



hosted by the
Swedish Life Cycle
Center & the
project Swedish
platform for the life
cycle perspective

Webinar Improved communication of LCA results

2020-03-05

Frida Røyne, researcher at RISE



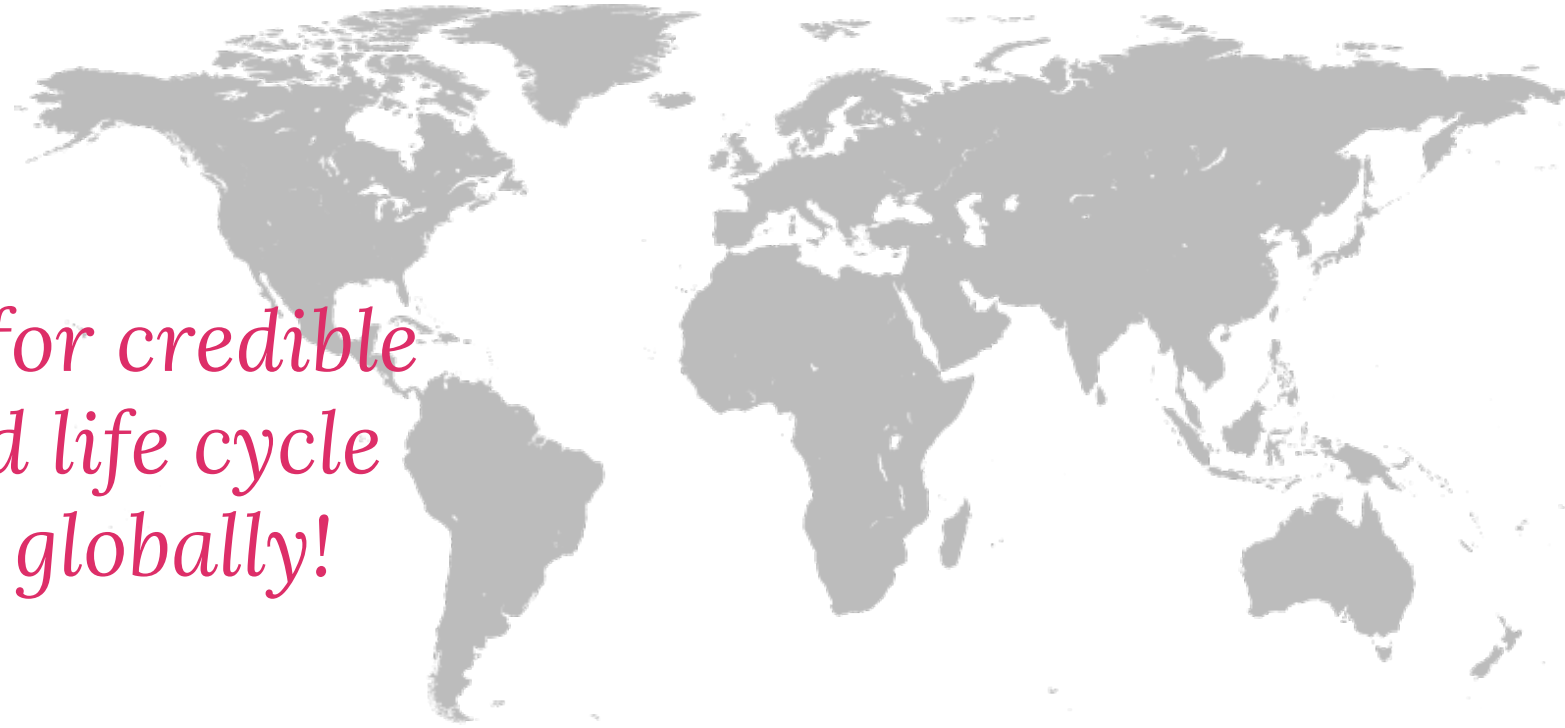
Webinar guidelines & information

- If you do not see the presentations, the presentations will be found here <https://www.lifecyclecenter.se/events/>
- The webinar will be recorded
- The webinar starts with presentations – save your questions to the end
- You are muted as default and when it is time for questions we will be able to unmute you if you have a question
- Presentations will be sent to all participants after the webinar



