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HOCHSCHULE DARMSTADT  
UNIVERSITY OF APPLIED SCIENCES

**s:ne**

SYSTEM INNOVATION FOR  
SUSTAINABLE DEVELOPMENT

# Verteilung von Ownership als Herausforderung und Chance

## Transdisziplinäre Co-Creation am Beispiel von Leder-Design-Guidelines für NE

Jonas Rehn-Groenendijk - Hochschule Darmstadt, s:ne

Karl Borgschulze - CSI Hongkong, Ltd.

Dr. Jonas Rehn  
Karl Borgschulze  
Systeminnovation für  
Nachhaltige Entwicklung (s:ne)  
Hochschule Darmstadt

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Bundesministerium  
für Bildung  
und Forschung



Gemeinsame  
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GWK



# Inhalt

1. Projektkontext
2. Leather Design Guidelines als transdisziplinärer Forschungsgegenstand
3. Ownership in co-creativen Arbeitsmodi
4. Herausforderungen heterogener transdisziplinärer Akteurskonstellationen
5. Offene Fragen

## Ausgangspunkt:

**Wie lässt sich eine nachhaltigere Chemie entlang der globalen Lederlieferketten erreichen?**

# Transdisziplinärer Prozess als Erfolgsbedingung



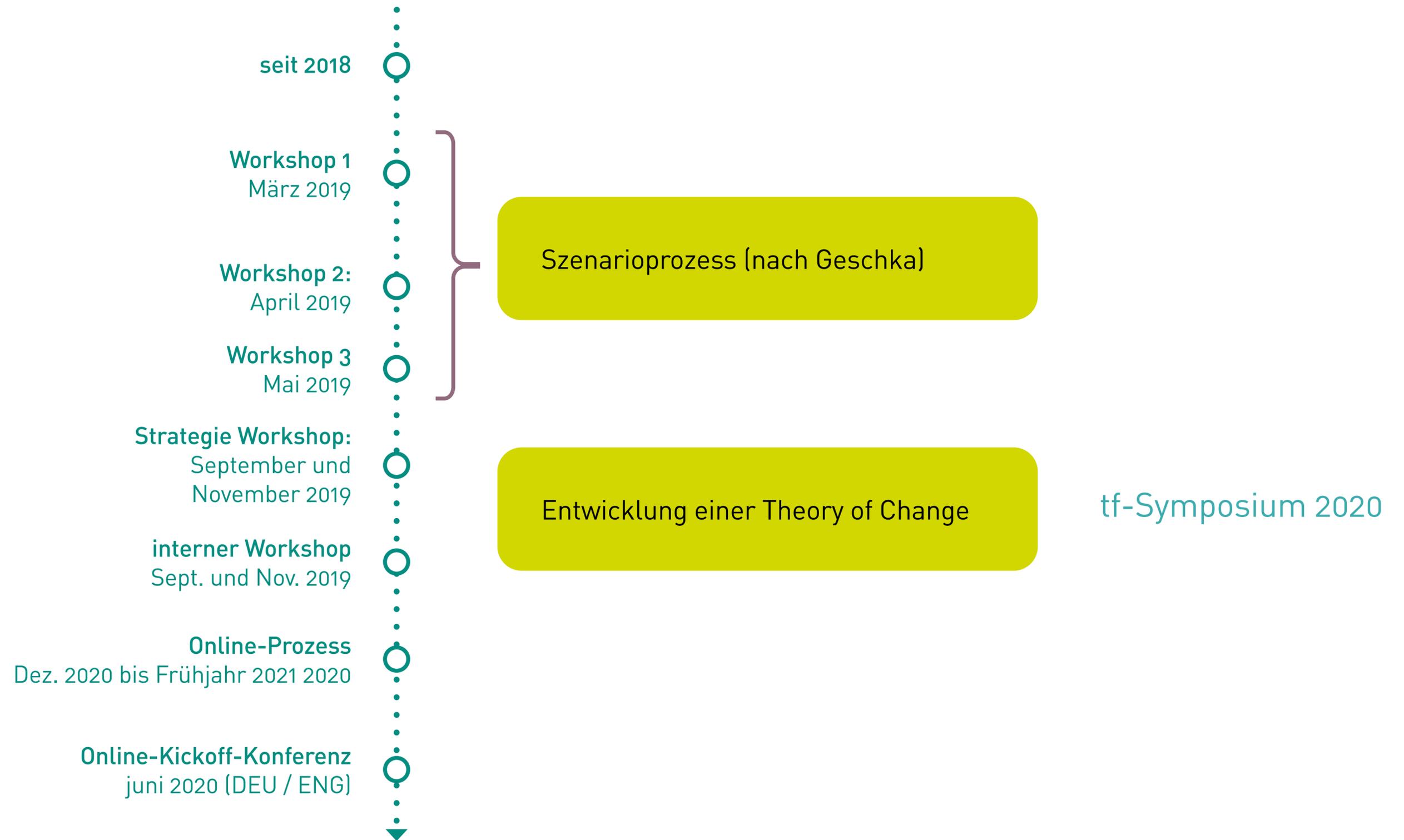
# Transdisziplinärer Prozess als Erfolgsbedingungen

- seit 2018
- Workshop 1  
März 2019
- Workshop 2:  
April 2019
- Workshop 3  
Mai 2019
- Strategie Workshop:  
September und  
November 2019
- interner Workshop  
Sept. und Nov. 2019
- Online-Prozess  
Dez. 2020 bis Frühjahr 2021 2020
- Online-Kickoff-Konferenz  
juni 2020 (DEU / ENG)

Szenarioprozess (nach Geschka)



# Transdisziplinärer Prozess als Erfolgsbedingungen



# Outputs

## Outcomes 1

 Normative Impulse  
Aktivere kritische Öffentlichkeit

 Strukturelle Systemoptimierungen und entsprechende Geschäftsmodelle  
Prozessinnovationen  
Branchenweite Governance-Strukturen für Traceability  
Vertikale und horizontale Kooperationen  
Kompetenzbildung in Produktionsländern

