Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

Cultivating a Systems Mindset for Circular Value Chains

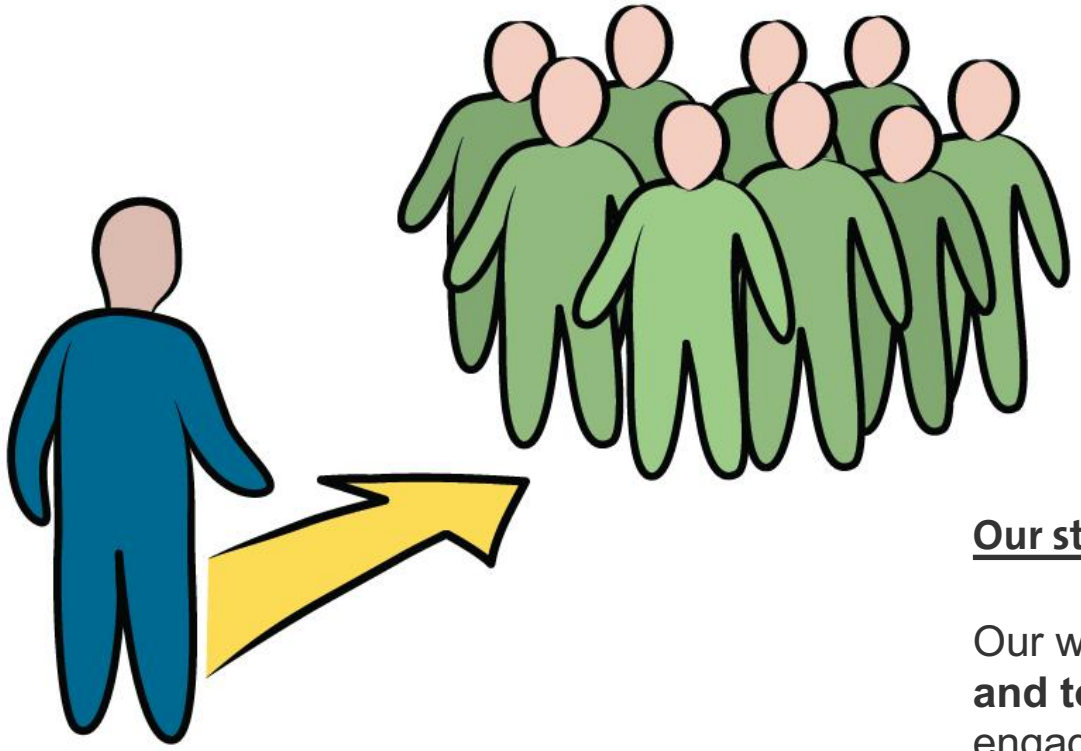
Working with the Multi-Flow Method

SysPrac 2026 | Reduced version of the workshop presentation

Charis Luedtke
Prof. Fenna Blomsma

Chair of Circular Economy and Systems Innovation
Socioeconomics Faculty @ University of Hamburg

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union.
Neither the European Union nor the granting authority can be held responsible for them.



Our starting point:

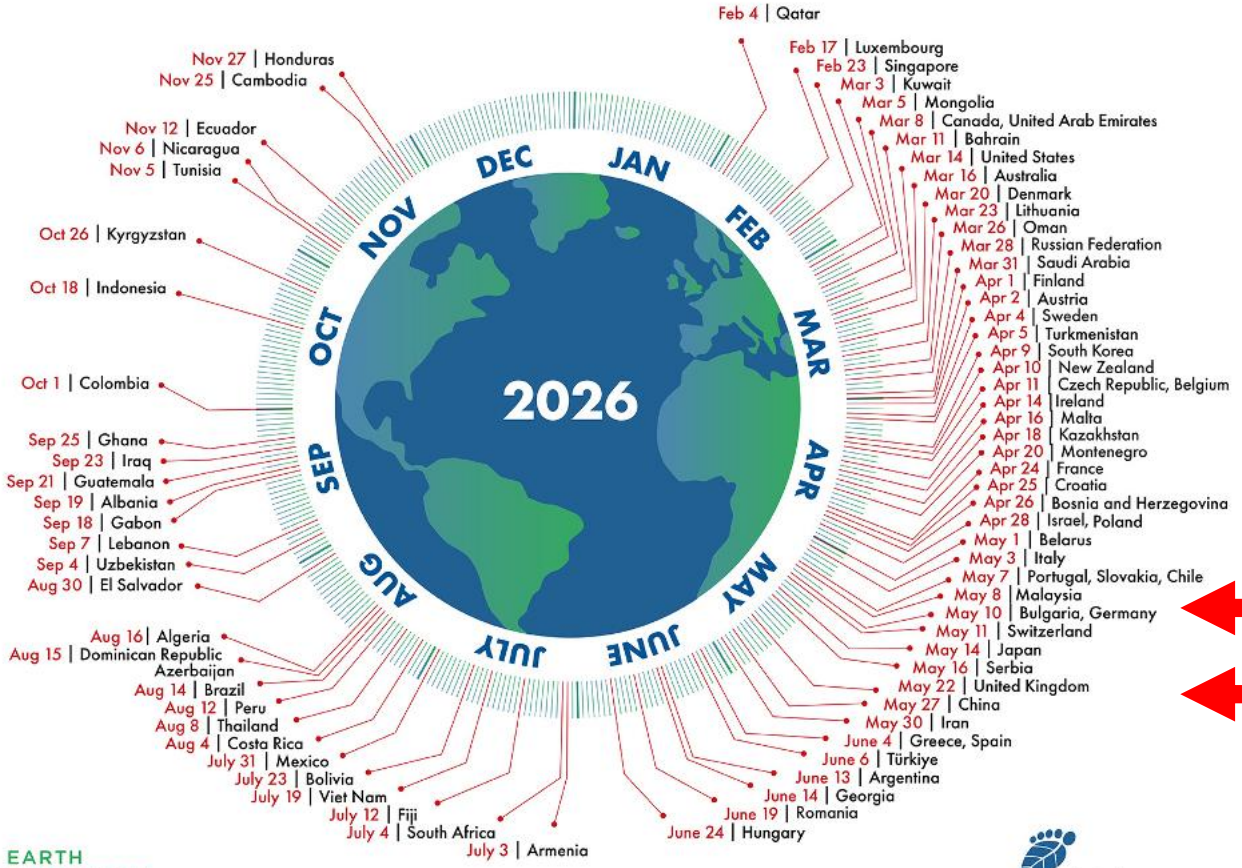
Our work is rooted in **circular economy research and tool development**. We are increasingly engaging with systems thinking.

