

# **Can ISO standards on LCA support full harmonization?**

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Zürich, Sept. 9, 2014**

# ISO Standards on LCA – History and First Generation

- **1985 – 1990: Different approaches to quantify environmental issues of products, e.g.**
  - Energy balances
  - Swiss ecopoints
- **1992: SETAC - Code of Conduct on LCA**
- **1997-2000: ISO 14040-43 – LCA**
- **2006: ISO 14040 and ISO 14044 – LCA  
(published, supersede ISO 14040-43)**
- **2006: ISO 14025 – Type III Product Declaration**

# New Standards or Projects on LCA

- **ISO/TS 14067:2013 – Carbon Footprint of Products - Requirements and guidelines for quantification and communication**
- **ISO 14046:2014 – Water Footprint - Principles, requirements and guidelines – published Aug. 2014**
- **ISO/TS 14071:2014 - Critical review processes and reviewer competencies: Additional requirements and guidelines to ISO 14044:2006**
- **ISO/DTS 14072 - Life cycle assessment - Requirements and guidelines for organizational life cycle assessment - under publication**
- **ISO/DTR 14073 - Environmental management - Water footprint -- Illustrative examples on how to apply ISO 14046 – publication expected in 2015**
- **ISO/AWI 14026 - Environmental labels and declarations - Communication of footprint information – started 2014**
- **ISO/DTS 14027 - Environmental labels and declarations - Type III environmental declarations - Product Category Rule (PCR) development – started 2014**

# Can ISO support full harmonization?

- ISO standards are based on international consensus:
  - ISO/TC 207/SC5 (LCA) consists of 54 participating countries and 18 observing countries which vote several times on drafts
  - Consensus in WGs on drafts needed i. e. no sustained objection
- ISO standards typically are framework documents
  - Detailed rules to be defined in goal and scope definition phase
  - Sensitivity analyses required (interpretation phase)
  - Limitations to be reported
- Further harmonization intended by
  - Paving the way to product category rules
  - Additional standards on specific impact categories (carbon footprint, water footprint) and sector specific standards
- **Full harmonization supported by ISO, but consensus always has priority – discussion on open issues will continue**

# Issues under discussion (full harmonization difficult)

- **Future scenarios**
- **LCA of a service**
- **Options of studies**
- **Product category rules**
- **Communication**
- **Verification/critical review**

# Treatment of future scenarios

## *Original text ISO 14040*

- LCA considers the entire life cycle of a product, from raw material extraction and acquisition, through energy and material production and manufacturing, to use and end of life treatment and final disposal

