



SUSTAINABILITY IN BUSINESS

78th (75th) Swiss LCA Discussion Forum: Life Cycle Thinking = Lower Environmental Footprint?

We should consider absolute relevance of an LCA-study – why & how

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Intro: Which LCA studies come to your mind ... ?

LCA Study:	Key effect:
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-

The situation:

- **Big challenges to build sustainable society incl. economy**
- **LCA wants to support this development**

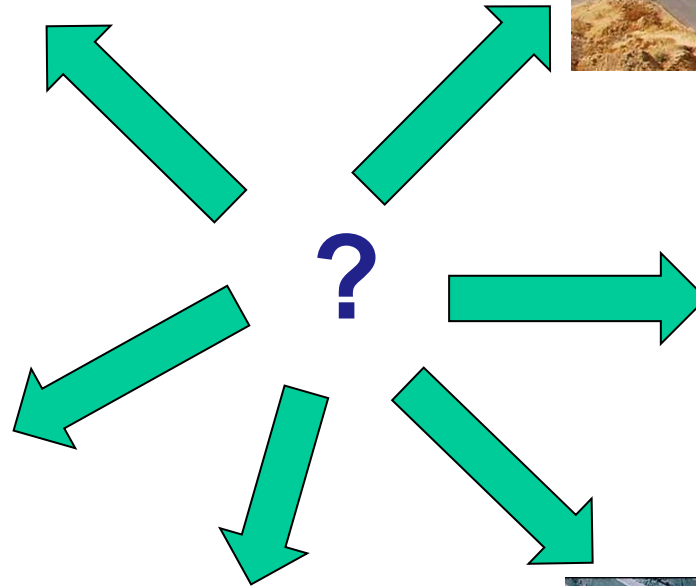
But often (usually?) ... :

- **... LCA cover 'small stakes'**
- **... we don't know the absolute relevance of a study at hand**

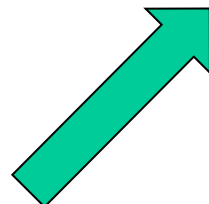
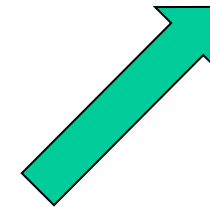
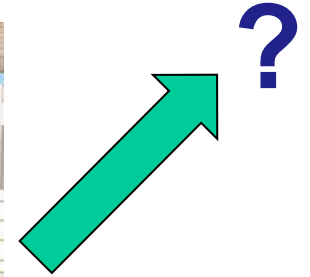
Therefore: Let us ...

- **.. analyse LCA studies for their relevance, due to size or to learnings, and adapt depth, effort, etc.**
- **.. include this aspect in "How to do LCA"**

The sustainability challenge is big – e.g. housing



The sustainability challenge is big – e.g. transportation



LCA can help – but does it?

