



Relevancy and Adequacy of Life Cycle Approaches for different stakeholders and goals, towards a common intention

78th and jubilee Swiss Discussion Forum on LCA: "Life Cycle Thinking = Lower Environmental Footprint?" Sept. 2021, Zurich, CH

Martin Baitz, Hannes Partl, Ulrike Bos



Sphera's Approach to Life-Cycle-Management and Lower Environmental Footprints

Reaching operational and financial goals requires an integrated approach to risk management, product stewardship and sustainability



Optimize across the enterprise

- Corporate performance reporting
- Sustainable global growth
- Investor and public relations




Power your decisions

- Team and site performance
- Regulatory compliance
- Employee and environmental safety

Operationalize, scale, & optimize Integrated Risk Management

with our purpose-built solutions supported by information, innovation & insights



A photograph of an offshore oil rig at sunset. The rig is a complex structure of steel and concrete, with multiple levels and platforms. It is situated in the middle of the ocean. The sky is a mix of orange, yellow, and blue, with scattered clouds. The water is a deep blue. The rig has several red lifeboats and various pieces of equipment. The overall scene is industrial and serene.

Motivation and Facts

Why LCA?

There has never been more evidence....



MOST USED Climate Myths

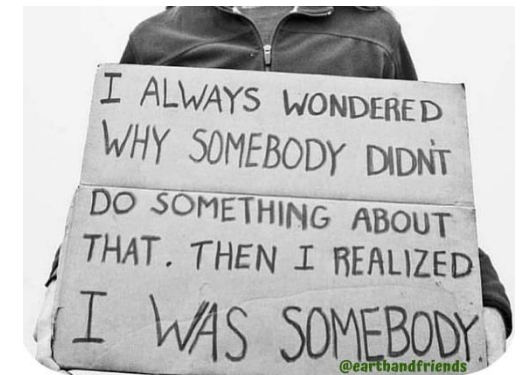
and what the science really says...

- 1 Climate's changed before
- 2 It's the sun
- 3 It's not bad
- 4 There is no consensus
- 5 It's cooling
- 6 Models are unreliable
- 7 Temp record is unreliable
- 8 Animals and plants can adapt
- 9 It hasn't warmed since 1998
- 10 Antarctica is gaining ice

[View All Arguments...](#)

	1) Timing	2) Correlation	3) Mass Balance	4) C14 ratio	5) C13 ratio	6) Oxygen	7) Oceanic CO2	8) Volcanism	9) Biomass	10) History
Anthropogenic	O	O	O	O	O	O	O	.	.	.
Biosphere	X	X	X	X	X	O	X	.	.	X
Oceanic Outgassing	X	X	X	X	X	X	X	X	.	X
Volcanic	X	X	X	O	X	X	.	X	.	.

