

Thematic Seminar Series

Sustainable Consumption and Production Patterns

Value of life cycle perspective

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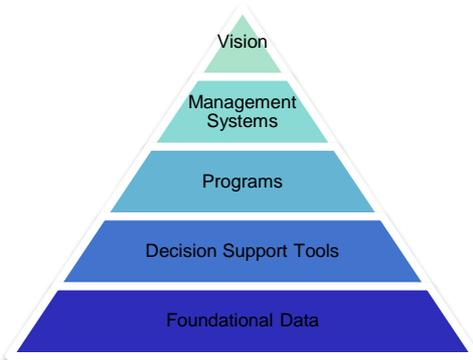
&

Chair, UNEP/SETAC Life Cycle Initiative



Five Winds INTERNATIONAL

About Five Winds International

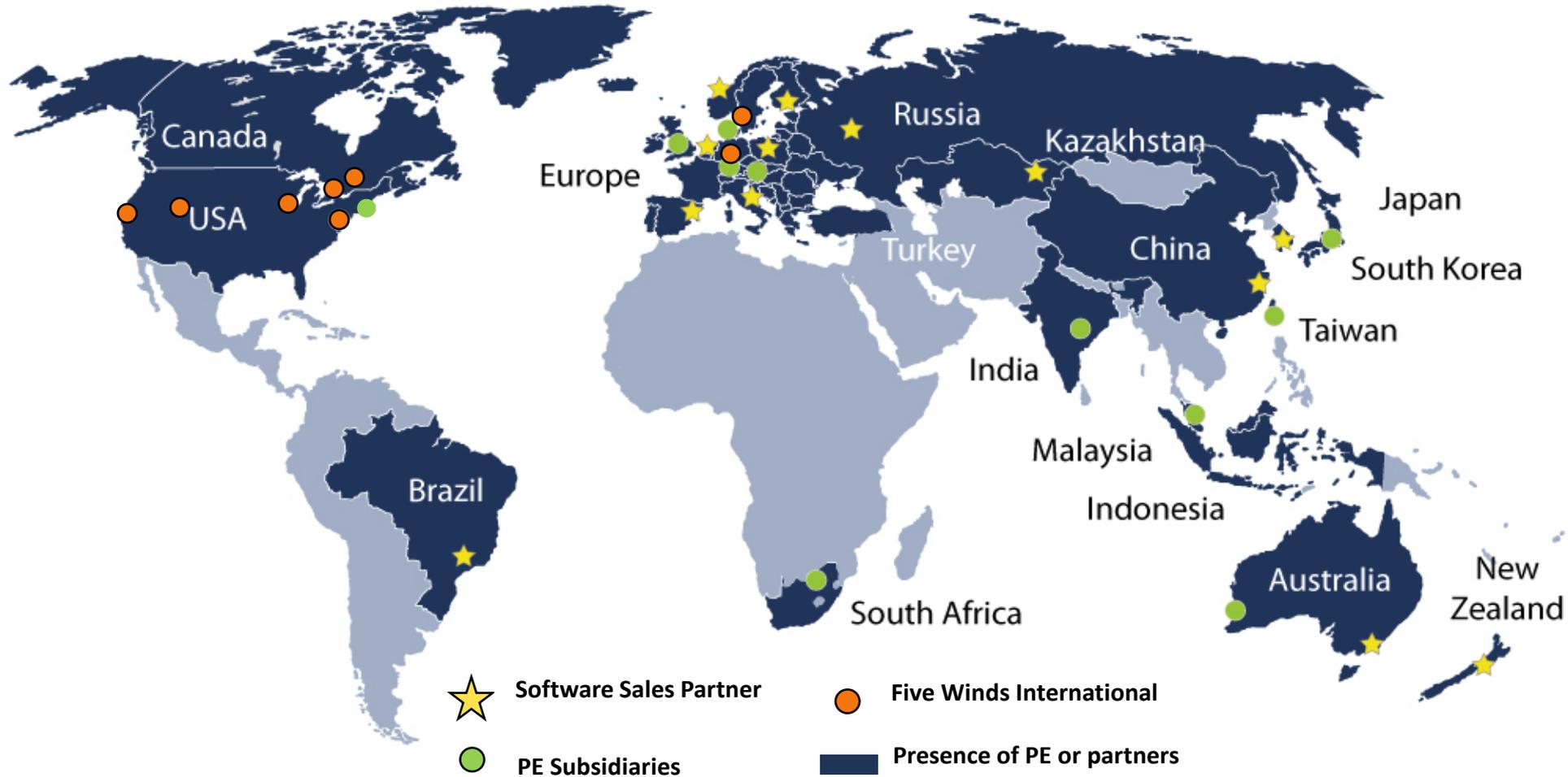


- Sustainability implementation experts since 1998
- Local service, international perspective
 - Offices in US, Canada, Europe
 - Global capacity through affiliation with PE and other networks
- Strategy through implementation



Global Presence