 Veränderte Produkt-Entwicklungsprozesse (in Richtung NE)  
Verändertes Einkaufsverhalten (Sourcing in Richtung NE)

 Sensibilisierung der Verbraucher  
Produkt- und Informationsangebot am Point of Sale

## Outcomes 2

 Verbesserte Arbeitsbedingungen in den Drittstaaten  
Vollzug

 „Kulturwandel“ in den Lieferketten  
Nachhaltigere Produktionsweisen

 Nachhaltigere Produkte

 Veränderte Konsumweisen

## Impact



Etablierung einer „Nachhaltigeren Chemie“ in den Lederlieferketten

**TP**  
Teilprojekt n

# Transdisziplinärer Prozess als Erfolgsbedingungen



# „Architektur der Experimentierräume“



tf-Symposium  
2021

# „Architektur der Experimentierräume“



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## Ziele des Teilprojekts



### **1. Entwicklung von Guidelines**

Unterstützung von Entwicklungsprozessen für nachhaltigere Lederprodukte



### **2. Anwendung der Guidelines in Pilotstudie**

Realer Entwurf als Evaluation und Proof of Concept der Guidelines

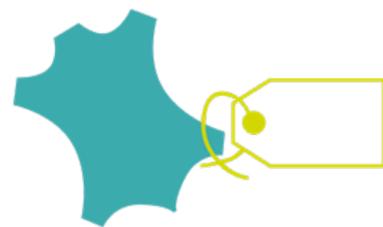
## Forschungsfragen der Guidelines



Welche **Aspekte** gilt es bei der Gestaltung nachhaltigerer Lederprodukte zu berücksichtigen?



Was sind **relevante Designprinzipien** dabei?



Gibt es spezifische Materialeigenschaften von „**nachhaltigerem Leder**“, die beachtet werden sollten?



Welche **Geschäftsmodelle** können hieraus entwickelt werden (z.B. Product-Service-Systems)?

# Transdisziplinärer Ansatz

Projektgruppe / Co-Autor\*innen / Reviewer\*innen

## Wissenschaft

Chemie

Rechtswissenschaften

Wirtschaftslehre

Designforschung

Ingenieurwesen

Psychologie

etc.

## Industrie & Brands

Gerbereien

Lederchemie

Schuhindustrie

Lederwaren

etc.

## NGOs & weitere

Beratung

Prüflabore

Verbraucherschutz

Ledermuseen

Stiftungen

etc.

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*Ergebnisse ggf. entgegen  
eigener Zielsetzungen*

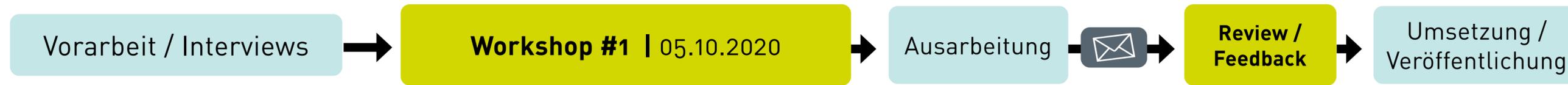
*keine Vergütung*

Wie kommt man ins langfristige produktive  
Arbeiten trotz potentieller Interessenkonflikte  
und ggf. mangelnder Anreizstrukturen?

*Konsumhaltung vs. Verantwortlichkeit*

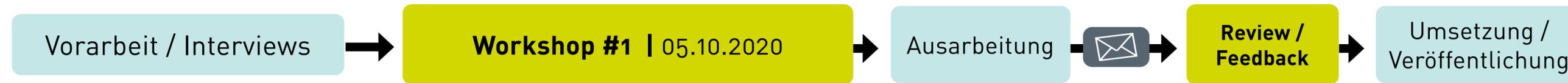
*Sichtbar...?*

*Zeitressourcen*



Forschungsgruppe (h\_da)

Transdisziplinäres Team



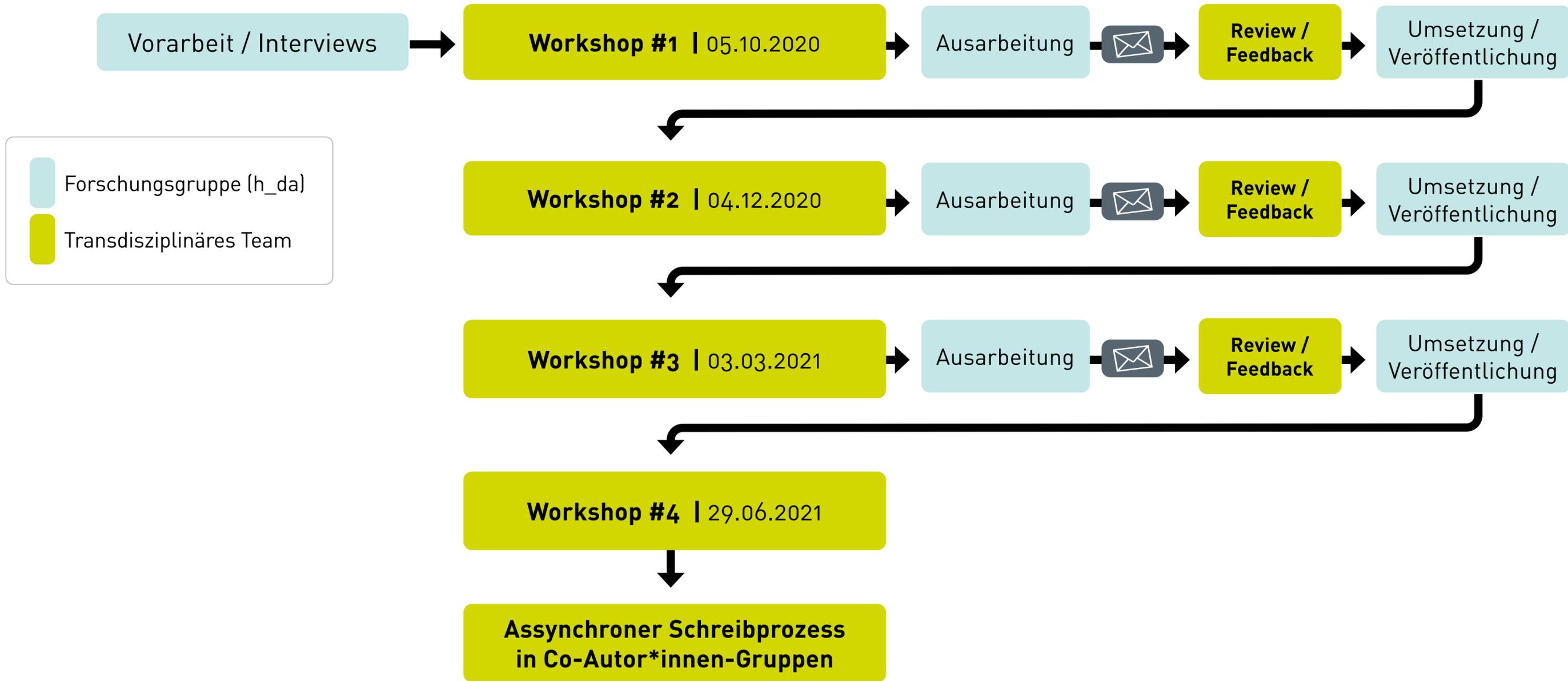
 Forschungsgruppe (h\_da)

