

A sustainable consumption and production strategy for South African construction products

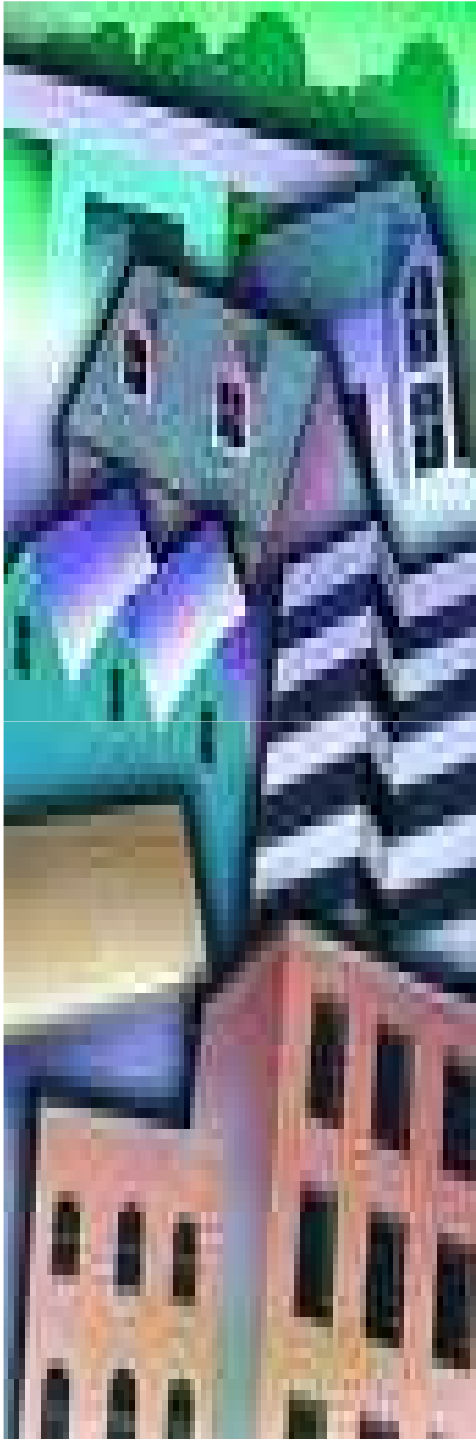
Buy Environmental conference 09 – 10 June 2009

N. L. AMPOFO-ANTI

CSIR BUILT ENVIRONMENT

The logo for the Council for Scientific and Industrial Research (CSIR) of South Africa. It features the letters 'CSIR' in a bold, blue, sans-serif font. The 'C' is a large, rounded shape, and the 'S' is a vertical bar with a small horizontal bar at the top. The 'I' is a vertical bar with a small horizontal bar at the top, and the 'R' is a vertical bar with a small horizontal bar at the top.

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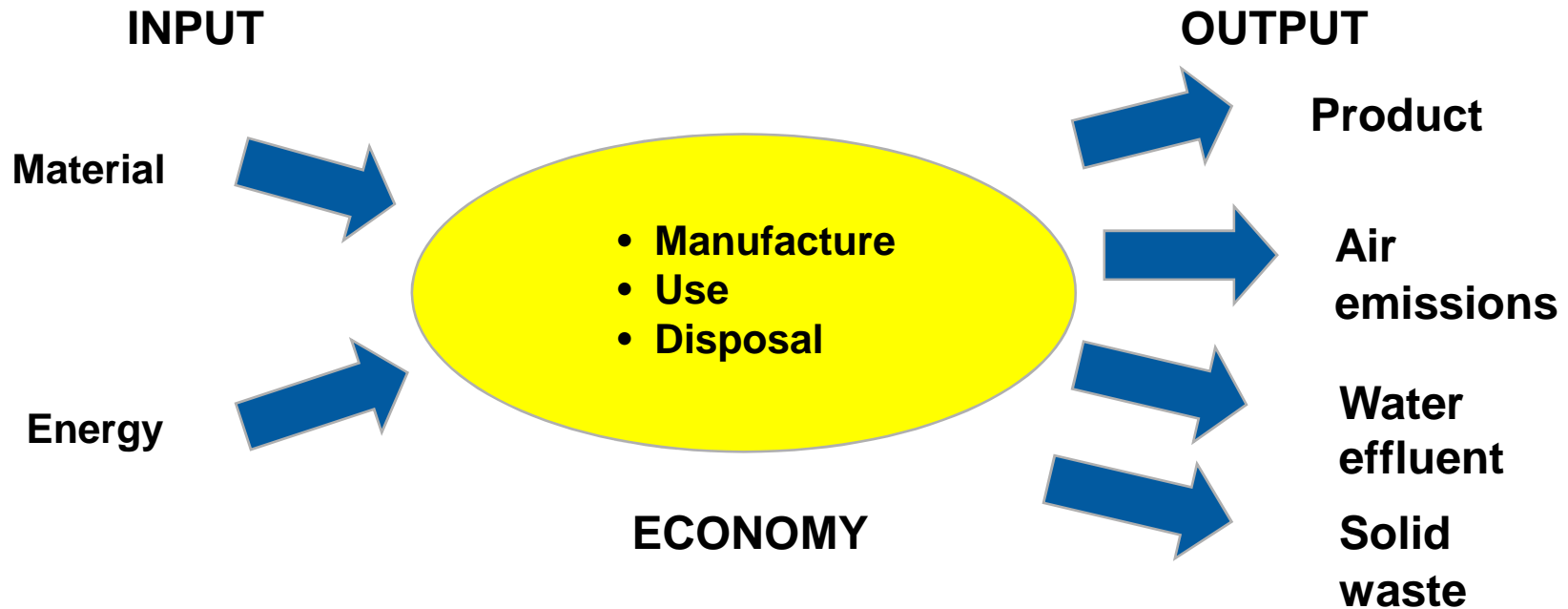