SWEDISH
LIFE CYCLE
CENTER

*We aim for credible
& applied life cycle
thinking globally!*



CHALMERS

essity

ivl
SVENSKA
MILJÖINSTITUTET



Boverket

Jordbruks
verket
Swedish Board
of Agriculture

Konsument
verket · KO

TRAFIKVERKET



Nouryon

RI
SE



Swedish
Energy Agency

SGI
Statens
geotekniska
institut

Upphandlings
myndigheten

SKF



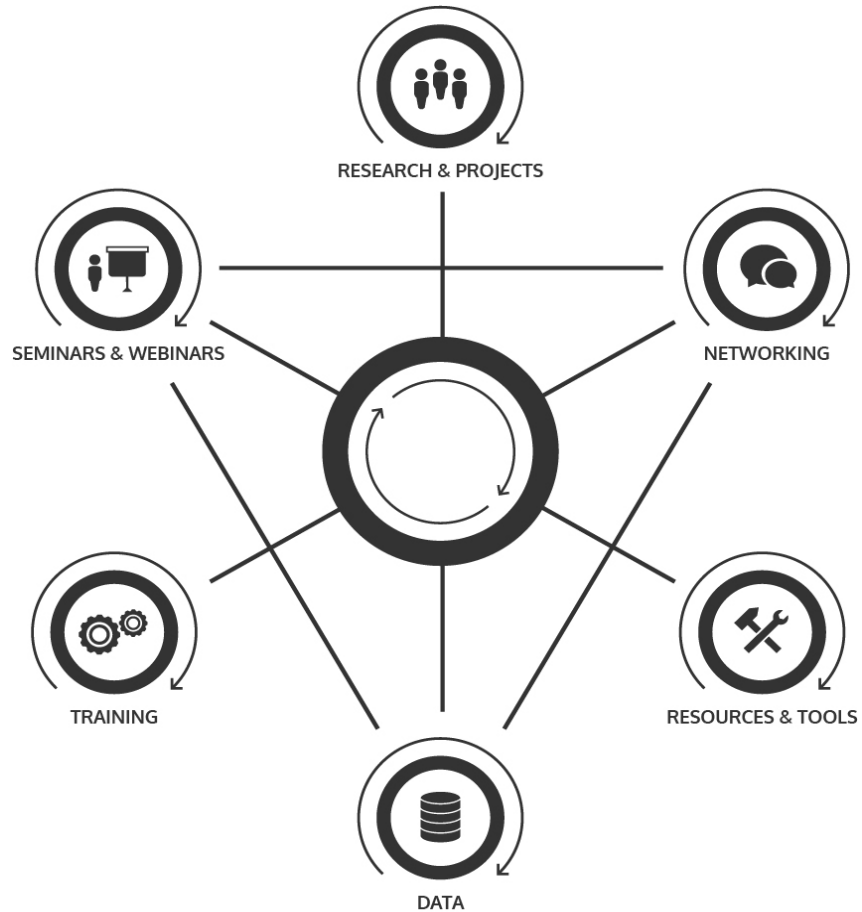
SWECO



VOLVO



A partner driven center




Swedish platform for the life cycle perspective



Two- day course in Applied Life Cycle Thinking

21-22 april, Göteborg, Chalmers



9 out of 10
from evaluation of
previous course !

The life cycle perspective, understanding the environmental impacts of a product or service throughout the value chain, is gaining increased importance in business as well as in public sector and authorities. In this two-day course you will get a deeper understanding on how to apply life cycle thinking in your organization, through real cases and proven methods.

Price: 11500 SEK ex. VAT

Register: <https://www.lifecyclecenter.se/events/save-the-date-two-day-course-in-applied-life-cycle-thinking-2020/>

Sign up to our newsletter

- I want to receive newsletters and invitations from Swedish Life Cycle Center to my inbox. I agree on the terms and conditions connected to the use of my personal data. I can unsubscribe at any time. [Read the terms](#)