Evidence Matrix for Anthropogenic CO2

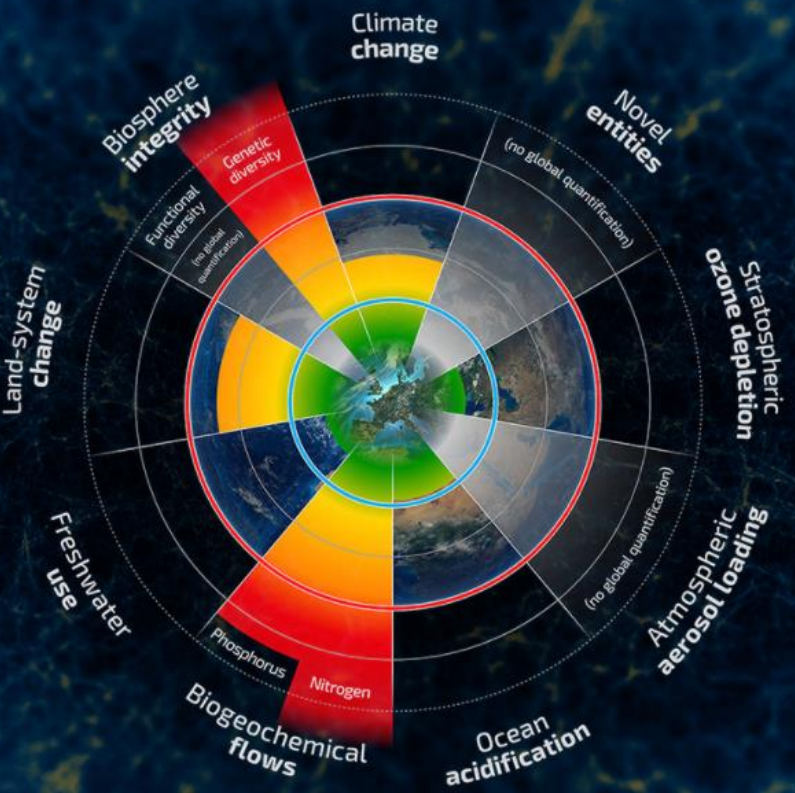


Instagram@earthandfriends

Climate – Diversity - Extinction – Ecosystems: Interlinked Impacts

Planetary Boundaries

A safe operating space for humanity



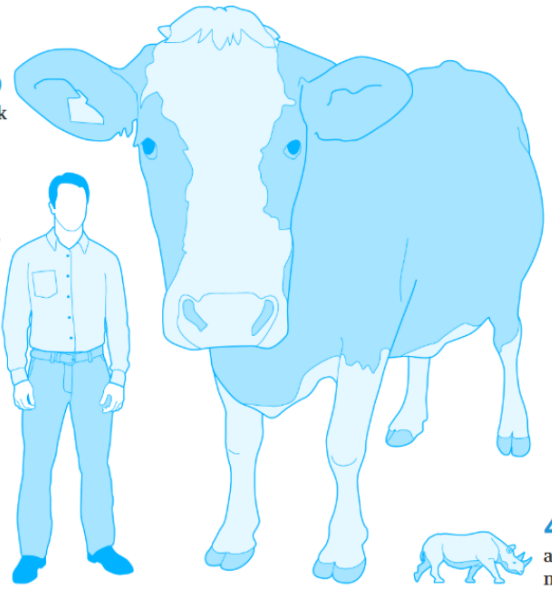
- Beyond zone of uncertainty (high risk)
- In zone of uncertainty (increasing risk)
- Below boundary (safe)
- Boundary not yet quantified

Of all the mammals on Earth, 96% are livestock and humans, only 4% are wild mammals



