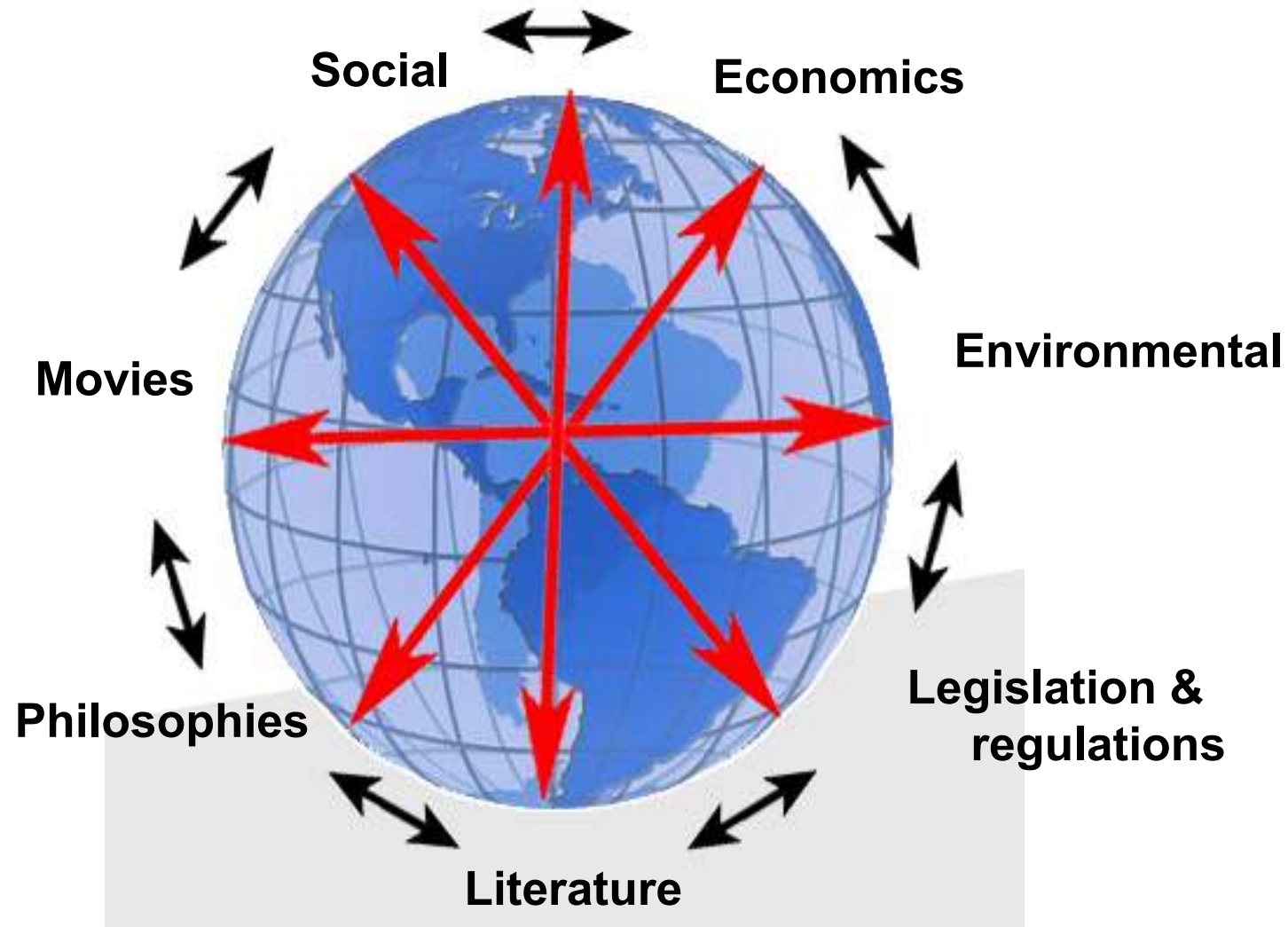


## Sustainability

- **The global picture**  
Summary version sheet 2 - 8  
Extended version sheet 27 - 36
- **Sustainable systems**  
Summary version sheet 9 - 15  
Extended version sheet 37- 55
- **Contribution of sun shading fabrics** sheet 16 - 20
- **Verosol's vision on sustainability**  
Summary version sheet 21 – 26  
Extended version sheet 56 - 71
- **Verosol's choice for man-made fibres** sheet 72 - 77
- **Questions & Available information** sheet 78



# THE GLOBAL PICTURE:



## **SOCIAL DEVELOPMENTS: a few examples**

- UN Resolution 2008: Climate change is a global problem
- The increasing influences of NGO (non-governmental organisations)
- People feel insecure about their future
- Increasing worldwide population -> increasing pressure on the food chain

## ECONOMICAL DEVELOPMENTS: a few examples

- Shortages of (natural) resources like oil, metal, but even more important drinkable water!
- Without water the food chain will become in danger
- Food, like corn and sugar are used for fuel instead of feeding people: increase of food prices

# ENVIRONMENTAL DEVELOPMENTS

A few examples we all know:

- Rising emissions of Greenhouse gases like CO<sub>2</sub>
- Rising temperatures: Melting ice and rising seas
- Shortages of drinkable
- Shrinking forests
- Grassland changing to deserts
- Collapsing fisheries
- More and more endangered species
- Etc.

# LEGISLATION & REGULATION

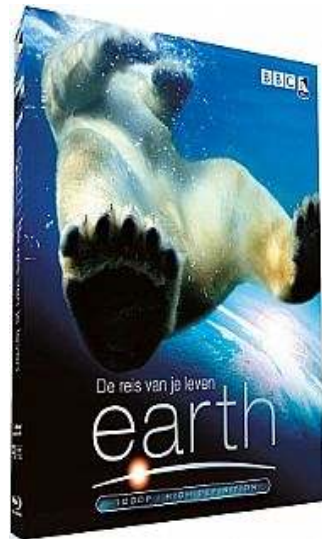
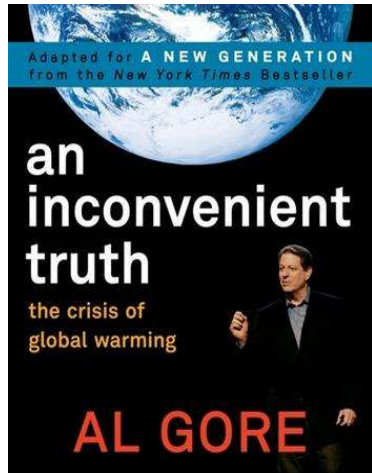
- Worldwide: like Kyoto Protocol and Bali Protocol
- Continental: like in Europe, EPBD, Energy Performance for Building Directive
- National:
  - UK: Part L UK
  - NL: Energy Performance Coefficient
  - D: EnEV Energie Einsparungs  
Verordnung



# MOVIES, PHILOSOPHIES & LITERATURE

Are increasing peoples awareness of a changing world:

A few examples:



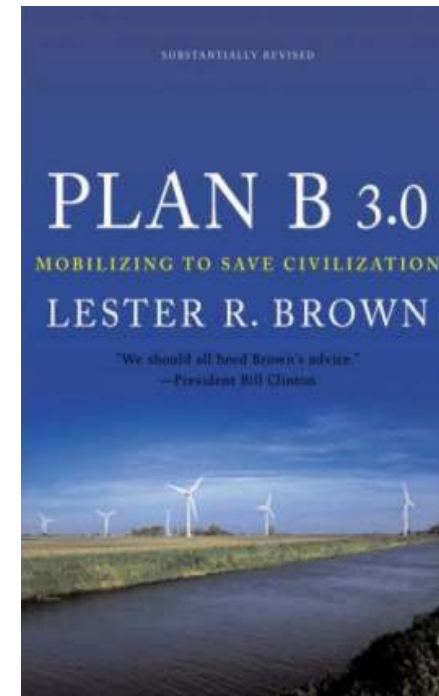
David Attenborough – BBC



06.27.08  
Disney · PIXAR



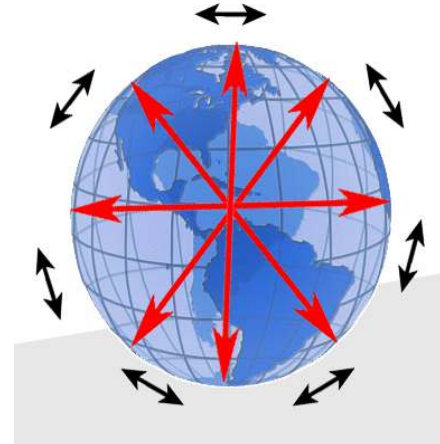
Braungart & McDonough:  
Waste = food



Analyzing the interaction  
between global environ-  
mental and economic  
trends

# THE GLOBAL PICTURE: CONCLUSION

- Social developments
- Economical developments
- Environmental developments
- Legislation & regulations
- Movies
- Philosophies & Literature



**Above mentioned subjects are influencing each other and increasing the awareness that action needed !**



## **GREEN LABELS AND CERTIFICATES: WHAT YOU NEED TO KNOW**

- Different types of green labels and certificates are used on global and national level
- Green labels and certificates can be given on:
  - Fabrics
  - Production facilities
  - Buildings in which our fabrics are used
  - Complete product life cycle of the end-product (LCA)
- Sometimes new 'labels' are copying elements of other labels

# GREEN LABELS AND CERTIFICATES: FABRICS

Some examples:

## Öko Tex 100:

- Limit the use of toxic chemicals
- The best known and most successful label for textiles tested for harmful substances



## Greenguard:

- Certification for low-emitting products and materials
- Is related to **LEED** for Indoor Air Quality



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[www.greenguard.org](http://www.greenguard.org)

# GREEN LABELS AND CERTIFICATES: PRODUCTION FACILITIES

## ISO 14001:

- An environmental management system (EMS).
- Similar to ISO 9000 quality
- Focussed on the process rather than to the product itself.



## Öko-Tex 1000:

- To avoid or limit the use of harmful substances in **production**
- Limitation relating to waste water and exhaust air, optimise their energy consumption, ensure low noise and dust pollution
- Introduce measurements to ensure safety at work
- The use of child labour is prohibited.



# GREEN LABELS AND CERTIFICATES: ON BUILDINGS

Local Green Building councils provide guidelines for greener buildings, like:

- LEED : Used in USA, Canada, Mexico, Brazil, India
- BREEAM : United Kingdom, the Netherlands
- Green Star : Australia, New Zealand, South-Africa
- Estidama : Emirates
- Green Mark : Singapore
- HK-BEAM : Hongkong
- CASBEE : Japan
- CHEM : China
- HQE : France
- VERDE : Spain
- ...



# GREEN BUILDING COUNCILS: WORLDWIDE

## some examples

- Australia
- Brazil
- Canada
- Germany
- India
- Japan
- Mexico
- United Kingdom
- United States of America
- New Zealand
- Taiwan
- United Arab Emirates
- Singapore
- Hong Kong
- In process: Argentina, Colombia, Poland, Vietnam, Romania, Italy, Spain, The Netherlands, Turkey

# GREEN BUILDING COUNCILS: some examples of logo's



MEMBER / MEMBRE



Deutsche Gesellschaft für nachhaltiges Bauen e.V.



EMIRATES GREEN BUILDING COUNCIL

## GREEN LABELS AND CERTIFICATES: OTHERS

### **GECA:** Good Environmental Choice Australia

- Indicates the environmental performance of a product from a whole of product life perspective for consumer goods.



### **PRODUCT LIFE CYCLE ANALYSIS:**

- Scientific methodology that evaluates the environmental impact of a product throughout its life cycle, from the extraction of the raw materials through processing: from manufacturing to disposal

### **RECYCLING:**

- Involves processing used materials into new products
- Recycling is a key component of modern waste management: "Reduce, Reuse and Recycle"



## EXAMPLE:

Worldwide, +/- **35** % of the  
energy is consumed by  
buildings in general

## THE MOST IMPORTANT ENERGY-CONSUMERS IN BUILDINGS ARE:

- Lighting
- Equipment
- Airco
- Heating

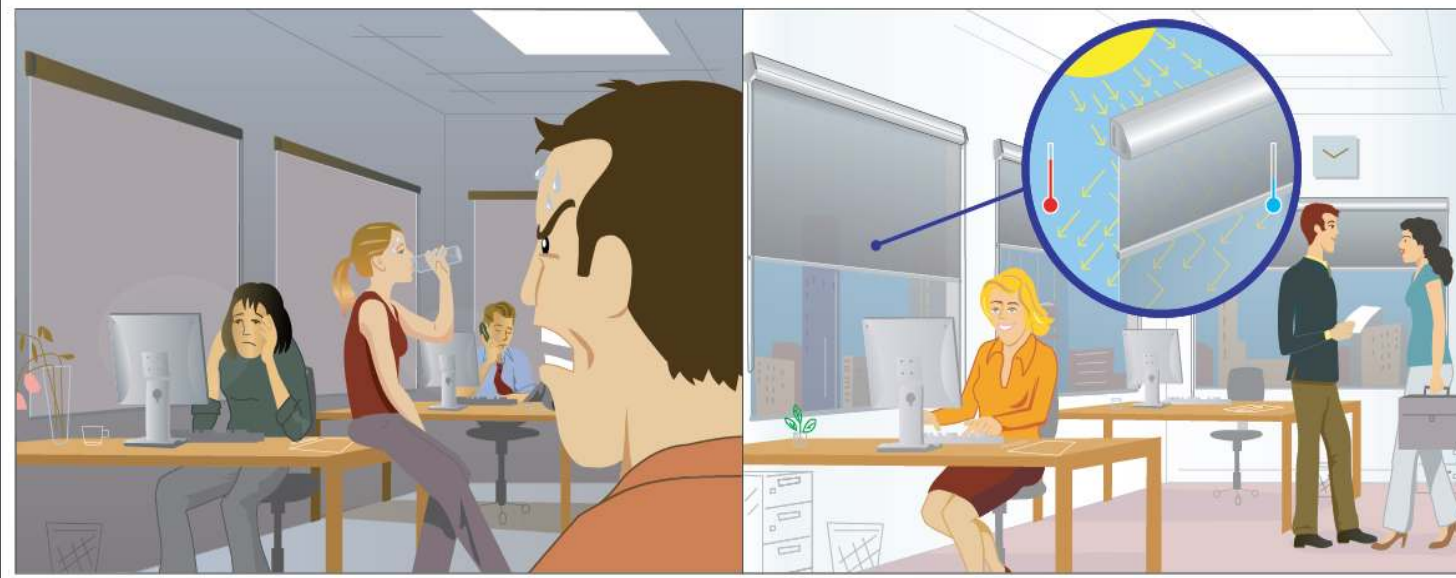
**Sun shading fabrics can make a major contribution on:**