Sign up

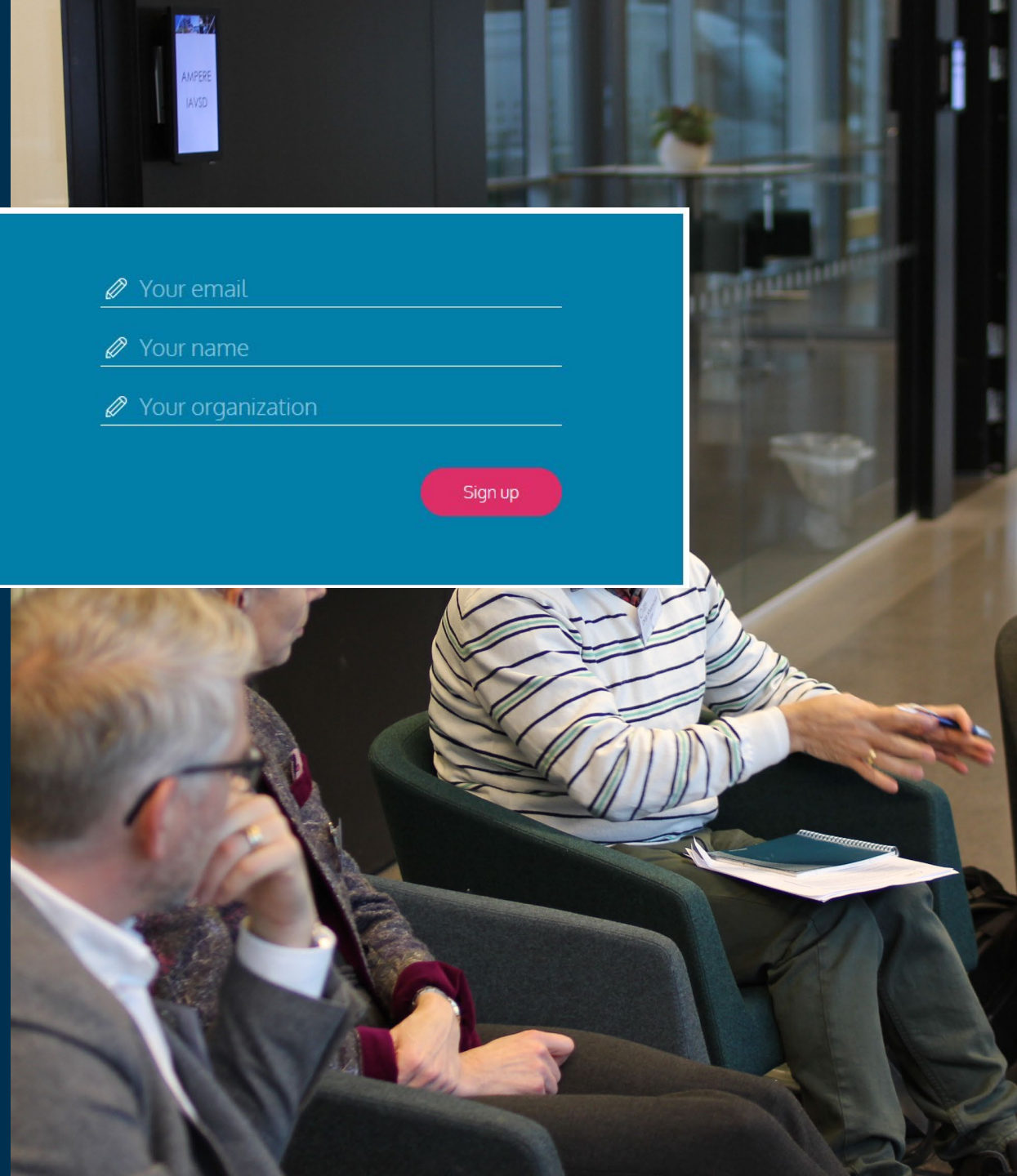
lifecyclecenter@chalmers.se

www.lifecyclecenter.se

Twitter: [@lifecyclecenter](https://twitter.com/lifecyclecenter)

LinkedIn: [Swedish Life Cycle Center](https://www.linkedin.com/company/swedish-life-cycle-center)

And sign up for our newsletter!





hosted by the
Swedish Life Cycle
Center & the
project Swedish
platform for the life
cycle perspective