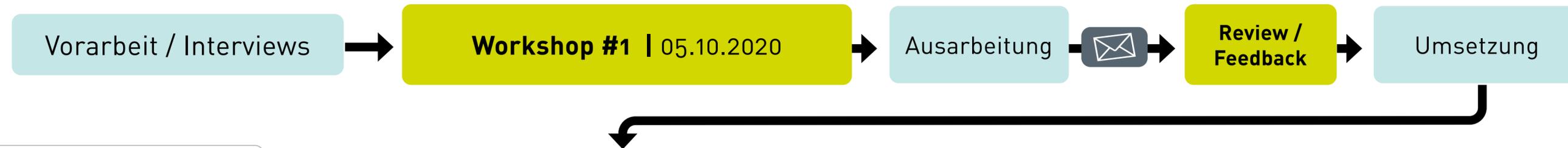
 Transdisziplinäres Team

## Workshop-Formate

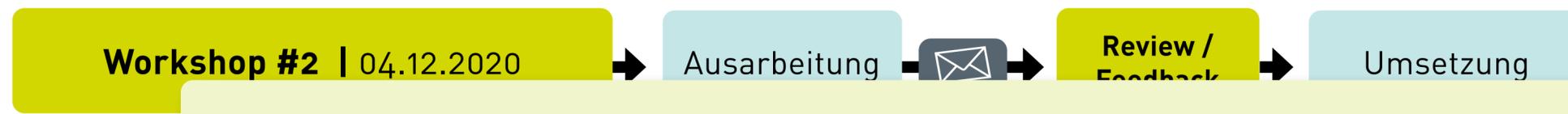
- ▶ Team-Building
- ▶ Projekt-Dynamiken nutzen
- ▶ Individual-Interessen hörbar machen







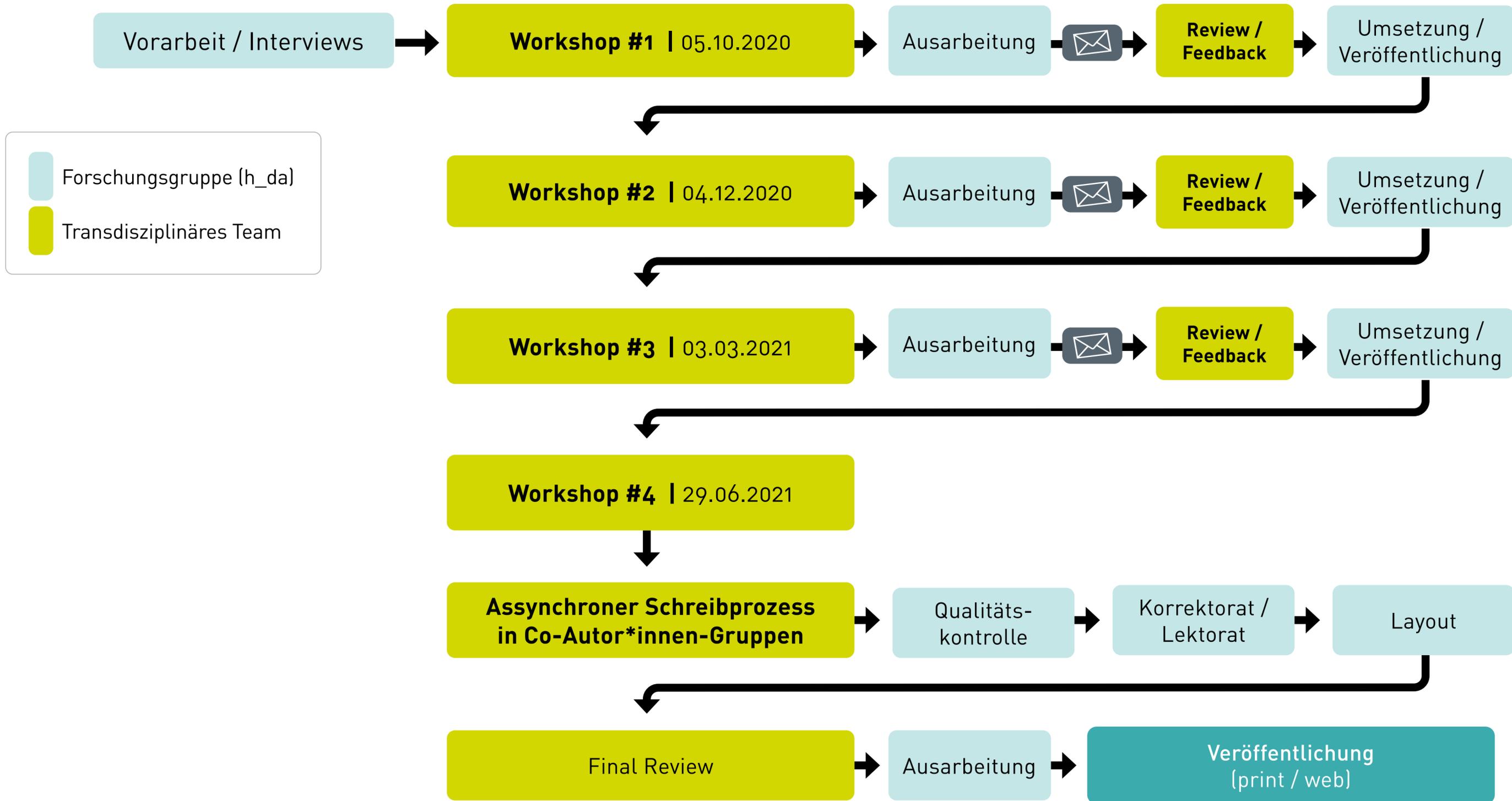
Forschungsgruppe (h\_da)  
 Transdisziplinäres Team