**Lighting, Cooling & Heating**

# SUNSHADING FABRICS CAN MAKE A CONTRIBUTION ON:

## LIGHTING:

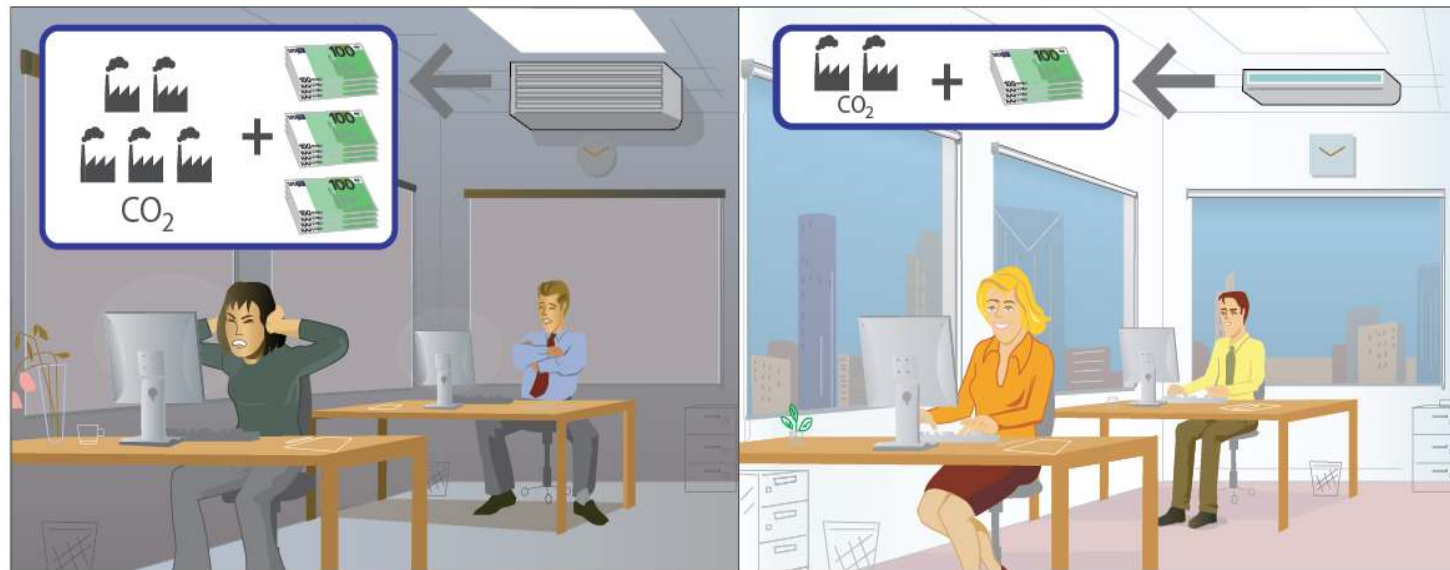
- More natural light can enter a room without having glare problems
- Less artificial lighting is needed



# SUNSHADING FABRICS CAN MAKE A CONTRIBUTION ON:

## COOLING:

- Reflective sun shading fabrics can make a firm contribution to decreasing air-conditioning costs and with that reducing carbon-emissions



## SUNSHADING FABRICS CAN MAKE A CONTRIBUTION ON:

### HEATING:

- Sun shading fabrics have insulating properties
- Reduction of heat loss:  
Improved U-value



# VEROSOL'S VISION ON SUSTAINABILITY

*In Verosol's vision on sustainability a product is manufactured in an environmentally friendly, safe and socially responsible manner and can be processed safely at the end of it's life cycle (and preferably recycled).*



# VEROSOL'S VISION ON SUSTAINABILITY: THE 5 BASIC ELEMENTS

1 : Energy savings by using Verosol products

2 : Clean and energy-efficient processes

3 : Safety

4 : Social responsibility

5 : Life cycle

# ENERGY SAVINGS: PAY-BACK TIME ENERGY-WISE

**Independent Dutch research, done by TNO, 2008:**

Within a year, the amount of energy saved by using a Verosol product is even more than the energy needed to make the end-product



## VEROSOL'S VISION ON SUSTAINABILITY: THE WAY FORWARD

*Verosol believes that the pursuit of sustainability is a continuous process and therefore chooses a long-term approach, in which measurable short-term objectives are set*

# VEROSOL'S VISION ON SUSTAINABILITY: THE WAY FORWARD

Verosol has set 3 measurable objectives towards sustainability:

1. To be a CO<sub>2</sub> neutral company
2. To maximize the use of recyclable products
3. To save at least 10% on the energy used in it's processes

# VEROSOL'S GREEN LABELS AND CERTIFICATES



# THE GLOBAL PICTURE

- Social developments
- Economical developments
- Environmental developments
- Legislation & regulations
- Movies
- Philosophies & Literature

To start with the following  
UN resolution:



# UNITED NATIONS, 26th of March 2008



- Is concerned that **climate change poses an immediate and far-reaching threat to people and communities** around the world and has implications for the full enjoyment of human rights
- Climate change is **a global problem** and it requires a global solution
- The warming of the climate system is **unequivocal** and that most of the observed increase in global average temperatures since the mid-twentieth century is likely **to have been human-induced**
- Recognizing that **human beings are at the centre of concerns** for sustainable development and that the right to development must be fulfilled so as to equitably meet the development and environmental needs of present and future generations
- **The world's poor are especially vulnerable** to the effects of climate change, in particular those concentrated in high-risk areas, and also tend to have more limited adaptation capacities