Webinar Improved communication of LCA results

2020-03-05

Frida Røyne, researcher at RISE



Improved communication of LCA results

Frida Røyne

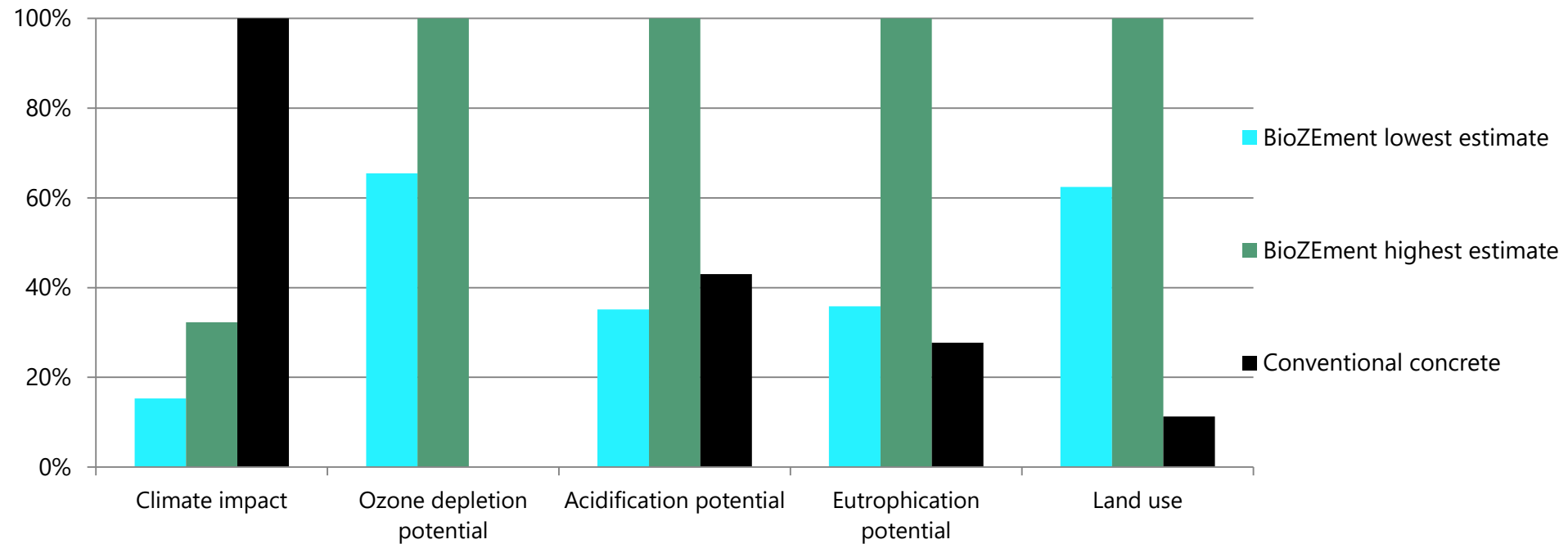
RISE – Research Institutes of Sweden

Webinar March 5th, 2020

About the project

- October 2018 - May 2019
- Team: Michael Martin (IVL) and Louise Quistgaard (RISE)
- Financed by Åforsk
- Which type of communication?
 - The physical dimension: Which platforms the results are distributed through
 - The social dimension: How the results are distributed
 - **The expressive dimension:** How the results are expressed and compared quantitatively, qualitatively and visually

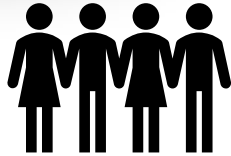
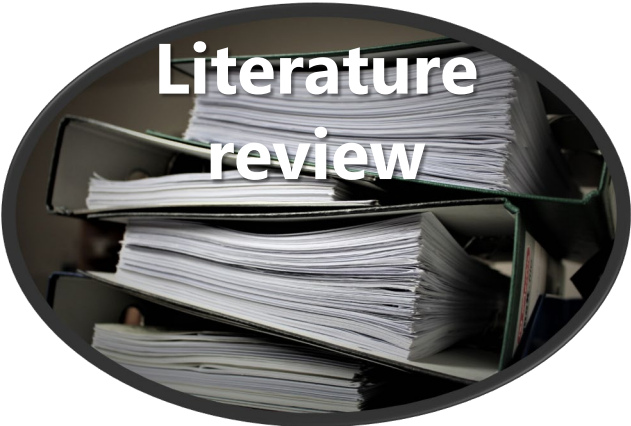
How it all began...



Comparison of innovative (BioZement) and conventional concrete

What is good
communication?

