Conceptualize and practice collaborative research towards transdisciplinary knowledge
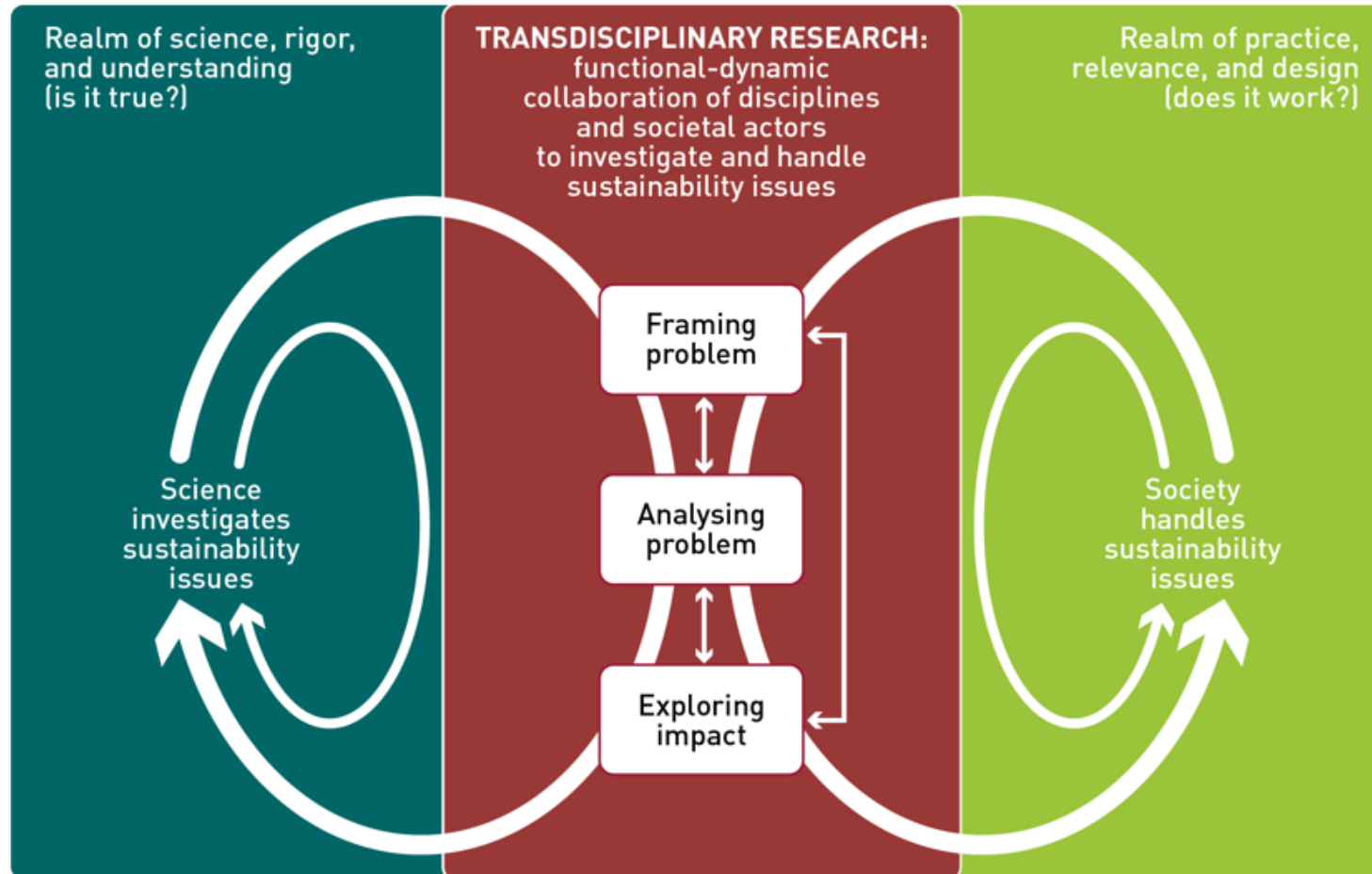
Christian Pohl

There is more or less agreement on the process and its challenges

(Pohl, C., Krütli, P., Stauffacher, M., 2017. Ten reflective steps for rendering research societally relevant. *GAIA* 26, 44)