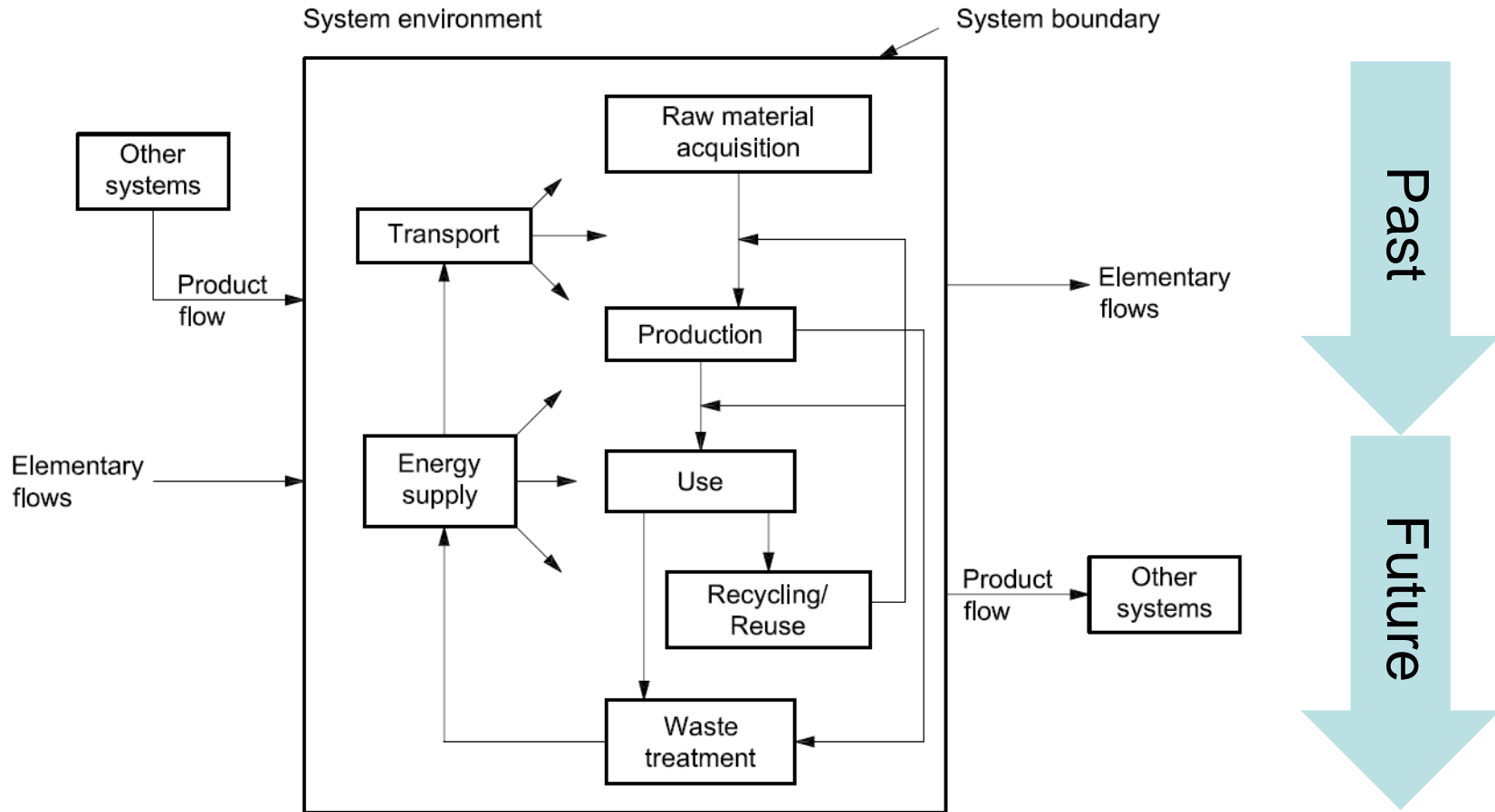
## *Consequence:*

- LCA studies typically include future scenarios

## *Main issues:*

- Accountants want to consider only what has happened in the past
- Data collection typically refers to data of the past

# Example of a product system (ISO 14040)

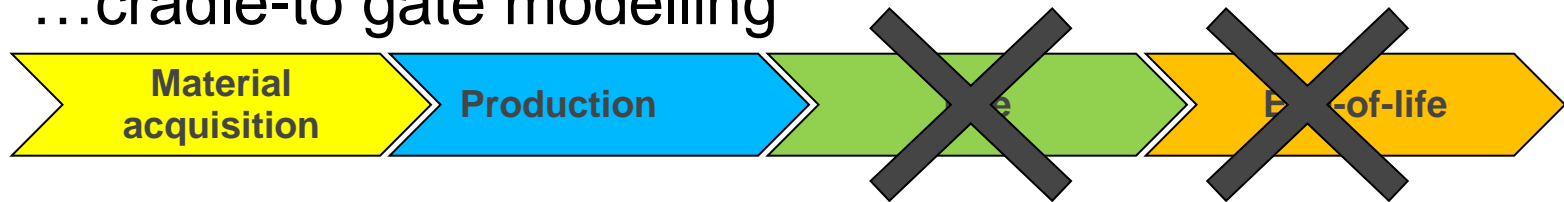


# Life cycle of a product

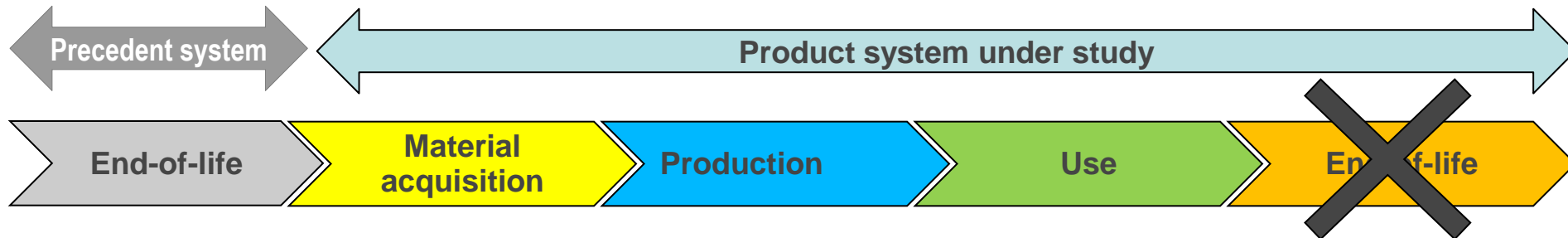
...according to ISO 14044



...cradle-to gate modelling



...cut-off approach (recyclable materials)





# LCA of a service

- **A product according to ISO 14040/44 includes a service**
- **A product according to ISO 14001 does not include a service**
- **Guidance on the system boundary and life cycle stages of a service is missing in ISO 14040/44 and other ISO standards**
- **Should new or revised ISO standards adopt the definition of products of ISO 14001?**

# Options of studies

## ■ Life Cycle Assessment (LCA)

- Includes all phases, i. e. goal & scope definition, inventory, impact assessment, interpretation
- Includes all stages of the life cycle, i. e. production, use, end-of-life operations
- Comprehensiveness related to impact categories

## ■ Life Cycle Inventory (LCI)

- Includes all phases, excepting impact assessment
- Includes all stages of the life cycle

## ■ Information Module (ISO 14025)

- Includes all phases
- Includes only selected stages/processes of the life cycle

## ■ Non-comprehensive selection of impact categories

- Carbon footprint studies (ISO/TS 14067)
- Water footprint assessments (ISO 14046)
- Others

# ISO 14046 – Water Footprint



- **WF assessment can be an independent study or a part of an LCA study**
- **Only impact categories related to water can be selected**
- **New impact categories water availability/ water scarcity defined**
- **Challenge for data providers**

# ISO 14046 – Challenge for data providers

In ISO 14064, subclause 5.3.2, last para it is stated:

- *Water inputs or water outputs of different resource types, different quality, different form, different location with different environmental condition indicators or different timing shall not be aggregated in the inventory phase. Aggregation may be performed at the impact assessment phase.*
- **Averaging includes aggregation.**
- **Therefore, “conventional” averaging of water consumption, as used for other LCI data, is not permitted if the relevant sites are located in areas with different water scarcity.**

# Product Category Rules

- **PCR:** Set of specific rules, requirements and guidelines for developing Type III Environmental declarations for one or more product categories (ISO 14025)
- **CFP-PCR:** set of specific rules, requirements and guidelines for quantification of and communication on the Product Carbon Footprint (CFP) for one or more product categories (ISO 14067)
- Procedure for the development of PCR/CFP-PCR are laid down in ISO 14025 and ISO/TS 14067
- Where **relevant** PCR or CFP-PCR exist, they **shall** be adopted (ISO/TS 14067)  
e.g. considered as «proper» by the organization applying this TS
- New ISO/DTS 14026 intends to develop additional guidance on PCR

Approval of all stakeholders, e. g. international associations involved, to a PCR is necessary

# LCA and communication

## ***Scope of ISO/TC 207/SC5***

Standardization in the field of life cycle assessment as a tool for environmental management of product and service systems. It encompasses the assessment of impacts on the environment from the extraction of raw materials to the final disposal of waste

## ***Scope of ISO/TC 207/SC3***

Standardization in the field of communication on the environmental aspects of products, i. e. goods and services, including the related programmes and verification procedures. Such communication includes environmental labels and declarations which describe products by qualitative features or by one or more quantitative parameters.

## ***Scope of ISO/TC 207/SC7***

SC7 is responsible for the development of standards and other related documents aimed to describe the principles, concepts and methods relating to the validation, verification, quantification, reporting and management of direct and indirect GHG emissions for organizations, the value and/or supply chain.

# LCA Communication

## ***ISO/TS 14067 (Carbon Footprint):***

- This Technical Specification is applicable to CFP studies and different options for CFP communication based on the results of such studies:
  - CFP external communication report
  - CFP performance tracking report
  - CFP declaration
  - CFP label

## ***ISO 14046 (Water Footprint):***

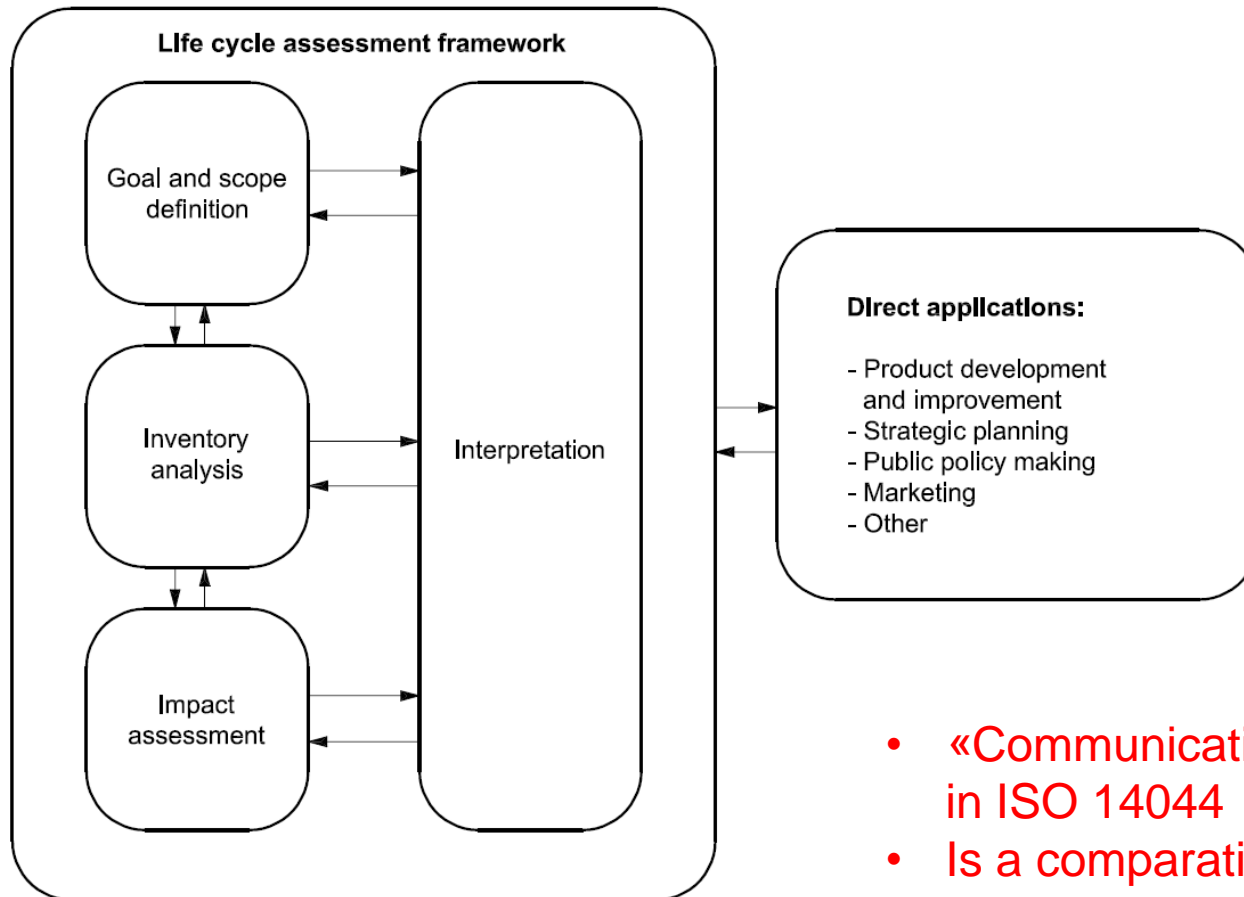
- Whereas reporting is part of the scope of this standard, communication of water footprint results in the form of, e.g., labels or declarations, is outside the scope of this standard.

# Footprint communication

- New ISO/DTS 14027 intends to develop additional guidance on footprint communication
- First meeting in Panama on May 2014
- New draft, based on draft seed document, to be discussed in WG meeting in Jan. 2015
- Definition of “Footprint” not clear (only carbon footprint and water footprint defined by ISO)
- Communication as adequate information to enable consumers to make a comparison will be addressed
- Alignment problems with existing standards (ISO 14021, ISO 14024, ISO 14025, ISO/TS 14067)

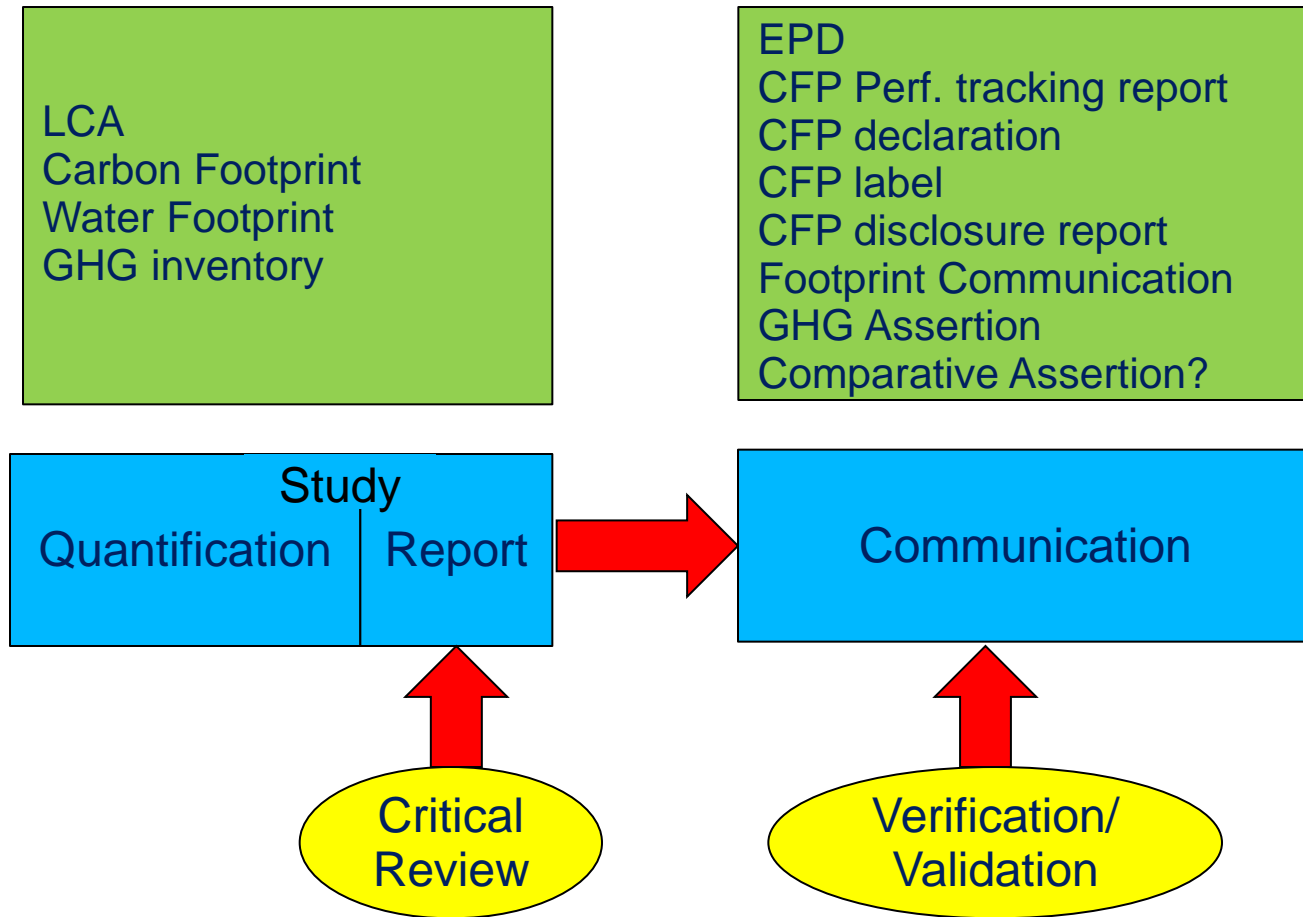


# Phases and direct applications of an LCA



- «Communication» not defined in ISO 14044
- Is a comparative assertion a form of communication?

# Critical review – verification - validation



# Final observations and conclusions

- **Inherent technical uncertainties/limitations should be reported in a transparent way and not narrowed down by «harmonization procedures»**
- **Inherent inconsistencies/misalignments of different ISO standards exist because**
  - **Three different subcommittees of ISO/TC 207 involved**
  - **New standards are worked out without alignment of published standards by revision**
- **Together with other ISO members, Switzerland insists in a better alignment of ISO standards on environmental management and its tools**