Method



Researchers
Practitioners



Commissioners
Decision makers



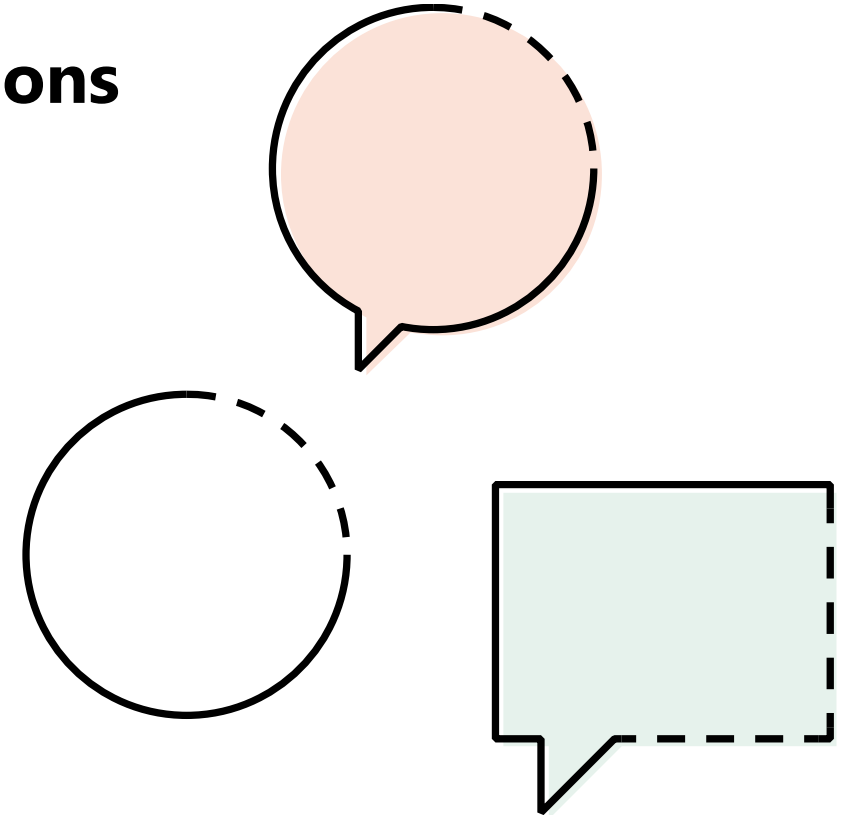
Communicators

Questions addressed

- Expression of scale and severity
- Formulation of goal/aim
- Numbers versus conclusions
- Mentioning of audience
- Tailoring to media and audience
- Visual presentation
- Need for LCA expertise
- Future needs

Current practice

Opinions



Result 1

Stating goal, intended audience and conclusions

Preferences



Current practice



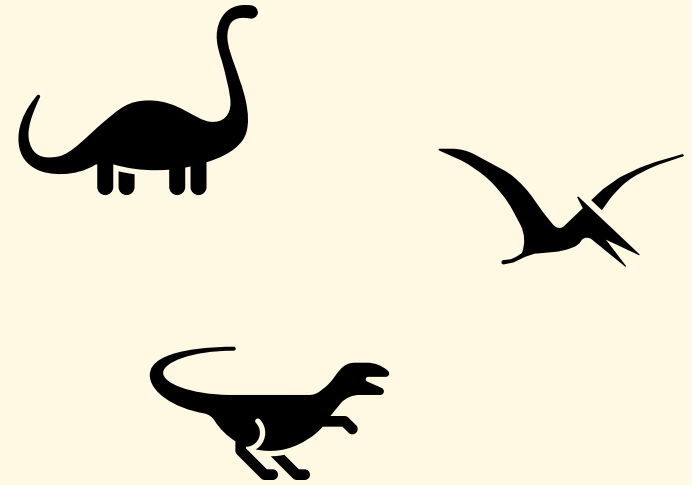
Is it much? Is it significant??