Outline

- Introduction to Sustainable Consumption and Production (SCP)
- International trends in SCP
- SCP in South Africa
- Lessons learnt
- SCP action agenda for South African construction products

Introduction to Sustainable Consumption and Production (SCP)

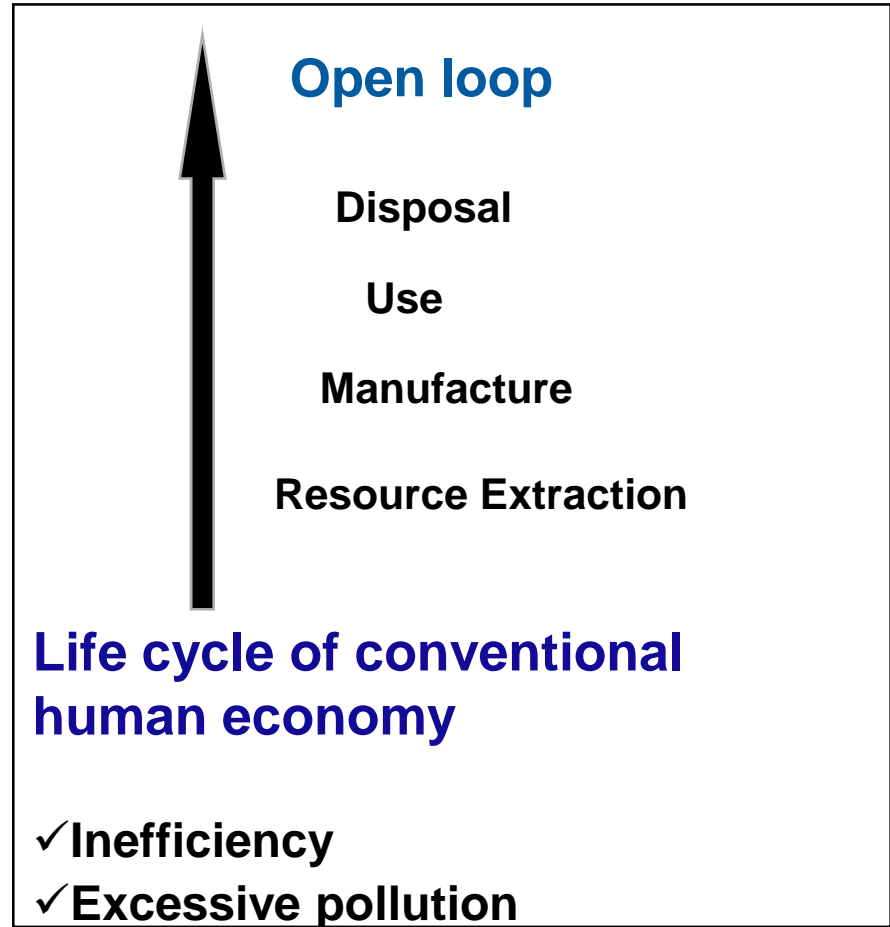
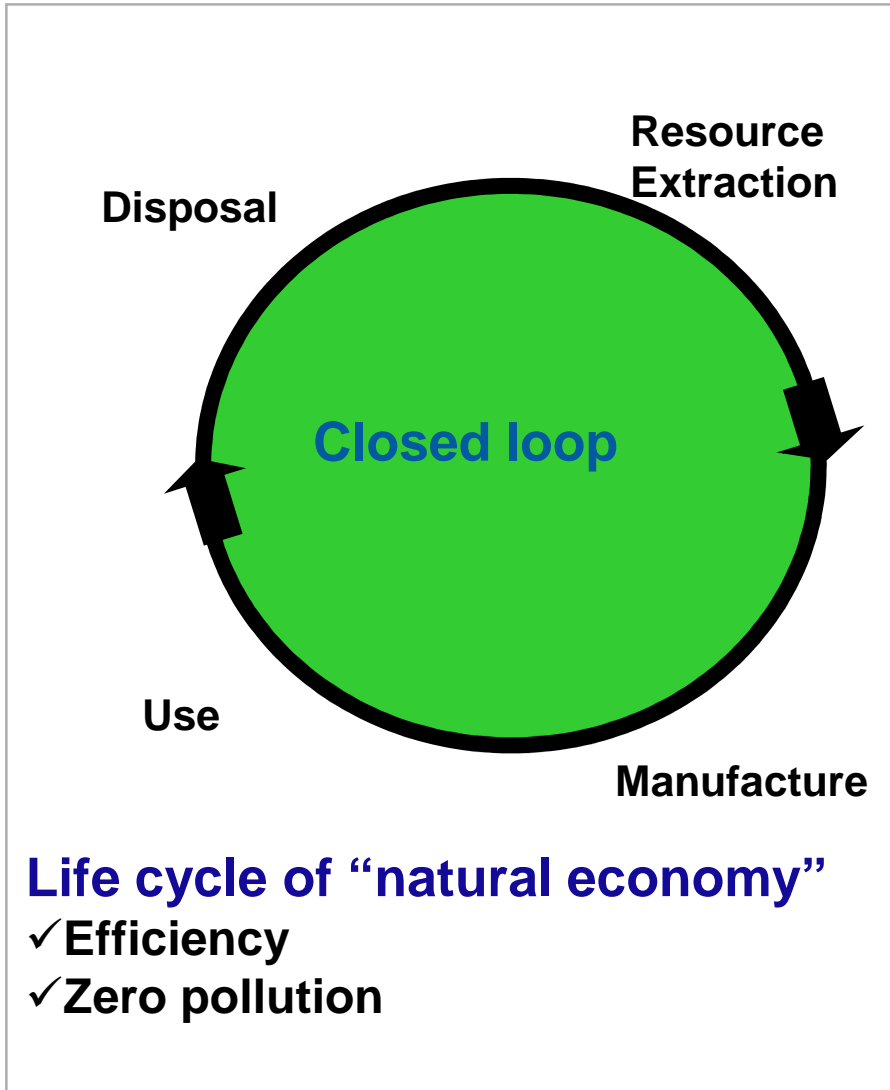
Attributes of consumption and production (economic) process