## Ownership und Verantwortung

- ▶ Co-Autor\*innen = Chapter-Owner
- ▶ Supporter\*innen = Input-Geber
- ▶ Abgabe von Verantwortung = Abgabe von Kontrolle

**Assynchroner Schreibprozess  
in Co-Autor\*innen-Gruppen**

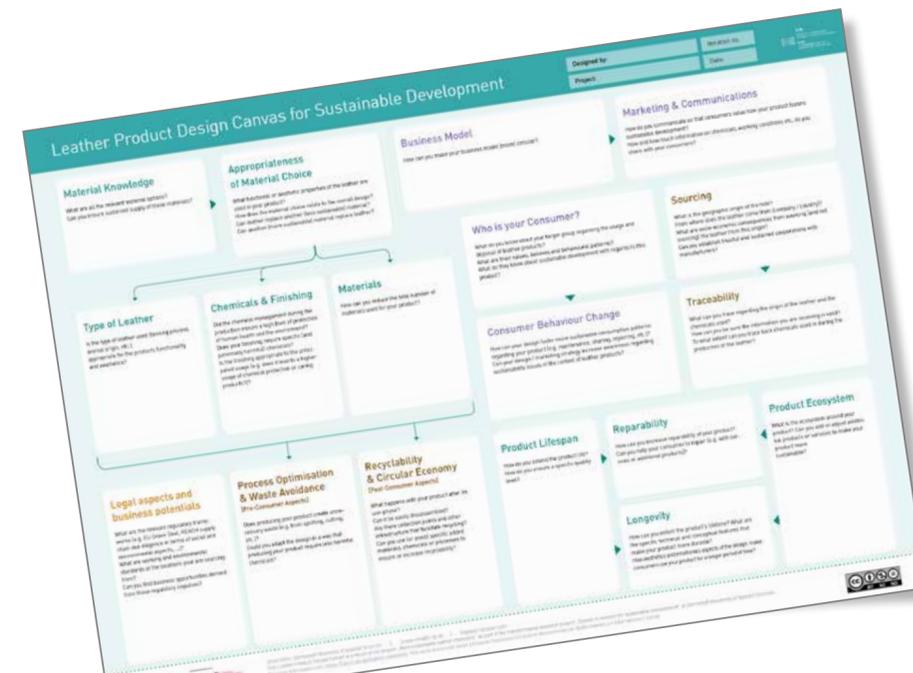


# Approx. 20 Kapitel & zusätzliche Listen und Tools

<b>Introduction</b>	Project Context Conceptual and theoretical background of the Guidelines
<b>Purpose &amp; Structure of the Guidelines</b>	The Role of Design of Leather Goods and Sustainable Development How to use these guidelines Taxonomy of Leather Design Methods
<b>General Topics</b>	Leather Chemicals and Sustainable Development Consumer Behaviour Traceability and Information Management ... and many more ...
<b>Design Approaches &amp; Strategies</b>	Design for Longevity Design for Recyclebility Material Selection ... and many more ...
<b>Design Tools &amp; Methods Overview</b>	List of Methods Leather Product Design Canvas
<b>Back Matter</b>	



# Leather Design Guidelines for Sustainable Development



## Leather Product Design Canvas

# Application Example

## Leather Product Design Canvas for Sustainable Development

Designed by:  

Iteration no.  

Project:  

Date:

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SUSTAINABLE INNOVATION FOR  
RECONSTRUCTIVE ENVIRONMENT

### Material Knowledge

What are all the relevant material options?  
Can you ensure sustained supply of these materials?  
*→ Do research on new types of leather!*

### Appropriateness of Material Choice

What functional or aesthetic properties of the leather are used in your product?  
How does the material choice relate to the overall design?  
Can leather replace another (less sustainable) material?  
Can another (more sustainable) material replace leather?

