

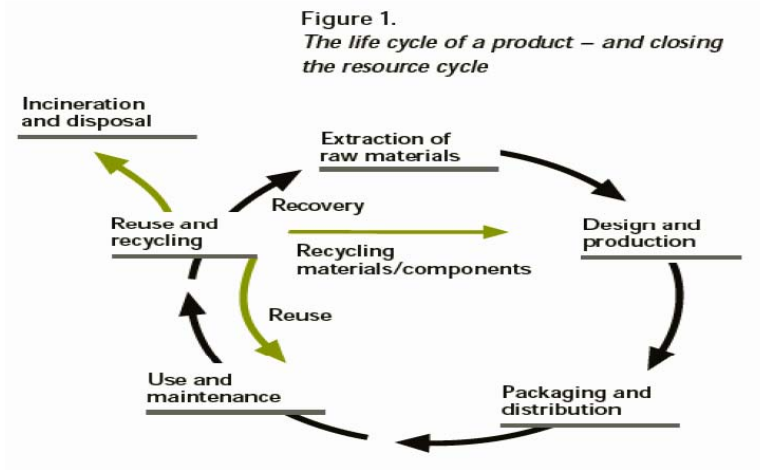
# Introduction to Environmental Life Cycle Analysis (LCA)

**What is a life-cycle?**

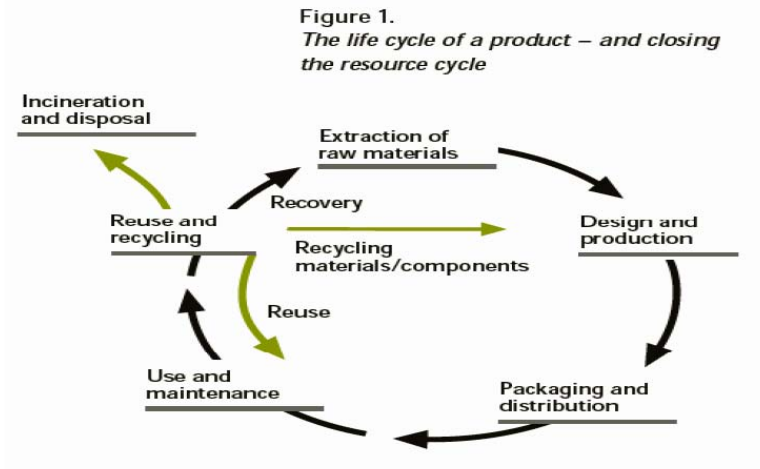
'developing products with improved environmental characteristics throughout the product's life cycle'...



**‘focus on improvements to the product in ALL phases, from raw material extraction and transport, to production and consumption, to re-use or disposal’**



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## What is Clean Production?

Clean production is **optimised production** by reducing water and energy consumption, by substituting harmful materials, and by introducing the best available technology to reduce discharges and emissions, then an enterprise's products are cleaner, all else being equal.

*“Cleaner production is a first step towards cleaner products”*

## What are environmental management systems (EMS)

Focuses initiatives on the environmental conditions **within** the enterprise's own property and makes demands for continuous improvements...



- ☑ Environmentally optimised goods transport,
- ☑ collaboration with suppliers regarding phase-out of harmful substances,
- ☑ information to consumers regarding environmentally friendly product use, etc.

“Life-cycle-based environmental management is a **step further** towards cleaner products.”

## What are Clean Products?

- focuses on improving the **environmental characteristics** of a product,
- all departments **must** contribute including product development, production, sales and marketing, procurement, and transport.
- requires **increased collaboration** with suppliers and consumers, regarding environmental improvements

## Why Life-cycle environmental assessment or analysis

- Decision-making and operational tool for management and employees; it is an expression of commitment and action.
- From ‘clean production’ towards ‘clean products’



## Advantages of LCA to enterprises

- A life-cycle perspective **demands more** from an enterprise’s environmental initiatives, **BUT** also provides the possibility for significant advantages, for example:
  - ☑ an improved market position compared to the competitors or ‘competitiveness’;
  - ☑ an improved market image; growing ‘environmental sensitivity’ of global and local markets and consumers

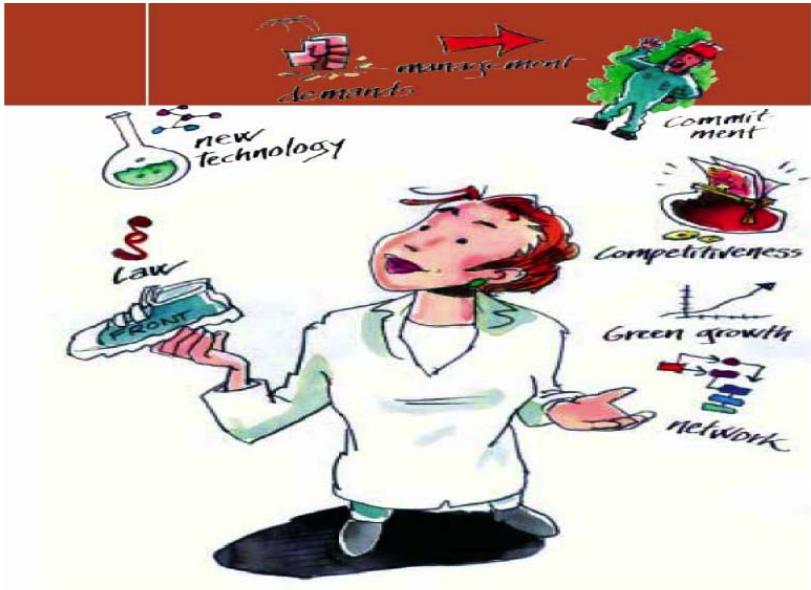
Figure 3.  
*Internal driving forces and possible advantages*



Annex 5a

- ☑ closer cooperation with suppliers and customers regarding product development and marketing; ‘greening the supply chain’
- ☑ better relations with environmental and other authorities and with other collaborative partners; ‘environmental compliance’
- ☑ New innovations (production and technologies); reduction of costs;

Figure 4.  
External driving forces and possible advantages



Sources:  
 Guide to Life-Cycle Management: Background Report, UNEP, January 2005.  
 Arne Remmer and Marie Munster. “An Introduction to Life-Cycle Thinking and Management”. Environmental News No. 68, Danish Environmental Protection Agency, 2003. (Primary source)