

FASHION AND SUSTAINABILITY

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The powerful cultural machine of fashion

- Luxury
- Eccentricity
- Spectacularization
- Fast fashion
- Compulsive buying
- Idealization of the perfect body
- Brand's dominance over materials and labor



BRAND

- **Brand:** name, term, sign, symbol, or design, or a combination of these, used to identify the goods and services (product brand) of a company or the company itself (corporate brand) and to differentiate them from those of competitors.
- Nowadays, the brand has acquired a multidimensional meaning, that also considers the company's history (brand identity), the experience consumers and employees have gained with the brand, its level of awareness, and the expectations of potential buyers
- The brand has value in itself; it is separable from the product on which it is placed and extendable to other types of products (from clothing to cosmetics, mobiles, cars and hotels)
- **Today, brand value is also determined in terms of sustainability**

FASHION INDUSTRY UNDER ATTACK

- It is considered the world's second most polluting industry (after the energy industry)
- It produces goods with an extremely short lifecycle, leading to scraps and non-biodegradable waste
- It prioritizes aesthetic result over the analysis of its environmental (and human) cost
- It is frivolous, produces hedonistic, non-essential goods, encouraging pathological consumerism
- The use of products generates waste and emissions, and consumes energy (washing and ironing cycle)

ECO-DESIGN PRINCIPLES

- Materials
- Chemical safety
- Ecological and social history of materials/ Production processes
- Supply chain traceability
- Documentary evidence (tests, certifications...)
- Product lifespan
- Maintenance/ washing/ ironing
- Recyclability

Non rewearable textile waste

- About 1/3 of discarded clothing and household textiles are collected in Europe = 2 million tons
 - Volume will increase in coming years
 - Quality will decrease
- Outlets for textile waste
 - Rewearable clothing (50-60%)
 - 2nd hand shops, exports
 - Wiper industry (10-20%)
 - Mechanical recycling (15-25%)
 - Fibers for re-spinning (small %)
 - Non-wovens for thermal insulation, sound insulation, bedding
 - Waste (5-10%)
 - Incineration
 - Landfill
- Input for Resyntex: part of materials nowadays not used or mechanical recycled



Limiting factors textile recycling

- Re-use:
 - Soiling, stains, worn out products
- Recycling
 - Materials
 - Mixed fibers
 - (Mixed) Colour
 - Finishes, coatings, laminates; non textile parts
 - Quantities
 - Reproducibility / heterogeneous fractions
 - Economy
 - High costs of collecting and sorting
 - Lack of demand for recycled products
 - Low prices for secondary raw materials
- Limiting factors depend on the recycling method; each method has its own limitations



Design and product development

- Design for recycling
 - Selection of materials
 - Mono-materials or common used blends
 - No finishes that “glue” fibers together
 - No coatings
 - Detachable laminates and haberdashery
 - Labels and sewing yarn of same base material
 - Only very low % of elasthan (or don’t use it at all)
 - Selection of fabrics:
 - Loose knitted fabrics are much easier to recycle compared to tight woven fabrics
 - Twined yarns are more difficult to recycle in high end products
 - Patterns: less cutting waste
- Recycling in Design
 - Use recycled materials as much as possible
 - Use the imperfection of recycled materials as a design feature



Textile and clothing manufacturing stages

- Textile production
 - Yarns and fabrics: only mono-materials or frequently used blends
 - Use nanotechnologies in stead of conventional technologies
 - Less chemicals (so higher purity of textile fractions)
 - (TFE2 on clean processing / resource efficiency)
 - Use no chemicals that can “frustrate” recycling
 - No heavy metals
 - No chlorinated and fluorinated products
- Garment production
 - Alternative bonding techniques suitable for disassembly
 - Hot melts, Wear2-yarns, chinese knots, ...
 - Don’t combine open and dense fabrics

WHICH STORYTELLING FOR THE SUSTAINABLE PRODUCT

- It does not pollute, it is healthy
- It is fair
- It is beneficial and improves the quality of life
- It originates from a specific territory, from its culture
- It allows a community to work and rediscover its values, etc.
- It is innovative
- It arises from waste recovery
- It does not cause suffering to animals

PRODUCT SAFETY ARISES FROM A GLOBAL PERSPECTIVE OF THE PROBLEM

- The global effects of using toxic chemicals have been recognised. What is applied to garments enters the environment and threatens people's health, even those far from the production sites. It is essential to replace toxic substances with safer alternatives.
- The company learns to engage in dialogue with stakeholders previously outside its traditional framework (environmental and humanitarian movements)
- New methods are being sought in order to make environmental and solidarity engagement visible, since the certification system is no longer sufficient