# SOCIAL DEVELOPMENTS

- UN Resolution: see previous sheet
- The increasing influences of NGO (non-governmental organisations), like World Food Organisation (WFO), Unicef, Greenpeace, WWF etc.
- In general more people feel insecure about their future, not only financially but also un-safe, and due shortage of food and water
- Increasing worldwide population and with that an increasing pressure on the food chain
- Discussions about the big differences in the amount of water and land needed for 1 kilo meat and 1 kilo vegetables

# ECONOMICAL DEVELOPMENTS

- Shortages of (natural) resources like oil, metal, but even more important drinkable water!
- Without water the food chain will become in danger
- Food, like corn and sugar are used for fuel, or even for making textile yarns, instead of feeding people: increase of food prices
- “Battle” between farmers and cities for land and water

# ENVIRONMENTAL DEVELOPMENTS

As described for example by the Earth Policy Institute:

- Rising emissions of Greenhouse gases like CO<sub>2</sub>
- Rising temperatures: Melting ice and rising seas
- Water shortages: rivers are running dry (like the Yellow river – China), lakes are disappearing
- Shrinking forests
- Grassland changing to deserts
- Collapsing fisheries
- Disappearing plants and animals, more and more endangered species

# LEGISLATION & REGULATION

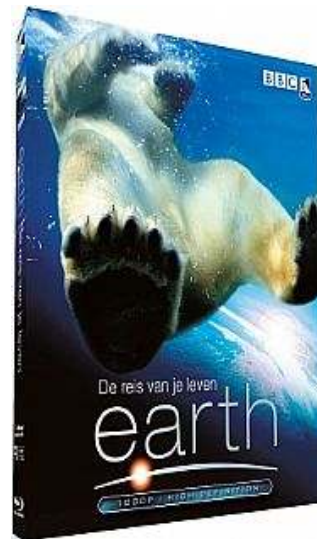
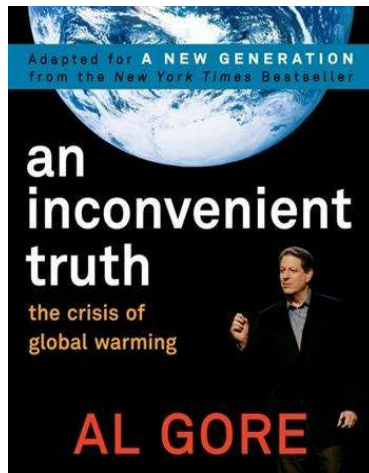
- Worldwide:
  - Kyoto Protocol and Bali Protocol
  - Trade and quota of CO<sub>2</sub> emissions- > CDM = Clean Development Mechanism validates projects on CO<sub>2</sub> emissions and generate CDM-approved Certified Emissions Reductions
- Continental: like in Europe, EPBD, Energy Performance for Building Directive
- National:
  - UK: Part L UK
  - NL: Energy Performance Index
  - D : EnEV Energie Einsparungs Verordnung



# MOVIES

Are increasing peoples awareness of a changing world:

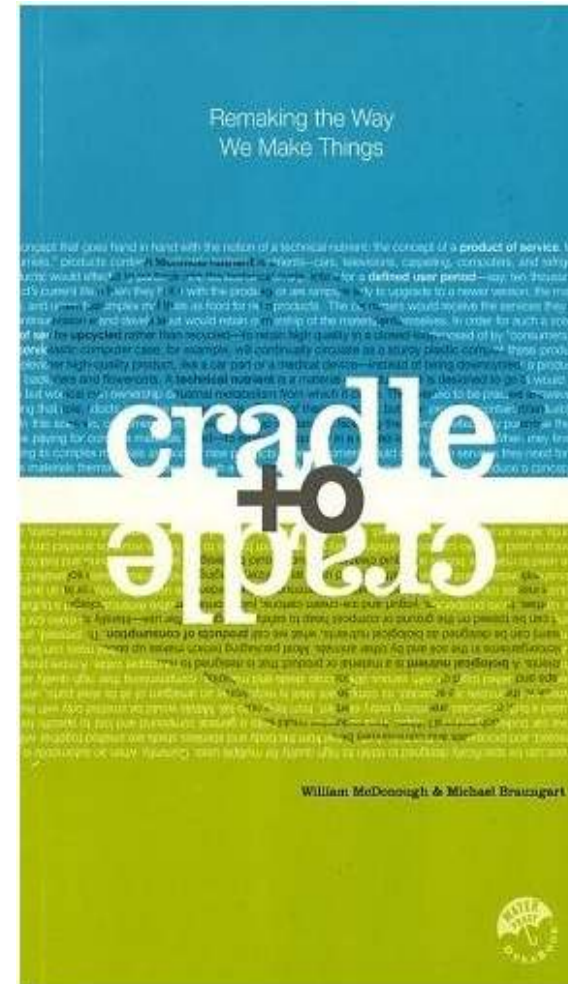
- Earth from David Attenborough – BBC
- Al Gore: Inconvenient Truth
- even movies for children, like Wall-E



# PHILOSOPHIES

## Cradle to Cradle:

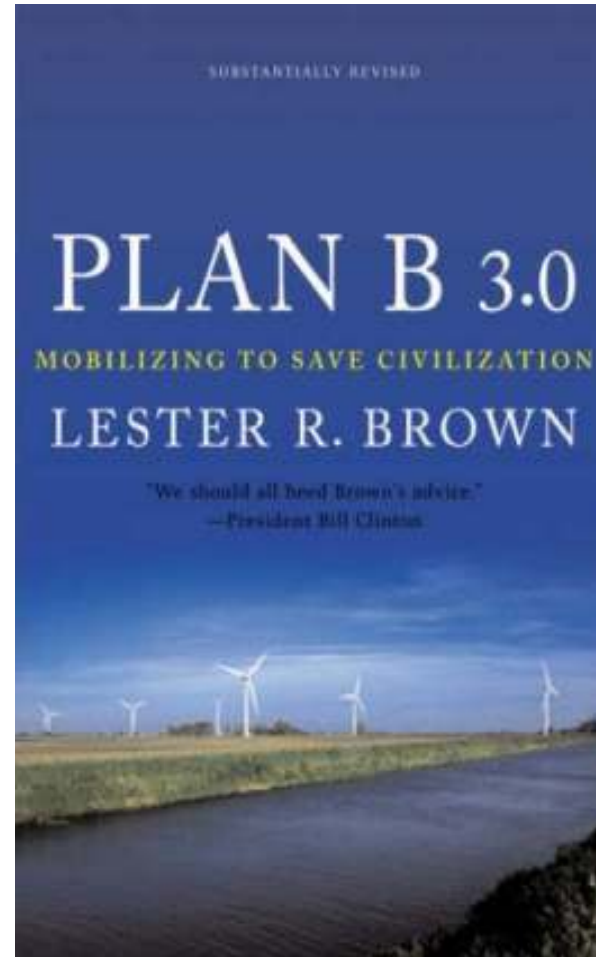
- Remaking The Way We Make Things, by Michael Braungart and William McDonough
- Their message: Waste = Food
- Recycle: up-cycle instead of down-cycle
- But is this really saving energy?



