deal of the sustainable apparel market still focuses on basics like jeans, t-shirts, yoga, and baby clothes.

Sustainable Apparel Event at New York Fashion Week

The nonprofit organization Earth Pledge has made sustainable fashion one of its core issues. In 2005, Earth Pledge hosted the first Future Fashion, a fashion show highlighting sustainable apparel. In 2008, in partnership with Barney's New York, Lexus Hybrid, and Pure & Natural, the Future Fashion show took place just ahead of New York Fashion Week, the premier fashion event of the year. Earth Pledge invited international designers to participate, provided them with samples of hundreds of fabric choices, and helped them to source the fabrics. Participating designers and design houses included Stella McCartney, Yves St. Laurent, Michael Kors, Marc Jacobs, Calvin Klein, Versace, Givenchy, Burberry, Threesfour, and many more. Many smaller eco-fashion events and shows are appearing, many of them local or regional, showcasing work from fashion design or art students.

Media Coverage Accelerating

In the fashion industry, fashion shows lead and editorial coverage follows. In the past two years, interest in sustainable apparel has been driven by editorial coverage in magazines from *Vogue* to *Lucky*. This has introduced concepts of organic, sustainable, fair trade and ethical practices in the garment industry to the reader whose first interest is fashion rather than social

change. Meanwhile, magazines like *Yoga Journal* and others aimed at the wellness and alternative medicine consumer, which gave early attention to sustainable apparel, continue to highlight it. Many newspaper articles have also appeared, including stories in the *New York Times*, *Wall Street Journal*, *The Guardian* and the *London Times*. *Los Angeles Times* blogs “Emerald City” and “All the Rage” have written on sustainable apparel.

Trade Magazines Focus on Industry and Supply Chain

Fashion industry trade magazines are not ignoring sustainable apparel, and in fact, keep naming it as a top trend and giving it extensive coverage given its small percentage of the total apparel market. *Women’s Wear Daily* published a special “WWDGREEN” section on October 30, 2007, coinciding with the Organic Exchange conference in Monterey, CA. *California Apparel News* also covered the conference, as did *Eco-Textile News* and *Organic Processing*.

E-Media Presence Via Sustainable Fashion Blogs

Today’s environmental movement is inseparable from e-media, especially social networking sites, blogs, retail sites and other interactive functions of the Web. It’s no surprise, then, that there is a great deal of visible online conversation and commerce related to sustainable apparel, brands, and designers. Some notable sites covering sustainable apparel:

- **Treehugger.com** is one of the largest aggregate enviro-blogs, with frequent posts on organic and sustainable apparel.
- **Grist.org** is an online environmental magazine with excellent articles and a blog with many expert writers.
- **Inhabitat.com** is about “future-forward design for the world you inhabit” and has a strong fashion and apparel component.
- **OrganicStyle.com**, formerly *Organic Style* magazine published by Rodale, is now owned by Organic Bouquet, a sustainable florist, and has been relaunched as an online magazine covering fashion and other aspects of sustainable living.
- **EcoSalon.com** is a blog sponsored/published by VivaTerra, and is aimed at women 35 or older with a sustainable lifestyle.

New Products, Trends, and Emerging Designers and Entrepreneurs

In the sustainable apparel category, new product and trend focus is primarily on new fabrics, new designers, and new electronic and brick-and-mortar retail outlets. The drive toward definitions and labeling regulations can also be counted as a trend; if the organic food movement is a predictor, then any kind of legitimate and consistent certification delineating “sustainability” will increase consumer confidence and broaden and deepen the market. Sustainability-minded entrepreneurs are also likely to attempt to develop more local, regional and domestic production options.

Developing New Materials for Sustainable Apparel

Refining and increasing genuinely sustainable fiber and fabric choices for designers and marketers should be priorities for the industry. This is underway; Earth Pledge, which maintains a swatch library of fabrics they classify as sustainable, now has more than 600 swatches after cataloguing only 50 just a few years ago.

New Trends in Fiber Processing, Dyes, Finishes, and Fabric Treatments

Though this is the area least visible to the shopper, it is also the realm where “the rubber meets the road,” so to speak, in terms of sustainability and environmental responsibility. For truly green companies, it will be essential to source and develop new ways of treating fibers for maximum visual appeal and minimal impact on natural resources.

This may have an impact on style as well. For example, making pre-faded, worn or bleached denim requires considerably more water and chemicals than making darker indigo denim. Sustainable denim marketers should focus on styles that integrate this principle.