We therefore bring an **outside-in perspective**, while continuing to learn from and engage with the systems thinking community.

Country Overshoot Days 2026

When Earth Overshoot Day would land if all the people around the world lived like...

We simply use TOO MUCH



Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

EARTH OVERSHOOT DAY

For more information, visit:
https://overshootday.org/newsroom/country-overshoot-days

Global Footprint Network
Advancing the Science of Sustainability

Source: Country Overshoot Days 2026 are calculated using the National Footprint and Biocapacity Accounts' 2025 Edition (Lo et al. 2025), produced by York University for FoDaFo and Global Footprint Network, available at data.footprintnetwork.org

Circular Economy

An umbrella concept



Challenges in advancing circular economy efforts

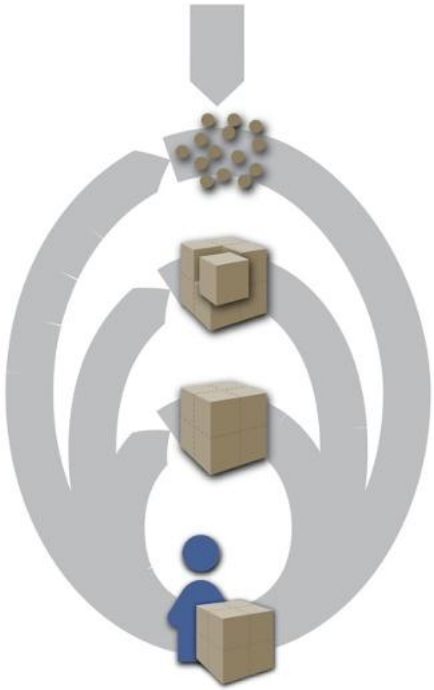
- Circular value chains are multi-actor systems shaped by interacting material, value, information, & energy flows
- Efforts often focus on isolated issues
- Practical approaches to work with system-level complexity across organisations remain limited


Visual: AdobeStock

This hinders the emergence and scaling of robust circular solutions.