### Business Model

How can you make your business model [more] circular?  
*Product as stand-alone offering can be extended by service offering!*  
*Ask Bill for advice*

### Marketing & Communications

How do you communicate so that consumers value how your product fosters sustainable development?  
How and how much information on chemicals, working conditions etc. do you share with your consumers?  
*be honest → it is not perfect but transparent...  
↳ Discuss strategy with Emma!*

### Type of Leather

Is the type of leather used (tanning process, animal origin, etc.) appropriate for the products functionality and aesthetics?  
*→ Meeting with Philip and Rudy!*  
*What type of leather (with particular use when it gets older?)*

### Chemicals & Finishing

Did the chemical management during the production ensure a high level of protection of human health and the environment?  
Does your finishing require specific (and potentially harmful) chemicals?  
Is the finishing appropriate to the anticipated usage (e.g. does it lead to a higher usage of chemical protection or caring products)?  
*→ get rid of PU-coating  
↳ We change the material!  
Natural leather is, see how you have change over time!*

### Material Diversity

How can you reduce the total number of materials used for your product?  
*Do we have to reduce the no. of materials?  
↳ Idea: offer a range of sustainable materials to choose from*

### Who is your Consumer?

What do you know about your target group regarding the usage and disposal of leather products?  
What are their values, beliefs and behavioural patterns?  
What do they know about sustainable development with regards to this product?  
*⚠ We need more research!*  
*25% women, 35% kids and 65%*

### Sourcing

What is the geographic origin of the hide?  
From where does the leather come from (company / country)?  
What are socio-economic consequences from sourcing (and not sourcing) the leather from this origin?  
Can you establish trustful and sustained cooperations with manufacturers?  
*It is easy to trace, if we have less steps in the system...  
↳ What is number?*

### Consumer Behaviour Change

How can your design foster more sustainable consumption patterns regarding your product (e.g. maintenance, sharing, repairing, etc.)?  
Can your design / marketing strategy increase awareness regarding sustainability issues in the context of leather products?  
*Modular!*

### Traceability

What can you trace regarding the origin of the leather and the chemicals used?  
How can you be sure the information you are receiving is valid?  
To what extent can you trace back chemicals used in during the production of the leather?  
*How can we really trace hides & chemicals? ↳ We need a tool! ↳ Marking*  
*hide → IT → ? → check with Emma!*

### Legal aspects and business potentials

What are the relevant regulatory frameworks (e.g. EU Green Deal, REACH supply chain due diligence in terms of social and environmental aspects, ...)?  
What are working and environmental standards at the locations you are sourcing from?  
Can you find business opportunities derived from these regulatory impulses?  
*What do we need to consider when aiming for full material disclosure?*

### PRE-CONSUMER ASPECTS Process Optimisation & Waste Avoidance

Does producing your product create unnecessary waste (e.g. from splitting, cutting, etc.)?  
Could you adapt the design in a way that producing your product require less harmful chemicals?  
*optimized layout = reduced waste... so we should communicate this!*

### POST-CONSUMER ASPECTS Recyclability & Circular Economy

What happens with your product after its use-phase?  
Can it be easily disassembled?  
Are there collection points and other infrastructure that facilitate recycling?  
Can you use (or avoid) specific added materials, chemicals or processes to ensure or increase recyclability?

### Product Lifespan

How do you extend the product life?  
How do you ensure a specific quality level?  
*How do we care for the bag?*  
*Phase 1: longer use phase (leaves with not hole can it be done with com...)*  
*Phase 2: practical second hand market*  
*Phase 3: disposal (or strong hand)*

### Reparability

How can you increase reparability of your product?  
Can you help your consumer to repair (e.g. with services or additional products)?  
*modern system → parts can be replaced → offer as a repair service!*

### Longevity

How can you extend the product's lifetime? What are the specific technical and conceptual features that make your product more durable?  
How aesthetics and emotional aspects of the design make consumers use your product for a longer period of time?