Advances in less toxic dyes are likely, whether they are synthetic or naturally derived. In the early days of organic clothing, it was accepted, within the very small niche of the market, to make only beige or “earth-colored” clothing. Consumer expectations have risen well beyond that, and they want sustainability and color and prints too. The industry should invest in making this possible.

Environmental Awareness in Production Facilities

In processing facilities still using large amounts of water and chemicals, it will become more important to develop closed-loop systems that recycle and reclaim these substances for

minimal waste or disposal into rivers or soil. This is a mandate for all industries, not just apparel and textiles, and will require tremendous intellectual, innovation and financial capital to retrofit or build new systems. However, with that initial investment, corporations will be able to recoup savings on manufacturing processes and also gain tremendous credibility in the eyes of the supply chain all the way through to consumers.

Who's Making the Clothes, and How Are Workers Treated?

It is going to become harder for manufacturers to defend unethical labor practices and harder for countries to encourage them, as more consumers gain awareness of the tragedy of sweatshop practices, child labor, and abusive conditions. The largest multinational companies, such as Wal-Mart, Nike, and The Gap, will continue to feel pressure to modify and upgrade labor conditions. In North America, we are beginning to see renewed interest in domestic production. Small entrepreneurs are taking a stand for using local workers.

New and Emerging Designers, Entrepreneurs, and Collections

In early 2008, nearly every day brought news of another company launching an eco-collection or integrating organic or sustainable pieces into a current line. Many of these are the smallest of companies, based on one designer or entrepreneur's vision, but the list also includes larger apparel marketers such as JCPenney, Banana Republic, and GUESS. In April, 2008, Coca-Cola announced that it would begin selling t-shirts with recycling-focused slogans through 400 Wal-Mart outlets made from recycled plastic bottles.

Sustainable Apparel Supply and Distribution Chain

The supply and distribution chain for apparel is a complex network that often traverses the globe. For sustainable apparel, that supply chain becomes more complex because it begins on the farm, forest, ranch, or laboratory where the fibers originate. A designer or marketer cannot simply order fabric without regard for where and how it is grown and produced. This necessitates familiarity with agricultural practices and regulations that apply to organic products, for example, or an understanding of how bamboo or hemp sourcing is different from conventional fibers.

The sustainable apparel supply chain also requires sensitivity to quantities of supply itself. If a brand is sold as organic, conventional cotton cannot be substituted if organic cotton fiber is in short supply. This has driven some larger purchasers of sustainable fibers to invest in and

develop partnerships with growers and producers, so that they can comfortably make long-term commitments and projections. In the organic cotton market, it's also led to development of "fiber pools" where marketers can commit to a specified level of purchase in a predetermined amount of time, even without knowing exactly which finished products they'll manufacture, in order to provide security to growers.

Sustainable apparel is distributed through retailers across the spectrum, from low-end mass-market to high-end department store and boutique retailers to outdoor clothing specialists, yoga studios, and spas. There is also a significant online retailing component, with shopping sites dedicated to green products and, of course, online sales by the brands themselves.

Organic Cotton Production Concentrated in India, Turkey

According to Organic Exchange, Turkey produced 39% of the organic cotton supply in 2006-2007, and India 32%. Other primary organic cotton growing countries include the United States and China. Together, these four countries produce more than 75% of the supply of organic cotton fibers. The remainder is produced in Uganda, Tanzania, Peru, Israel, Pakistan, and other countries.

Hemp Production in China, Europe

Hemp cannot legally be grown in the United States; if efforts to change this policy are realized, it could significantly improve conditions in the market for hemp fabric. At this time, hemp for fabric production is grown in China, Europe, Russia, and Canada; Australia is in the development stage.

Organic Wool Production Centered in Australia, New Zealand

Organic wool production is still a very small but growing enterprise. Production is primarily in Australia, New Zealand, and Argentina; in the United States and the United Kingdom, there are small cooperatives and cottage industries raising organic sheep.

Farm-Retailer Partnerships

As noted in Chapter 3, Wal-Mart, as the largest purchaser of organic cotton, has invested in relationships with farmers and providing incentives for them to grow cotton organically. Woolworths South Africa, another large purchaser of organic cotton, has done the same.

Global Production Capacity Projected to Grow With Constraints

The following table illustrates a projection of the global sustainable fiber and garment production capacity in 2012. The table was created by Jeff Stein of Green Innovation, Inc.