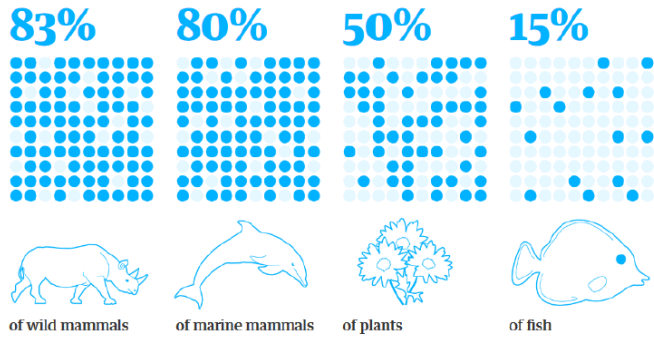
60% are livestock

36% are humans



4% are wild mammals

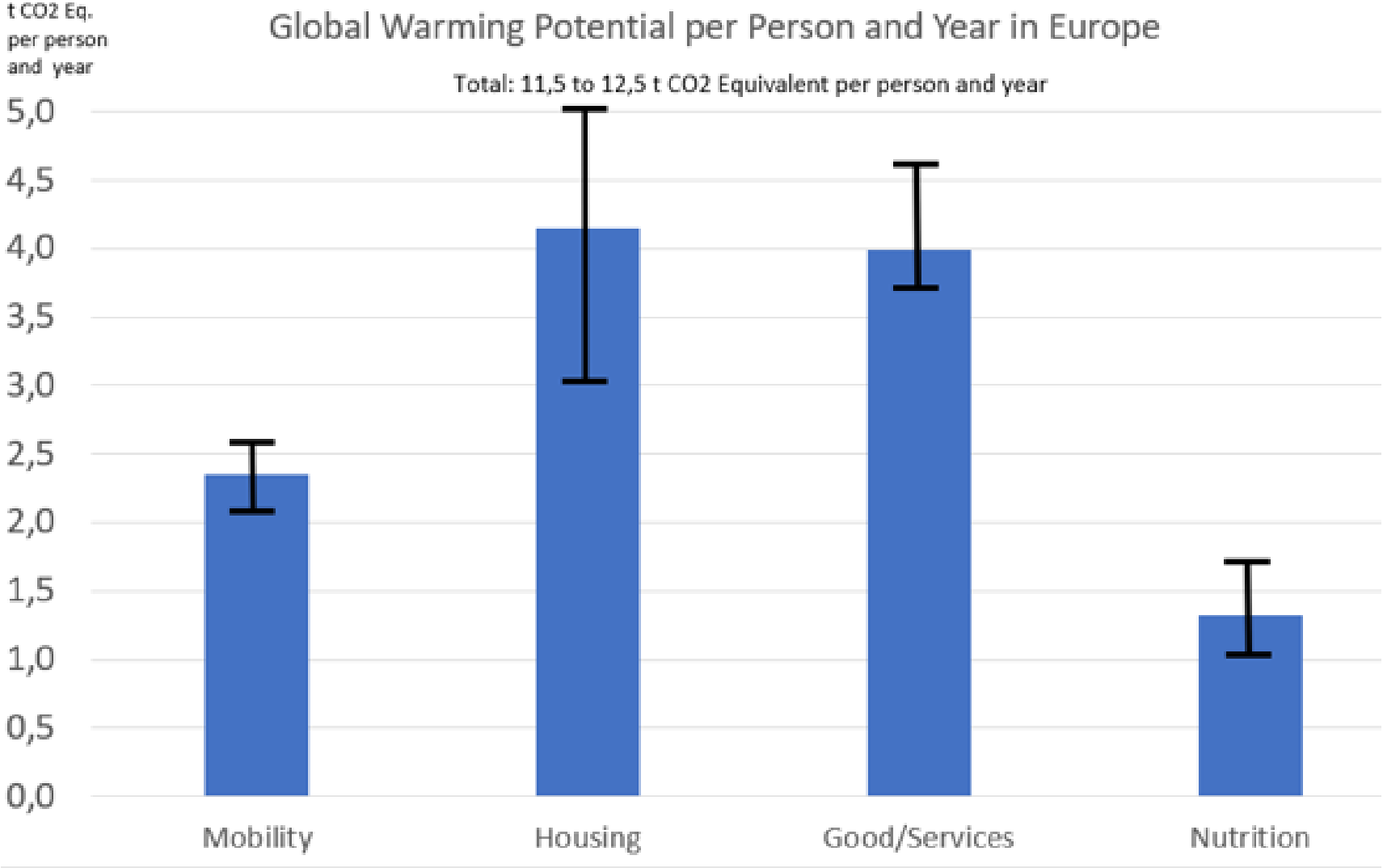
Since the rise of human civilisation 83% of wild mammals have been lost