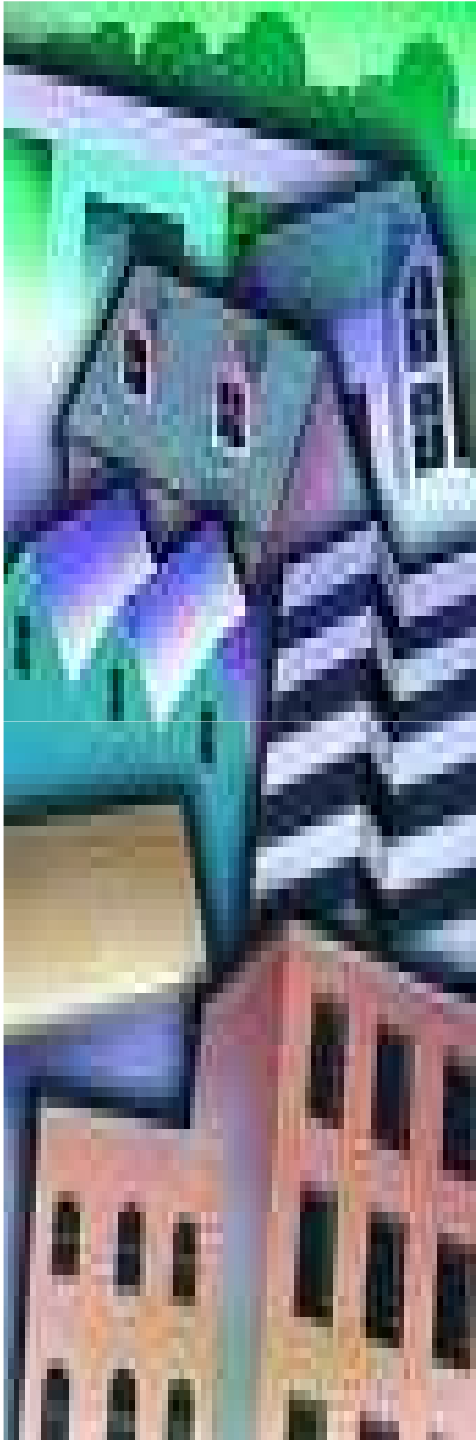


Prerequisites for SCP, i.e. “green economy”