DETOX: SOME INSIGHT ABOUT THE CAMPAIGN

- It was funded in 2011, as an initiative by Greenpeace
- Analysis of Asian river waters
- Pressure on brands
- 11 classes of toxic substances to be eliminated by 2020

<http://www.greenpeace.org/italy/it/campagne/inquinamento/acqua/Campagna-Detox/detox-fashion/>
<https://www.youtube.com/watch?v=KR8c01NoNBw>



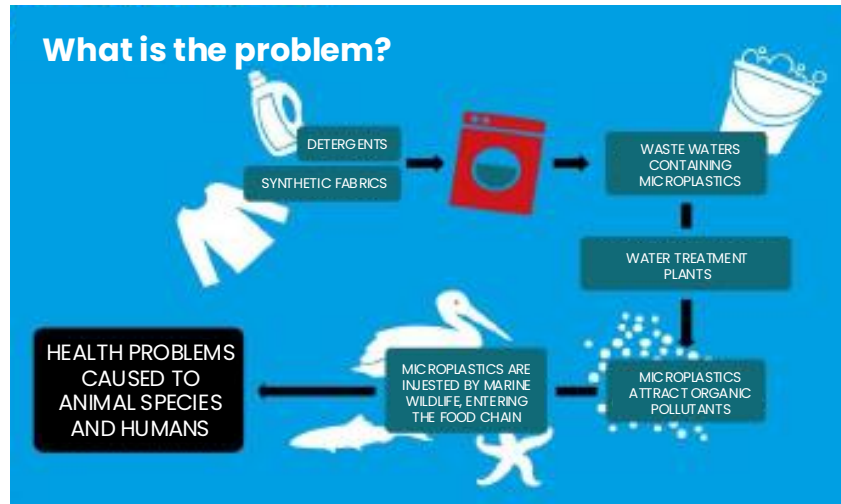
ZDHC



It was funded in 2011 as an initiative by sportswear brands and associations. Among these are: H&M, Inditex, Puma, Nike, Marks&Spencer, Adidas, Benetton... Unlike Detox, it does not set the «0» goal; instead it focuses on the principle of non intentionally using hazardous chemical substances.

MICROPLASTIC IN THE SEA

Washing 1 kg of textile garments generates 25 kg of CO₂, and in Europe alone, 35.6 billion laundry loads are done annually. Detergents, stain removers and fabric softeners are released into the water, along with non-biodegradable textile fibers. A polyester hoodie releases up to 1 million microfibers into the wash water, an acrylic scarf 300,000 and a pair of nylon stockings 136,000

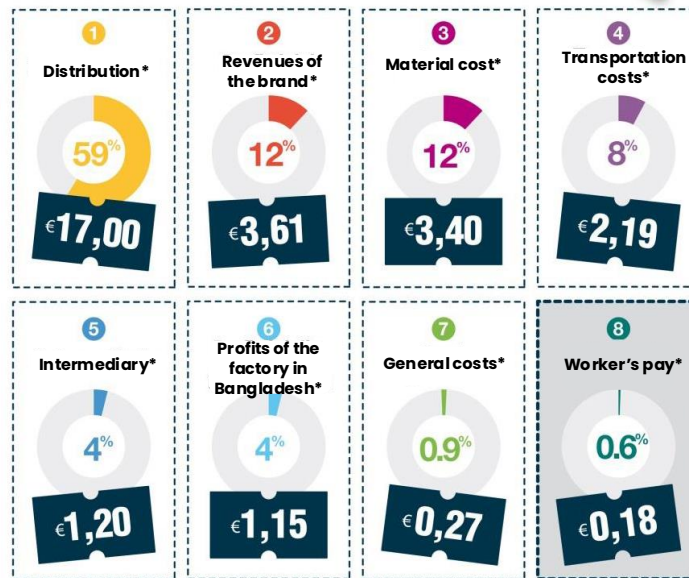


M-RSL: Manufacturing-Restricted Substances List

- It is an integral part of the procurement specifications of brands, outlining the requirements that suppliers must meet regarding the absence or limitation of dangerous chemicals in their products.
- In addition to M-RSLs associated with environmental campaigns, there are lists developed by individual brands
- Many chemical companies have equipped themselves to offer their customers dyes and auxiliaries that comply with specific M-RSLs.