Circular economy – a simple idea with a lot to unpack

And what this means when innovating for circular strategies



When innovating for a

Circular Economy



… it is crucial to apply

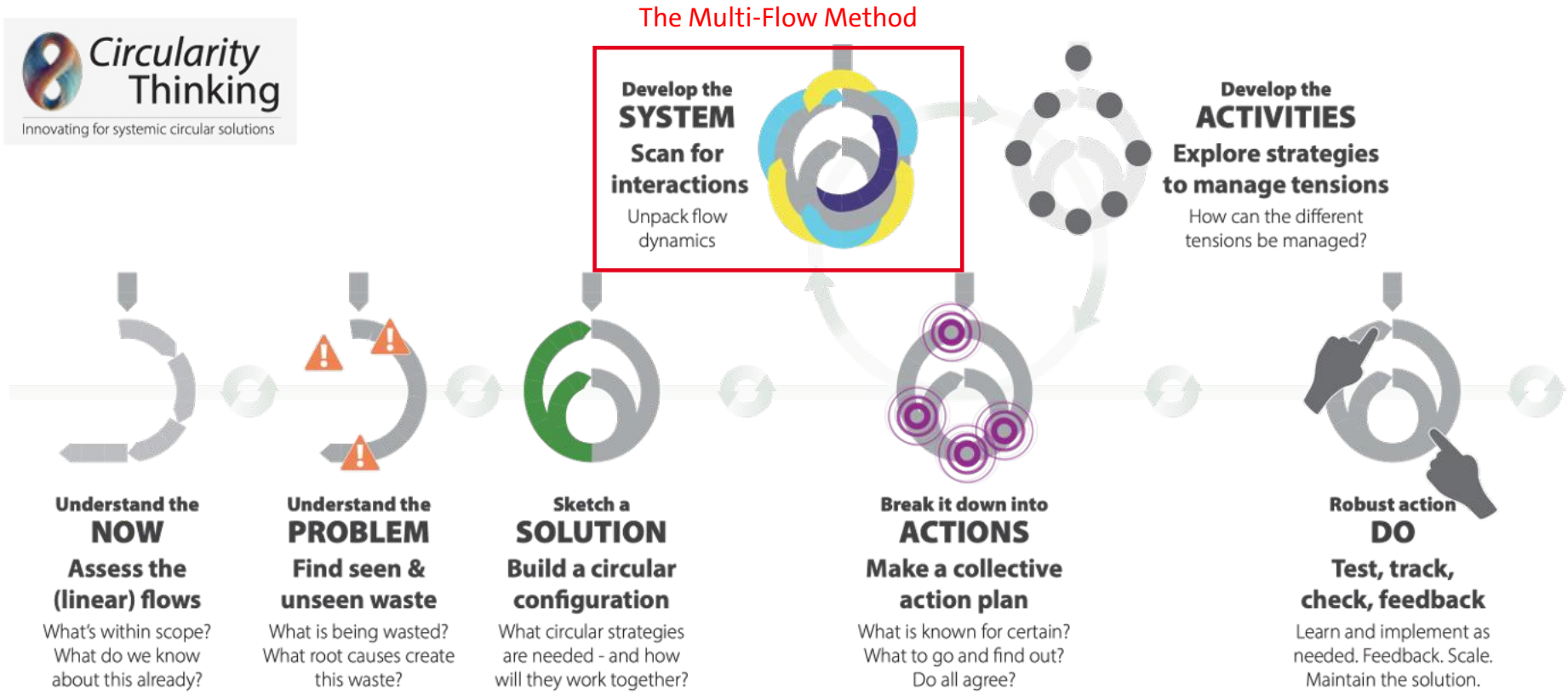
Systems Thinking



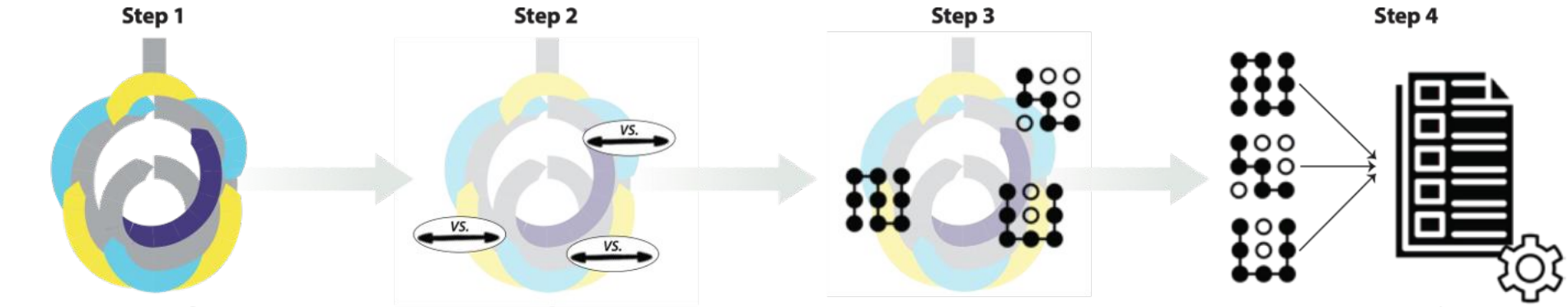
… so practical steps enable systemic change

Circularity Thinking

Circularity Thinking by Fenna Blomsma & colleagues



Steps of the Multi-Flow Method



Step 1

Extend
BEYOND RESOURCE FLOWS

Mapping value, information and energy flows.

Step 2

Explore
GENERATIVE TENSIONS

What are the key insights for the flows?

Step 3

Uncover
PATTERNS

What existing patterns shape the system? What desired patterns could enable change?

Step 4

Summarise
ECOSYSTEM REQUIREMENTS

What can be built on? What is still missing?