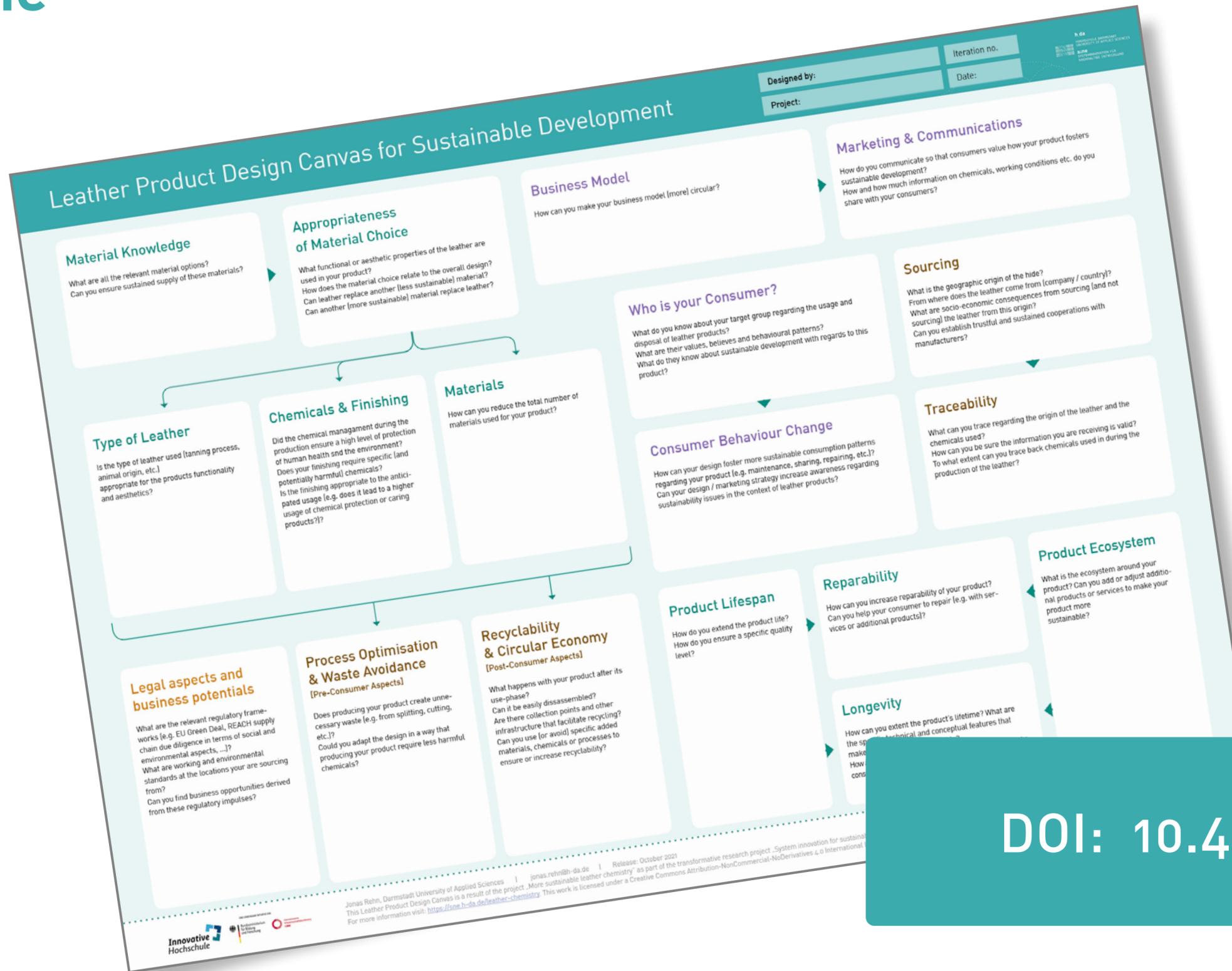
### Product Ecosystem

What is the ecosystem around your product? Can you add or adjust additional products or services to make your product more sustainable?  
*Maintenance, Repair, Caring advice, check social media!*

25

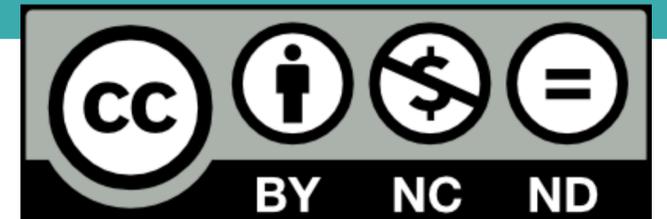
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Jonas Rehn, Darmstadt University of Applied Sciences | jonas.rehn@h\_da.de | Release: October 2021  
This Leather Product Design Canvas is a result of the project „More sustainable leather chemistry“ as part of the transformative research project „System innovation for sustainable development“ at Darmstadt University of Applied Sciences.  
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# MORE SUSTAINABLE LEATHER PRODUCTS 2022



Design Competition &  
Mentoring Program

Internationaler Wettbewerb als Proof of Concept:  
[sne.h-da.de/leather-design-competition.de](https://sne.h-da.de/leather-design-competition.de)

# MORE SUSTAINABLE LEATHER PRODUCTS 2022



Design Competition &  
Mentoring Program

Beteiligte Praxisakteure als Juror\*innen,  
Coaches und Inputgeber\*innen

Internationaler Wettbewerb als Proof of Concept:  
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## Herausforderungen (aus wissenschaftlicher Sicht)

- ▶ Co-Creation & offener Prozess = Abgabe von Kontrolle
- ▶ Dennoch gleichzeitig Projektziele und normative Orientierung
- ▶ Unterschiedliche Zielsetzungen und Ressourcen bei den Akteur\*innen
- ▶ Hohe Varianz an Qualität und Anwendbarkeit der Inputs

# Herausforderungen (aus Industrie-Sicht)



# Solutions Network

The world is ready to design, produce,  
source, and consume differently.