- ✓ Resource efficiency
- ✓ Zero pollution

Introduction to SCP





Introduction to SCP

Attributes of construction economy

Socio-economic benefits

- ✓ Construction products
- ✓ Job creation, contribution to GDP, etc

Environmental deficits (global)

- ✓ Raw materials use: 50%
- ✓ Non renewable energy use: 50%
- ✓ Freshwater use: 40%
- ✓ Solid waste generation: 50%
- ✓ Air pollution (GHG): 40%
- ✓ Freshwater scarcity

Dilemma

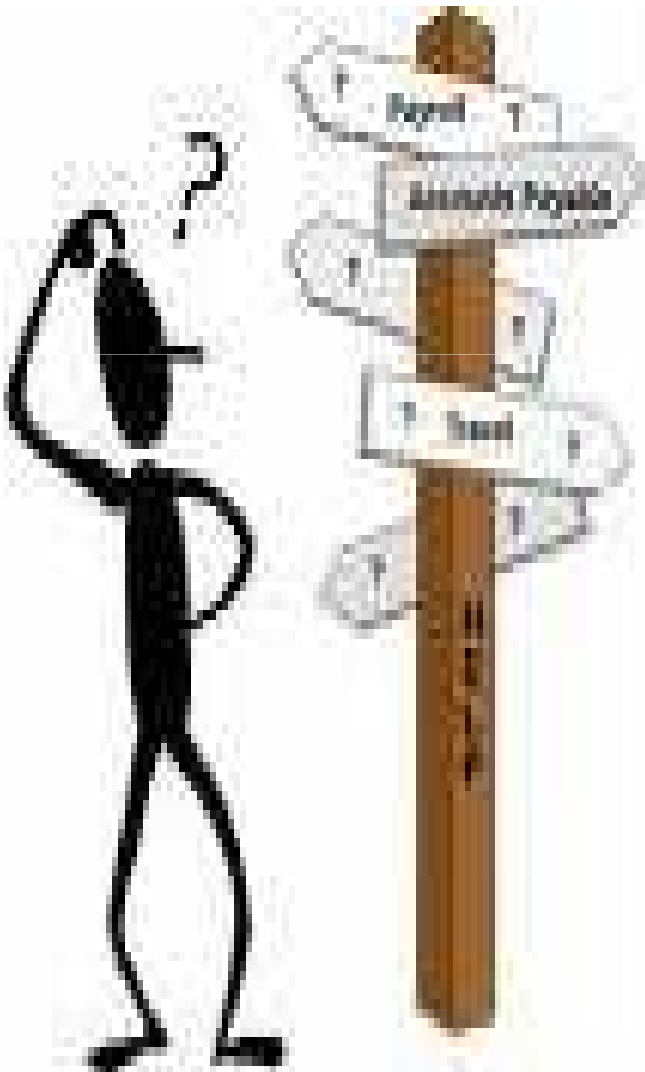
International trends in SCP

The imperatives of SCP a.k.a. “the green economy” are globally endorsed.....

- ✓ UN, Stockholm, 1972
- ✓ Brundtland Report, 1987
- ✓ Agenda 21, 1992
- ✓ Kyoto Protocol, 1997
- ✓ WSSD, 2002
- ✓ Stern Review, 2006

But the approach to SCP is contentious..

- ✓ Prescriptive approach?
- ✓ Science-based approach?





International trends in SCP

Route 1: The prescriptive approach

Principle

- ✓ Pollution control (reactive)