Many methods reinforce barrier & enabler framing…

Common barriers & enablers

– High costs

– Lack of government support

– Technological limitations

– Lack of information

\+ Shared infrastructure

\+ Cost-sharing

\+ Better information sharing

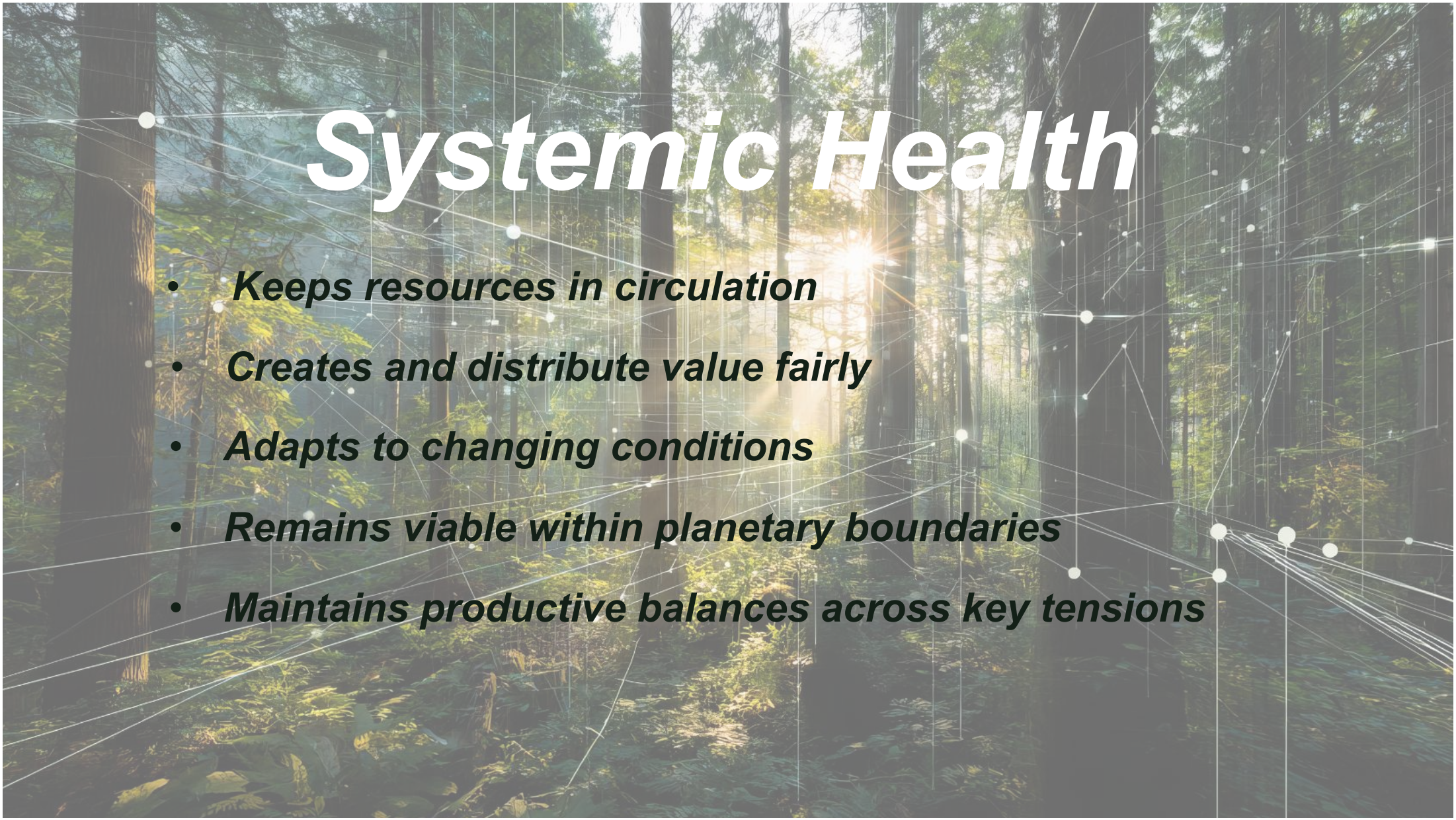
But a list does not tell us:

- how the issues are connected
- whose perspective they represent
- how one condition reinforces or undermines another
- whether addressing them creates a system that can function well as a whole.

A shift in perspective within the Multi-Flow Method

From:
What are the barriers?

To:
What forces and relationships are shaping this system, and are they in a healthy balance?


Systemic Health
• Keeps resources in circulation
• Creates and distribute value fairly
• Adapts to changing conditions
• Remains viable within planetary boundaries
• Maintains productive balances across key tensions

Tensions as a systemic health lens



Individual vs. Collective Interest





Robustness vs. Adaptability





Concentration vs. Distribution



Goals of the Multi-Flow Method

- Change of perspective (& sensemaking)
- Explore the systemic health through tensions
- Define the (existing and desired) patterns
- Reframe the solution space