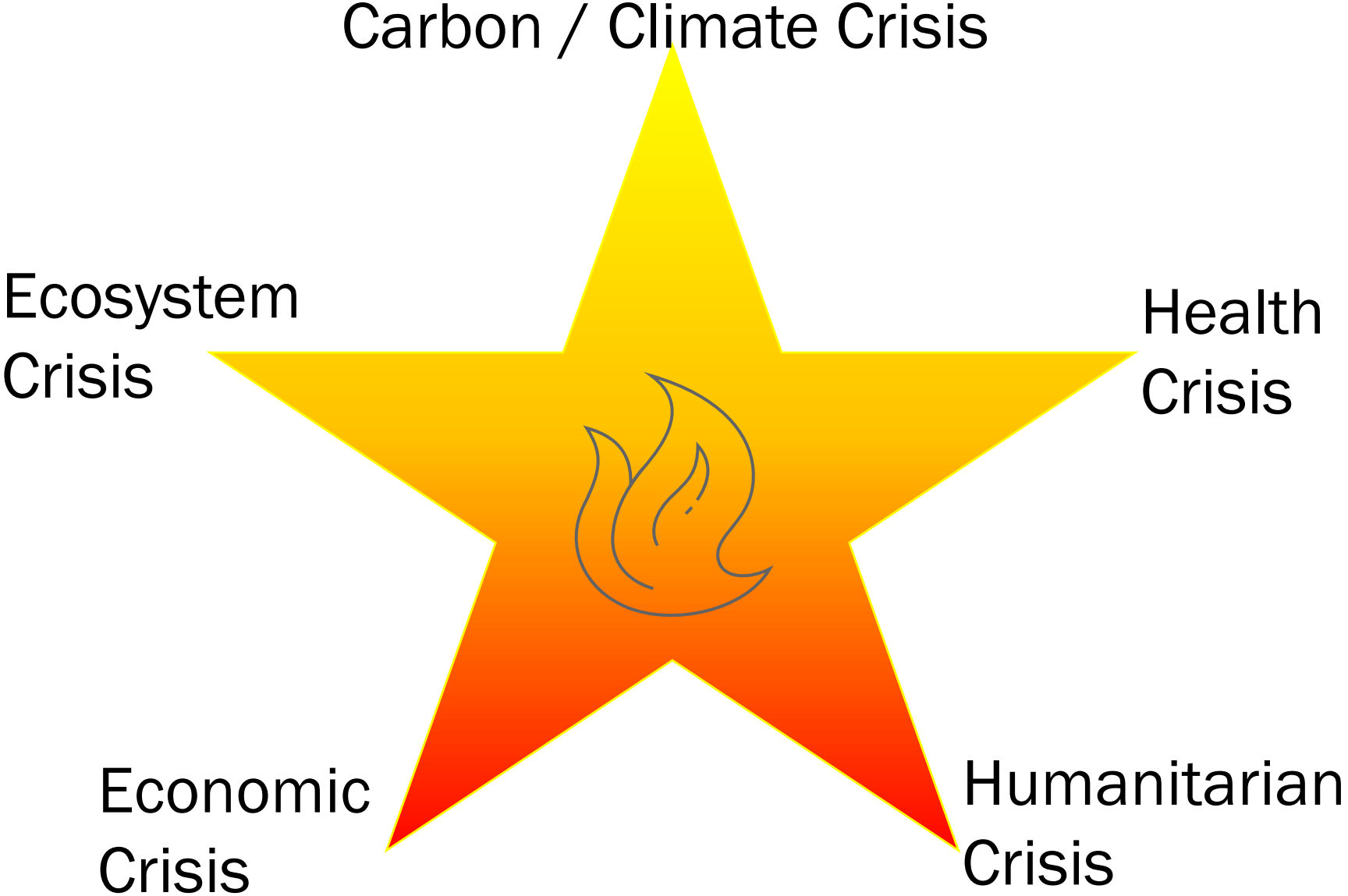
Bar-On et al., PNAS, 2018; Guardian graphic, 21 May 2018

Source: <https://globaia.org/anthropocene>

Intersectoral (industry) and individual (personal): Interlinked responsibility



Money, Environment, Human welfare: Interlinked Crises



Catalogue of Specifications

- Relevant impacts
- Relevant human activities
- Relevant branches
- Global coverage
- Avoiding shift of burden (geo., env., econ.)
- Scientifically based
- Standardized

LC(A) compulsory

- No impact excluded per se
- Applicable to persons, activities, products
- Used in all sectors
- Global coverage
- No LC stage excluded per se
- 1000s of scientific studies and dissertations
- ISO anchored