Kids, don't put plastic in your fire – it's not good for the environment

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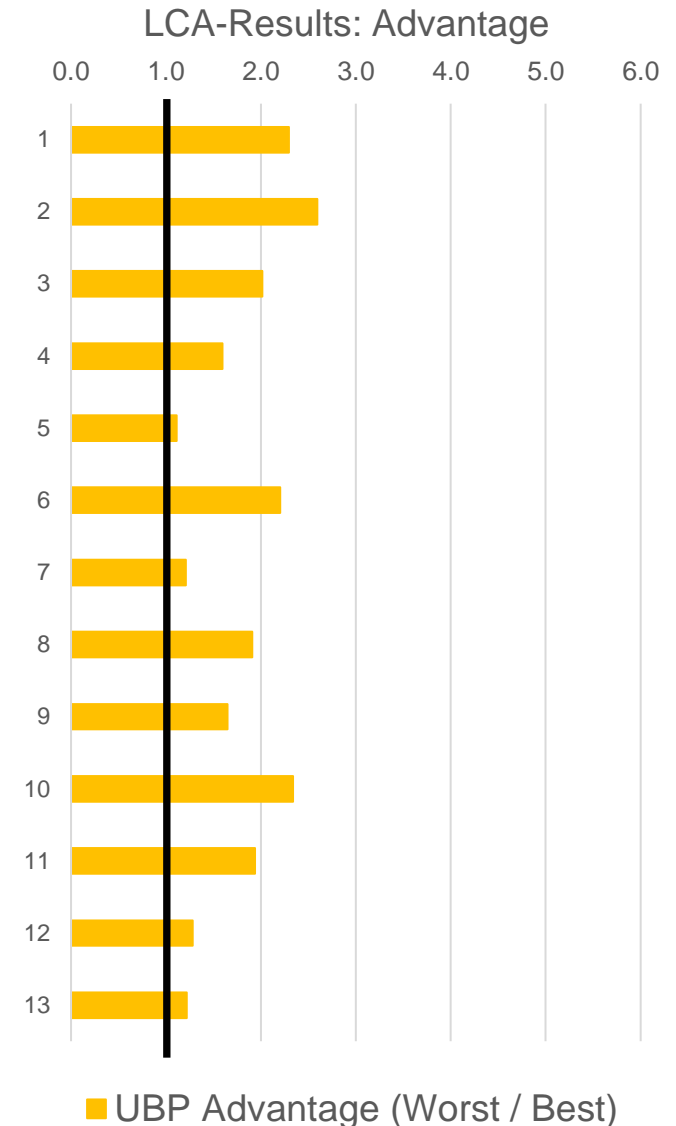
Questions	The issue(s)
<ul style="list-style-type: none">➤ Are we doing LCA studies on the relevant, large questions (and decisions), or on small topics?	<ul style="list-style-type: none">➤ As practitioners we often do not know the overall relevance of an LCA-study➤ Many LCA studies cover small impact potentials
<ul style="list-style-type: none">➤ We usually mean ‘to do good’ with LCA – but do we have a clue?	<ul style="list-style-type: none">➤ Market Sizes are often not explicitly considered in an LCA➤ Market Dynamics, such as rebound effects, are rarely considered in LCA-studies.
<ul style="list-style-type: none">➤ Shouldn't ISO 14040/44 ask to also assess the relevance of a LCA topic?	<ul style="list-style-type: none">➤ ISO evades strategy issues, even at the expense of efficacy (also in ISO 14001)

Some of our LCAs

Nr	Packaging
1	Milk packaging brick / PE
2	Wine glass bottles single/multiple use
3	Tote bag Paper / PE (1)
4	Tote bag PE / PE
5	Tote bag Paper / PE (2)
6	Tee protective bag
7	Yoghurt cup Corn-based PLA / PE+board
8	Yoghurt cup cover Alu / PET
9	Watch gift box
10	Crème tubes
11	Waste bag PE / Re-PE
12	Burger Packaging
13	Douche bottle

Some of our LCAs: 'advantage'