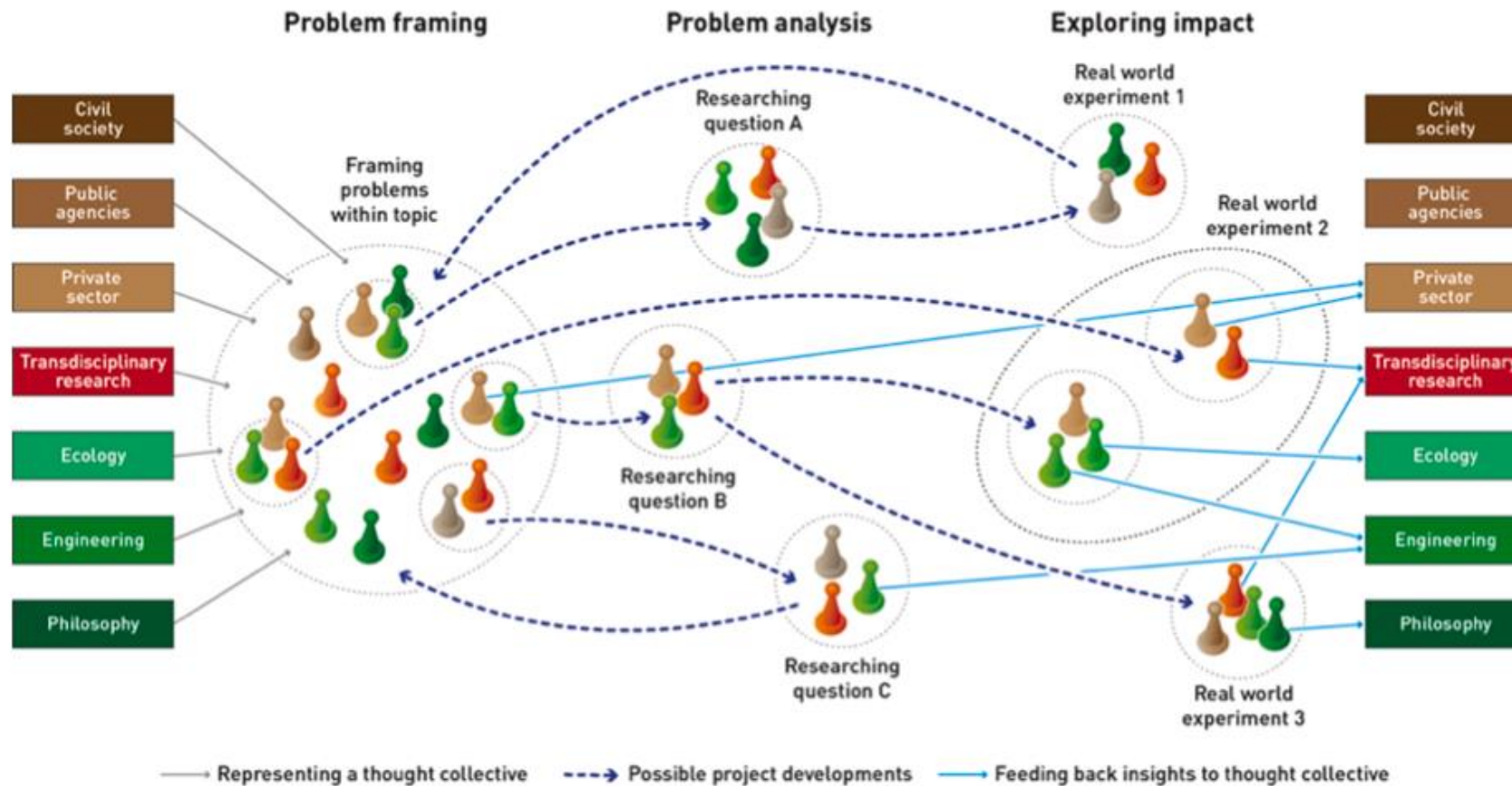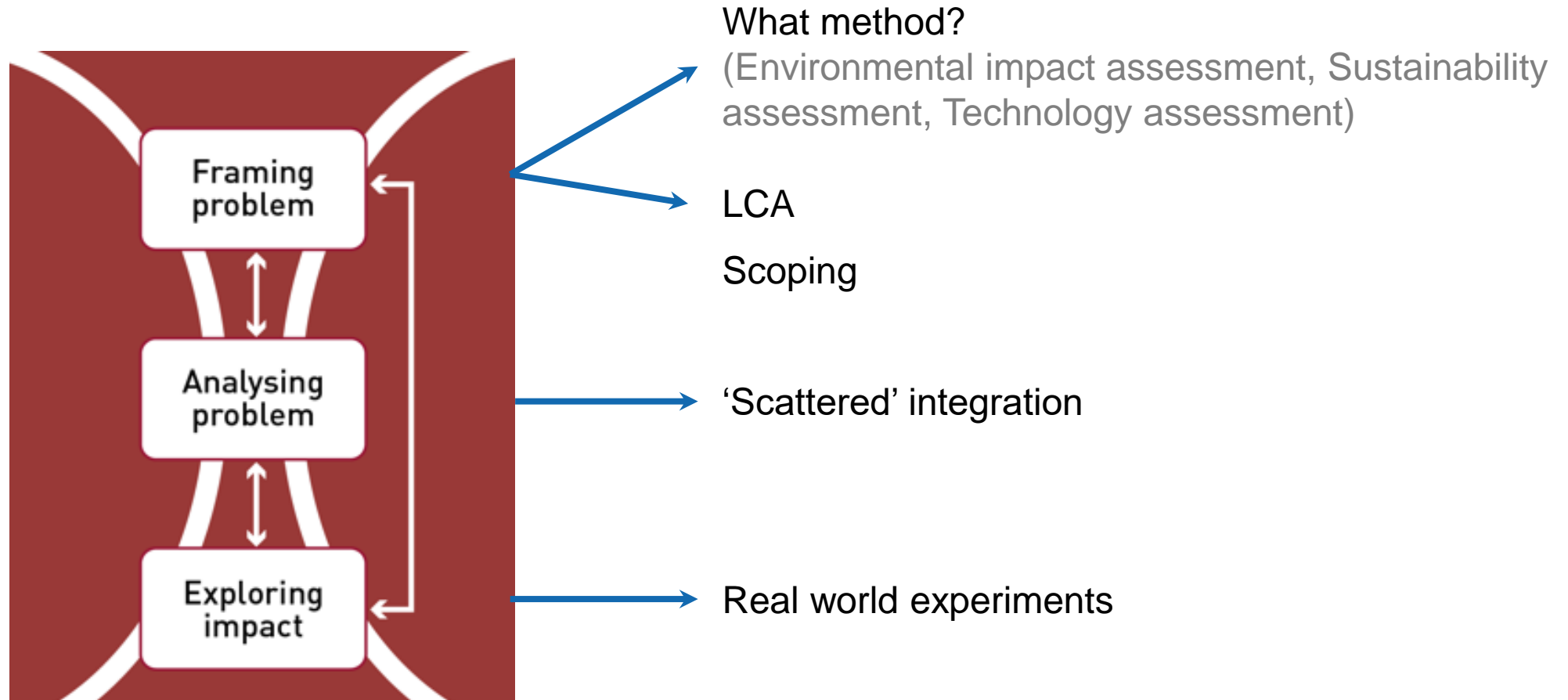# This process is not linear and may unfold in divers ways