Drivers of LCA

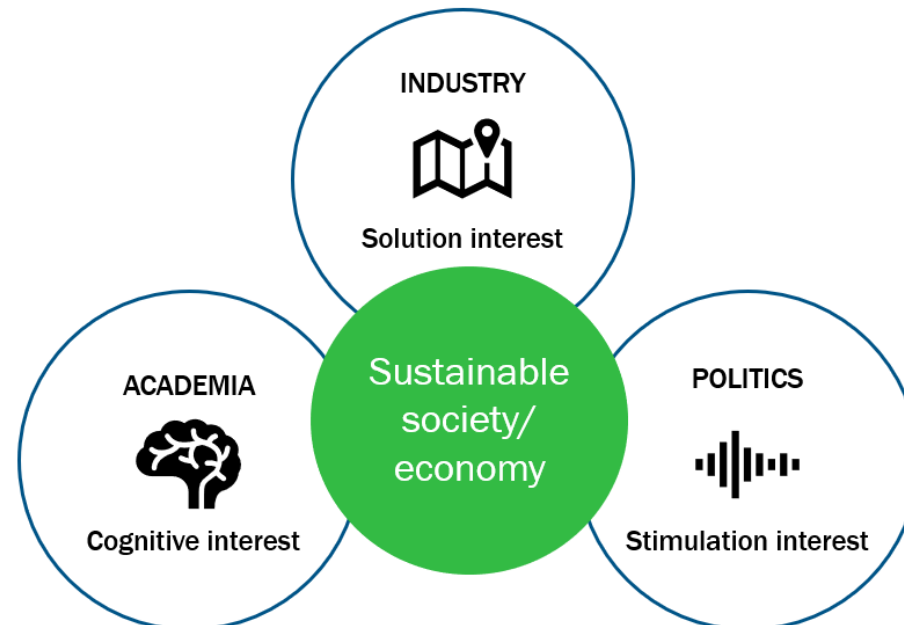


What is relevant?

- Any integral little step or single breakthroughs ?
- All impacts or only most “serious” impacts ?
- Behavior evolution or consumer regulation ?
- Scientific findings or practical application ?
- Prospective or Retrospective information ?

What is adequate ?

- Global alignment or national pioneers ?
- Simplification (compass) or Complication (street map) ?
- Private budgets or subsidies ?
- Competition or Collectivization ?
- Cooperation or Precompetitive Alignment ?

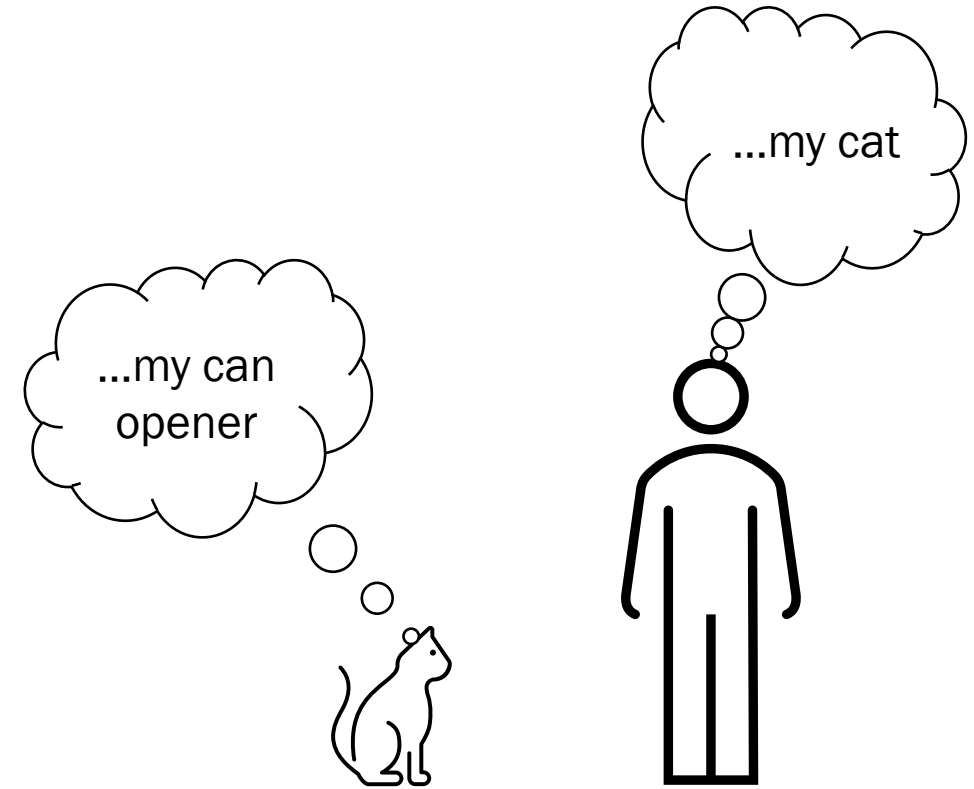




How much does LCA really help in reducing pressure on the environment?
Adequate question ?

Different (LCA) perspectives/perceptions of and amongst stakeholders

- ...how many more cars can we sell if we apply LCA ?
- ...next we forbid hunting !
- Install a dust filter to reduce dust impacts !