Result 2

Expressing scale and severity

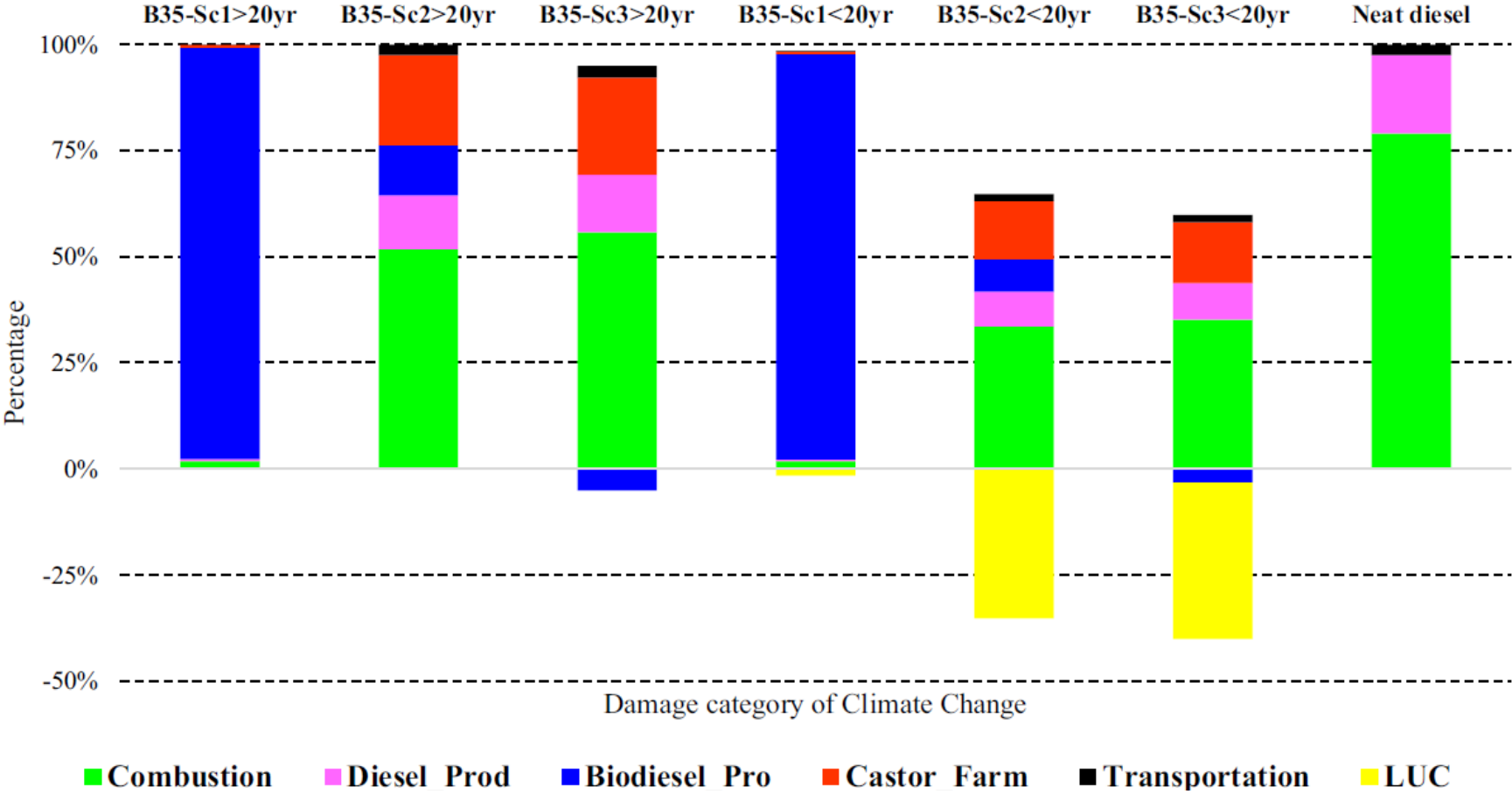
- Most common to use benchmark
 - LCA on other products/technologies
 - The different life cycle phases
 - Most common to use several
- Normalization and weighting generally avoided
- Absolute LCA suggested but juvenile
- Most positive to the least complex



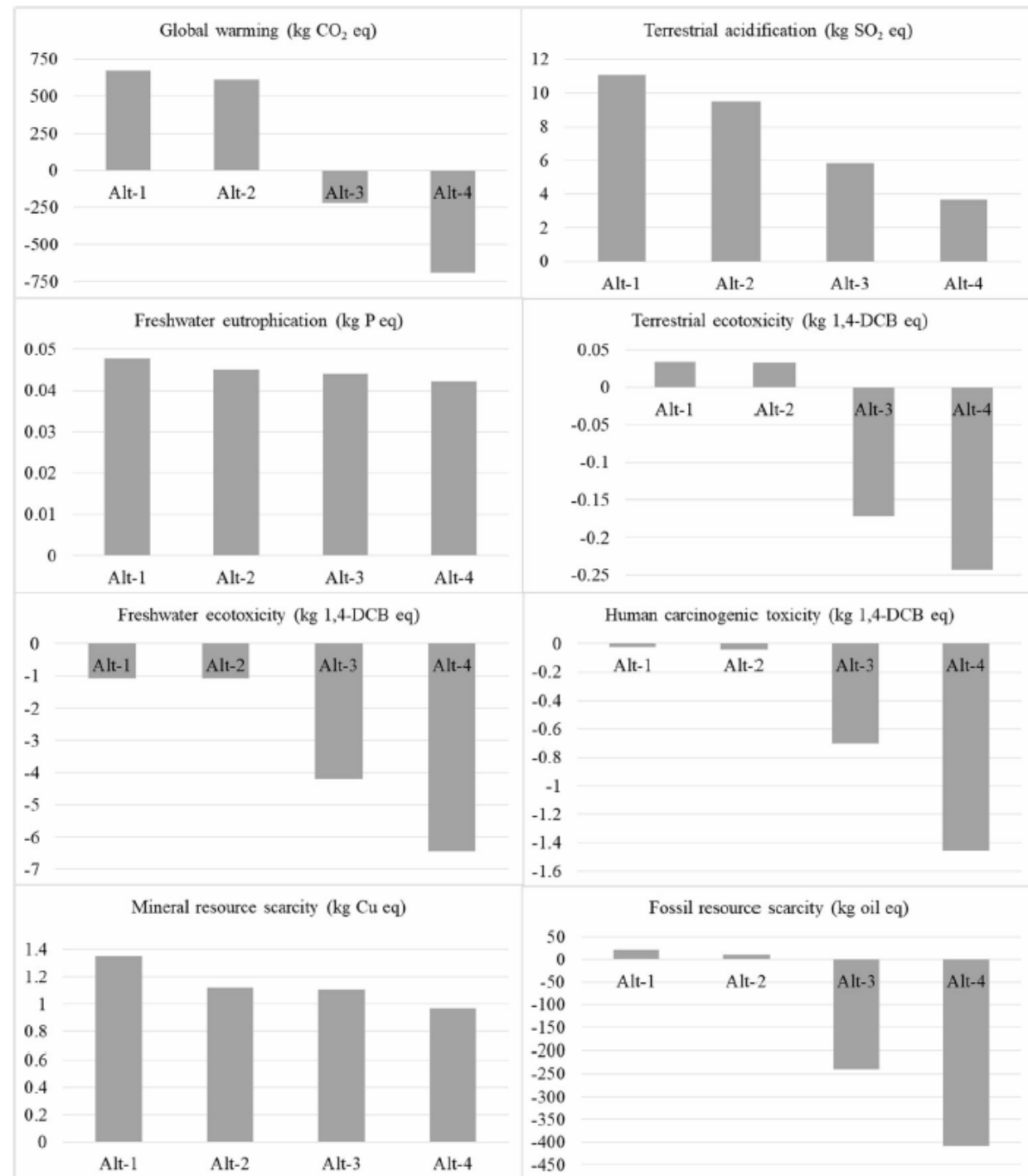
“Diagrams are helpful to most people. Tables are interesting for the nerds”