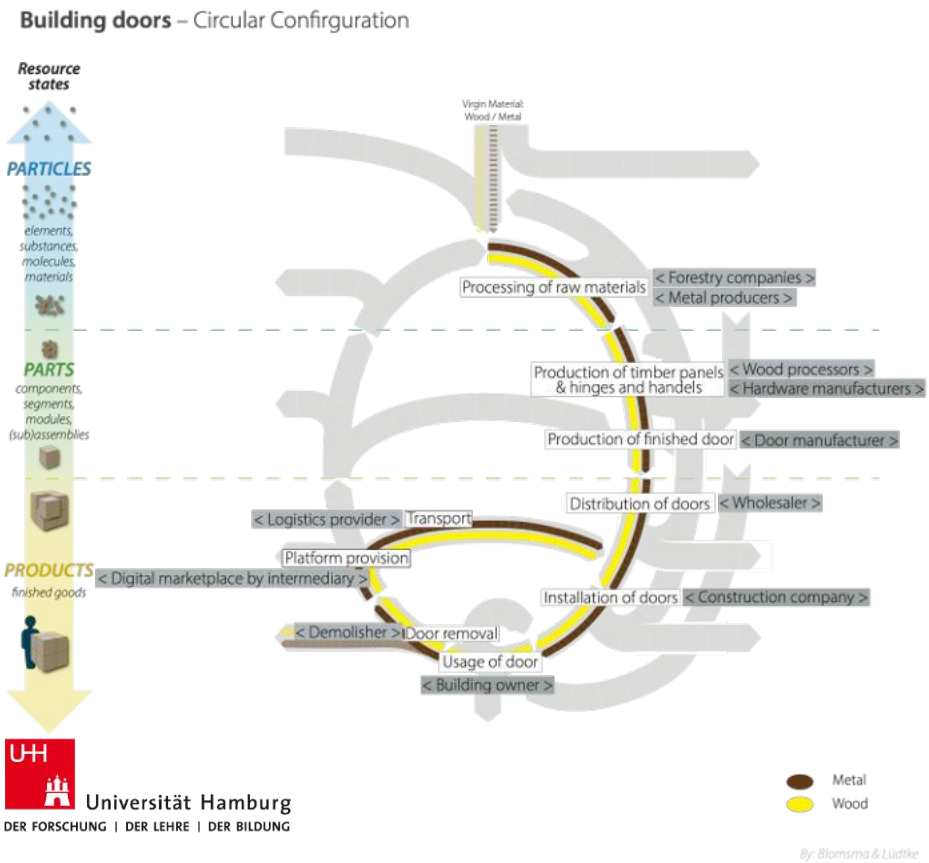
Photo: Adobe Stock

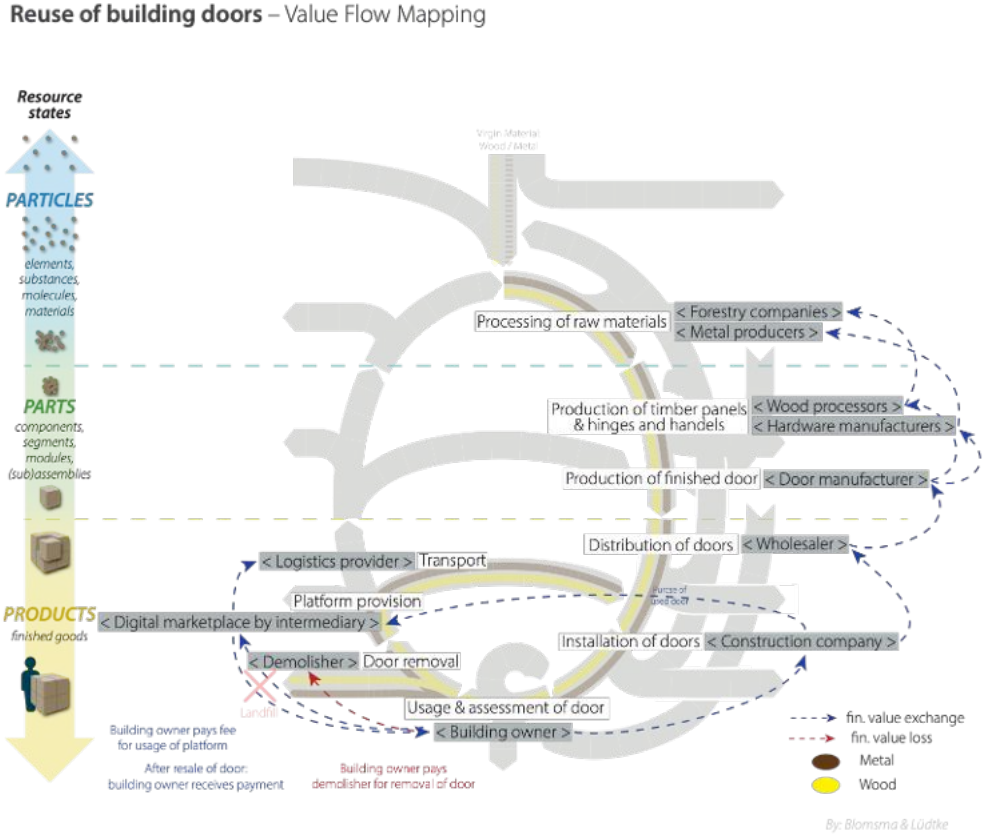
Application example: Reuse of building doors