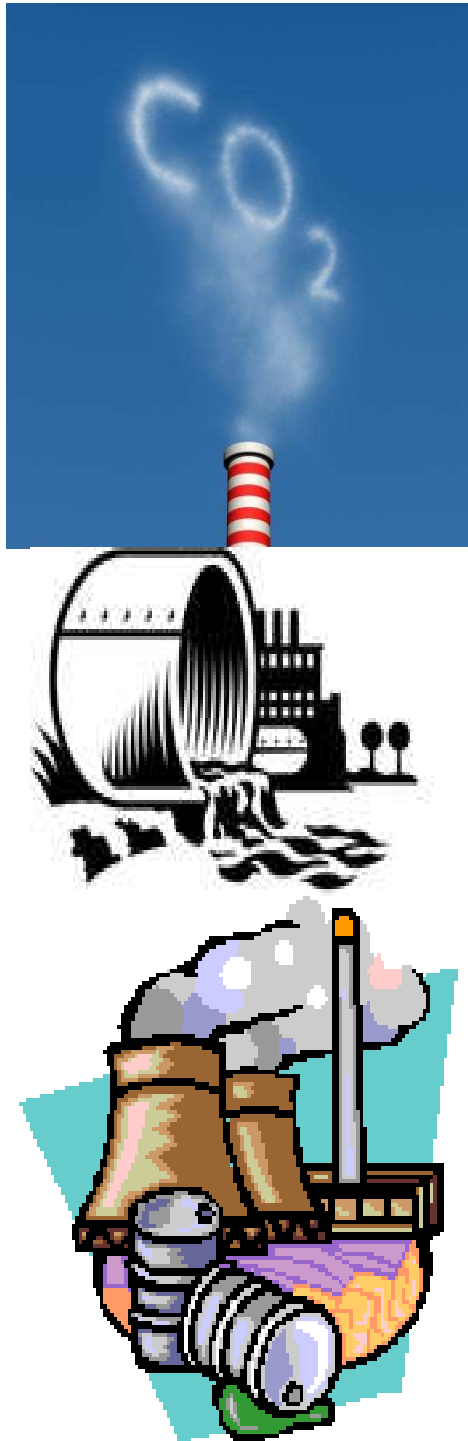
Key features of prescriptive approach

- ✓ Fragmented perspectives on environmental management
- ✓ Subjective assessment criteria
- ✓ No step change (old framework, refined behaviour)

Key challenges

- ✓ Escalating resource deficits
- ✓ Uncontrollable pollution
- ✓ Escalating costs
- ✓ Outdated, but still in use





International trends in SCP

Route 2: The science-based approach

Principle

- ✓ Pollution prevention (pro-active)

Key features of science-based approach

- ✓ Systems perspectives on environmental management
- ✓ Objective assessment criteria

Key advantages

- ✓ Comprehensive
- ✓ Win-win for economy and environment
- ✓ Current environmental knowledge

Key challenge

- ✓ Step changes for entire supply chain

International trends in SCP

Life Cycle Assessment (LCA): the science-based tool

Why LCA?

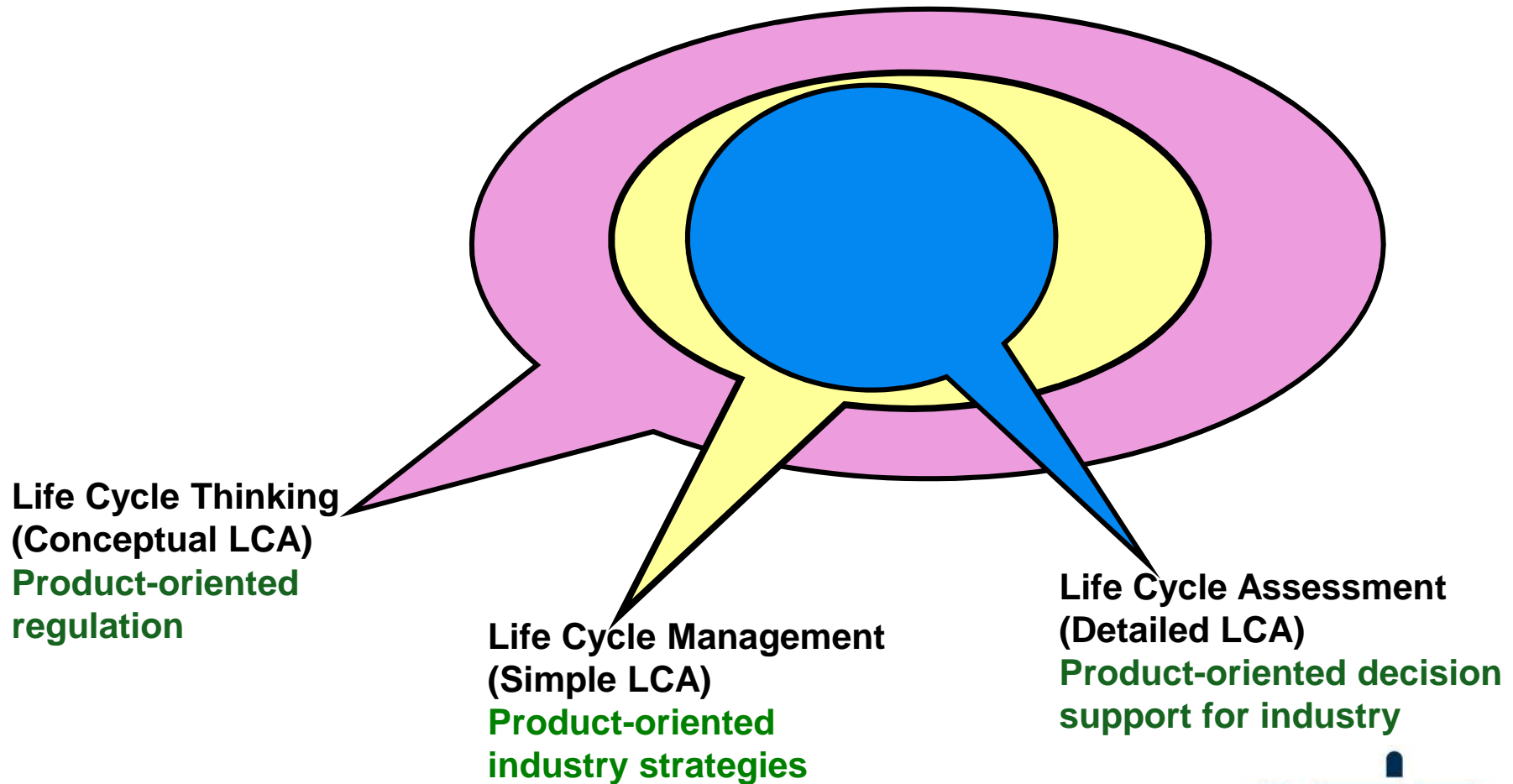
- ✓ LCA is central to SCP (UNEP)
- ✓ LCA is a prerequisite for the life cycle or “green economy” – WSSD
- ✓ Flexible applications – suitable for product, process or service