# LITERATURE

## Plan B 3.0: Mobilizing to save civilization

- Analyzing the interaction between global environmental and economic trends
- Offers a response for individuals and governments for saving the civilization now
- President Bill Clinton: “*Lester Brown tell us how to build a more just World and save the planet in a practical, straight-forward way. We should all heed Brown’s advice*”





**QUESTION: DO WE NEED TO DO SOMETHING ?**

## **GREEN LABELS AND CERTIFICATES: WHAT YOU NEED TO KNOW**

- Different types of green labels and certificates are used global and on national level
- Green labels and certificates can be given on:
  - Fabrics
  - Production facilities
  - Buildings in which our fabrics are used
  - Complete product life cycle of the end-product (LCA)
- Sometimes new 'labels' are copying elements of other labels

# GREEN LABELS AND CERTIFICATES: FABRICS

## Öko Tex 100:

- International testing and certification system for textiles
- Goal is to limit the use of certain chemicals
- With a total of over 51,000 certificates issued for millions of different individual products, and over 6,500 companies involved world-wide, the Oeko-Tex Standard 100 has become **the best known and most successful label** for textiles tested for harmful substances



# GREEN LABELS AND CERTIFICATES: FABRICS

## Greenguard:

- The GREENGUARD Certification Program is an industry independent, third-party testing program for low-emitting products and materials
- Access to the GREENGUARD Product Guide, an indoor air quality (IAQ) resource, is provided at no charge and is related to **LEED**
- The guide features products, which are regularly tested to ensure that their chemical and particle emissions meet acceptable IAQ pollutant guidelines and standards
- A valuable tool for architects, designers, product specifiers, and purchasing organizations that want to locate, specify, and purchase off-the-shelf, low-emitting products for indoor environments.



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# GREEN LABELS AND CERTIFICATES: PRODUCTION FACILITIES

## ISO 14001:

- International specification for an environmental management system (EMS)
- Is similar to ISO 9000 quality management in that both are focussed on the process rather than to the product itself
- The overall idea is to establish an organized approach to systematically reduce the impact of the environmental aspects which an organization can control



# GREEN LABELS AND CERTIFICATES: PRODUCTION FACILITIES



## Öko-Tex 1000:

- Comply with specified criteria to avoid or limit the use of harmful substances in **production**
- Company need limit values relating to waste water and exhaust air, optimise their energy consumption, ensure low noise and dust pollution
- Introduce measures to ensure safety at work
- The use of child labour is prohibited.
- 
- Company guarantees in a declaration of commitment that they comply with all the criteria required by the Oeko-Tex Standard 1000
- The incorporation of basic elements of an environmental management system in the operational procedures is essential for this.

# GREEN LABELS AND CERTIFICATES: ON BUILDINGS

Local Green Building councils provide guidelines for greener buildings, like:

- LEED : Used in USA, Canada, Mexico, Brazil, India
- BREEAM : United Kingdom, the Netherlands
- Green Star : Australia, New Zealand, South-Africa
- Estidama : Emirates
- Green Mark : Singapore
- HK-BEAM : Hong Kong
- CASBEE : Japan
- CHEM : China
- HQE : France
- VERDE : Spain
- ...



# GREEN LABELS AND CERTIFICATES: ON BUILDINGS

## LEED: Leadership in Energy and Environmental Design

- Is a Green Building Rating System
- Developed by the U.S. Green Building Council (USGBC)
- Provides a suite of standards for environmentally sustainable construction: New buildings, Maintenance and Major Renovations
- Different LEED versions have varied scoring systems based on a set of required "prerequisites" and a variety of "credits". In general there are 69 possible points and buildings can qualify for four levels of certification:
  - **Certified** - 26-32 points
  - **Silver** - 33-38 points
  - **Gold** - 39-51 points
  - **Platinum** - 52-69 points



# GREEN LABELS AND CERTIFICATES: ON BUILDINGS

## **BREEAM: Building Research Establishment's Environmental Assessment Method**

- The BREEAM family of assessment methods and tools are all designed to help construction professionals understand the environmental impacts of the developments they design and build.
- Created in 1990 with the first two versions covering offices and homes.
- These versions look at the same broad range of environmental impacts: Management, Health and Wellbeing, Energy, Transport, Water, Material & Waste, Landuse & Ecology and Pollution
- A building will rated on a scale of: PASS, GOOD, VERY GOOD or EXCELLENT

The logo for BREEAM, consisting of the word "breeam" in a lowercase, bold, sans-serif font. The letters are a vibrant yellow-green color.

# GREEN LABELS AND CERTIFICATES: ON BUILDINGS

## GREEN STAR:

- Is a comprehensive, national, voluntary environmental rating scheme that evaluates the environmental design and achievements of buildings
- covers a number of categories that assess the environmental impact that is a direct consequence of a projects site selection, design, construction and maintenance, including: Management, Indoor Environment Quality, Energy, Transport, Water, Materials, Land Use & Ecology, Emissions and Innovation
- The following Green Star Certified Ratings are available:
  - 4 Star Green Star Certified Rating (score 45-59) signifies 'Best Practice'
  - 5 Star Green Star Certified Rating (score 60-74) signifies 'Australian Excellence'
  - 6 Star Green Star Certified Rating (score 75-100) signifies 'World Leadership'



# GREEN LABELS AND CERTIFICATES: ON BUILDINGS

Estidama

## Estidama:

- Estidama = 'sustainability' in Arabic
- An integrated program to devise guidelines and regulations for sustainable (green) design, operation and maintenance of all types of buildings and communities within the Emirates of Abu Dhabi.
- Initiated by a group of government agencies and developers (UPC, EAD, ADM, Masdar, Aldar and Sorouh) in alignment with the leadership's vision to transform Abu Dhabi into a sustainable Arab Capital.
- Will help in implementing the overarching principles of Plan 2030 and its recommendations for the future of Abu Dhabi City's urban development.
- The first phase of the Estidama program includes the identification of a set of design guidelines for residential and commercial new buildings: working document is now available on internet

# GREEN LABELS AND CERTIFICATES: ON BUILDINGS

## BCA GREEN MARK:

- Launched in January 2005 as an initiative to move Singapore's construction industry towards more environment-friendly buildings: New Buildings and Existing buildings
- Buildings are awarded the BCA Green Mark based on **five key** criteria: Energy Efficiency, Water Efficiency, Site/Project Development & Management (Building Management & Operation for existing buildings), Good Indoor Environmental Quality & Environmental, Protection and Innovation
- Buildings are awarded **Platinum, GoldPLUS, Gold or Certified rating** depending on the points scored.
- Apart from achieving the minimum points in each rating scale, the project has to meet all pre-requisite requirements, and score a minimum of 50% of the points in each category, except the Innovation category.