Respect Stakeholder viewpoints - ask the right questions – define a solid target – do not generalize per se

→ Goal and Scope Definition in LCA



Which important decisions were based on life cycle thinking and analysis?

Countless !

LCA and Decisions

- Decisions and LCA in Policy
- IPP EU
- Sustainable Consumption and production policy (EU and UN)
- EU car takeback and recycling regulation
- Circular Economy concept / Waste Management Act (KrW-/AbfG), Germany 1996
- EC Environmental Footprint EF
- Preventing bold material bans (like e.g. PVC) without suitable alternatives
-

LCA and Decisions

- Decisions and LCA in Industry....
 - LCA at major Automotive companies: Any new car needs full LCA to pass QA
 - Chemical company in West Germany: Shut-off own power plant and co-invest in public plant
 - Window producer: Switch of specific Polymer supplier to reduce emissions relevantly
 - Re-Insurance companies: Neither invest nor insure further coal-based power and industries
 - Apparel producers: Reusable packing and durability of ideal material blend
 - Central Bank: Innovation towards saver, durable and less impacting bank notes
 - Banks, Investment companies, Insurance companies: SFDR (Sustainable Finance Disclosure Directive) moves focus from “recycling-paper” and “office energy” to “How does our investments raise or reduce impacts!”



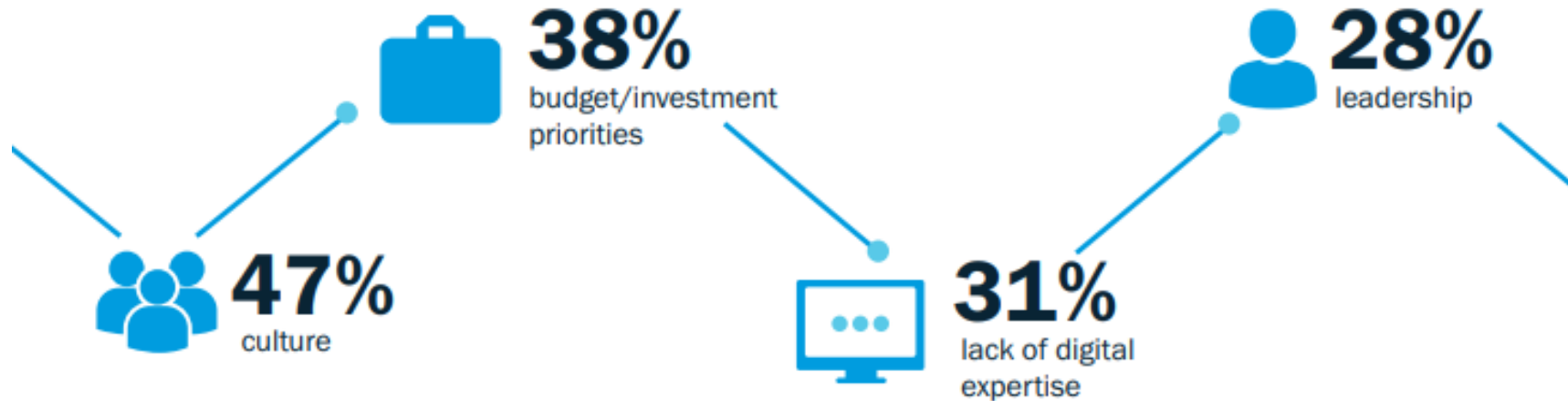
How can LCA become more effective for big and relevant issues?

