

International Perspectives on the Status and Role of Life Cycle Assessment

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Launch of AIGMF Life Cycle Assessment of Glass Containers
New Delhi, 14th May 2012



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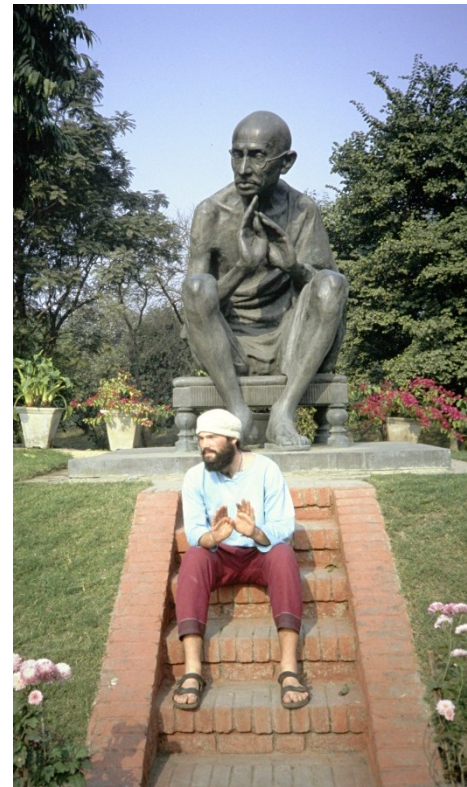
- Why do we talk about LCA?
- What is LCA?
- The international standards of LCA
- AIGMF's study on glass containers
- Summary and outlook

- We all agree that we want to protect the environment!
- We all agree that sustainable development is the way to go!



"Our world has enough for
each person's need, but
not for his greed."

Mahatma Gandhi

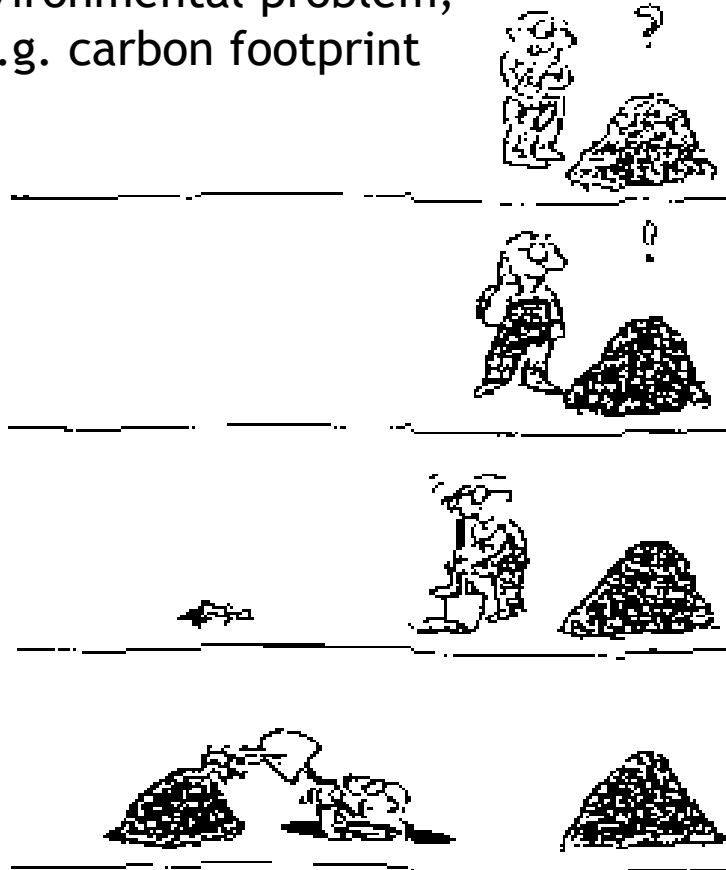


The challenge is...unfortunately...

SUSTAINABLE
ENGINEERING



environmental problem,
e.g. carbon footprint



environmental problem,
e.g. water footprint or toxicity

- How can we measure what is green (environmentally preferable)?
- How can we measure what is blue (more sustainable)?

- for products
- for processes
- for organisations
- for nations



- If we know the green and blue, how can we make it happen?

One of the top 10 ideas changing the world....



When it comes to **going green**,
intention can be easier than action.

...

But what if we could seamlessly calculate the full lifetime effect of our actions on the earth and on our bodies?