Table 1.3
Global Sustainable Fiber and Garment Production Capacity
(2007-2012)

Global Sustainable Fiber and Garment Production Capacity (2007-2012) (all figures in 1000s)	% Share of Sustainable Apparel Market	2012 Potential Total Quantity of Sustainable Garments	Avg Yield * (garments/kg)	2012 Projected Global Fiber Production Capacity (kg)	2007 Estimated Global Fiber Production Capacity (kg)	Annual Growth Rate Assumption	Notes
Organic Cotton	23.0%	968,083	3	322,694	60,000	40.0%	1
Lenzing Viscose	25.5%	1,072,077	3	357,359	280,000	5.0%	2
Lenzing Modal	11.8%	497,750	3	165,917	130,000	5.0%	2
Lyocell (Tencel)	10.9%	459,461	3	153,154	120,000	5.0%	2
PLA (corn-based fiber)	20.1%	844,770	3	281,590	140,000	15.0%	3
PCR PET (recycled soda bottles)	10.3%	434,838	3	144,946	90,000	10.0%	4
Sustainable Wool (i-Merino, organic, etc.)	10.9%	459,461	3	153,154	120,000	5.0%	5
Soy	5.7%	241,363	3	80,454	40,000	15.0%	6
Bamboo	4.6%	193,261	3	64,420	40,000	10.0%	7
Totals	100.0%	4,202,981	3	1,723,688	1,020,000	11.1%	

Notes

1. mid-range projection of Organic Exchange Market Rpt 2007 (preliminary highlights)

2. based upon modest growth in capacity of existing production facilities (www.lenzing.com)

3. based upon apparel and home textiles consuming 10% share of production of Cargill NatureWorks' Ingeo corn-based bio-polymer (www.natureworks.com)

4. based on 12% of Teijin's EcoCircle (www.ecocircle.jp) and 30% of Foss Manufacturing's Eco-Fi (www.fossmfg.com) 2006 estimated production capacity

5. conventional Merino wool supply from Australia and New Zealand where extensive sustainability programs are promoted by government (www.landwaterwool.gov.au), also organic wool (www.vtorganicfiber.com) and i-Merino (www.i-merino.com)

6. due to patent, all fiber dependent on Shanghai Winshow Soybean Fibre Co. (www.soybeanfibre.com)

7. due to patent, all fiber dependent on BambroTex (www.bambrotex.com)

* Yield (1.075 linear yards per garment) based upon 180gsm knit 100% cotton women's t-shirt

** Sustainability profiles on each of these fibers are available at: www.greeninnovationinc.com/Information

Source: Jeff Stein of Green Innovation, Inc., a sustainability management consultant helping consumer goods companies leverage environmental and social sustainability as a driver of growth. Stein is also founder and CEO of Karma Technologies, a provider of information technology, processes and services that together make international sourcing of organic goods cheaper, safer and easier. Used with permission.

Mass Market Consumer Goods Retailers Become Major Players in the Market

Wal-Mart is certainly the “big daddy” but by no means the only mainstream mass-market retailer entering the sustainable apparel market. Sam’s Club, a division of Wal-Mart, is also participating in the environmental and sustainable initiative. Together the two constitute the world’s largest purchasers and users of organic cotton. Target, though it currently offers more in the way of organic cotton home textiles than clothing, is increasing its offerings of jeans,

shirts, and baby clothes in sustainable fabrics. Wal-Mart and others sell Hanes organic cotton underwear.

Department Stores Implement Sustainable Apparel or Organic Cotton Programs

Price-sensitive department stores such as JCPenney and Kohl's are offering some organic and sustainable clothing, such as Levi's organic denim at JCPenney and Eileen Fisher garments at Kohl's. JCPenney has instituted a program of several degrees of sustainable labeling for a number of its private brand products, including clothing.

More dynamic programs are in place at more fashion-forward department stores. Barney's, the high-fashion emporium in New York, has taken a lead role in developing the profile of sustainable apparel. Barney's was a major sponsor of the Earth Pledge Future Fashion show in 2008, and works with designer lines such as John Patrick Organic and Stella McCartney.

Nordstrom, based in Seattle, is growing its organic and sustainable apparel program as part of a storewide environmental effort to achieve "triple bottom line" – economic, environmental and social – integrity.

In the United Kingdom, it's no surprise that major department stores are interested in ethical and sustainable fashion. In January 2008, H&M announced that it would use 1,500 tonnes of organic cotton in its spring fashions, an increase over 2007. The company says it offers organic cotton choices in nearly every store department. Loomstate brand clothing is sold at Harrod's and Selfridge's. Topshop offers some Fair Trade, organic and recycled fashions.