Circularity concepts for Cooking Ware



European  
Commission

# Circular Economy Action Plan

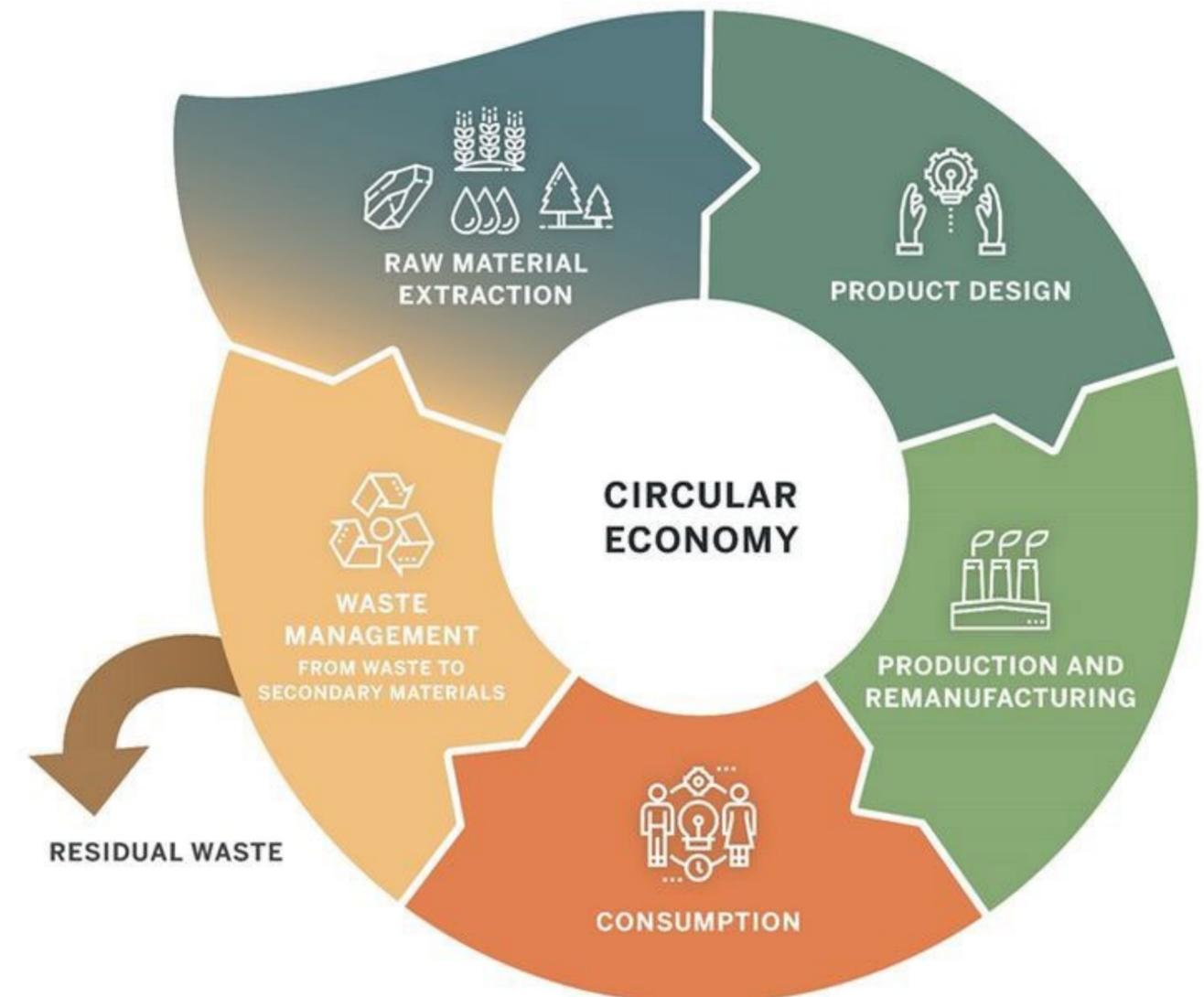
The European  
Green Deal

# EU Green Deal

- **Objectives**

Measures that will be introduced under the new action plan aim to

- make sustainable products the norm in the EU
- empower consumers and public buyers
- focus on the sectors that use most resources and where the potential for circularity is high such as: electronics and ICT, batteries and vehicles, **packaging, plastics, textiles**, construction and buildings, food, water and nutrients
- **ensure less waste**
- **make circularity work for people, regions and cities**
- **lead global efforts on circular economy**



# 01 Product or Project Target

The first step is to define the overall target. The questions to answer here are: What product or project do I want to realise? What are my requirements? Some businesses may only want to sell products made from natural material, others aspire maximum durability, or want to focus on creating circular products. Another target could simply be to meet new compliance requirements. Establishing clarity over the target first is important in order to steer activity into the right direction.



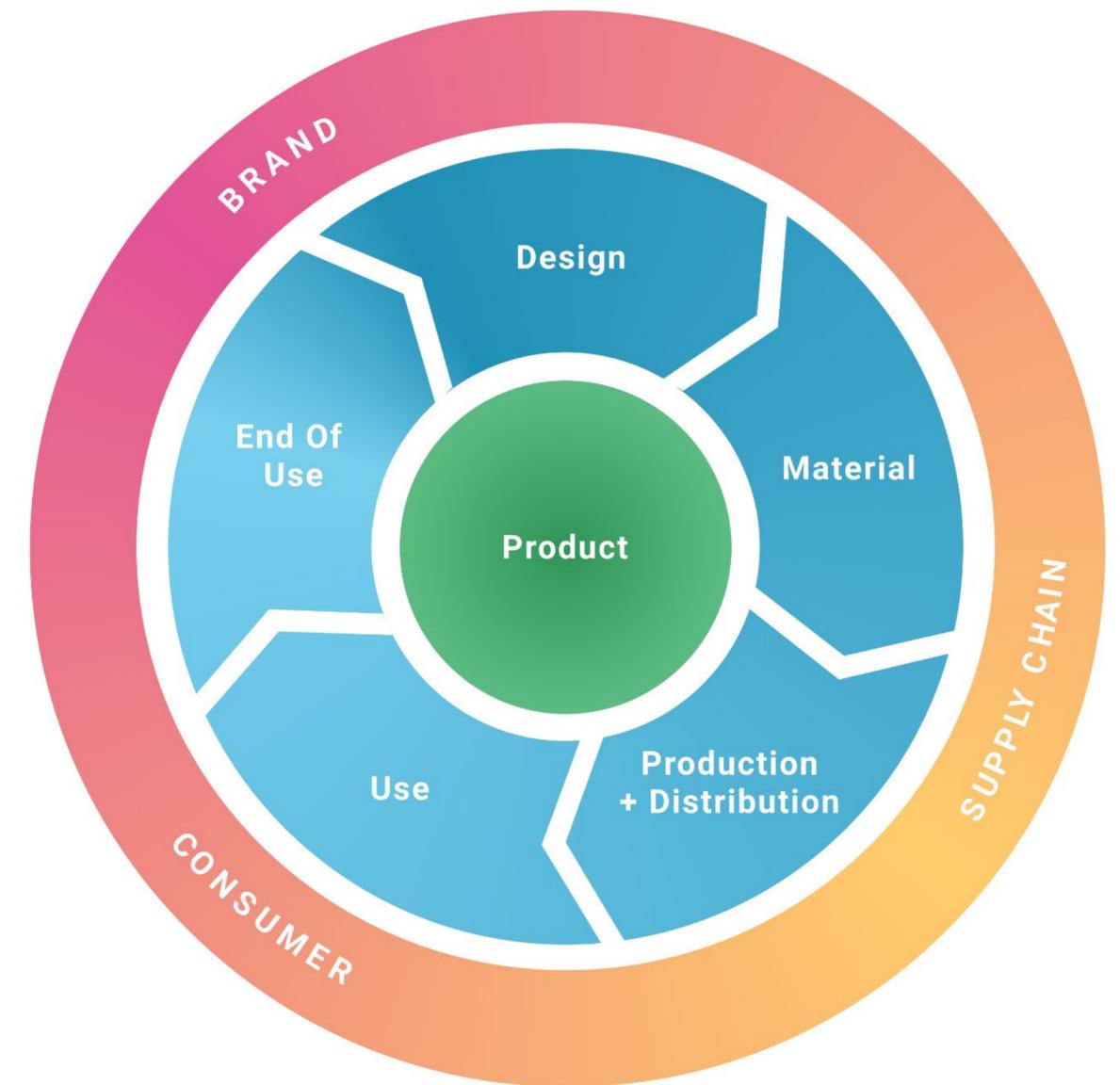
## 02 Subtargets

Based on the overall target, subtargets are defined. Subtargets provide greater focus on a specific part of the overall target. Examples of subtargets include increasing longevity, using biodegradable material, reducing the use of harmful substances etc., but can be anything that further defines and details the overall target. Each of the subtargets will be looked at individually.