# GREEN LABELS AND CERTIFICATES: ON BUILDINGS



## HK-BEAM: Building Environmental Assessment Method:

- The building assessment tool which is widely adopted in Asia
- Its assessment criteria have been specifically developed to cater and address high priority environmental issues in Hong Kong and in the region.
- A comprehensive standard and supporting process covering all building types, including mixed use complexes, **both new and existing**;
- BEAM **benchmarks** the overall environmental performance of buildings in terms of site considerations, material usage, energy aspects, water consumption, indoor environmental quality and innovations, throughout its complete life cycle
- **Certification range: Platinum** (= excellent), **Gold** (= very good), **Silver** (= good), and **Bronze** (= above average)

# GREEN LABELS AND CERTIFICATES: ON BUILDINGS

## **CASBEE: Comprehensive Assessment Systems for Building Environmental Efficiency**

- Assessment system is currently under development by the Japan Sustainable Consortium and will be eventually adopted as the national system to appraise the environmental performance of buildings in Japan.
- Upon its completion development, four assessment tools will be included, namely Pre-design Assessment Tool, Design for Environment Tool, Eco-labelling, and Sustainable Operation and Renovation Tool.
- Currently only details of the Design for Environment Tool is available.

The logo for CASBEE, consisting of the word "CASBEE" in a bold, green, sans-serif font, with a small "TM" trademark symbol to the upper right of the "E".

**CASBEE™**

# GREEN LABELS AND CERTIFICATES: ON BUILDINGS

## **GHEM: Green Housing Evaluation Manual**

- Only limited information available on internet
- Assessment Handbook for Ecological Residential Buildings
- In 2001, Science and Technology Development Promoting Center, Ministry of Construction of the PRC, introduced the Green Housing Evaluation Manual (GHEM) for addressing environmental issues in residential developments.
- Premises satisfying certain levels of performance will be labelled as Asia-Pacific Green Village by GHEM.

# GREEN BUILDING COUNCILS: WORLDWIDE

## some examples

- Australia
- Brazil
- Canada
- Germany
- India
- Japan
- Mexico
- United Kingdom
- United States of America
- New Zealand
- Taiwan
- United Arab Emirates
- Singapore
- Hong Kong
- In process: Argentina, Colombia, Poland, Vietnam, Romania, Italy, Spain, The Netherlands, Turkey

# GREEN BUILDING COUNCILS: some examples of logo's



MEMBER / MEMBRE



EMIRATES GREEN BUILDING COUNCIL

## GREEN LABELS AND CERTIFICATES: OTHERS



### GECA:

- The Good Environmental Choice Label is the only environmental labelling program in Australia which indicates the environmental performance of a product from a whole of product life perspective for consumer goods.
- The label is awarded to products that meet voluntary environmental performance standards which have been created and assessed in conformance to international environmental labelling standards.
- The program is internationally recognised and growing in demand and awareness throughout different industries.

# GREEN LABELS AND CERTIFICATES: OTHERS

## PRODUCT LIFE CYCLE ANALYSIS:

- Scientific methodology that evaluates the environmental impact of a product throughout its life cycle, from the extraction of the raw materials through processing:
  - Manufacture
  - Installation
  - Use
  - Ultimate disposal or recycling
- Intensive work to find and get all the required information
- Need assistance from the complete product chain

## GREEN LABELS AND CERTIFICATES: OTHERS



### RECYCLING:

- Involves processing used materials into new products in order to:
  - prevent the waste of potentially useful materials
  - reduce the consumption of fresh raw materials
  - reduce energy usage
  - reduce air (from incineration)
  - reduce water (from land filling) pollution by reducing the need for "conventional" waste disposal
  - lower greenhouse gas emissions as compared to virgin production.

Recycling is a key component of modern waste management and is the third component of the "Reduce, Reuse and Recycle" waste hierarchy.

# VEROSOL'S VISION ON SUSTAINABILITY

*In Verosol's vision on sustainability a product is manufactured in an environmentally friendly, safe and socially responsible manner and can be processed safely at the end of it's life cycle (and preferably recycled).*



# VEROSOL'S VISION ON SUSTAINABILITY: THE 5 BASIC ELEMENTS

## **Element # 1 : Energy savings by using Verosol products:**

- Proven through independent tests and practical experience
- Significant contribution to the reduction of energy costs:
  - Reduction of heating costs during the winter
  - Reduction of air conditioning costs during the summer.
- In most cases, reduction of energy costs also means a considerable reduction of the CO<sub>2</sub> emissions.

# VEROSOL'S VISION ON SUSTAINABILITY: THE 5 BASIC ELEMENTS

## **Element # 2 : Clean and energy-efficient processes:**

- The complete process is as important as the product
- Integrated approach: including assessment of the entire chain from raw materials to complete end product at our customer's location.
- The emphasis lies on the reduction of energy consumption during the production process and the prevention and reduction of waste.
- Complies with the most stringent current environmental standards and regulations and pursues a pro-active policy.
- Certified according to ISO9001 and ISO14001.

# VEROSOL'S VISION ON SUSTAINABILITY: THE 5 BASIC ELEMENTS

## **Element # 3 : Safety:**

- During production, processing, installation and use of its products is of the greatest importance.
- Safety of all the employees and subcontractors, but also the safety throughout the entire production chain from suppliers to final customers
- Minimize the use of hazardous substances in the production process
- Work according to the highest safety standards.
- The Verosol collection complies with the highest international fire-retardant standards, which ensures safe use of Verosol products during use.

# VEROSOL'S VISION ON SUSTAINABILITY: THE 5 BASIC ELEMENTS

## **Element # 4 : Social responsibility:**

- Is a core element of sustainability at Verosol.
- It is self-evident that all the relevant current regulations are met and that everyone involved in the production process is treated and compensated fairly.
- Offers employees a challenging work environment and ample opportunity for personal growth
- Verosol does not use child labor and in general does not allow working circumstances that are not socially responsible, nor will it work or do business with suppliers and/or customers who do not respect this

# VEROSOL'S VISION ON SUSTAINABILITY: THE 5 BASIC ELEMENTS

## **Element # 5 : Life cycle:**

- The life cycle of Verosol products is, in most cases, quite long. This in itself adds to durability and sustainability
- Even once the product has served its useful life, the product can be processed in a safe manner
- Parts of the product can be reused (aluminium, polyester) and Verosol supports and endorses, where feasible, a 'cradle to cradle' approach
- To the extent possible, Verosol adopts the cradle to cradle approach during the design of new products
- In other cases, clean incineration is the most energy efficient and ecologically responsible solution and, when supporting evidence is available, should be favoured above recycling (counter-intuitive as it sometimes may be)

# ENERGY SAVINGS: PAY-BACK TIME ENERGY-WISE

**Independent Dutch research, done by TNO, 2008:**

Within a year, the amount of energy saved by using a Verosol product is even more than the energy needed to make the end-product