If LCA can be more applied in practise

Overcome individual challenges of digitalization towards sustainability

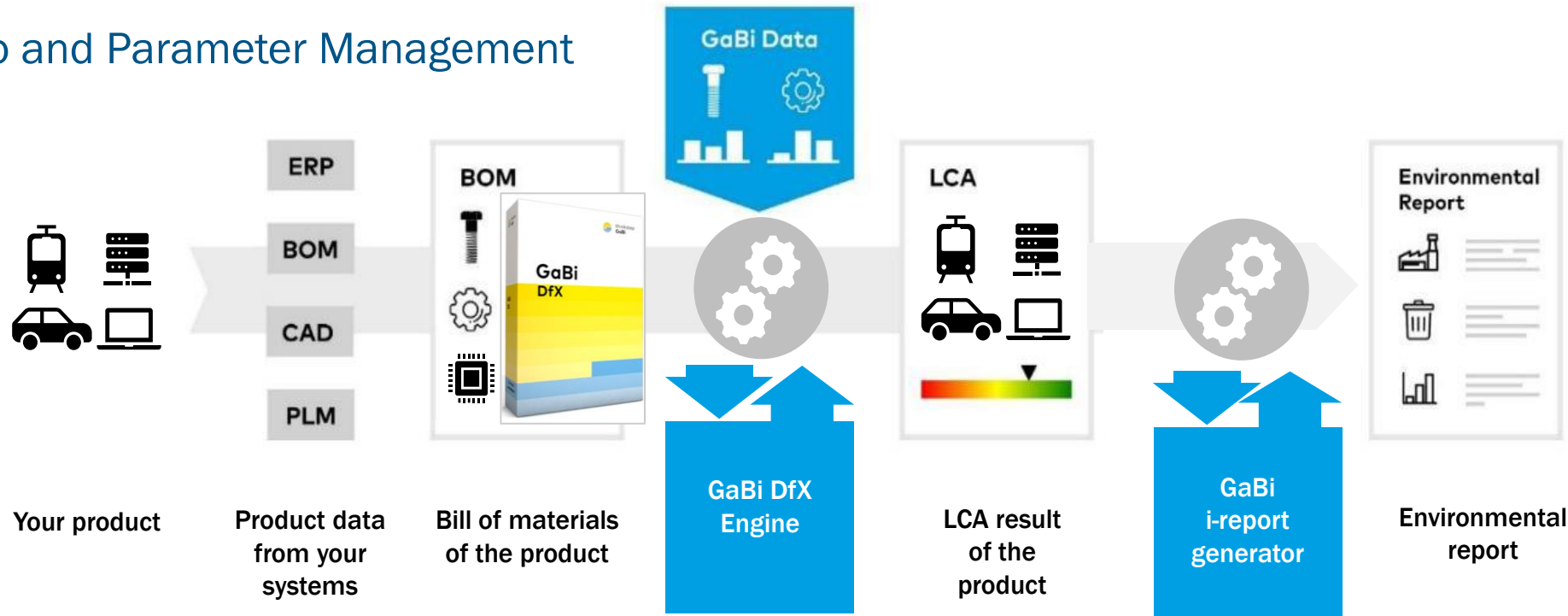
BUT THERE ARE VERY REAL CHALLENGES TO OVERCOME.

TOP FOUR BARRIERS TO ADVANCING DIGITAL TRANSFORMATION PROJECTS



Automation: Tools speed up model set-up, scenarios, reporting

- BOM Import with automated system step up
- ERP/PLM connection
- Interactive report generation
- Export/Import Interfaces
- Scenario and Parameter Management






Justification: Relevant quality data is key to unlock real potentials

LCA Data

Robust, authentic engineering-based LCI data repository

World's largest LCA data repository


Industrial data		3rd Party Data
 <p>Authorized data from 50+ Associations & Companies</p> <p>> 500 EPDs</p>	<ul style="list-style-type: none"> • Professional Database • 24 Extension Databases • Data on Demand <div style="display: flex; align-items: center; margin-left: 20px;"> } <div> <p>~ 15.000 standard datasets</p> <p>> 100.000 inventories</p> </div> </div>	 <div style="background-color: #0056b3; color: white; padding: 5px; text-align: center; margin-top: 10px;"> <p>U.S. Life Cycle Inventory Database</p> </div>

Communication: Standardized procedures and reporting schemes





- **Be efficient: Automate/outsourcing costly error-prone manual work, allocate expert time else**
- **Use relevant information: Rely on quality LCA data in fore- and background**
- **Communicate adequately: fact based, fair and responsible**

A man in a light blue shirt is seen from behind, sitting in a blue chair in an audience. He has his right hand raised, pointing towards the front of the room. In the background, other audience members are visible but out of focus. The scene is set in a dimly lit room with blue ambient lighting.

**Thank you for your
interest and attention.**

Any Questions?

Contact Us

Address

Sphera Solutions GmbH
Hauptstr. 111-113
70771 Leinfelden-Echterdingen
Germany

Phone

+49 - (711) 3418170

Online

sphera.com/contact-us