Fig. 2. In a transdisciplinary project, researchers of different disciplines or interdisciplinary fields and practitioners of different sectors of society jointly frame a problem, analyse it, and explore to have impact. Researchers and practitioners may gain insights in all three stages. A project may not go through all three stages and not in a sequential order. A project (larger circle) may also split into sub-projects (smaller circles).

(Pohl, C., Klein, J.T., Hoffmann, S., Mitchell, C., Fam, D., 2021. Conceptualising transdisciplinary integration as a multidimensional interactive process. *Environmental Science & Policy* 118, 21)

Where practitioners of different societal sectors could matter

What method?
(Environmental impact assessment, Sustainability assessment, Technology assessment)

LCA

Scoping

'Scattered' integration

Real world experiments

How practitioners can be included in problem framing and scoping

Burkhardt-Holm, P. (2008). Fischnetz: Involving Anglers, Authorities, Scientists and the Chemical Industry to Understand Declining Fish Yields. In *Handbook of Transdisciplinary Research*, 127-143 (Eds G. Hirsch Hadorn et al,). Dordrecht: Springer.

Where practitioners could matter

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(EIA, Sustainability assessment, Technology assessment)

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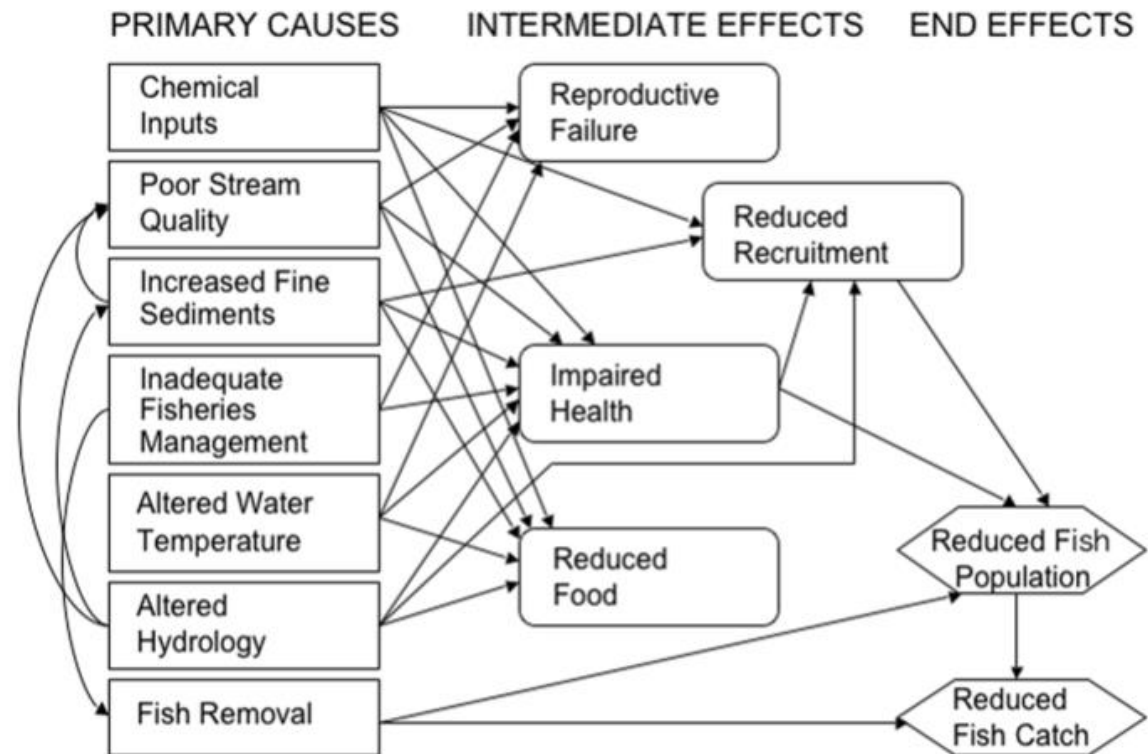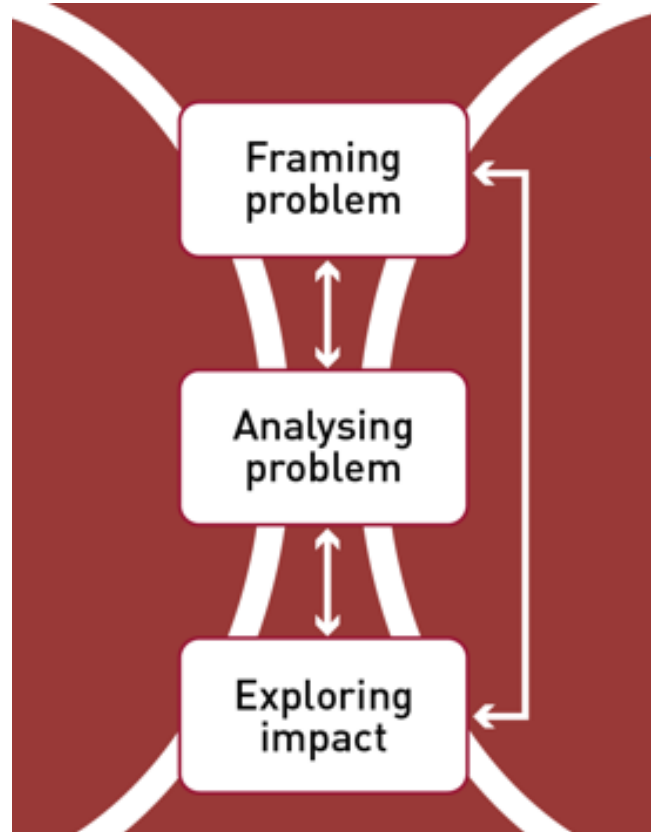# During the project there can be 'scattered' integration
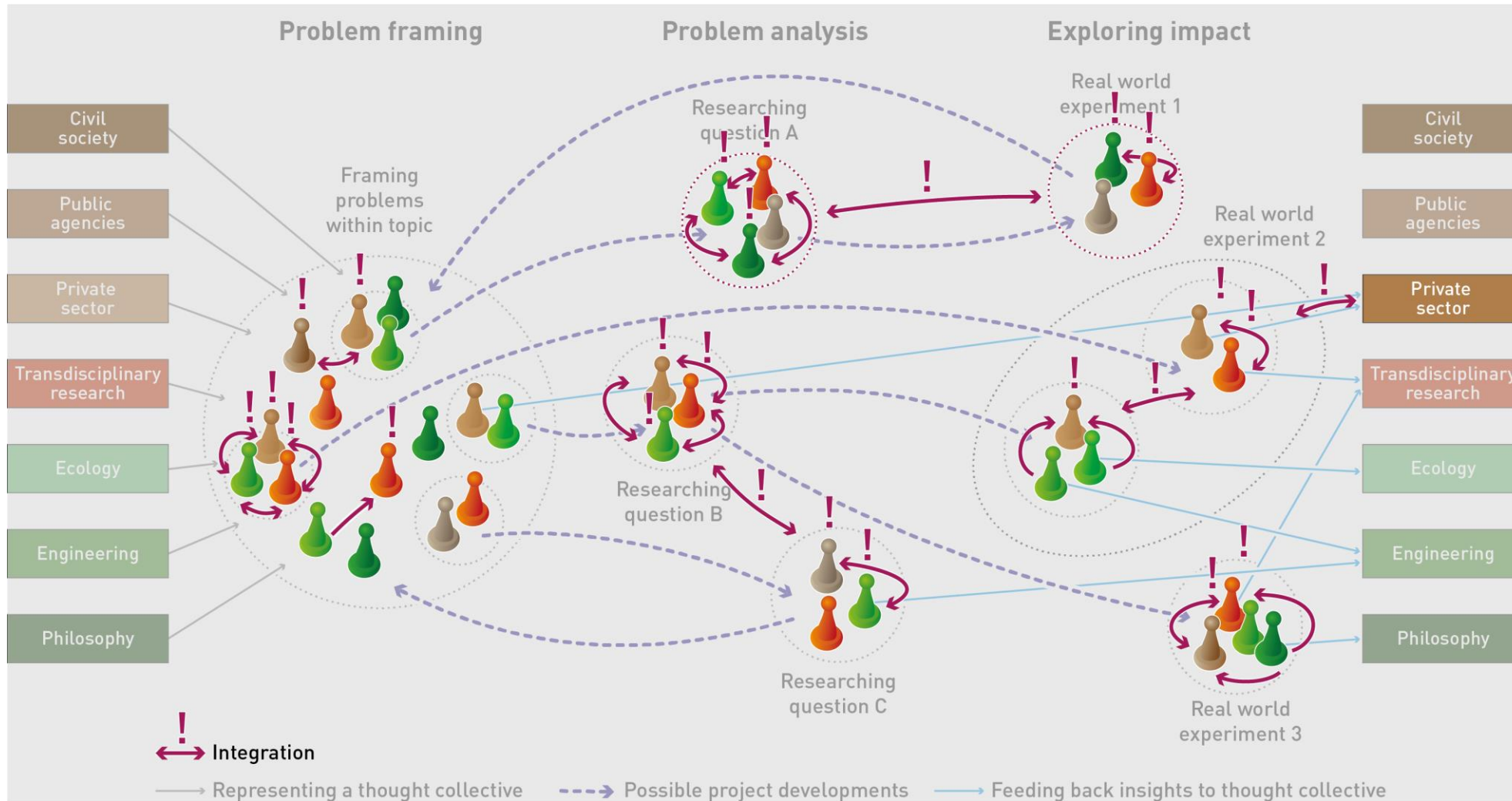
(Pohl, C., Klein, J.T., Hoffmann, S., Mitchell, C., Fam, D., 2021. Conceptualising transdisciplinary integration as a multidimensional interactive process. *Environmental Science & Policy* 118, 22)