According to environmental magazine *The Ecologist* in "The A-Z of Eco-Fashion," from the January 2008 issue, "Marks & Spencer was the first major retailer to set its own standards that ban or restrict chemicals on the products it sells, and has an Environmental Code of Practice for dyeing and finishing."

Outdoor Retailers Lead in Sustainable Apparel

As we've seen, some manufacturers of high-performance outdoor and athletic wear demonstrate a deep commitment to sustainability throughout their operations. These include Patagonia, one of the largest and longest-standing users of organic cotton and fleece made of recycled plastics, and newcomer Nau, a small independent company dedicated to innovation, which is developing new fabrics as well as using existing sustainable fibers. Both Patagonia

and Nau operate their own brick-and-mortar stores, as well as selling through other retailers, and also sell product online.

Nike is among the top five buyers of organic cotton. Like Wal-Mart, Nike operates on a scale so large that anything it does has substantial impact on the industry. At present Nike is integrating organic cotton into its line both in blends with a small percentage of organic cotton, and in garments made entirely of organic cotton. Nike is also using recycled materials for some shoes and otherwise attempting to up its sustainability profile. Nike's greatest vulnerability is probably in the area of ethical labor and eliminating sweatshops from its worldwide manufacturing program.

Fashion, Baby Clothes in Specialty Boutiques and Shops

Around the country, shops and boutiques with a focus on environmentally conscious goods are opening. Many of these include or specialize in sustainable apparel. Some are focused on products for infants and young children; new parenthood is often a stimulus for entering the market for organic products, both in food and clothing. Others are focused on fashion, design and accessories for eco-chic adults.

Because many of these stores are quite new, it's difficult to assess their level of success and impact on the market. Many factors can influence success, including product mix, location, marketing, advertising, price and local economic conditions.

Marketer Websites and Online Eco-Boutiques Making Inroads

While Wal-Mart organic cotton items, Levi's eco jeans, or H&M sustainable apparel offerings may be readily available to many people, a wider variety of eco-clothing is still not accessible in every location through brick-and-mortar retailers. In many places, the level of consumer awareness and market may not be well developed enough to support a store.

Company websites and online eco-boutiques selling a range of designers and brands expand the market considerably, however. In fact, online retailing is important to the growth of the sustainable apparel market. Consumer education is critical, and many companies include blogs or information about fabrics and labor and manufacturing that might not otherwise be available to garment shoppers.

Market Share by Type of Retail Outlet

In a developing market, market shares may fluctuate and change quite rapidly. At publication, Packaged Facts estimates sales of sustainable apparel by type of retail outlet as follows:

Table 1.4
Market Share by Retail Outlet of Sustainable Apparel

Type of Retailer	Market Share
Mass Market (Wal-Mart, JCPenney, etc)	30%
Department Store (Nordstrom, Barney's)	16
Specialty Stores	14
Outdoor Retailers	18
Online Sellers	22
	100%

Source: Packaged Facts

The Sustainable Apparel Consumer

Though there is not yet a substantive body of demographic or consumer research specific to the sustainable apparel consumer, there are interesting data regarding consumer opinions and preferences about the general concept of buying sustainable products, about many of the environmental, ethical, and health values that sustainable apparel represents, and about products that are related in the marketplace. From these, we can extrapolate some ideas about who our green clothing shopper might be.

The Sustainable Apparel Consumer is a Values-Based Shopper

Sustainable apparel is generally more expensive than its conventionally produced equivalent, less readily available, and the market in total offers fewer choices. Who would choose to purchase sustainable garments, given these limitations? The answer is: Those whose values align with the values attached to sustainable apparel, and who are willing to pay more to support those values. This includes protecting and preserving natural resources, rejecting pesticide use and excessive use of toxic chemicals, treating workers fairly, and recycling materials and reducing waste.

Those values, however, are usually not apparent to others simply by looking at the clothing unless it has some image or branding identifying it as organic or a fiber or brand associated with sustainability. The wearer must either communicate to others the values of the clothing

in other ways, such as talking about the clothes, or be satisfied with the personal knowledge that they've made a responsible choice in sync with their beliefs.

The first scenario is more likely; it's easy to imagine that the response to a compliment on clothing would be, "And it's organic cotton and hemp, too," or "It's my fair trade dress." These responses might come before identifying it as the product of a brand or designer. Wearers of sustainable apparel, then, also become marketers and educators spreading the word about the reasons for and meaning behind their choices.

