(Environmental) Life Cycle Assessment

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Introduction

"…the process of evaluating the effects that a product has on the environment over the entire period of its life cycle…extraction and processing; manufacture; transport and distribution; use, re-use and maintenance; recycling and final disposal."

'Life Cycle Assessment: What it is and how to do it'; United Nations Environment Programme;1996.

ISO 14040 / 14044 (2006)

(PAS 2050 for carbon footprints)

Wide application in building construction (LEED, BREEAM)

Limited use in pavement materials and systems, often not ISO compliant

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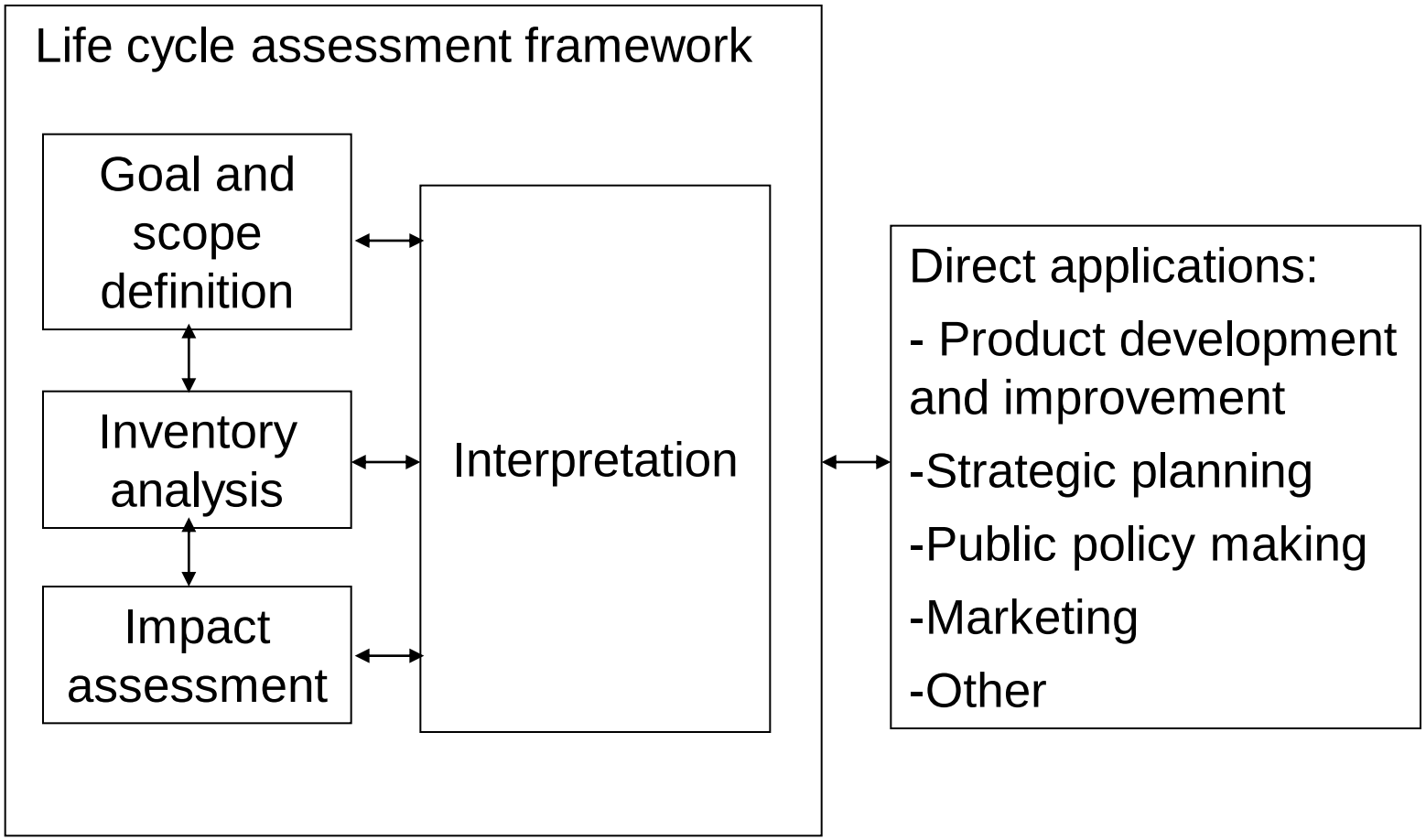
Introduction



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Uses of LCA

From ISO 14040:

- Product development and improvement
- Strategic planning
- Public policy making
- Marketing
- Other *(- design, specification, procurement, management . . .)*

To take a systems approach

To keep a ‘level playing field’

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Challenges

Common Goals, Scopes and Boundaries

Good Data Quality (Primary and Secondary)

- Time, geography, boundaries, representativeness

Sensitivity analysis

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Research Questions

Methodology:

- Life cycle definitions (Product Category Rules (PCRs))
- Allocation of impacts to recyclates and byprodcuts
- Secondary data set with clear or common boundaries and quality

Application:

- Relationship to ‘Environmental Limits’
- Decision making (design, specification, procurement, asset management)

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