Where practitioners could matter

What method?
(EIA, Sustainability assessment,
Technology assessment)

LCA

Scoping

'Scattered' integration

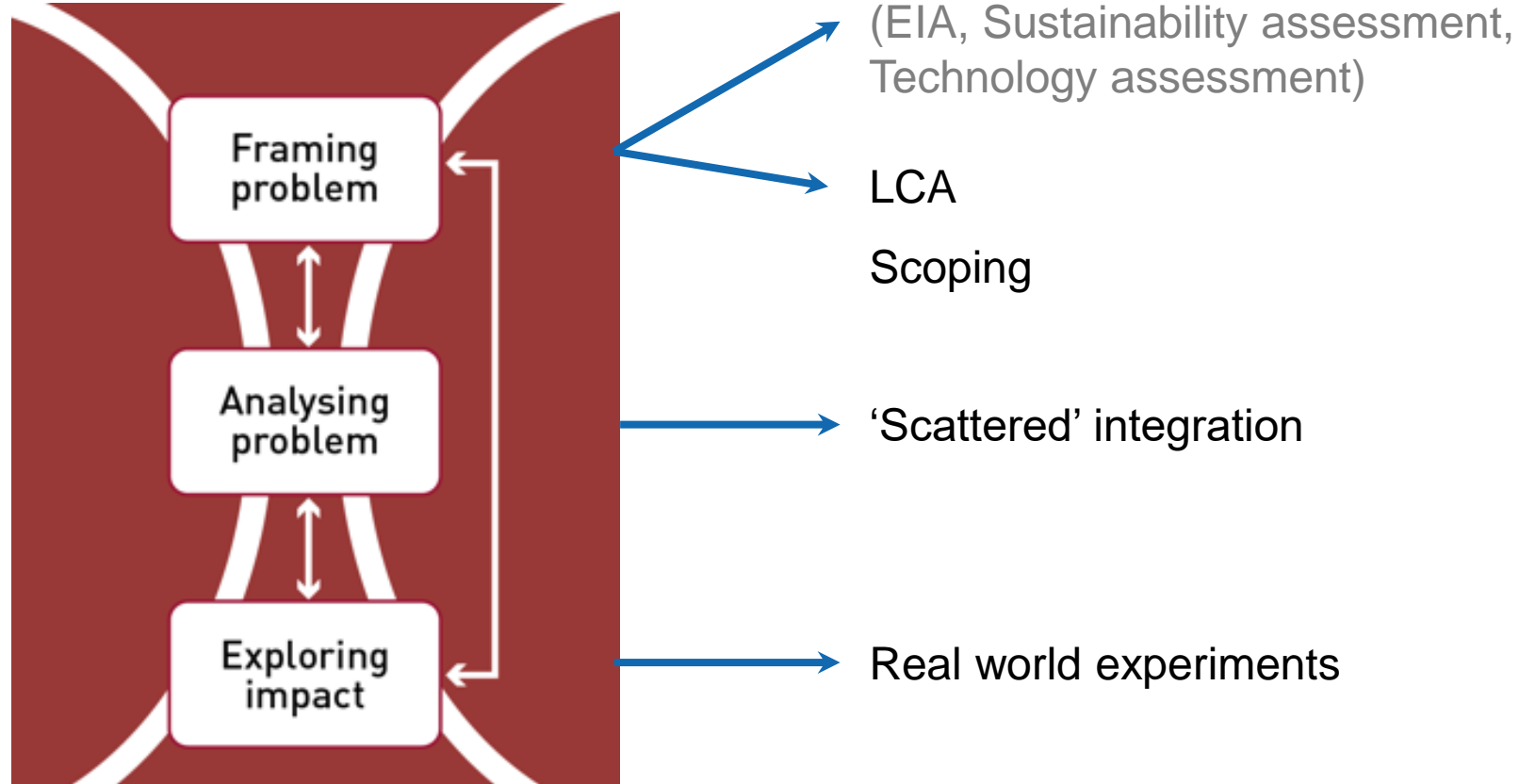Real world experiments

Where to find support

There are a number of online toolkits that provide methods, tips and resources

Tools, cases studies, journals, networks, conferences
of 'integration and implementation sciences'

https://i2s.anu.edu.au/resources

Case studies, tips and guides for including arts,
humanities and social sciences in ID and TD research

www.shapeidtoolkit.eu

Hands-on methods for co-producing knowledge

www.transdisciplinarity.ch/toolbox

scnat knowledge

swiss academy of sciences

de   fr   it   en

Methods and tools for co-producing knowledge

Collaboration between experts and stakeholders from science and practice for tackling real-world, context-sensitive societal challenges. [more]

Image: td-net

| Search by key issues | Search by phases | td-net toolbox   + | Resource compilations   + |

| Shared experiences   + | Community   + | Capacity Building |

When targeted at tackling societal challenges, inter- and transdisciplinary research involves varying points of view, interests or political goals. Ways of how research can be societally relevant need to be identified. Specific tools that help to deal with these challenges and shape collaboration between experts and stakeholders from science and practice in systematic and traceable ways are therefore needed.

The resources provided here are contributed by experts from the international community of transdisciplinarians and related academic fields.

Get involved in the network of peers!

Contact

Sibylle Studer
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Network for Transdisciplinary Research (td-net)
House of Academies
PO Box
3001 Bern
Switzerland

✉ E-mail

Powered by: ✕

Identify actors, roles and expectations

Clarify who to involve	+

Specify roles, tasks and responsibilities	+

Clarify expectations	+

Embrace differences, tensions and conflicts in a transdisciplinary group

Handle different perceptions of and opinions towards the issue	+

Deal with power issues	+

Deal with tensions in the transdisciplinary group	+

Build ownership and trust	+

Strive for societal relevance

Review understandings of the societal problem situation	+

Question scientific framings	+

Embrace differences, tensions and conflicts in a transdisciplinary group

Handle different perceptions of and opinions towards the issue ✕

We have the impression that core actors of the project might be at cross-purposes. We want them to become aware of each other's viewpoint, expertise and know-how in order to use the full potential for the benefit of the project.

> Toolbox dialogue approach
> Multi-stakeholder discussion group
> Design Thinking
> Tell your Story by Means of an Object

We want to enhance mutual understanding of researchers with different disciplinary backgrounds through comparing conventions that are fundamental to their academic field (e.g. norms on knowledge generation, evidence, assumptions, values).

> Toolbox dialogue approach

Our co-production process is stuck because different experts disagree on strategies for solving a problem or answers to a key question. We would like to collect and weigh the underlying arguments and rationales.

> Delphi

Participants' expectations regarding the project's outcomes are unclear or differ. We need to clarify these expectations in order to agree on realistic project goals.

> Outcome spaces framework
> Theory of change

We would like to learn what the problem is, for whom it is a problem and how strongly we or other people agree on its framing. We want the various perspectives to become explicit.

Step 1 of:

> Design Thinking
> Soft systems methodology

As laypersons in a certain field, we would like to examine priorities, framings and models set by experts. We would like to uncover respective assumptions (e.g. system boundaries that were set when creating a model; aspects that are stressed or neglected in describing an issue).