Utilizing a network of over 150 sustainability consultants worldwide



Some Clients

RIO TINTO



The miracles of science™

EILEEN FISHER



World Business Council for Sustainable Development



Make it better.™



Gillette®



DAIMLERCHRYSLER



MOTOROLA

Herman Miller



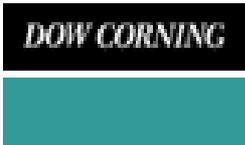
Interface Corporation

Johnson & Johnson

JohnsonDiversey
Clean is just the beginning



Armstrong



Environment Canada



ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT



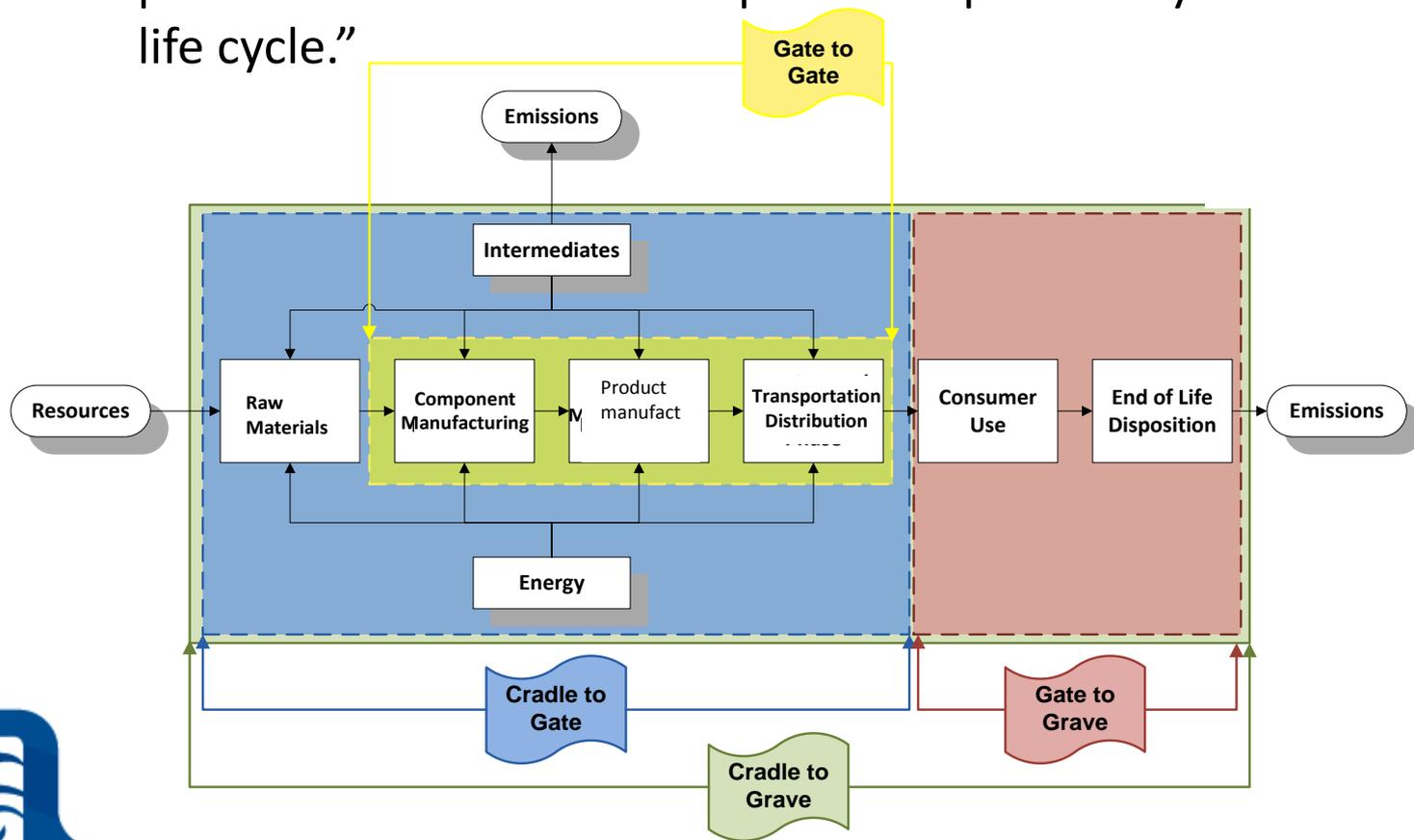
International Council on Mining & Metals



