



A crazy little thing called sustainability

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Slide design in cooperation with Daryn Slyamov

Why actively address sustainability in higher education?

Bundesministerium
für Umwelt, Naturschutz, nukleare Sicherheit
und Verbraucherschutz



18.04.2022

Um globale Probleme in der Zukunft zu begrenzen, müssen wir die Gesellschaft verändern. Wie gelingt die Transformation?

BMUV - 04/28/2022

3+ ZIELE FÜR DEN KLIMASCHUTZ

Unternehmen sind von Nachhaltigkeit überfordert

Viele Unternehmer setzen noch keine eigenen Klimaziele. Vor allem kleineren Unternehmen fällt es schwer, sich nachhaltig aufzustellen. Fachleute wundert das nicht, doch sie sind sich einig: Es muss ein Umdenken stattfinden.

FAZ - 07/14/2023

After the Maui Fires, Locals Fear Being Shut Out of Recovery

Hawaii has long endured battles for resources among developers, tourists, Natives and workers. Now, many who lost homes and jobs wonder if there will be a place for them in Lahaina.

By JILL COWAN and MICHAEL CORKERY

New York Times - 08/12/2023



Zeit Online - 08/02/2023

Erdüberlastungstag

Ökologische Belastungsgrenze der Erde für 2023 ist erreicht

Die Menschheit hat alle Ressourcen verbraucht, welche die Erde in diesem Jahr auf natürlichem Wege bereitstellen kann. Deutschland stand bereits im Mai an diesem Punkt.

2. August 2023 • 250 Kommentare

Heat, War and Trade Protections Raise Uncertainty for Food Prices

Experts are warning of a new normal in which food supplies — and prices — could be rocked more regularly.

By ESHE NELSON, ANA SWANSON and JEANNA SMIALEK

New York Times - 08/10/2023



FH AACHEN
UNIVERSITY OF APPLIED SCIENCES



To what extent is sustainability reflected in the manufacturing sector?

- Qualitative study (explorative approach), interviews with industry experts (engineering background).
- Contact pool: Industrial Advisory Board of the Cluster of Excellence "Internet of Production" (IoP) at RWTH Aachen University.
- Interviews took place both online and in person and were recorded and transcribed using qualitative data analysis software (MAXQDA).
- Method: Qualitative content analysis, based on Mayring (2015), allows structured analysis and statistical summarization of qualitative data.

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53 People

were invited to the qualitative survey. 38 participants of the IAB and additional 15 from ITA of RWTH Aachen University.

58,5 %

response rate

50 Minutes

average length of interviews

Results & Conclusion

- Out of 31 interview partners, merely 16,1% addressed sustainability
- When addressed, it was mostly associated with e.g., CO2 footprints, energy transition, or energy efficiency.
- 6,5% of the interviewees mentioned social aspects of sustainability, e.g., impact of entrepreneurial activity on society, employee perspective.

Conclusion:

- Ecological and economic pillars of sustainability emphasized.
- Lack of public discourse on the social perspective.
- Questionable to what extent holistic understanding of sustainability exists

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16.1%

addressed sustainability
without being specifically
asked about it.

2 Pillars

have been mostly
mentioned: **ecological**
and **economical**

Limitations & Future Considerations

- Methodology constraints: Survey framework has limitations on results.
- Pandemic influence: COVID-19 peak affected participant responses.
- Tangential study: Sustainability explored alongside digital transformation.
- Interview dynamics: Social desirability in empirical social research (e.g. Strack, 1994).
- Qualitative focus: Expert interviews limit statistical representation.
- Initial insights: Basis for further sustainability exploration in engineering.
- Action points: Identifies relevant areas for company sustainability efforts.

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Conclusion

To meet the challenges of tomorrow's world, we need a holistic understanding of sustainability. People play a central role in this.

“That's, so people, people, people, I think that's the biggest challenge. Or probably almost the only one. Of course, our industry in particular has certain challenges, the energy transition and so on and so forth, but I think everything stands and falls with the people.”

(Transkript_200914_LS50063, Pos. 50, Nr. 14)

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Sustainability - An attempt at a definition