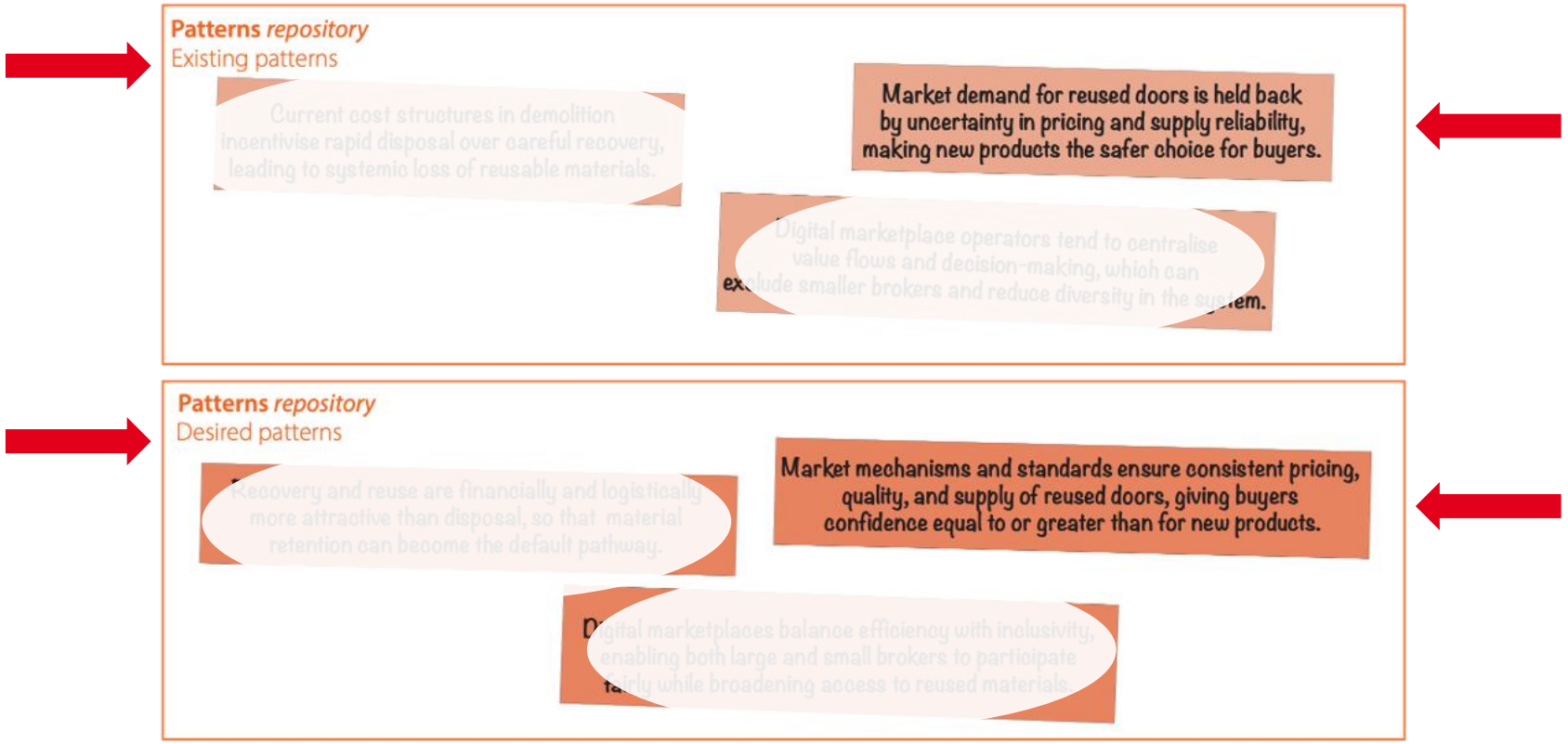
Application example: Material & Value flow mapping

Case: Reuse of doors → "lack of demand" → value flow mappings





Example: Existing & Desired patterns



“Shifts thinking from single-point to multi-point perspectives.”