IRI Data Show Viable Market for Sustainable Products and Packaging

Sustainability is now the umbrella term covering the values of the LOHAS sector. In December 2007, Information Resources, Inc. released *Times & Trends: Sustainability 2007*, a survey examining consumer-focused Consumer Packaged Goods growth opportunities related to sustainable attributes. IRI surveyed more than 22,000 consumers, and released the following highlights:

- About half of respondents consider at least one sustainability factor when selecting brands to buy or stores to shop. (These factors are identified as organic development, eco-friendly ingredients, eco-friendly packaging, and fair treatment of suppliers and employers).
- About 20% named at least two of these factors as key influences in brand selection, and at least two in store selection. IRI calls these respondents "sustainability-driven." This is consistent with other market research on the organic sector, with about 15 to 20% of consumers very invested in organic values, and half to two thirds identifying them as regular or occasional users or purchasers of organic products.
- According to IRI, consumers age 55 and over are more likely to be sustainability-driven. This is of interest to the apparel market, where styles from sustainable brands tend to skew much younger; there are few garments aimed at men or women working in business environments, for example.
- Smaller households were more likely to be sustainability-driven.
- IRI says that 85% of leading consumer product retailers and manufacturers now have sustainability programs in place, and that "Industry players with successful products

and positioning in this space today will likely enjoy a first mover competitive advantage.”

Table 1.5
Sustainability Factors Influencing Brand Selection: Percent of Consumers

Sustainability Factor	Percent of Consumers Influenced By
Product is organic	39%
Packaging is better for the environment	29%
Product itself is better for the environment	23%
Manufacturer treats employees and suppliers fairly	21%
None of the above	52%

Source: IRI Sustainability Survey, December 2007; 22,267 respondents
(Sustainability-driven consumers cite at least two sustainability factors as key influences)

Table 1.6
Sustainability Factors Influencing Store Selection: Percent of Consumers

Sustainability Factor	Percent of Consumers Influenced By
Product is organic	23%
Packaging is better for the environment	21%
Product itself is better for the environment	21%
Manufacturer treats employees and suppliers fairly	19%
None of the above	57%

Source: IRI Sustainability Survey, December 2007; 22,267 respondents
(Sustainability-driven consumers cite at least two sustainability factors as key influences)

Ripening Marketing Opportunities

The landscape of consumer interest in environmentally responsible goods and services shows a great deal of opportunity for sustainable apparel designers, manufacturers, retailers and marketers. The data suggest that this doesn't have to be an all-out company redesign – small, progressive efforts designed to grow can meet with success as long as the company is truthful about where it stands and where it intends to improve. False claims and hyperbole are patronizing to the concerned consumer and can backfire on the entire industry.

The question of generational preferences is interesting for this market. Fashion tends to be designed for and marketed to the young, yet there is clearly an older market with the

principles and money to support sustainable apparel. This appears to be a wide-open market for the designer willing to go beyond jeans, yoga clothes, and trendy baby-doll dresses.

Effective consumer education and communication of environmental benefits will go a long way toward ensuring that sustainable apparel is established as a long-term trend rather than a fad that will quickly die out.

Future Trends and Opportunities

The sustainable apparel sector has very little past and an open-ended future. The innovators and advocates of today will define and shape the growth of the industry and what it becomes. While nearly every apparel marketer will feel pressure from both regulatory agencies and consumers to adopt more environmentally friendly and ethical labor practices, some will do the minimum required while others will take on a mission of truly changing the status quo. There are market opportunities in the short term for both strategies, but in the long term, the greater opportunity is for those investing in real change to more sustainable systems, from design philosophy to the final product and even its lifecycle beyond the actual purchase. Yet it's also true that small but meaningful and substantive changes may be as important to a brand's success as trying to create a sweeping program of sustainability.

Opportunities for Growth and Market Penetration

In a market that's still relatively new and small, there are many avenues for growth. Marketers should develop programs based on their strengths and resources. These might include new lines, new fabrics, or new manufacturing and labor practices. Evolving technologies, design standards, and consumer awareness and expectations will help drive growth, and designers, marketers, and entrepreneurs should stay informed and abreast of changes in the entire market dynamic to maintain momentum.

Evolving Design Concepts

Designers of sustainable apparel can take multiple directions:

- Basics for all ages. We know, at least anecdotally, that new parenthood is one of the primary gateways to purchasing organic cotton clothing (for infants). Other gateway products are t-shirts, jeans, and yoga clothes – basic garments that are relatively easy to find in organic fabric. Well-made basics that can be made without too dramatic a price increase over conventional choices are good sustainable-wardrobe starter

garments and a way to introduce consumers to the meaning and benefits of sustainable apparel.