HOW MUCH FASHION COSTS (TO WHOM)

How much does it cost to produce this T-shirt?



*Covers all costs at distribution level, including personnel, rent, store profits, taxes etc.

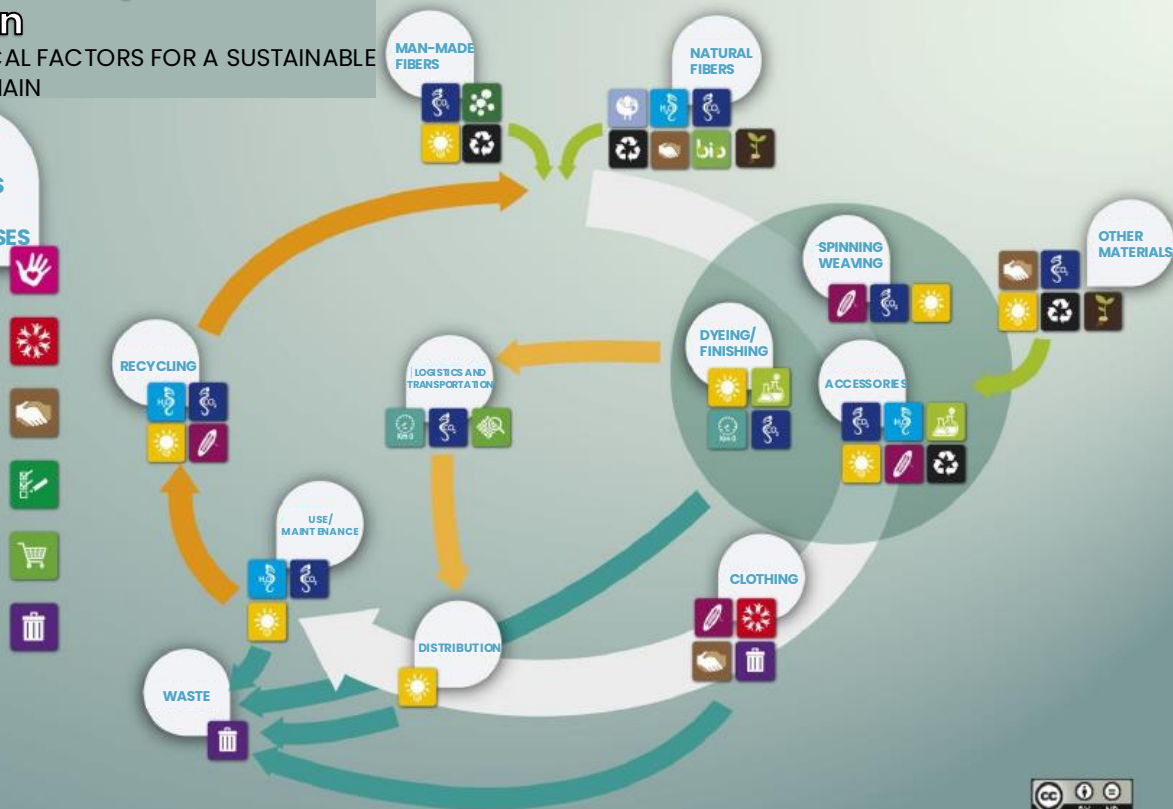
Trends of Sustainable Innovation

Order of importance	Innovation/product trends
1	Actions aimed at eliminating critical chemicals from processes by replacing them with safer alternatives, supply chain integration
2	Supply chain control, Systems for traceability of the production chain that benefit customers and consumers (smart label, sensing, tag)
3	Selection of sustainable raw materials (from renewable or recycled resources)
4	Technologies for recycling post-production and post-consumer waste
5	Product design based on end-of-life considerations: recyclability, biodegradability
6	Monitoring tools for environmental impacts across the lifecycle
7	Animal welfare
Innovation/processes trends	
1	Treatment / reuse of process water
2	Automation and robotics
3	E-commerce
4	Energy savings, cogeneration, renewable energy sources
5	Sensors in industrial processes, remote control, machine interconnections
6	3d printing, inkjet, augmented reality, nanotechnology treatments, plasma processes

Product lifecycle in fashion

THE CRITICAL FACTORS FOR A SUSTAINABLE
SUPPLY CHAIN

CROSS-
CUTTING
FACTORS
FOR ALL
BUSINESSES



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