What is LCA?

- ✓ decision-support for integrating environmental concerns into economic activity from cradle-to-grave
- ✓ International standard

International trends in SCP

LCA applications



International trends in SCP

Life Cycle Approaches - European Union policy

LCT application

Integrated Product Policy / Extended Producer Responsibility (EPR)

LCM applications

Design for Environment (DfE), Cleaner Production (CP), green procurement, Green marketing

LCA applications

Eco-labelling / Environmental Product Declarations (EPD)
LCA-based decision support tools, e.g. Life Cycle Inventory (LCI) databases



SCP in South Africa

National status

National environmental issues

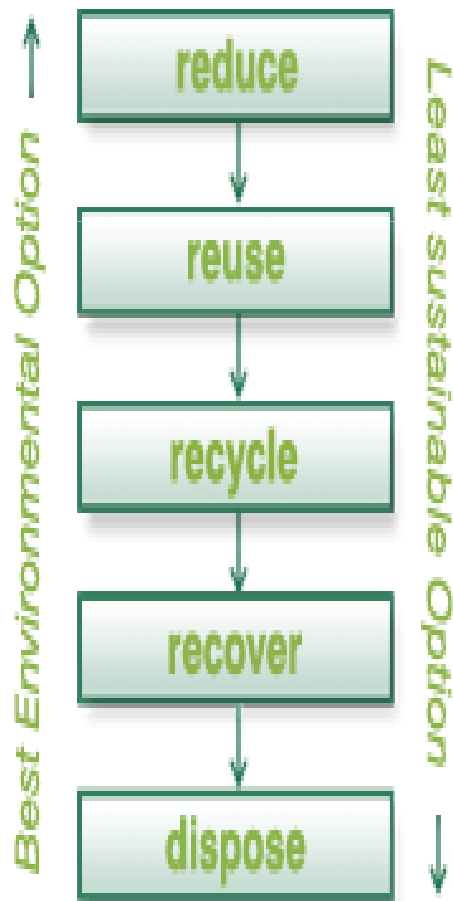
- ✓ Material and energy intensive economy
- ✓ Water scarcity

National responses to environmental issues

- ✓ Pollution prevention policy
- ✓ Ratification of Kyoto Protocol
- ✓ Energy efficiency and LTMS
- ✓ LCA role – national standard, CP and EPR strategies

Key national challenge

- ✓ Mismatch between policy position and government action



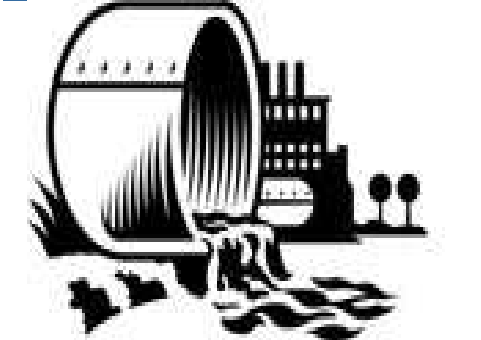


SCP in South Africa

construction status

Environmental issues in construction

- ✓ Energy-related: Consumption (16%), GHG emissions (28%)
- ✓ Material-related: resource intensive, toxic emissions, high volume solid waste