## VEROSOL'S VISION ON SUSTAINABILITY: THE WAY FORWARD

*Verosol believes that the pursuit of sustainability is a continuous process and therefore chooses a long-term approach, in which measurable short-term objectives are set*

# VEROSOL'S VISION ON SUSTAINABILITY: THE WAY FORWARD

Verosol has set 3 measurable objectives towards sustainability:

## **# 1. To be a CO<sub>2</sub> neutral company**

- A formal Life Cycle Analysis will be made to demonstrate that Verosol's contribution to the reduction of CO<sub>2</sub> emission is greater than the CO<sub>2</sub> emission that is caused by its processes and employees.
- Verosol will stimulate initiatives within the company that are aimed at reducing CO<sub>2</sub> emission

# VEROSOL'S VISION ON SUSTAINABILITY: THE WAY FORWARD

## **# 2: To maximize the use of recyclable products**

- Verosol will build a library of the composition of all products it brings to the market
- For each product, Verosol will assess the feasibility to recycle the product in an energy-efficient way
- Verosol will strictly minimize the use of products that can not be recycled

# VEROSOL'S VISION ON SUSTAINABILITY: THE WAY FORWARD

## **# 3. To save at least 5% on the energy used in it's processes**

- Verosol will look for innovative and economical ways to save energy in all its activities
- Energy savings will be included in evaluation criteria for capital expenditures within Verosol Group

# GREEN LABELS AND CERTIFICATES ON FABRICS

Where Verosol stands



- Öko-Tex (since many years. All Verosol polyester products, SilverScreen and recently Enviroscreen have passed)



- Ecospecifier (Australian initiative; most Verosol products comply)

# GREEN LABELS AND CERTIFICATES ON FABRICS

Where Verosol stands



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[www.greenguard.org](http://www.greenguard.org)

- Greenguard (US Indoor Air Quality certificate on fabrics; in progress). Greenguard contributes to the US LEED program
- Supporting paper: Verosol and LEED rating system available on Verosol website

# GREEN LABELS AND CERTIFICATES ON PRODUCTION FACILITIES - Where Verosol stands



- ISO 9001 (since many years)



- ISO 14001 (since early 2008)

# GREEN LABELS AND CERTIFICATES ON BUILDINGS

Where Verosol stands



- Verosol is a member of the US Green Building council that works with the LEED program



- Verosol is a member of the Green Building Council Australia, that works with e.g. the Green star rating system



- Verosol products have contributed to project where a green star rating has been awarded

# GREEN LABELS AND CERTIFICATES ON PRODUCT LIFE CYCLE - Where Verosol stands



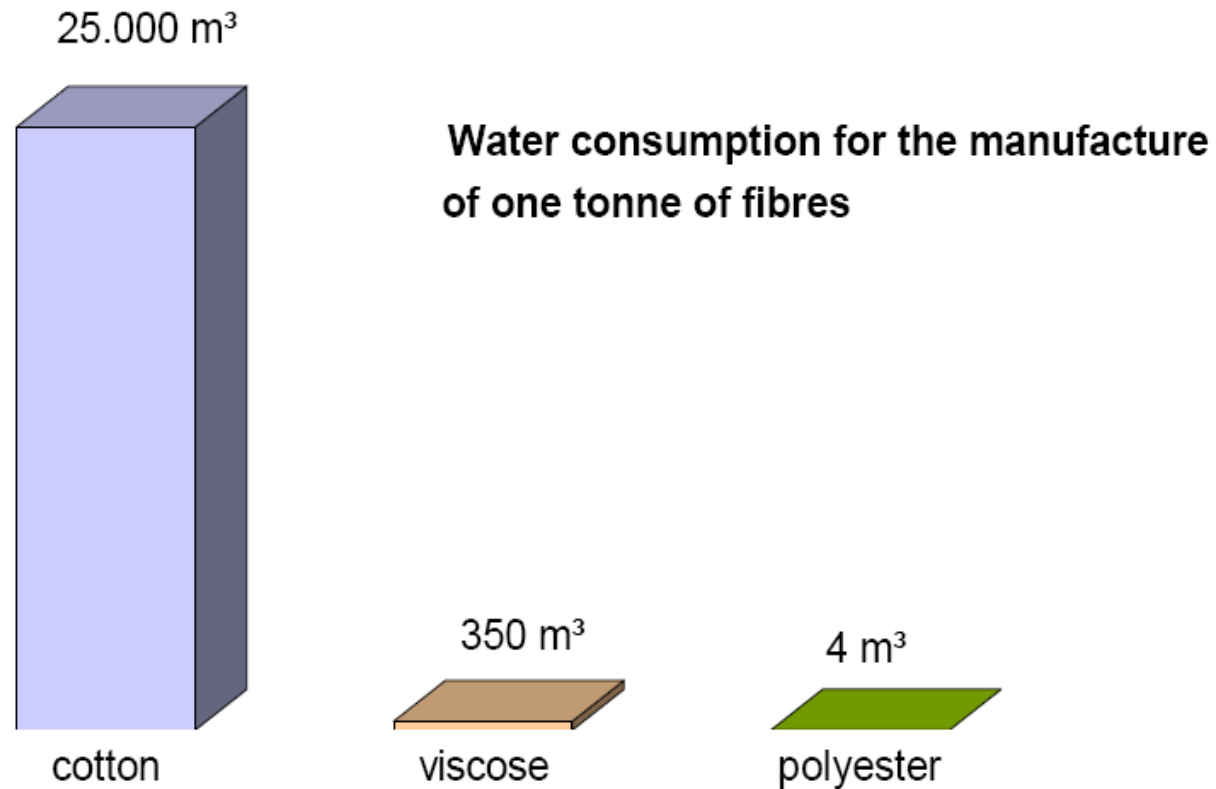
- GECA: Good Environmental Choice Australia: complete product chain incl. recycling

# VEROSOL'S CHOICE FOR MAN-MADE FIBRES

## REASONS TO CHOOSE FOR TREVIRA CS MATERIAL FOR THE ORIGINALS COLLECTION AND ENVIROSCREEN

- The amount of water consumption used for man-made fabrics compared the natural / eco-called fibres
- The land requirement for man-made fibres is almost zero, only the production plant. Therefore the agricultural land can be used for the food-chain
- Percentage of crude-oil needed for the manufacturing of man-made fibres world-wide is only 0.8 %