What is Life Cycle Assessment (LCA)?

Definition of Life Cycle Assessment from ISO 14040 / ISO 14044:

LCA is the “compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system throughout its life cycle.”



Life Cycle Impact Assessment

Categories - global, regional and local

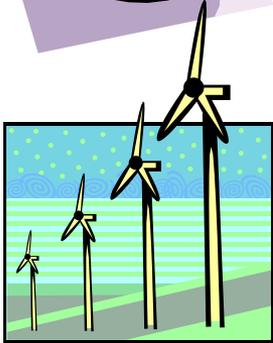


Global Criteria

Resource depletion

Global Warming Potential (GWP)

Ozone Depletion Potential (ODP)



Regional Criteria

Acidification Potential (AP)

Land use

Local Criteria

Human- and *Eco-Toxicity Potential* (HTP, ETP)

Eutrophication Potential (EP)

Photochemical Oxidant Creation Potential (POCP)



Other Criteria

Primary energy demand

Water

Nuisance (noise, odor, landfill demand, ionizing radiation)

Social impacts

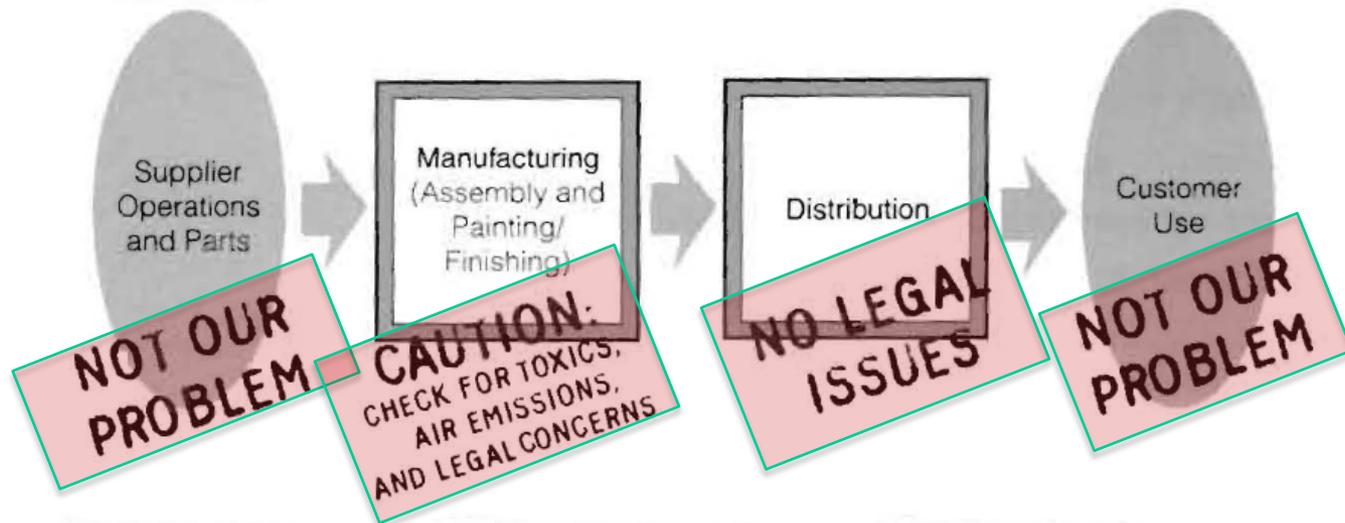


Static compliance approach

Traditional approach to environmental risk management

- site based
- single issue focus
- compliance driven

Simplified Car Value Chain



Source: Green to Gold, D. Esty and A. Winston



Dynamic systems approach



Dynamic systems approach

A Smarter Planet >



Food



Government



Healthcare



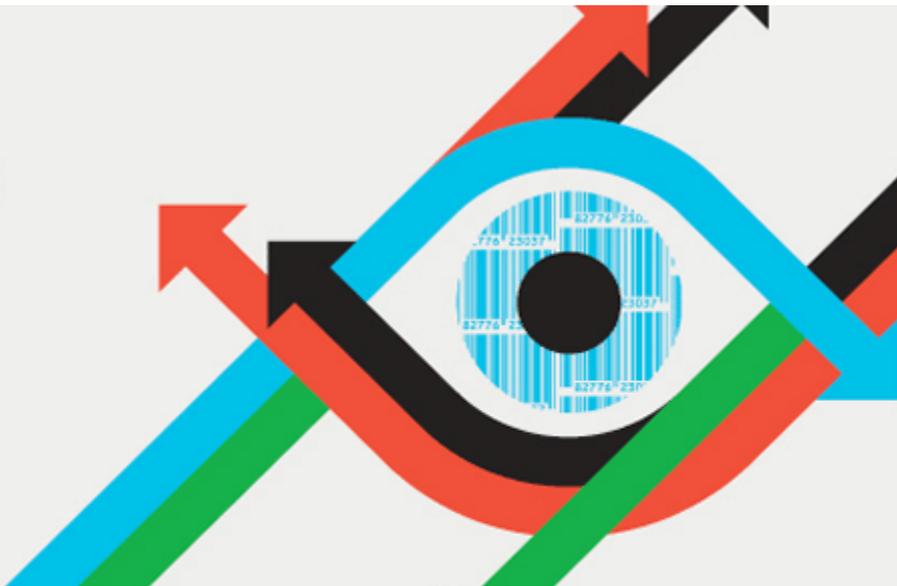
Infrastructure



Education



Energy



**A smarter supply chain
looks ahead.**



Introduce yourself to a smarter planet

Three big ideas

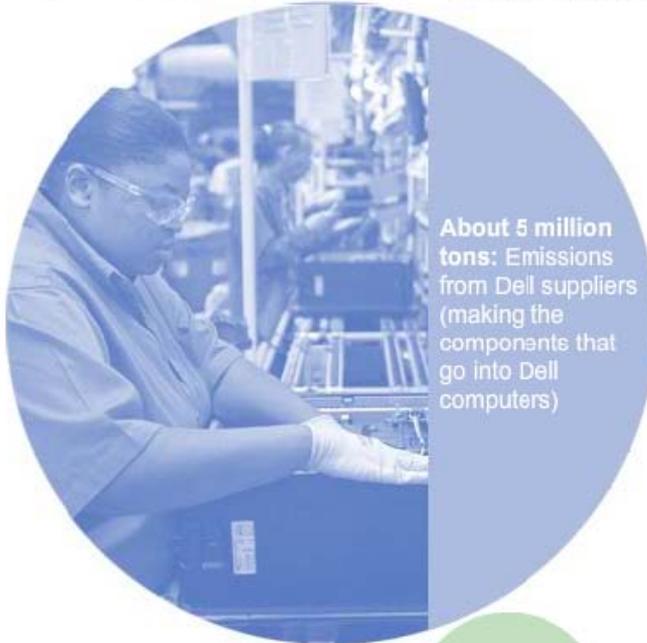
1. Instrument the world's systems
2. Interconnect them
3. Make them intelligent