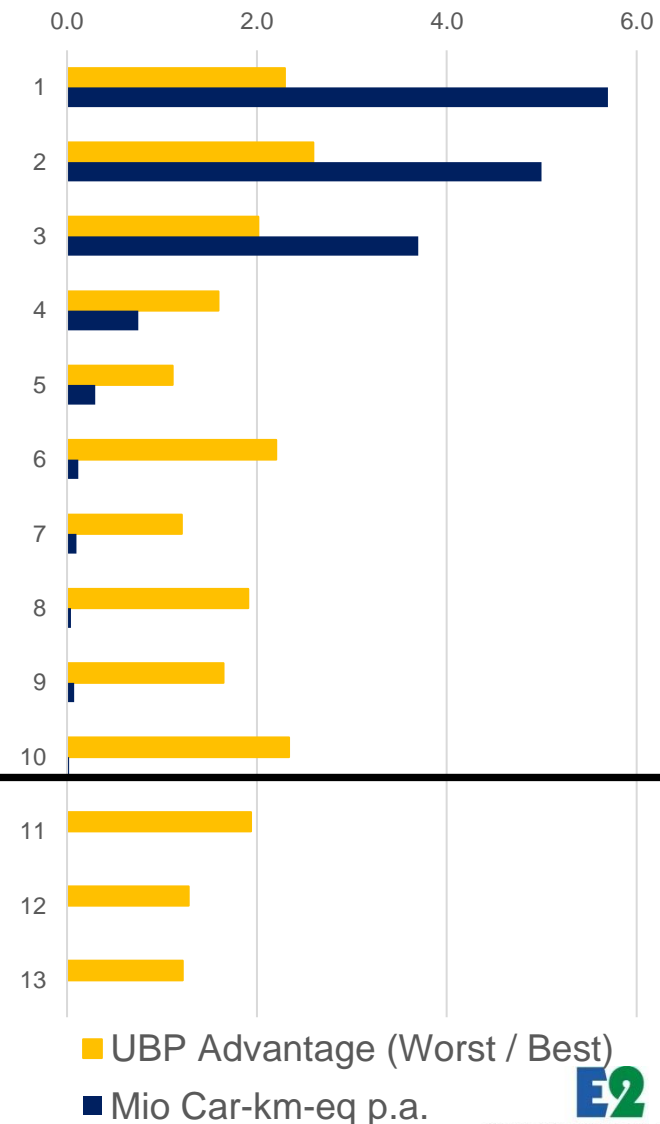
Nr	Packaging	UBP Advantage (Worst/Best)
1	Milk pack. Brick/PE	2.3
2	Wine gla.bott.Si/Mult.use	2.6
3	Tote bag Paper / PE	2.0
4	Tote bag PE / PE	1.6
5	Tote bag Pap / PE	1.1
6	Tee protect. bag	2.2
7	Yog.cup Corn /PE+Board	1.2
8	Yog.cup cover Alu/PET	1.9
9	Watch box	1.7
10	Crème tube	2.3
11	Waste bag PE / Re-PE	1.9
12	Burger Packaging	1.3
13	Douche bottle	1.2



Some of our LCAs: advantage + relevance

Nr	Packaging	UBP Advantage (Worst/Best)	Mio Car-km p.a.
1	Milk pack. Brick/PE	2.3	5.70
2	Wine gla.bott.Si/Mult.use	2.6	5.00
3	Tote bag Paper / PE	2.0	3.70
4	Tote bag PE / PE	1.6	0.75
5	Tote bag Pap / PE	1.1	0.30
6	Tee protect. bag	2.2	0.12
7	Yog.cup Corn /PE+Board	1.2	0.10
8	Yog.cup cover Alu/PET	1.9	0.04
9	Watch box	1.7	0.08
10	Crème tube	2.3	0.02
11	Waste bag PE / Re-PE	1.9	n.a.
12	Burger Packaging	1.3	n.a.
13	Douche bottle	1.2	n.a.