> Emancipatory boundary critique

Deal with power issues ＋

being realised. Through this comparison it can help identify changes in focus needed to meet the preferred outcomes in the remainder of the project.

e.g. to be used during scoping
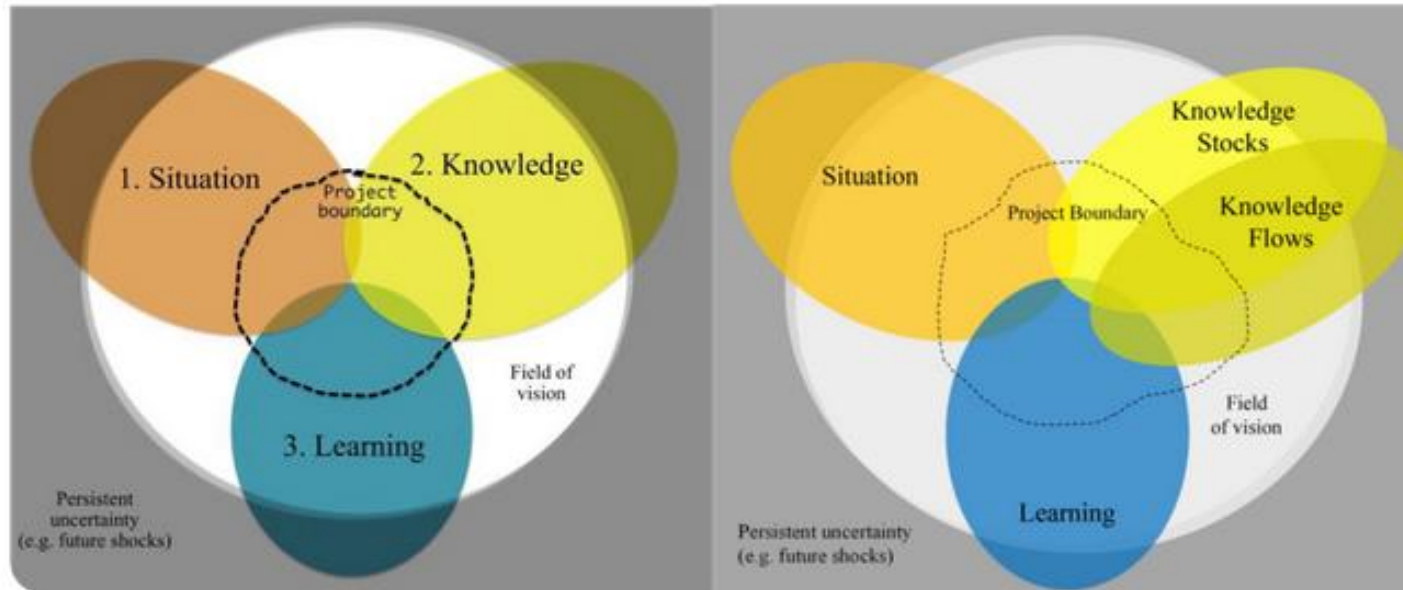
The first illustration is a conceptual map of the three outcome spaces (1. Situation, 2. Knowledge, 3. Learning) indicating a transdisciplinary project embedded in the broader landscape (Mitchell et al. 2015). The second illustration shows the OSF+ (see Duncan et al. (2020)) which differentiates between knowledge stocks and knowledge flows.

How does it work?	1) A moderator introduces the conceptual map of the outcome spaces displayed on a paperboard or the like (see Figure) and explains the three spaces:

Embrace differences, tensions and conflicts in a transdisciplinary group

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> Emancipatory boundary critique

Deal with power issues +

ETH *zürich*

s it work?

The key to emancipatory boundary critique is the following "Checklist of boundary questions"(Ulrich 2005, p 11), that the non-expert poses to the expert:

Sources of Motivation

1) Who is (ought to be) the client or beneficiary? That is, whose interests are (should be) served?

2) What is (ought to be) the purpose? That is, what are (should be) the consequences?

3) What is (ought to be) the measure of improvement or measure of success? That is, how can (should) we determine that the consequences, taken together, constitute an improvement?

Sources of Power

4) Who is (ought to be) the decision-maker? That is, who is (should be) in a position to change the measure of improvement?

5) What resources and other conditions of success are (ought to be) controlled by the decision-maker? That is, what conditions of success can (should) those involved control?

6) What conditions of success are (ought to be) part of the decision environment? That is, what conditions can (should) the decision-maker not control (e.g. from the viewpoint of those not involved)?

Sources of Knowledge

7) Who is (ought to be) considered a professional or further expert? That is, who is (should be) involved as competent provider of experience and expertise?

8) What kind of expertise is (ought to be) consulted? That is, what counts (should count) as relevant knowledge?

e.g. to be used
during scoping

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