→ Start here

Why does a life cycle approach matter – GHG example

What Dell Doesn't Include

[Back to what Dell does include](#) ◀



About 5 million tons: Emissions from Dell suppliers (making the components that go into Dell computers)



About 5 million tons: Emissions from Dell customers (electricity used in running Dell computers and servers)

...and water footprint

...and solid waste

...and air pollutants

...etc etc etc



Status of Life Cycle Approaches

Demand side

- Sustainable consumption and production imperative
- Millennium goals
- Retail expectations (e.g., WalMart, Tesco) – Sust Consortium
- Climate management (CPD)
- Green Building certification (e.g., GBCs)
- Green procurement (e.g., governments, large institutions)
- Government requirements (e.g., French consumer products label, CA Green Chemistry Initiative; Bio-based EO)
- Sector sustainability standards (e.g., BIFMA, CRI)
- Voluntary partnership programs (e.g., EPEAT)

Supply side

- UNEP/SETAC LCI (e.g., LCM, CMM, and data base guidance)
- Resources - University programs developing but lagging – particularly outside of Europe
- Software (e.g., GaBi, Sima-pro)
- Data bases (national and private)
- Government/Businesses infrastructures
 - geared to media by media strategies (e.g., water, air)
 - Site by site approaches – manufacturing, waste management (e.g., landfill)
 - Not configured to work collaboratively across life cycle stages and impacts & in partnerships - *this is where LCM can assist*



Wal-Mart's radical traceability

Home

About Responsible Jewelry



Collection

Mine To Market



▪ [Live Greener](#) ▪ [Spread The Word](#) ▪ [Media](#) ▪ [Contact](#)

Wal-Mart's radical traceability

Product History



Gold bars

Kennecott Utah Copper produces about 400,000 troy ounces of gold per year, with a purity of 99.99%. The molten gold is poured into 400 troy ounce bars, which are then sold to customers.



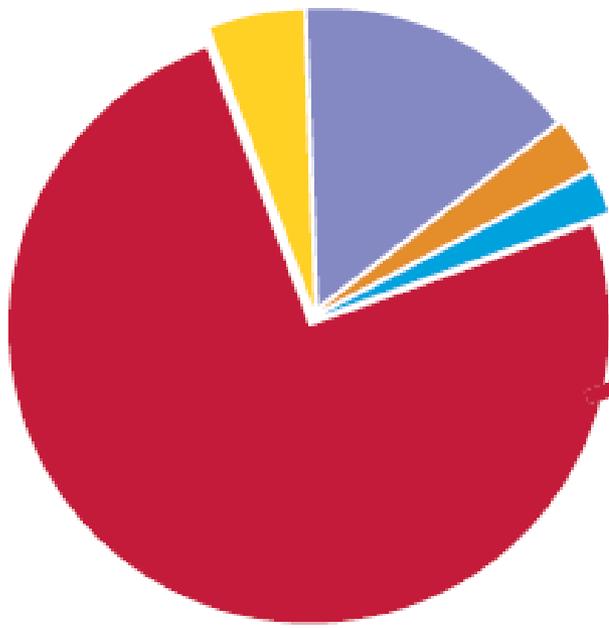
Batch Details

Batch No: 2008G01002
Shipped Date: 2008-02-19



Innovation - P&G – Cold water detergents

75% of energy during laundry life cycle is consumed in the in-use phase



- Ingredients
- Formulation
- Packaging
- Distribution
- Use phase
- Disposal



Leadership in Supply Chain Responsibility- Patagonia's Asian Suppliers



Leadership in Supply Chain Responsibility- Patagonia's Asian Suppliers



CHOOSE A PRODUCT

DIGGING DEEPER

JOIN THE DISCUSSION



roll over the boxes to view product stories

Down Sweater

[View Details](#) [Men's](#) | [Women's](#)



The Good

We use high-quality goose down, an exceptionally efficient insulator. The down comes from humanely raised geese and is minimally processed. The light shell is made of recycled polyester.



The Bad

We had to increase the weight of the shell fabric when we switched to recycled polyester. The zipper is treated with a DWR that contains perfluorooctanoic acid (PFOA), a synthetic chemical that is now persistent in the environment, and the product is not yet recyclable.



What We Think

We're investigating alternatives to the use of PFOA in water repellents – and looking for ways to recycle down garments.



Leadership in Supply Chain Responsibility- Patagonia's Asian Suppliers

Qingdao, China: Sewing

SEWING 

SOURCING PHILOSOPHY 

SOCIAL AUDIT 



Sewing

Patagonia's Down Sweaters are sewn in Youngone's modern Qingdao factory. But much of the work is time-consuming and low tech.

1/9

Youngone's modern factory in Qingdao, China, host city for the 2008 Summer Olympics sailing events. Qingdao is also home to China's most famous beer.

Photo Credit: Timothy Stuart



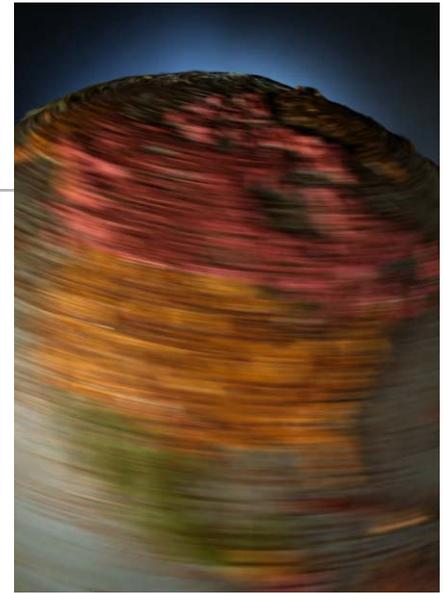
What can I do when I get home?

1. Establish policies and programs to improve efficiency and reduce footprint of resources and products you export
 - Work to understand the social and environmental footprint of your exports
 - Develop national data bases on those resources and products
2. Enhance educational forums to include life cycle thinking in science and engineering schools, executive development programs, and secondary schools



What can I do when I get home?

3. Develop a stakeholder engagement process with thought leaders from government, business, universities, and NGOs to better understand sustainable priorities important to your country
4. Engage in your country's standard setting activities – e.g., ISO, CEN, ASTM, CSA
5. Establish a national network of groups/individuals in understanding and advancing life cycle thinking – UNEP/SETAC LCI can be a resource



Key is developing a clear understanding first before we can make concrete changes to improve; but we need to scale and speed up our understanding & actions



LCI data base work international – just a snap shot

Country

- US
- Brazil
- UK
- Denmark
- Germany
- Malaysia
- Japan
- Europe
- China
- Thailand
- Australia
- Canada

Universities/Partnerships/ Consultant DBs

- Sustainability Consortium
- Sima-Pro
- GaBi - University of Stuttgart
- Eco-invent

Associations

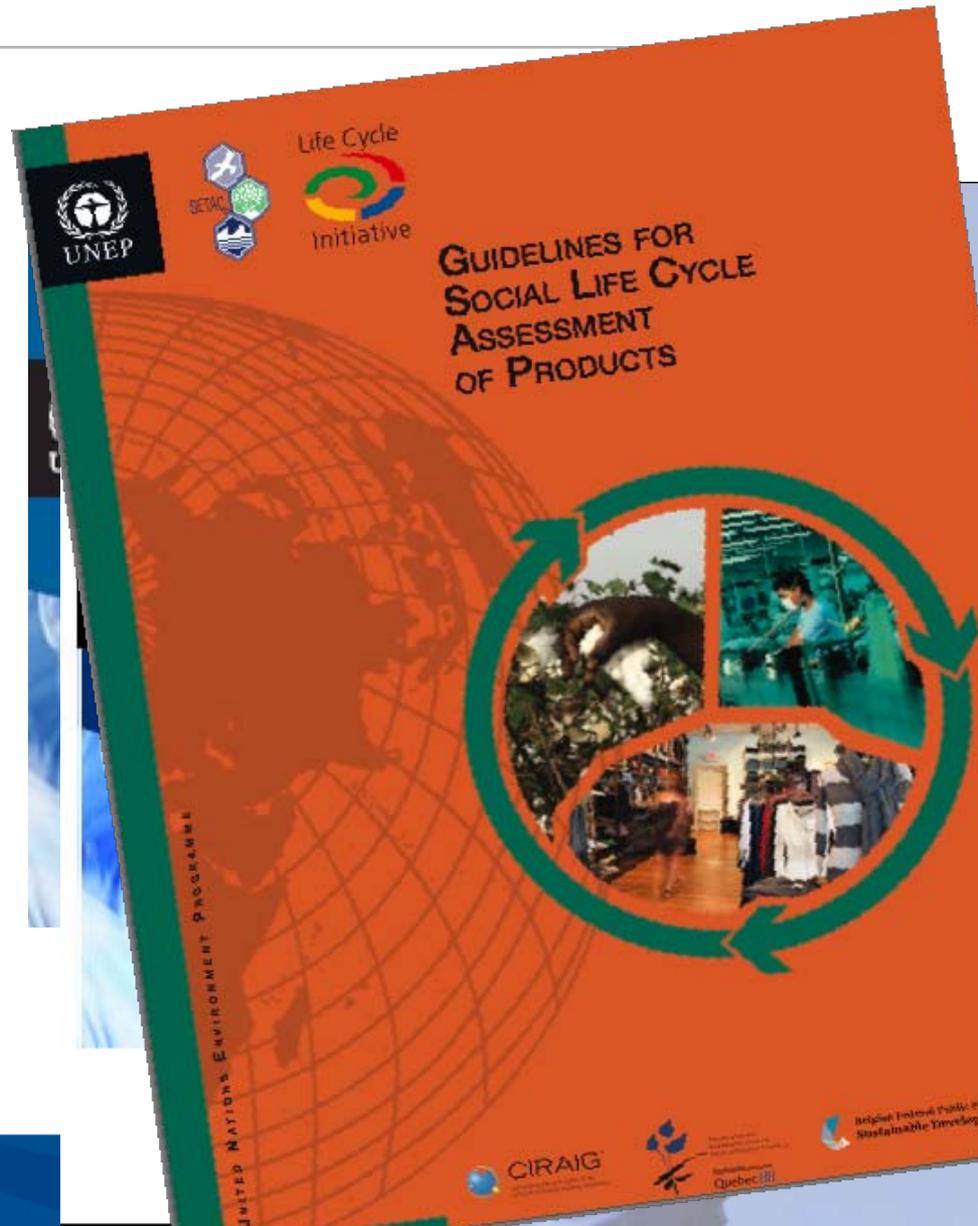
- Aluminum Association
- American Iron and Steel Institute (AISI)
- International Copper Association (ICA)
- International Zinc Association (IZA)
- Plastic Europe & American Chemistry Council
- WorldSteel
- Corrugated Board
- American Forest and Paper Association (AF&PA)
- North America Insulation Manufacturer's Association (NAIMA)
- Glass Packaging Institute (GPI)
- International Chromium Development Association (ICDA)



UNEP/SETAC Life Cycle Initiative

Business, Academic, and Governments
working together to:

- ✓ *To bring science-based life cycle approaches into practice worldwide*
 - ✓ Over 2000 individuals collaborating globally
 - ✓ SETAC brings the science
 - ✓ UNEP brings access to governments and dissemination
 - ✓ One stop shop for life cycle approaches



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