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

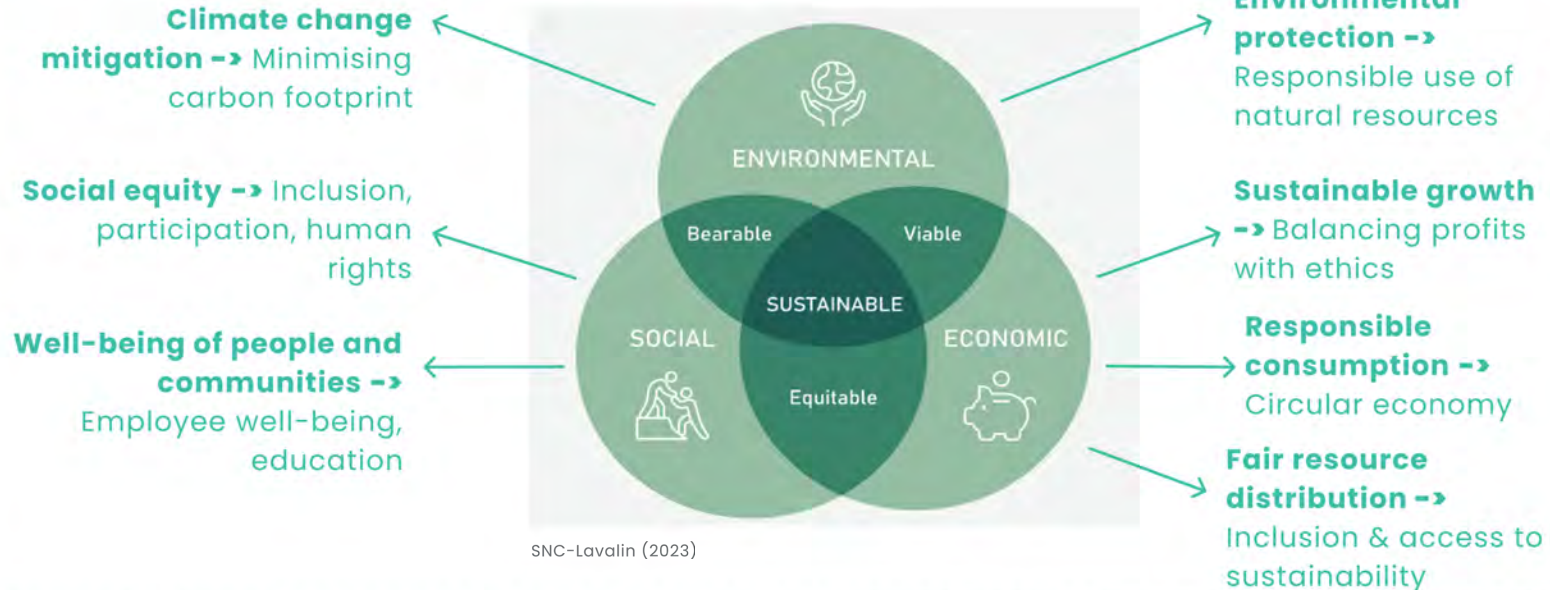
*World Commission on Environment and Development,
Brundtland Commission, United Nations (1987)*

- What do we know about the needs of future generations?
- Are today's framework conditions comparable to future conditions?
- Will values and priorities remain the same?
- Will the idea of sustainability remain the same across generations?

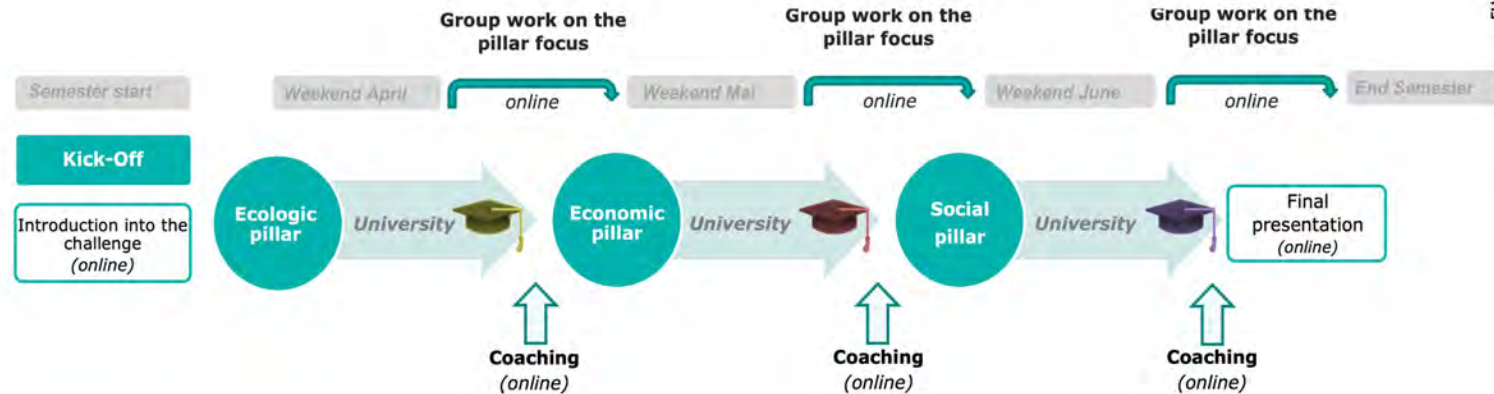
"[...] we should aim to preserve the possibility of all present and future generations to make their own choices in their aspiration to an accomplished and just life."

Dedeurwaerdere (2013)

The three Pillars of Sustainability



Sustainability Challenge Concept



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Sustainability Challenge Concept

Formal framework conditions

- Format as a weekend block course.
- Group size of approximately 30 students per challenge.
- Teaching and exchange at the respective location in presence.
- Organization of accommodation, meals and, if necessary, transfer.
- Clarification of the crediting of the module (elective subject, bachelor, master,...).

Conceptual framework conditions

- Diverse teams -> Encourage varied perspectives.

Different concepts are currently conceivable:

- Participation of three faculties in the challenge.
- Participation of three (international) universities in the challenge.
- Scalable: Adapt for larger groups with partners.

Integrating Sustainability into Engineering Education

Integrating sustainability into engineering study programs is crucial, encompassing all three pillars of sustainability. The proposed teaching concept, known as the sustainability challenge, offers an interdisciplinary and transdisciplinary framework. Heterogeneous teams, representing diverse backgrounds and expertise, play a significant role in integrating different perspectives. This approach aligns with the recommendations of the UNESCO expert review on Education for Sustainable Development (ESD) (UNESCO, 2011).

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Thank you for your attention!

Steuer-Dankert , Linda Dr. rer. pol.

Lehrkraft für besondere Aufgaben

Lehrgebiet: Internationales Management, Design Thinking - Innovationsmanagement, Change Management & Nachhaltigkeit

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Fachbereich 10 - Energietechnik



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