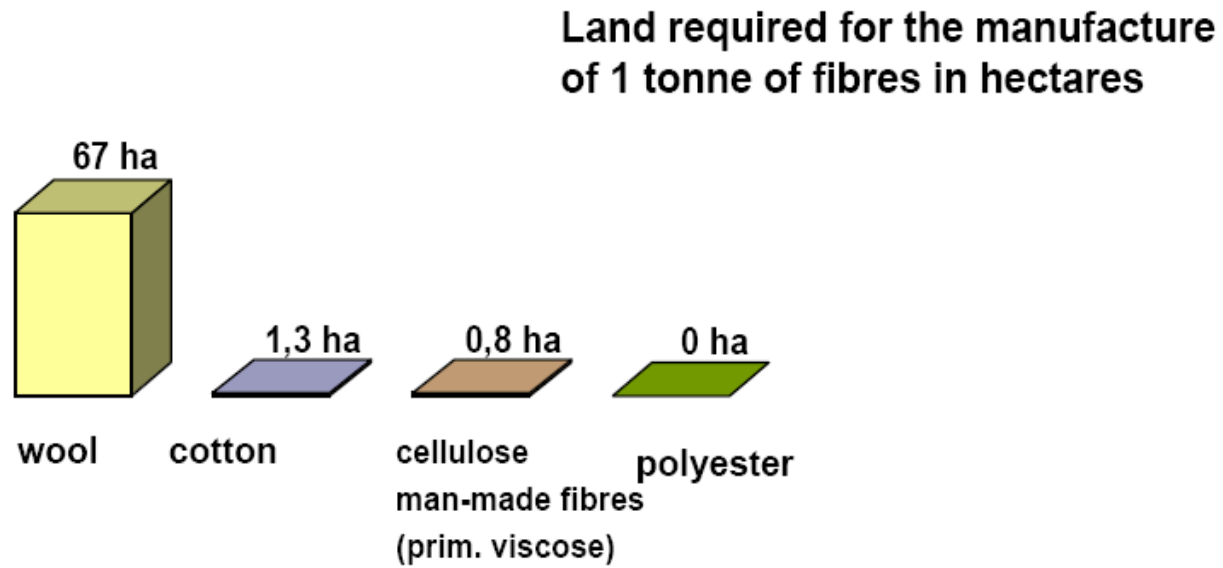
# THE AMOUNT OF WATER CONSUMPTION USED FOR MAN-MADE FIBRES COMPARED TO NATURAL / ECO-CALLED FIBRES



source: IVC

Copyright: Trevira

# THE LAND REQUIREMENT FOR MAN-MADE FABRICS COMPARED TO NATURAL FIBRES



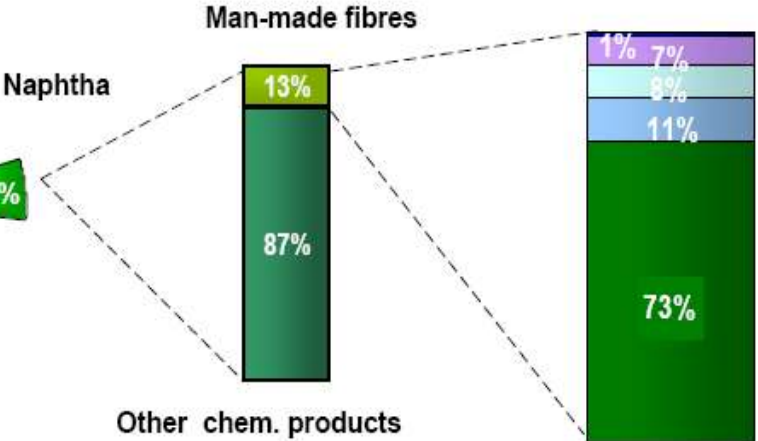
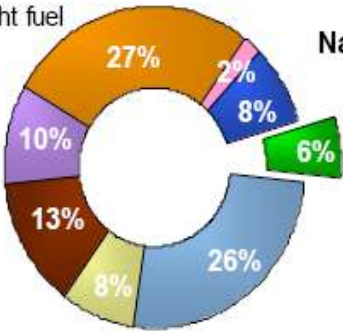
source: IVC

Copyright: Trevira

# PERCENTAGE OF CRUDE-OIL NEEDED FOR THE MANUFACTURING OF MAN-MADE FIBRES WORLD-WIDE: 0.8 %

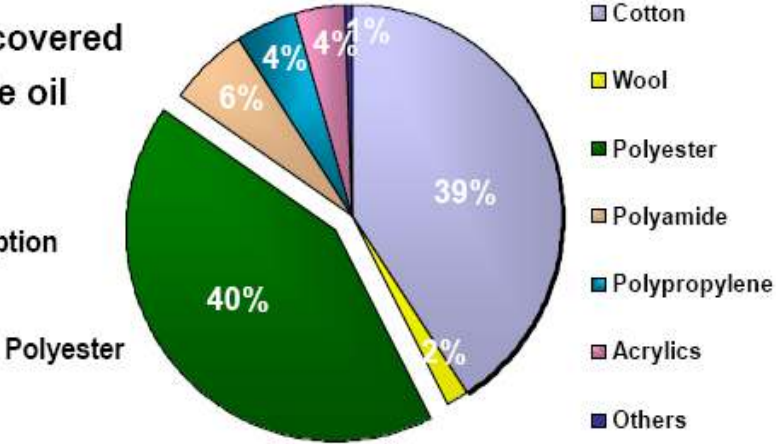
100% crude oil becomes...

- Diesel fuel/Light fuel oil
- Ethane
- Liquid gas
- Naphtha
- Gasoline
- Kerosene
- Heavy oil
- Others



40% of global textile consumption is covered by 0.8% of total consumption of crude oil

Global textile consumption (68.7 million tonnes)



source: IVC, Oerlikon Fiber Year

Copyright: Trevira

## TREVIRA CS: IN MORE DETAIL, as used by VEROSOL



### At the manufacturing of the yarns:

- No Solvent are used
- No compounds containing halogen or nitrogen are employed

### At the processing stage:

- No chemical finish is needed for flame retardancy

### In use:

- Trevira CS textiles are noted for their excellent durability
- In the event of fire, Trevira CS melts slowly, with no flaming and only slight formation of fumes occur

## TREVIRA CS: IN MORE DETAIL, as used by VEROSOL

An **economy investigation** carried out by the London *Fabric Care Association* has shown that flame retardant Trevira CS textiles reveal a positive energy balance, unlike cotton:

- Water consumption during washing of Trevira CS textiles is very low due to slight receptivity of the Trevira CS fibre to water.
- Detergent requirement is also lower as a result of less tendency to soil and easy stain removal.
- Compared with natural fibres less energy is needed for washing and drying.

Over the total **lifetime of a Trevira CS textile** this results in

- 36% less water consumption than with cotton materials,
- 3.3% longer life,
- 39% reduction in total costs (taking into consideration procurement, finishing, maintenance and care).



*Copyright: Trevira*

**Verosol**

# QUESTIONS & AVAILABLE INFORMATION:

**Verosol website:** [www.verosol.com](http://www.verosol.com)

- Supporting paper on LEED
- Certificates: like Öko-Tex, ISO, Greenguard
- Or contact [c.pasman@verosol.com](mailto:c.pasman@verosol.com)

**VEROSOL: THE GREENER BLIND**