Comment from the survey

Example from the survey



Example from the survey



Example from the survey

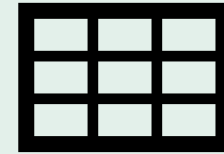
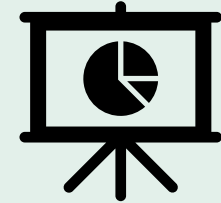
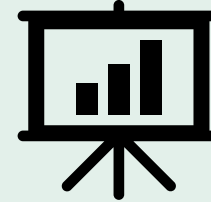
Table 3. ReCiPe midpoint results (Characterisation) attributed to the production of 1 kg microalgae-biodiesel.

Impact category	Unit	Spirulina platensis open (kg ⁻¹ biodiesel)	Nannochloropsis sp. open (kg ⁻¹ biodiesel)	Spirulina platensis closed (kg ⁻¹ biodiesel)	Nannochloropsis sp. closed (kg ⁻¹ biodiesel)	Diesel (0.867 kg ⁻¹ diesel)
Climate change	kg CO ₂ eq	2.644E+01	1.931E+01	1.330E+02	9.947E+01	5.450E-01
Ozone depletion	kg CFC-11 eq	1.260E-06	9.450E-07	6.600E-06	4.960E-06	4.460E-06
Terrestrial acidification	kg SO ₂ eq	1.367E-01	1.015E-01	6.946E-01	5.212E-01	3.706E-03
Freshwater eutrophication	kg P eq	6.293E-02	4.455E-02	3.238E-01	2.408E-01	3.670E-06
Marine eutrophication	kg N eq	1.138E-02	7.788E-03	7.332E-02	5.438E-02	3.030E-04
Human toxicity	kg 1,4-DB eq	4.322E+01	3.075E+01	2.224E+02	1.655E+02	8.418E-02
Photochemical oxidant formation	kg NMVOC	3.685E-02	3.291E-02	2.311E-01	1.790E-01	1.010E-02
Particulate matter formation	kg PM10 eq	4.742E-02	3.585E-02	2.535E-01	1.909E-01	1.210E-03
Terrestrial ecotoxicity	kg 1,4-DB eq	-2.450E-03	-2.890E-03	7.585E-03	4.651E-03	4.930E-05
Freshwater ecotoxicity	kg 1,4-DB eq	1.214E+00	8.677E-01	5.889E+00	4.384E+00	8.590E-04
Marine ecotoxicity	kg 1,4-DB eq	1.156E+00	8.252E-01	5.652E+00	4.206E+00	9.730E-04
Ionising radiation	kBq U235 eq	1.405E+00	1.152E+00	8.048E+00	6.149E+00	8.265E-02
Agricultural land occupation	m ² a	-3.898E+01	-1.151E+01	-3.845E+01	-1.111E+01	—
Urban land occupation	m ² a	-2.687E-01	-4.481E-02	9.322E-03	1.643E-01	—
Natural land transformation	m ²	-7.400E-04	6.450E-04	6.965E-03	6.437E-03	—
Water depletion	m ³	8.320E+01	6.069E+01	4.357E+02	3.259E+02	3.993E-01
Metal depletion	kg Fe eq	2.528E-01	2.371E-01	1.817E+00	1.410E+00	1.264E-02
Fossil depletion	kg oil eq	9.674E+00	7.041E+00	4.520E+01	3.377E+01	1.038E+00

Result 3

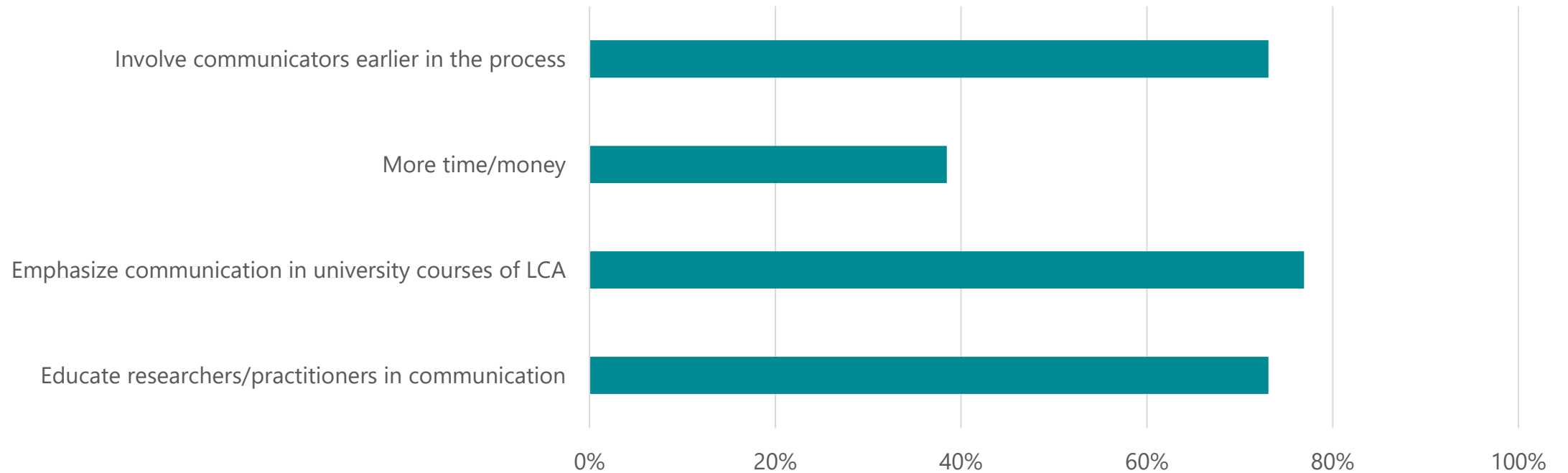
Opinions on visual presentations

- **Tables** - poorer understanding, good data source
- **Negative values and different time scales** require good explanations
- **Colors** - appealing but practical issues
- **Abbreviations** - necessary but should be limited
- **Multiple charts in one figure** – to use with caution
- **Multiple dimensions** – complexity decreases understanding



Result 4

How to improve communication



Why don't I understand
this article?
I must be too stupid...



Conclusions

- Most important: **attention**
- Focus on purpose and message
- Complexity should not overrule understanding
- Vast opportunities for improvement and further research



Full report in
DIVA

ENVIRONMENT
AND CIRCULAR
ECONOMY

Frida Røyne

frida.royne@ri.se

+46 72-500 65 80



Improved Communication of Environmental
Impacts – The Case of LCA Results

Frida Røyne, Louise Quistgaard (RISE),
Michael Martin (IVL Swedish Environmental Research
Institute)

RISE Report 2019:65

Illustrations from www.pexels.com

RISE – Research Institutes of Sweden AB · 010-516 50 00 · info@ri.se · ri.se
Lindholmspiren 7 A, 417 56 Göteborg · Box 857, 501 15 Borås

**RI
SE**

QUESTIONS?

THANK YOU

lifecyclecenter@chalmers.se

www.lifecyclecenter.se

Twitter: [@lifecyclecenter](https://twitter.com/lifecyclecenter)

LinkedIn: [Swedish Life Cycle Center](https://www.linkedin.com/company/swedish-life-cycle-center)

And sign up for newsletter!