...

Industrial ecologists have been using a method called **life-cycle assessment (LCA)** to break down that web of connection.

...

Characteristics	„TRADITIONAL“ Environmental Protection	„MODERN“ Environmental Protection
political background:	control of risks, dangers	sustainability
policy principle:	command & control	push & pull
main actor:	governments	society („all“ stakeholders)
principle for action:	reactive	proactive
regional scope	local, national	international
focus	production („one process“)	products („process network“)
environment	single compartments and emissions	complete cross-media view over the complete life cycle
environmental technology	separate processes, end-of-pipe	integrated processes, innovations
economic view	cost driver	value driver, USP

Life Cycle Assessment

→ trend from „nice to have“ towards strategic and competitive issue

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„LCAs provide the best framework for assessing the potential environmental impacts of products currently available.“

EU-Commission - Integrated Product Policy - COM/2003/0302 final



„LCA is a technique to assess the environmental aspects and potential impacts associated with a product, process, or service, by:

- » compiling an inventory of relevant energy and material inputs and environmental releases;
- » evaluating the associated potential environmental impacts;
- » interpreting the results to help making informed decisions.“



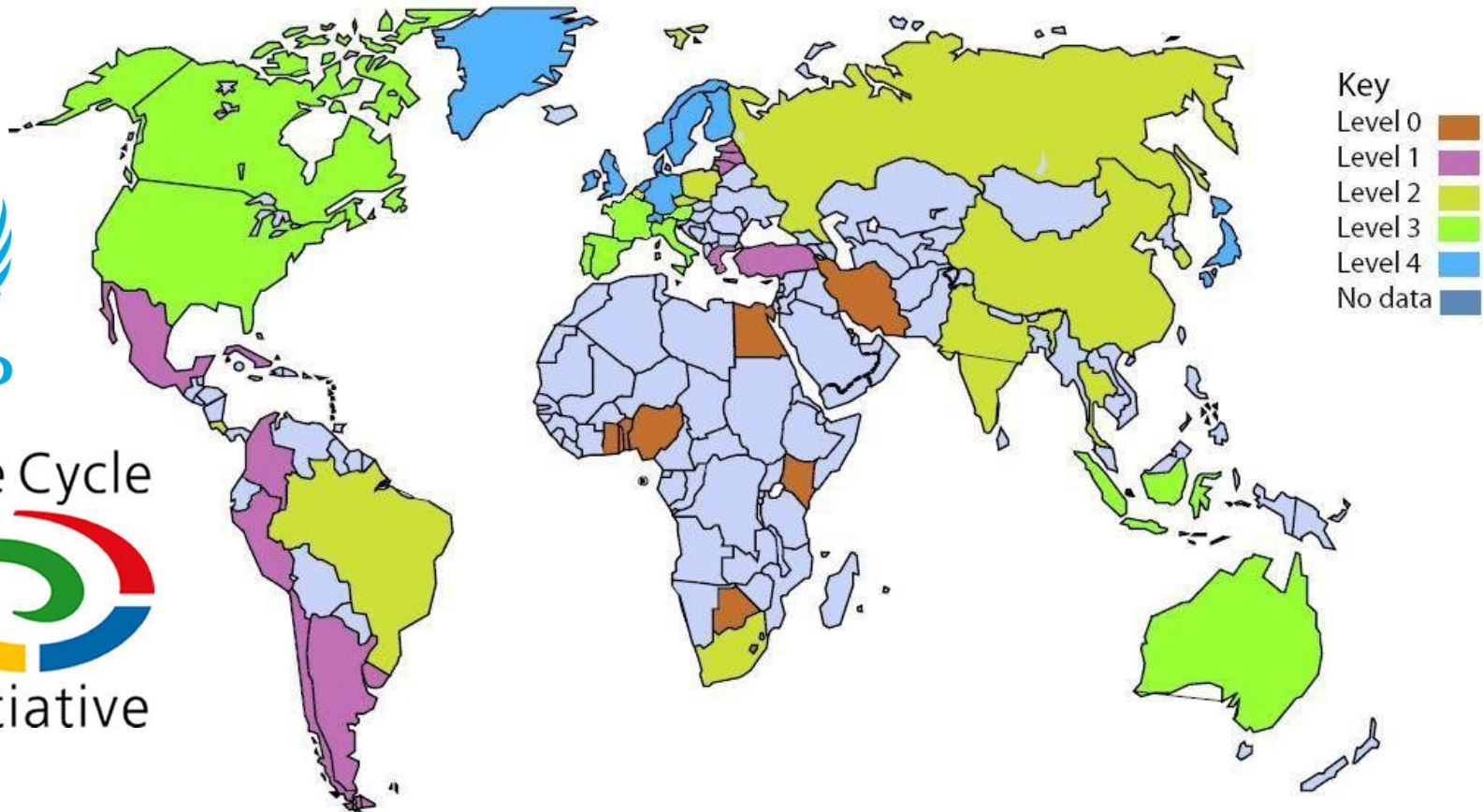
<http://www.epa.gov/nrmrl/lcaccess/index.html>

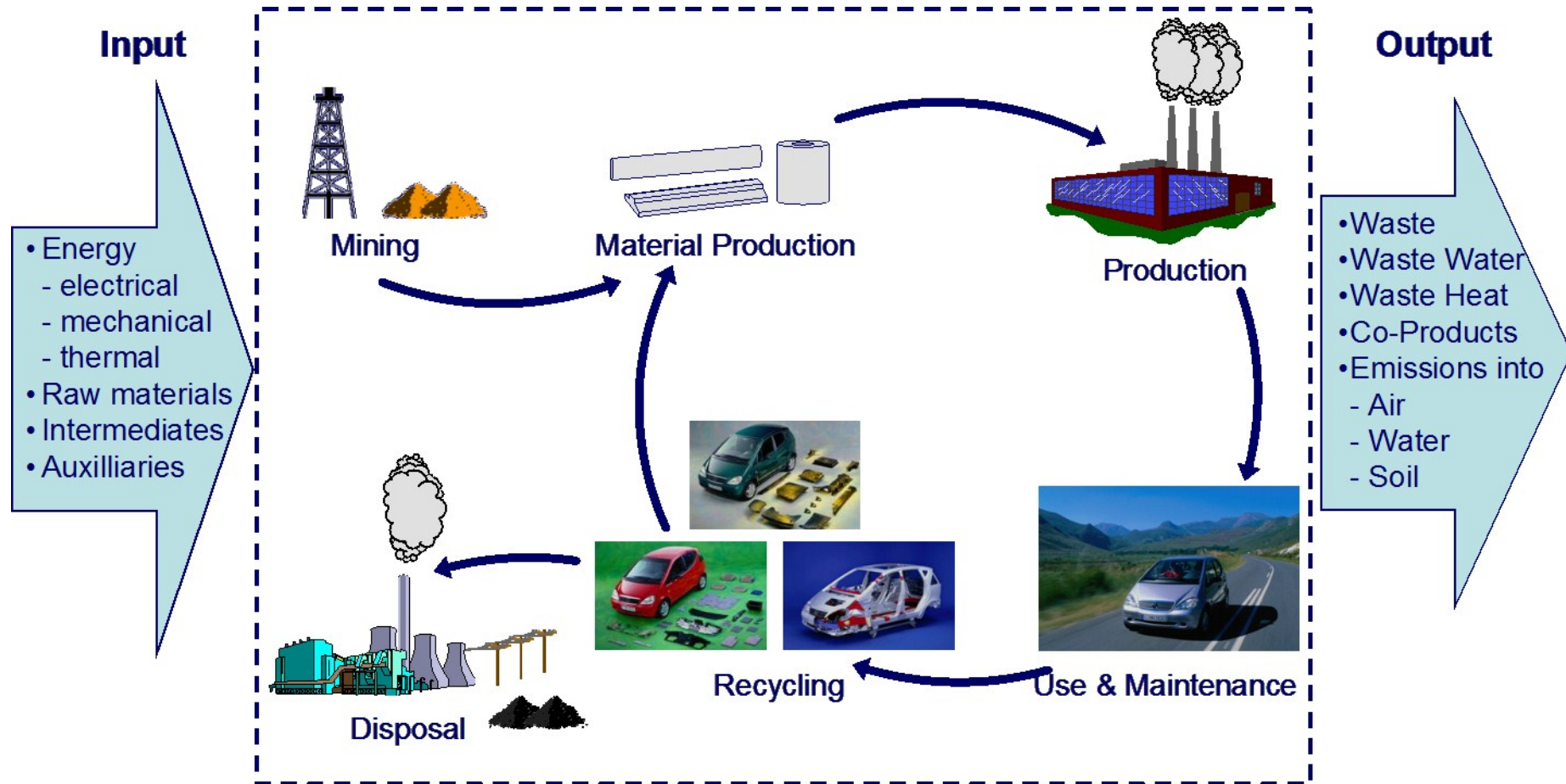
LCA as globally accepted tool to measure environmental performance



Life Cycle

Initiative

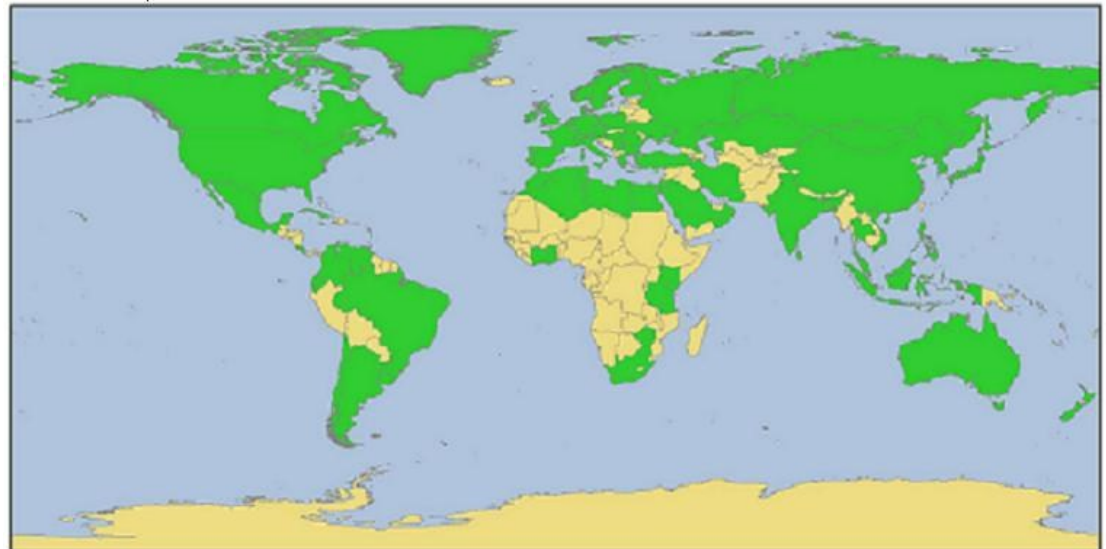


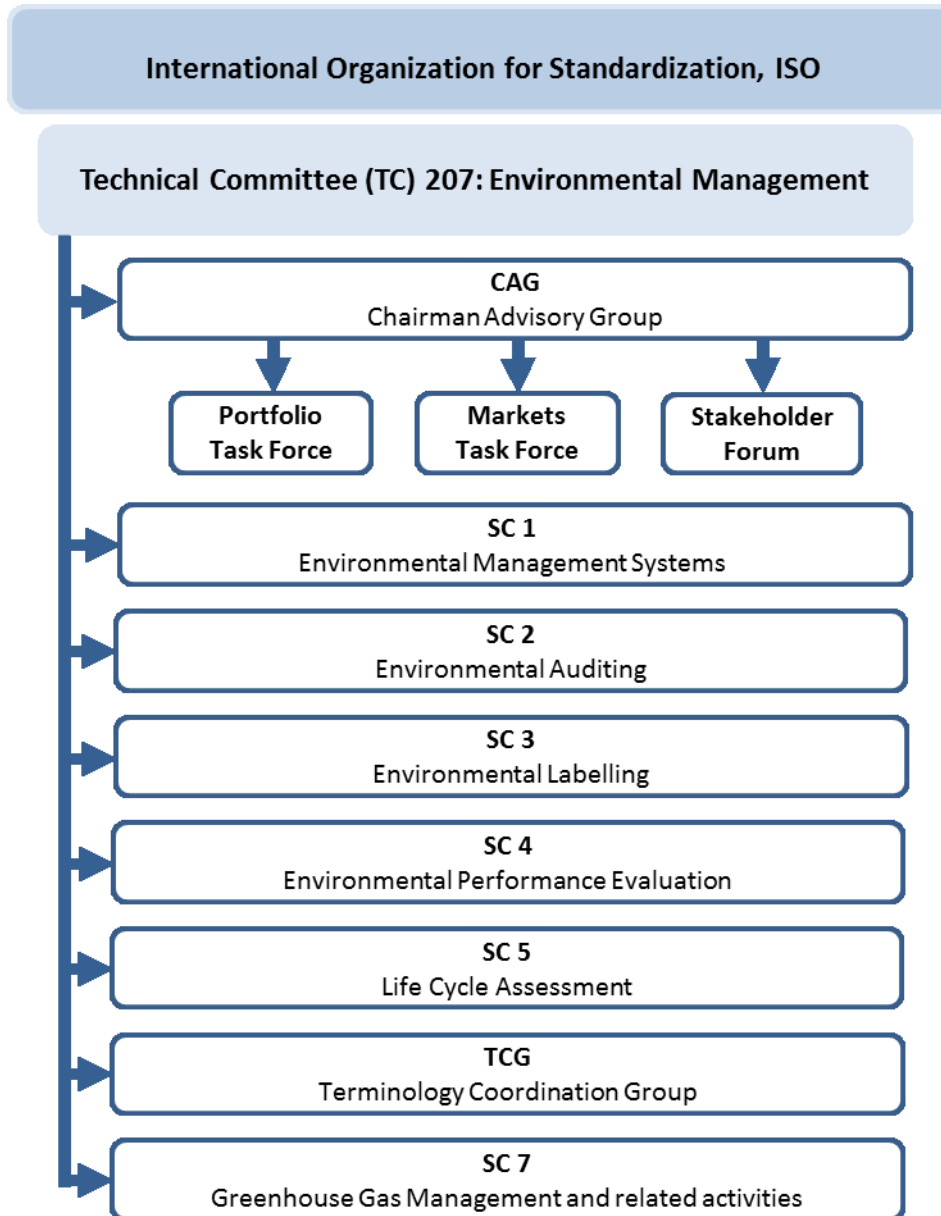


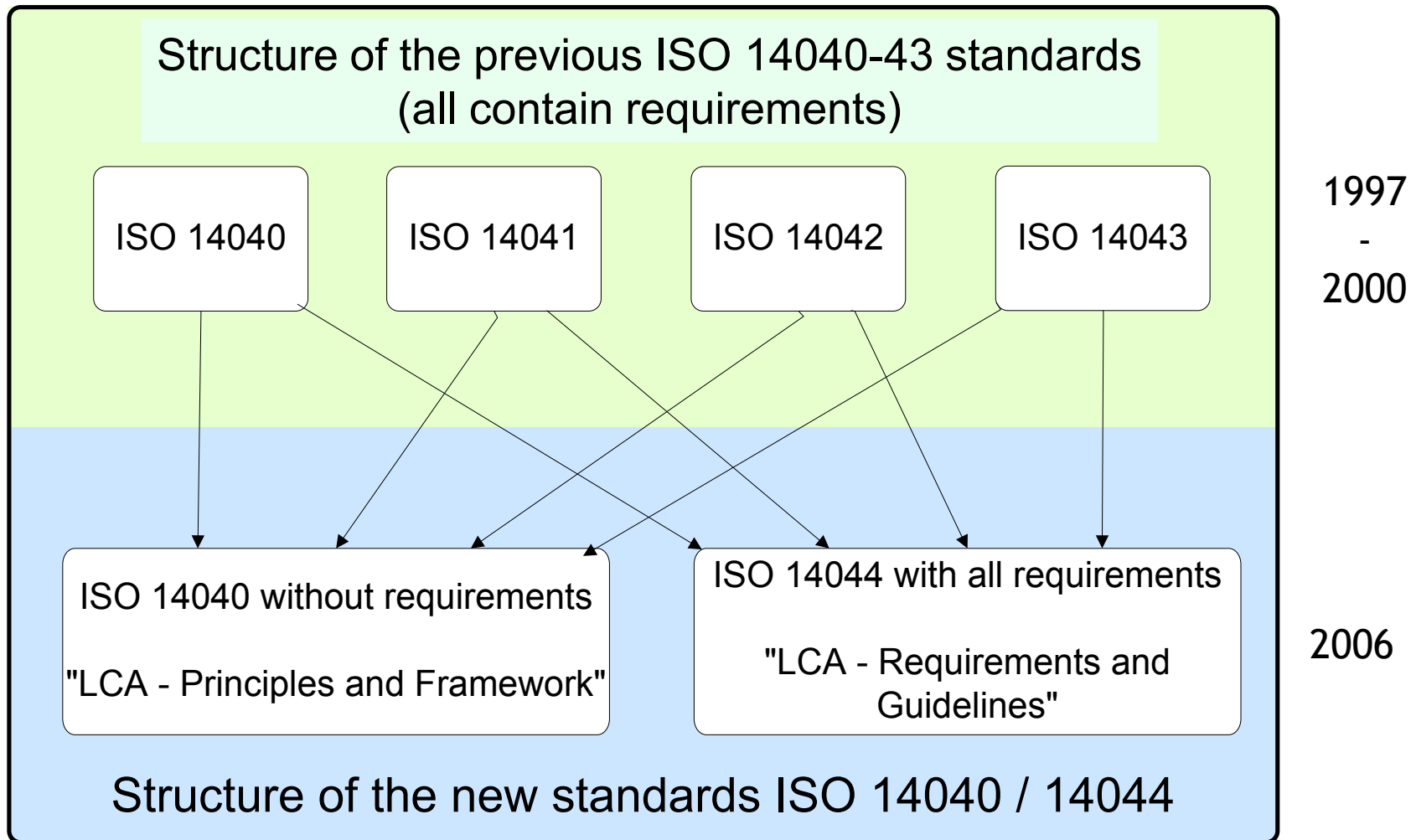


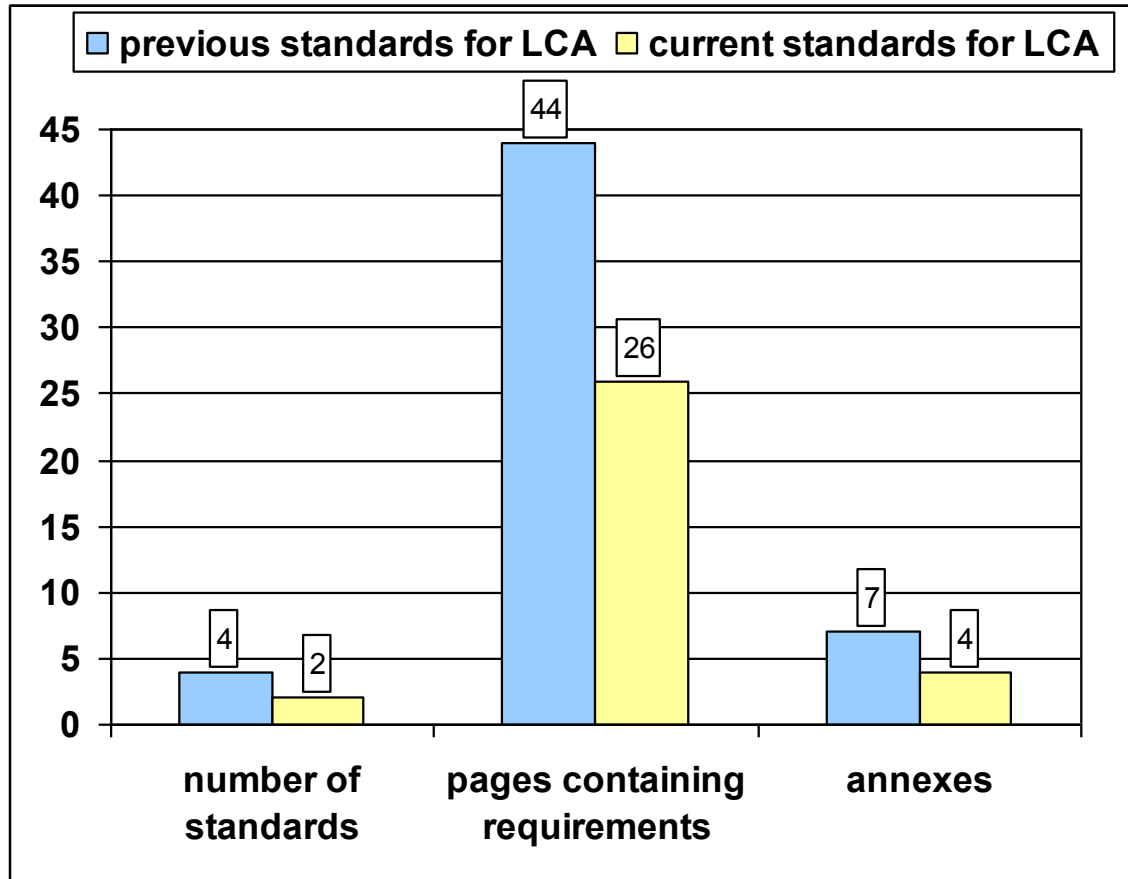
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- ISO/TC 207 was established in 1993
- Membership of ISO/TC 207 is among the highest of any ISO TC and is both broad and diverse in representation:
 - national delegations from over 100 countries participate in ISO/TC 207, including 27 developing countries.
 - liaison members from over 30 international organizations









co-convenors:

Atsushi Inaba, Japan

Reginald Tan, Singapore

Matthias Finkbeiner, Germany

secretariat:

Kim Christiansen, Denmark

→ project completed with unanimous vote ahead of schedule.

- ISO 14045 - Eco-efficiency assessment
- ISO 14046 - Water Footprint
- ISO 14067 - Carbon Footprint
- ISO 14071 - Critical Review
- ISO 14072 - LCA for Organizations





- Why do we talk about LCA?
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- As far as I am aware, it is the first comprehensive LCA study of an industry association in India that is performed and reviewed against ISO 14040/44
- The study is a comprehensive effort, covering:
 - the total production volume of container glass in India of 7596 t per day.
 - site specific data representative of current technology used in India from 72% (!) of the production volume of the reference year 2010/11.
 - site visits were done for 24 sites of various member companies of AIGMF
 - the size of the various furnaces ranged from 40 tons per day to 450 tons per day.
 - a comprehensive report of about 250 pages
 - the state-of-the-art LCA methodology for glass packaging as applied by FEVE and GPI.

The critical review according to ISO 14040/44 has the task to assess whether

- the methods used to carry out the LCA are consistent with the international standards ISO 14040 and ISO 14044,
- the methods used to carry out the LCA are scientifically and technically valid,
- the data used are appropriate and reasonable in relation to the goal of the study,
- the interpretations reflect the limitations identified and the goal of the study, and
- the study report is transparent and consistent.



- The critical review process was extensive and comprehensive as well:
 - The review process included three rounds of comments and several CR calls.
 - More than 200 comments of general, technical and editorial nature were addressed.
 - Open and constructive dialogue and access to all requested information.
- Thanks to the critical review panel members:
 - Mr. Matthias Fischer
Head of the Life Cycle Engineering Department
Fraunhofer IBP and University of Stuttgart, Germany
 - Mr. VS Mathur
General Manager (Quality and Environmental)
Tata Chemicals Limited, Babrala, India



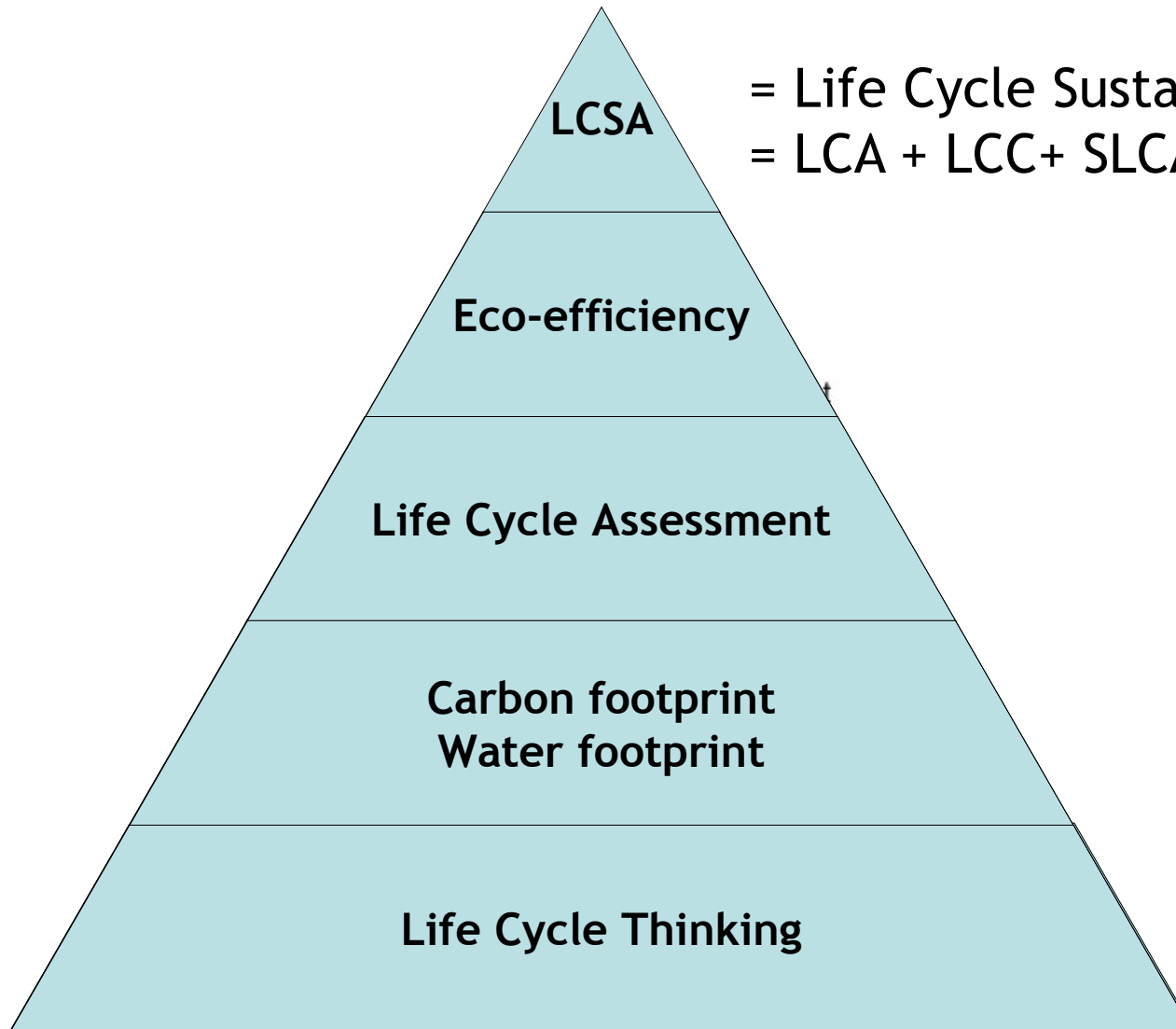
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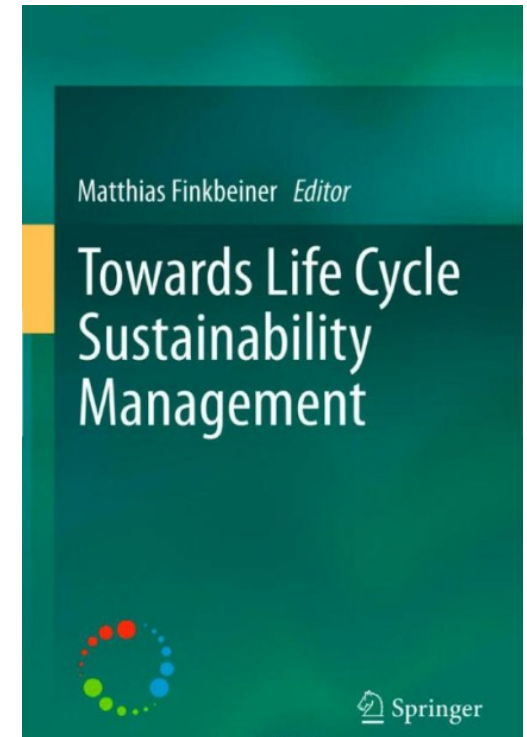
- Thank you to AIGMF for inviting me as chair of the critical review panel and for organizing this workshop!
- Thanks to PE Sustainability Solutions India for facilitating!
- Thanks and acknowledgements to AIGMF for being a pioneer in the preparation of comprehensive environmental information based on international standards, including a third party review!

- Members of AIGMF can develop and implement improvement strategies for packaging glass based on the findings of the LCA.
- Customers and stakeholders of the Indian glass packaging industry have access to comprehensive and robust environmental information to support their fact-based and informed decisions.
- Other industry associations / sectors may follow and LCA might become more and more beneficial for Indian economy and society.





= Life Cycle Sustainability Assessment
= LCA + LCC + SLCA



Springer Publishers, 2011

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Thank you and success for your way
towards sustainable glass in India!

Matthias Finkbeiner



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Department of Environmental Technology
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