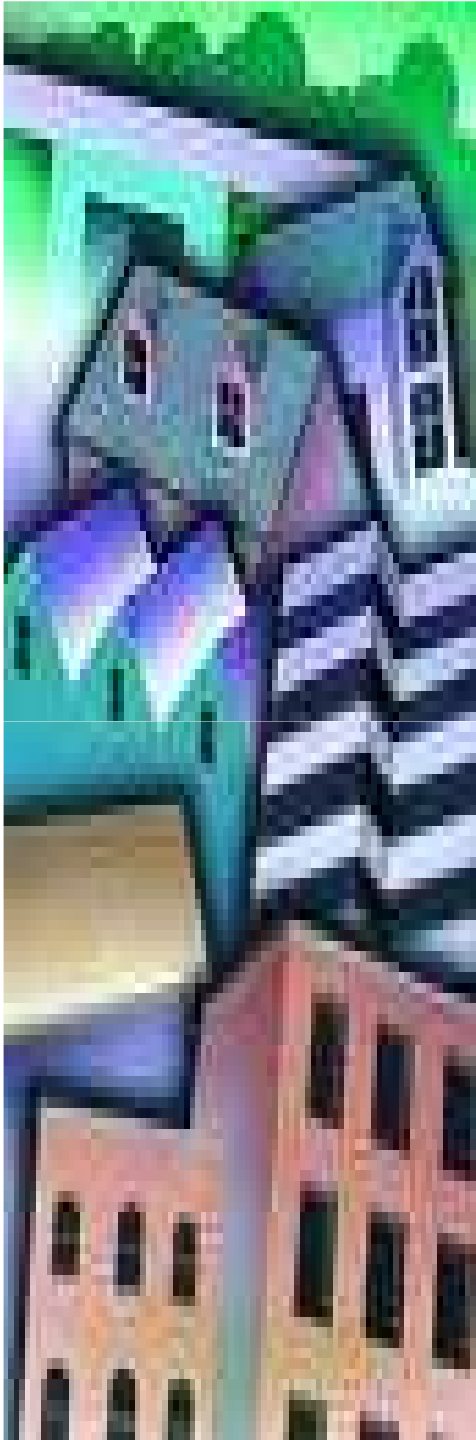
SCP status in construction

- ✓ Energy efficiency Regulations
- ✓ Green Building Movement



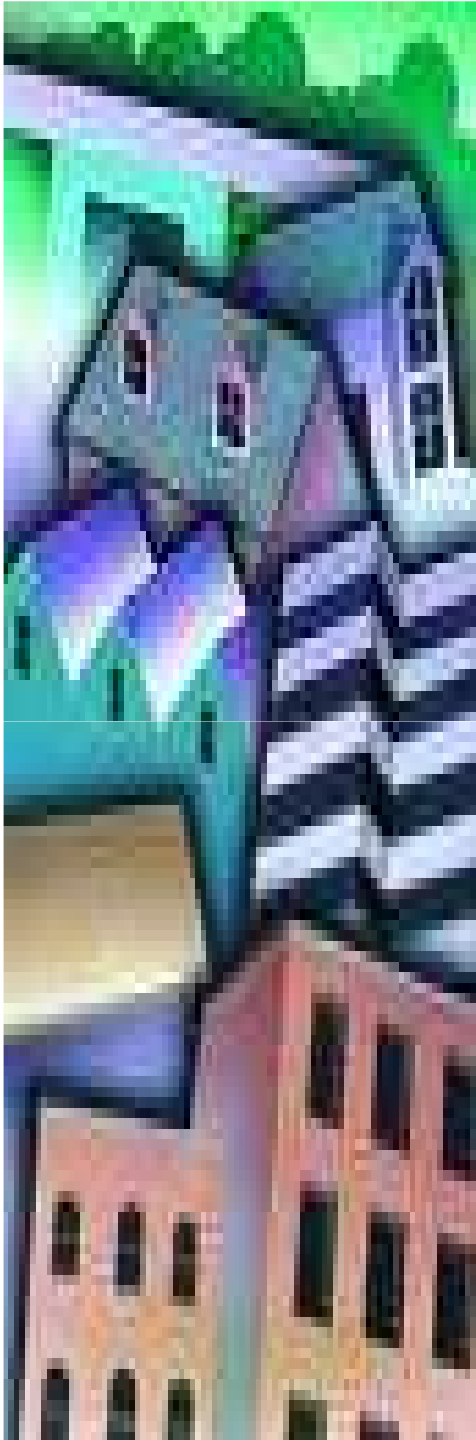
Key construction challenges

- ✓ Green buildings from non-green supply chain
- ✓ Energy efficiency versus materials inefficiency



Lessons learnt

- ✓ Green building principles and new regulations cannot drive SCP in the construction sector
- ✓ Mindsets need to change from prescriptive to science-based
- ✓ Approaches need to change from fragmented efforts to shared responsibility
- ✓ The science-based approach is win-win – do more with less resources, cheaper operating costs



SCP action agenda for construction products

Strategic considerations

- LCT-based policy strategy for entire construction sector.