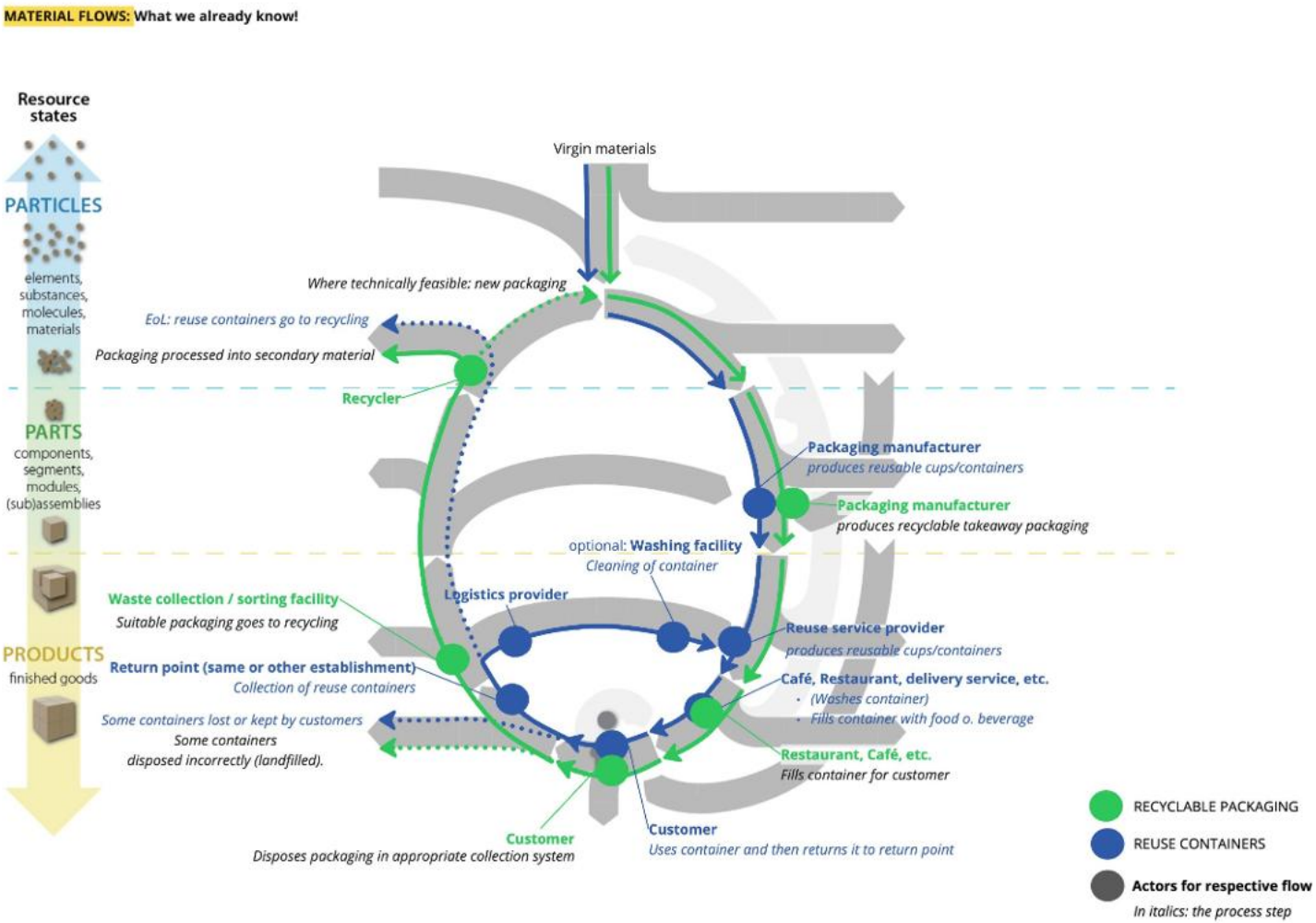
Today’s case: Reduction of single-use packaging