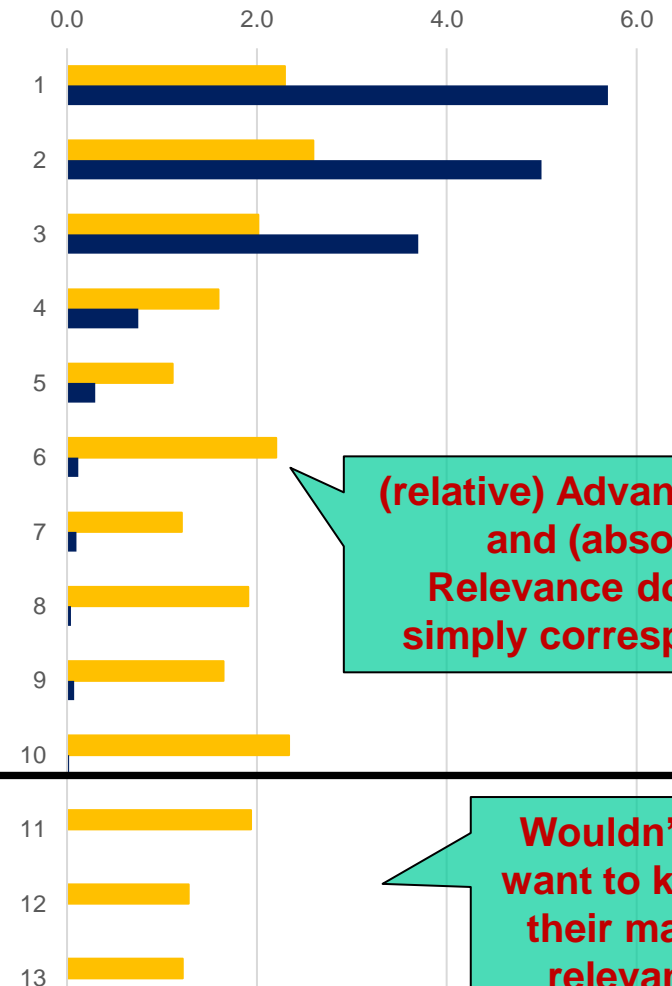
LCA-Results: Advantage vs. Relevance



Some of our LCAs: advantage + relevance

Nr	Packaging	UBP Advantage (Worst/Best)	Mio Car-km-eq p.a.
1	Milk pack. Brick/PE	2.3	5.70
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LCA-Results: Advantage vs. Relevance



(relative) Advantage and (absolute) Relevance do not simply correspond

Wouldn't we want to know their market relevance?

■ UBP Advantage (Worst / Best)
■ Mio Car-km-eq p.a.

To do: Include 'environmental relevance' into LCA

- Some LCA studies cover a large topic, and the analysed alternatives do 'make a difference'.
Very relevant LCAs were/are, e.g.
 - .. Comparison of motor **engine fuels** → push for **biofuels**?
 - .. Comparison of **motor types** → fossil, **electric, hydrogen**?
- Yet, many LCA studies cover a minuscule topic

- We should consider the **environmental relevance of the LCA question** at hand:

> Environmental improvement potential:

- .. How big is the **environmental impact** at stake?
- .. For any LCIA-unit, ideally expressed (normalised) in a +/- understandable way, e.g. as "car-km-eq.", "% of national emissions", ...)
- .. let's not forget **worsening** potential

> Environmental learning potential:

- .. to **scale** a study's results?
- .. to **transfer** a study's results?

Learning & Implementation: Two ways to be relevant

Learning Potential
= Ability to Scale or
Transfer from the
system(s) studied

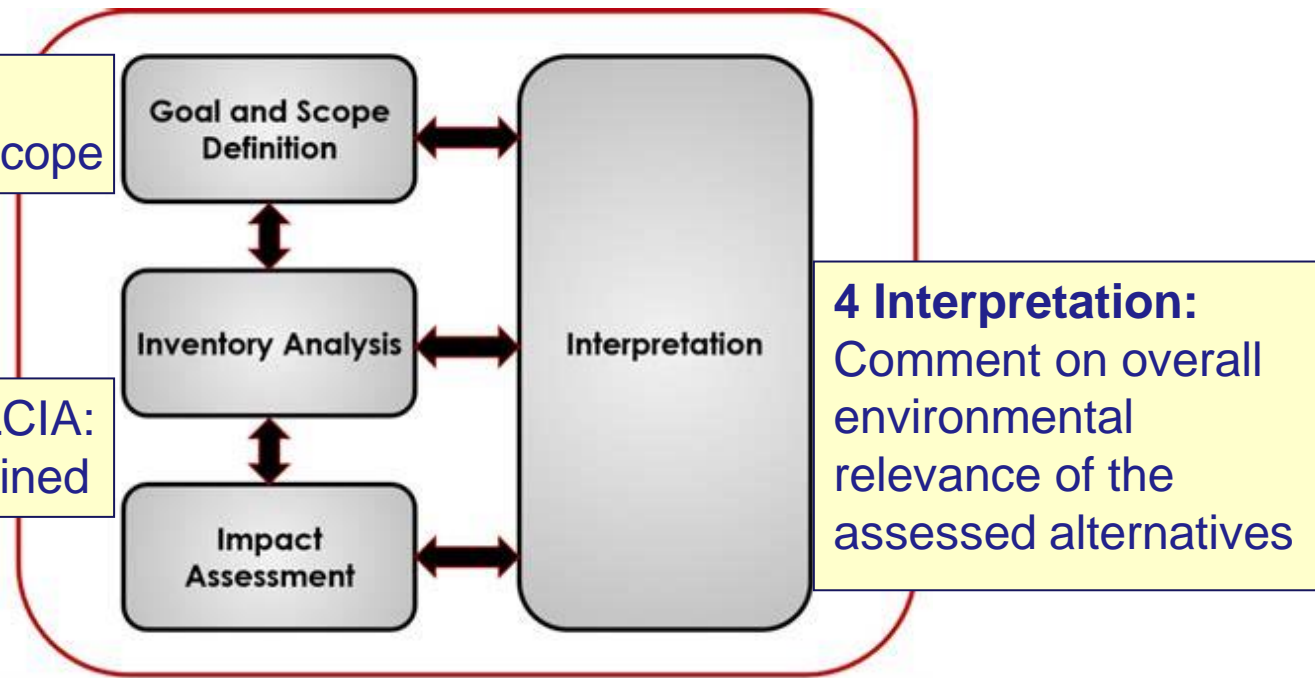
large	interesting <i>(consider learning potential and commissioner's interests)</i>	major LCA studies
small	minor studies <i>(keep it simple)</i>	important <i>(consider commissioner's interests and market dynamics)</i>
	small	large

Implementation potential
= Enviro' Relevance of the alternatives under study

1 Quotation: Propose to consider market size (or similar) and planned application of LCA into proposed depth of analysis

2 G&S: Include market size in scope

3 LCI & LCIA: do as defined



4 Interpretation: Comment on overall environmental relevance of the assessed alternatives

- **14040/44 and “relevance, market, value, ...”:**
 - > **methodologically yes,**
(e.g. “market value” as allocation basis; “environmental relevance” as criterion in the interpretation phase)
 - > **but no management view** (see separate slide)
- ‘Real life relevance’ of a study is not addressed in ISO 14040/44
- How to proceed?

“Absolute environmental relevance” and ISO 14040/44 (2)

Scope of ISO 14040/44

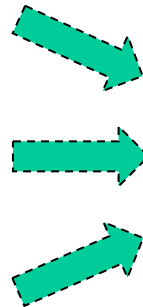
Markets,
Admin ...



Questions



choose



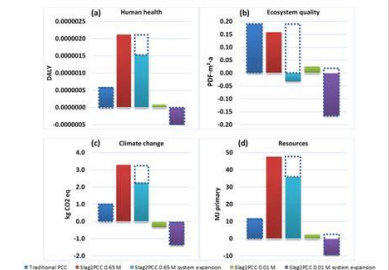
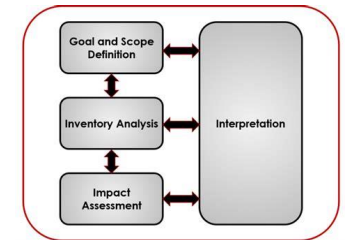
FU / Scope



elaborate



LCA
per FU



feed back / feed into



- **14040/44 and “relevance, market, value, ...”:**
 - > **methodologically yes,**
(e.g. “market value” as allocation basis; “environmental relevance” as criterion in the interpretation phase)
 - > **but no management view** (see separate slide)

 - ‘Real life relevance’ of a study is no topic in ISO 14040/44

 - How to proceed?
-
- Proposal: Add three items
 - .. **Ch. 3, Terms:** add either of the terms “environmental relevance of the LCA” or “environmental significance”
 - .. **Ch. 4.2.3, Scope:** add “In addition, it is useful to estimate the environmental relevance (significance) of the study, considering the intended application of the study results. (...)”
 - .. **Ch. 4.5.1, Interpretation:** add “Analysis of the potential significance of the study’s results”

The situation:

- Big challenges to build sustainable society incl. economy
- LCA wants to support this development

But often (or even usually?) ... :

- ... LCA cover 'small stakes'
- ... we don't know the absolute relevance of a study at hand

Therefore: Let us ...

- .. analyse LCA studies on their relevance, be it size of potential environmental impact or potential learnings, and
- .. adapt depth, effort, etc. of the LCA studies accordingly
- .. include this aspect in "How to do LCA", both in our offices and in ISO 14040/44