- **Statement Clothing.** A “green” wedding dress is an example of statement clothing; though a small niche, it’s an important purchase for the shopper and therefore has impact.
- **Office-appropriate attire.** The market is wide open for sustainably produced working wardrobes for professional men and women.
- **Specialty garments,** such as medical scrubs.
- **Designer brands.** This is the most fashion-forward category and the segment where designers can establish their name.

Evolving Technologies and Practices

While new designs and clothing lines are the interface to the consumer, in sustainable apparel they are in many ways an end point. In terms of environmental impact, choices marketers make from the field to the manufacturing plant have greater impact on the environment and are the essence of true sustainability. Bamboo fabrics made under less than transparent conditions, using extensive harsh chemical treatments, may not be the worst choice, but neither are they the best choice, and their limitations will eventually become clear to informed shoppers. Using organic cotton but underpaying garment workers in the developing world to manufacture the garments will also disappoint conscious consumers.

New developments in technology, from computer software programs allowing apparel manufacturers to better track inputs, energy use, and waste along the supply chain to improved manufacturing systems allowing reclaiming of water and chemicals to reduce or eliminate waste and contamination, will emerge to support sustainable textile and apparel production.

In labor practices, there will simply be less tolerance, as awareness grows of companies that exploit workers. Marketers should voluntarily eliminate any relationships with factories using sweatshop systems or child labor.

If interest in domestic garment production outside of Asia continues, entirely new or rejuvenated centers of industry may appear. Interest in handcrafts and artisan embellishments

and design may create new jobs for artisans. The tiniest niche in sustainable fashion, the refashioning trend of using old garments to make new ones, may, if it grows, change some of the ways we dispose of used garments.

Evolving Consumer Expectations

Consumers have more choices than ever before to spend limited disposable income. For values-based shoppers who choose to spend more on purchases that reflect and support their values, decisions become even more complex. Consumer expectations for companies are high; they want products of quality, beauty, utility, and reasonable price, made by companies that are environmentally responsible in many ways, treat workers well, and give back to the community. In return, they are likely to be loyal to brands that meet their standards, and act as ambassadors for those brands. If a brand is perceived to be greenwashing or otherwise fallen off its sustainability pedestal, however, it may be hard to recover this kind of customer loyalty. For sustainable apparel marketers, this may mean putting more thought into communicating how a garment was made than ever before. Accountability, authenticity, and transparency are key concepts for marketers to embrace.

Consumer Education Essential to Success

There are still many, many consumers whose immediate response to an organic garment is, “Why? You don’t eat it, do you?” Most consumers are still not informed about the meaning of fair trade, as well, though awareness is growing, primarily for coffee, tea, chocolate, and other tropical food crops. The burden will be on apparel manufacturers and retailers to build a stronger base of educated shoppers.

This means exposing the underside of the textile industry – chemical use in processing, pesticides in growing cotton, sweatshop labor, and intensive use of natural resources to clean, finish, and transport fabrics and clothing. Unless shoppers understand these dynamics, they won’t understand or accept the need for sustainable alternatives.

The need for creative and innovative public relations, marketing, advertising, and education through hang tags and point-of-purchase materials will give fashion industry talent a chance to shine. Working with nonprofit education and advocacy organizations such as Earth Pledge, Organic Exchange, Sustainable Style Foundation, Fair Trade Federation, Organic Trade Association, and those that are championing anti-sweatshop initiatives will help for-profit marketers to achieve their consumer messaging goals.

As noted, online social media such as company blogs can be very useful in reaching potential sustainable apparel consumers.

Conclusion: The Future of Sustainable Apparel

There is tremendous potential for the future of the sustainable apparel industry. The need for change is there, and well documented. Interest among young entrepreneurs and professionals in the apparel industry is growing. There is no lack of design talent and philosophical vision. Consumer awareness of environmental and social issues specific to textile production is growing. The farming, manufacturing, and retail infrastructure is growing.

Integrity and transparency in business, which will in turn lead to consumer confidence in sustainable claims, may be the key ingredient for success. Those who seek only to capitalize and profit on consumers' good intentions will ultimately hurt the entire industry's potential for long-term success. Those who are committed to genuine change, even in small and incremental ways, will help build a strong foundation for what can be the most significant shift in apparel manufacturing and marketing since the Industrial Revolution.