Practical considerations

- LCM strategies and techniques for each sub-sector

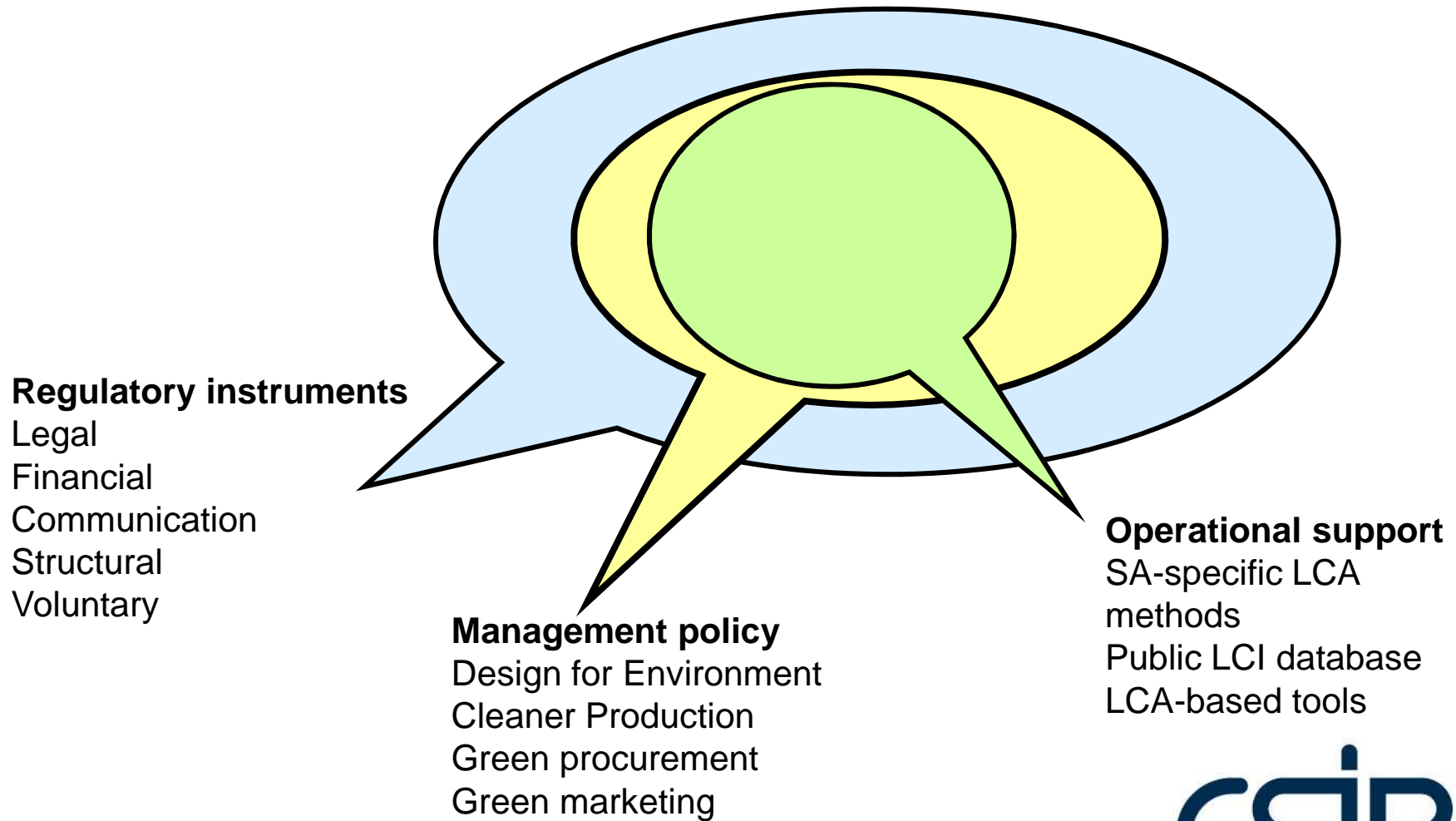
Operational considerations

- LCA-based decision support tools
- SA-specific LCA methods

Key areas for policy and strategy shifts

- Regulation, education
- Procurement, marketing

SCP action agenda construction products



Thank you

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