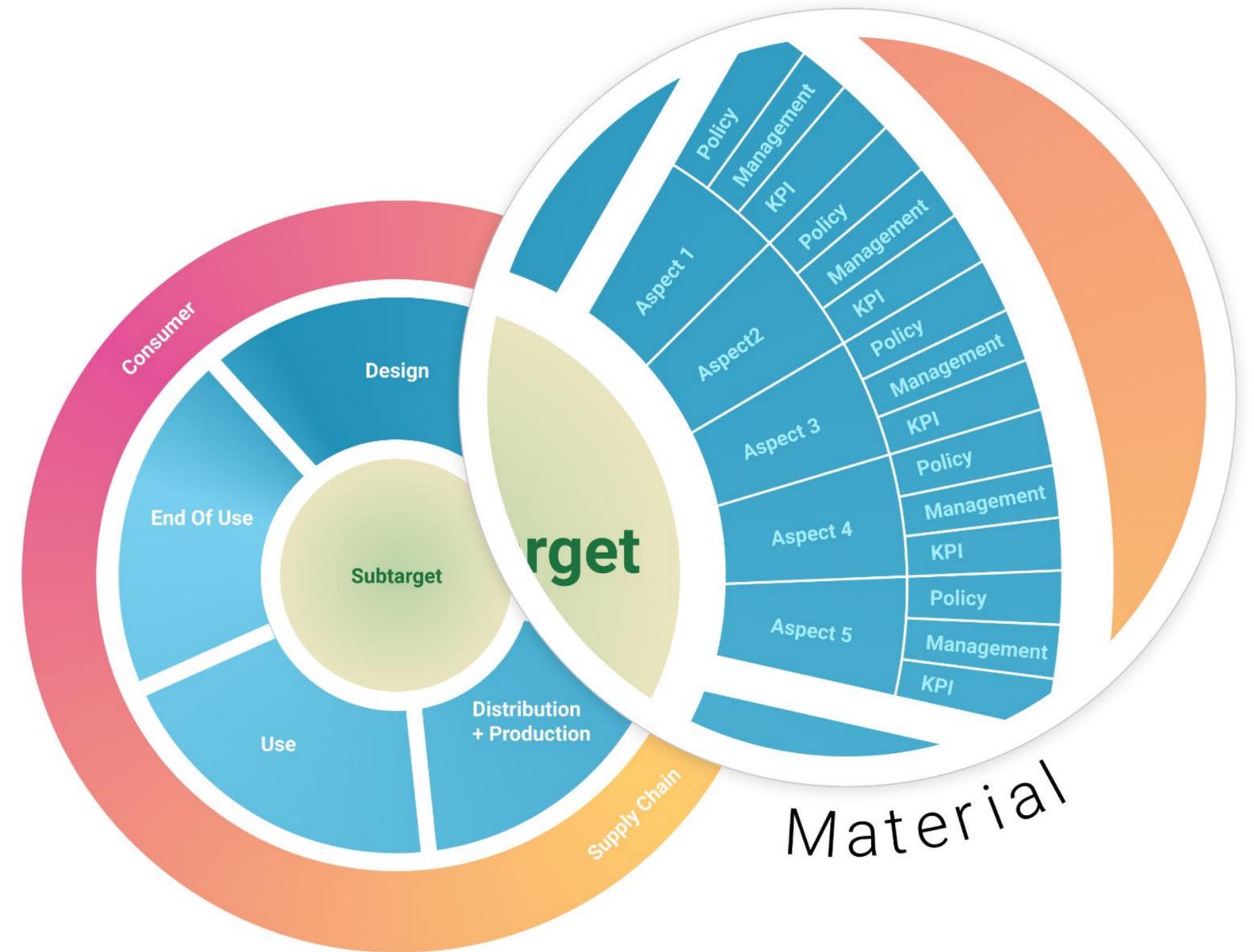
# 03 Aspects

The subtargets is then applied to each of the five segments of the product life cycle to define relevant aspects that need be considered in order to reach the subtarget. The goal is to answer the following questions: What segments are impacted by my subtarget? What needs to change in each segment to reach my subtarget? Depending on the subtarget, not every segment is relevant necessarily. For example, for the subtarget ‘minimise transport distance during production’, use and end of use segments are most likely irrelevant, whereas the segment ‘production and distribution’ is heavily impacted by the target. In this segment, aspects that would need to be considered are selecting local suppliers and working with nearby factories for instance.



# 04 Results

Once all relevant aspects have been defined, we need to know how we can implement them. For this, certain results might be necessary, which can be of three types: Policy, management systems and KPIs.



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43/F, AIA Building  
183 Electric Road  
North Point  
Hong Kong



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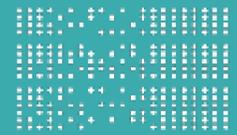
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Wie ist damit umzugehen, wenn die Übergabe von Ownership an Praxisakteure und die damit verbundene Kontrollübergabe zunächst zu Ergebnissen führt, die

**(a.) unterhalb der angestrebten Qualität**

**(b.) abseits der angestrebten Ziele (Zielkonflikte / Interessenkonflikte)**

liegen?



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# Danke für Ihre Aufmerksamkeit

Dr. Jonas Rehn  
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Nachhaltige Entwicklung (s:ne)  
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