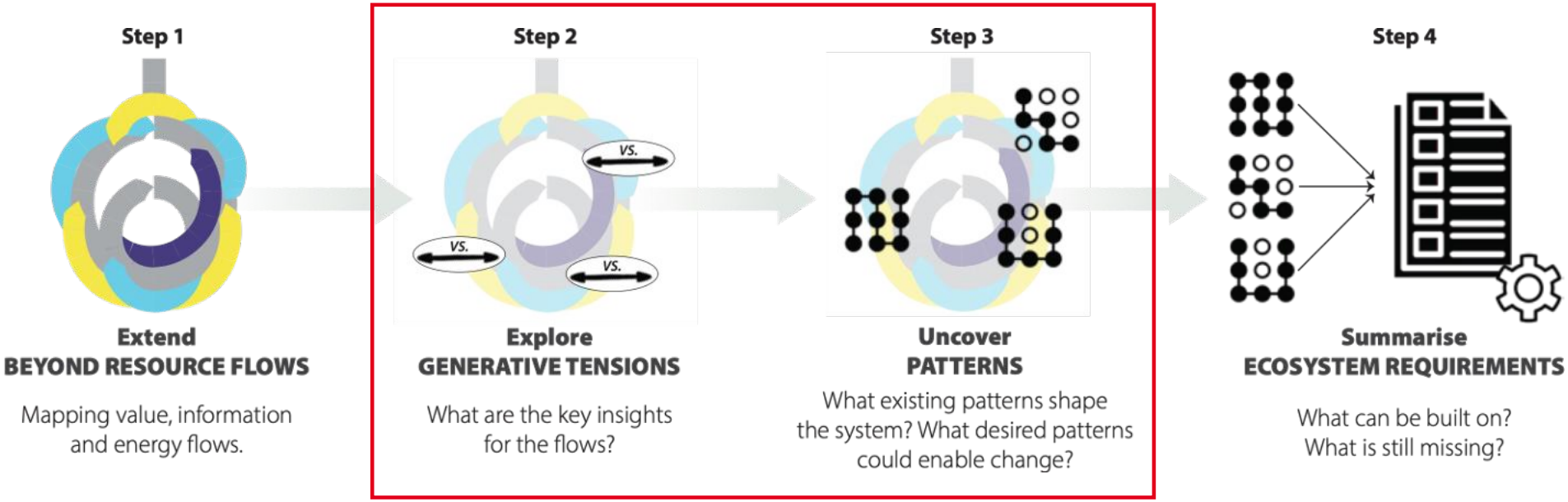




Material flow mapping



Steps of the Multi-Flow Method



GROUP WORK I:

1. Familiarise yourself with the case — *3 min*
Briefly read through the case and current observations together.

---

2. Explore the tension of *Robustness vs.* Adaptability — ± *15 min*
Look at each strategy separately.
For **recyclable packaging** and **reuse**, discuss:

What makes this strategy robust?
What makes the material flow reliable and dependable?

What makes this strategy adaptable?
Where can it respond to changing needs or conditions?

---

3. Bring the two sides of the tension together — ± *5 min*

Is the balance right?
How do robustness and adaptability relate?
Where does one support — or undermine — the other?
What does this mean for the systemic health of the material flow?

GROUP WORK II:

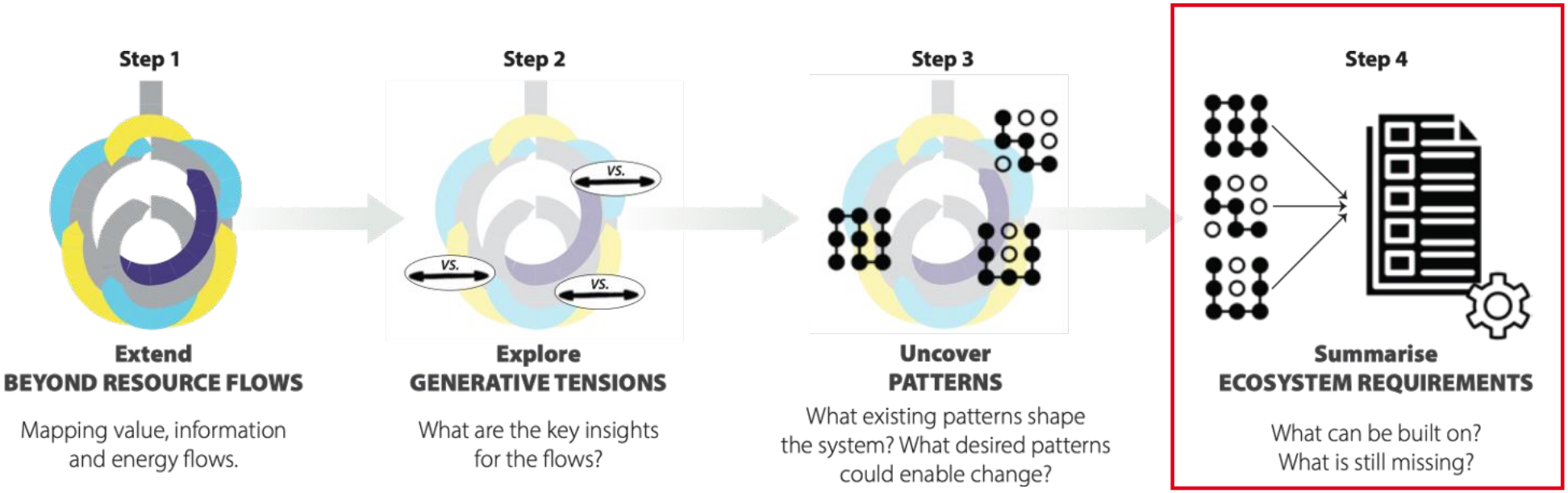
4. From tensions to patterns:

a) Existing pattern
What recurring system dynamic is shaping the material flow today?

b) Desired pattern
How would that dynamic need to change for the system to function more healthily?
Where is more robustness needed?
Where is more adaptability needed?
What should be different about how the system operates?

Write one concise statement for each.

Steps of the Multi-Flow Method



TENSION 2

MATERIAL FLOWS ANALYSIS:

Concentration vs. Distribution	Where does concentration help this strategy?	Where does distribution help this strategy?
Recycl. Packaging		
Reuse		

Contact



Charis Luedtke
Doctoral Student

University of Hamburg

Faculty of Business, Economics & Social Sciences

Chair of Circular Economy and Systems Innovation
charis.luedtke@uni-hamburg.de

LinkedIn: www.linkedin.com/in/charis-luedtke

LinkedIn

Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG