# DIFFERENT APPROACHES ON HOW TO ASSESS SOCIETAL IMPACT IN TRANSDISCIPLINARY AND PARTICIPATORY RESEARCH

1ST SYNTHESIS OF CONTRIBUTED TEMPLATES PREPARING THE ITD WORKSHOP "HOW TO ASSESS SOCIETAL IMPACT OF RESEARCH: APPROACHES & EXPERIENCES FROM DIFFERENT TRANSDISCIPLINARY & PARTICIPATORY RESEARCH FIELDS" (2021/17/09, 1:30-3:00PM (CEST)) - DRAFT BY JOSEFA KNY, MARTINA SCHÄFER, RACHEL CLAUS & JANET HARRIS – INCLUDING FEEDBACK BY CONTRIBUTORS (2021/01/09)

## LIST OF CONTRIBUTIONS & ABBREVIATIONS:

### DEVELOPMENT RESEARCH

*ImpresS* – Genowefa Blundo Canto (Cirad –Agricultural Research Center for International Development, France): IMPact of RESearch in the South (IMPRESS)

*Llanque/Jacobi* – Aymara Llanque-Zonta (Leuphana University, Germany), Johanna Jacobi (USYS ETH Zürich): Utilization TD co-generation of knowledge for transformation towards sustainability

### PARTICIPATORY HEALTH RESEARCH

*Allweiss* – Theresa Allweiss (KHSB, Berlin, Germany): Case study (mixed methods + participatory approach) from health research consortium PARTKOMMPLUS

*Harris* – Janet Harris (Sheffield University, UK): Participatory Health Research

*SIF* – Kate Beckett et al.: The Social Impact Framework (SIF)

### SUSTAINABILITY RESEARCH

*Belcher/Claus* – Brian Belcher, Rachel Claus (Royal Roads University, Canada): Theory-based evaluation

*Fritz* - Livia Fritz (EPFL Lausanne, Switzerland): Participation-effect pathways using a systems approach

*Schäfer/Kny* – Martina Schäfer, Josefa Kny (Center for Technology and Society, Technische Universität Berlin, Germany): Impact (Reflection) Workshop

*Wanner* – Matthias Wanner (Wuppertal Institut, Germany): Co-evaluation of real-world labs with structuration theory

## APPROACH DESCRIPTION SUMMARY

*ImpresS:* "ImpresS *ex-post*, is a case-study based method […] that evaluates the causal mechanisms through which agricultural research actions contribute to impacts in long-term innovation processes. Drawing on the principles of Contribution Analysis and Participatory impact pathway analysis, this is a step-wise, theory-driven method, based on participatory construction and validation of the impact pathway and its interpretation. Each ImpresS evaluation is an in-depth case study and consists of sequential building, refinement, and evidencing of the impact pathway and the underlying causal mechanisms through five iterative phases. These five phases

update the information gathered from diverse data sources using diverse collection methods to increase internal and construct validity."

*Llanque/Jacobi:* Not specifically an impact assessment approach, but a study on the utilization of knowledge with a focus on the participation of multiple actors, "also those that are often not heard in the transformation processes" using stages and scales of use of knowledge based on the hypothesis: "assessing who uses research knowledge and for what purpose can be an indicator for understanding the impact of transdisciplinary research on development."

*Allweiss:* The impact of a participatory health research consortium (as a whole, every sub-project + coordination unit) was assessed by means of a mixed methods approach (e.g. focus group survey, document analysis) in/accompanied by a structured impact mapping process.

*Harris:* "Analysis focuses on identifying how a project contributed to change in the specific local context, taking into account how context has either facilitated or constrained the effectiveness of the project. […] Both qualitative and quantitative approaches can be used to collect data, including interviews, case studies, storytelling, visual tools, survey, meeting notes, and mapping."

*SIF*: "The SIF is designed to uncover and map micro-macro (from individual through to societal and paradigmatic) level impacts which occur throughout and beyond co-produced research. These impacts result from multi-level interactions between individuals and/or groups. [… It] captures impact by prompting exploration/recording of who is/was involved at micro (individual) to macro (societal) levels, what the impact was on them/ their involvement, and importantly which key mechanisms enabled which impact; permits identification of linear and non-linear chains of causation and multi-level situational, relational, and more traditional behavioural and economic impact metrics; emphasises the importance of impact and mechanisms demonstrating the dynamic nature of impacts ensuing from research co-production."

*Belcher/Claus:* The approach "uses a Theory of Change (ToC ) as the main analytical framework, defines data needs on the basis of the outcomes specified in the ToC (i.e. using an evidence table that documents each outcome, what evidence is currently available for it, and what evidence is needed). A ToC traces the contributions of a research intervention from activities to impact as a set of hypotheses and tests them empirically through semi-structured interviews, surveys, bibliometric data, and/or document review as determined appropriate for each outcome. Analysis is primarily qualitative and aims to qualify and assess the extent and how a project contributed to change."

*Fritz:* "We propose a systems approach to map diverse perceptions of participation-effect pathways in TD research projects. The participation process and its dynamics are at the centre of our approach. A systems approach allows to explicitly consider non-linear relations and feedbacks in participation-effect pathways."

*Schäfer/Kny*: "We invite projects teams to reflect – guided by the method – on the societal effects they are aiming for or have achieved repeatedly in different project phases. The half-day discussions bring together project partners from academia and practice; we support processes of reflection with external facilitation and evaluation. During the discussions, the participants become aware of the different perspectives on the intended or achieved effects and of implicit assumptions about impact pathways within the team. The workshops contribute to a joint understanding and a prioritization of effects aimed for and can be applied in different project phases (ex-ante, in itinere, ex-post). Working with the "Theory of Change" (ToC) is at the core of the method set."

*Wanner*: "We understand Real-world Labs as "infrastructures" for transformation and try to grasp their longer-lasting structural effects. In order to assess the structural changes caused/influenced by the lab and the experiments we deploy the lens of structuration theory (Giddens). […] We used these modalities and questions in two workshops for the co-evaluation of structural effects of five td/transformative projects for co-productive city-making in a neighbourhood in Wuppertal/Germany. The data is/will be qualitatively analysed. […] In the end,

the approach tries to detect if new/altered ways and capabilities to find (sustainability) solutions were found and built. It does not focus on concrete (and countable) outputs and outcomes."

## CONCEPTS USED IN THE APPROACHES

*Similar general definitions of impact are used by some approaches: 'change' plus spectrum of effects in the close & wider societal context of the research process*

- „*Impact* is recognised as the many forms of change that occur with, within and for those who are engaging in the research as well as those changes that occur across the wider complex socio-ecological system or set of systems in which PHR [participatory health research] is taking place. It occurs throughout the research process and continues after it is completed." (ICPHR, 2020) (Allweiss)
- "PHR defines impact as occurring throughout the course of a project and beyond, on individual, group, organisational, and system levels, in communities of practice, institutions and organisations that are involved." (Harris; SIF)
- "understanding of change being 'any event or variation in the state of affairs' (Belcher and Palenberg, 2018, p. 480). We consider the notion of 'societal effects' to refer both to changes affecting the involved practitioners and structural and processual shifts in the wider societal context of a project." (Fritz)
- "Utilization of research knowledge – who uses research knowledge for what purpose in science, policy and practice may serve as an indication for impacts towards sustainability transformations" (Llanque/Jacobi)

*Definitions of outputs are widely used but with partly different foci*

- Outputs in PHR amongst others are: co-production of culturally-centred interventions; processes for integrating community and academic knowledge; local strategies for health promotion or health protection; tailoring of health information for specific groups and contexts; local strategies for disseminating information via social media; community forums; development of local health and wellbeing networks (Harris)
- Outputs: The products, goods, and services of research and the research process. e.g., knowledge contained in tailored products including publications, presentations, strategies and plans, popular media, training materials, and artistic representations. e.g. a forum or network, dialogues. (Belcher/Claus, Schäfer/Kny, SIF)
- "tangible or intangible outputs, including technologies, trained people, or new knowledge" (ImpresS)
- ➔ Differences in understanding: e.g. "learning", "capacity building" and "(development of) networks" would be considered a 1st order effect (Schäfer/Kny)

*Different forms of effects are used/identified*

- focus on (among others) empowerment processes, development of individual competences of persons involved, changes in and between the groups and organisations involved (Allweiss)
- changes in knowledge, attitudes, skills, relationships and/or behaviour (KASRB) in different outcome levels (see below) (Harris, Belcher/Claus)
- forms of effects: 1st order: learning and capacity building, network formation, improving the situation, increase in reputation; 2nd order: continuation of activities with the project context, transfer to other spatial contexts, 3rd order: influence on public discourse, new concepts, influence on law and regulation, further structural effects (Schäfer/Kny)
- "outputs are used by multiple actors under a certain context, which leads to changes in their behavior, interactions, and practices (outcomes). These changes have social, economic, and environmental effects (first level impacts) for the diverse actors who interacted with the research community in coproducing outputs or in generating these changes […and] spillover or scaling effects (second level

impacts) for other actors, who did not originally interact with the research community during the innovation process." (ImpresS)

- stages of knowledge utilization: reference, empowerment, influence, building trust, application/replication, effort, influence, redefinition, cognition, transmission/communication, social learning (Llanque/Jacobi)
- Giddens' structuration theory as analytical framework: four modalities "that facilitate the reproduction of structures in a given system. [… These] have been used to develop a series of related questions for the evaluation of RwL effects/outcomes. Questions concerning interpretative schemes, for instance, ask if concepts and terms have been mutually defined and coined. Norms draw the attention to e.g. processes of decision-making and if they were altered, questioned, strengthened etc. Allocative resources mostly refer to financial resources than are allocated to the lab/experiment, but also working hours of volunteers etc. With authoritative resources we e.g. ask about newly established/used political and public power to push the lab's issue. […] The four modalities mostly focus on capabilities, communication, interpretations and non-physical impacts and do not cover all types of aspects that the participants mentioned (e.g. concrete outcomes like a new digital networking map) or the literature on evaluation lists (e.g. CO2 reduction or technological)." (Wanner)

*Different definitions of levels/scales/orders/arenas/spheres of effects are used*

- (among others) individual, group, organisational level (Allweiss); micro (individual, groups/networks), meso (organisational/institutional), macro (societal/paradigmatic) level (SIF)
- In time: Outcome levels: Intermediate outcomes (over the course of the project), end-of-project outcomes, high-level outcomes (over the longer term) (Harris, Belcher/Claus);
- In influence: spheres (of control, influence, interest) (Belcher/Claus);
- In actor groups: first level impacts (involved actors) & second level impacts (on actors who did not originally interact with the research community during the innovation process) (ImpresS); system contexts: arena of actor collaboration (e.g. trust built), arena of involved practitioners (e.g. formed networks), arena of the wider practice context (e.g. raised awareness of sustainability) (Fritz);
- In space: local, sub-national, national, regional, global (Llanque/Jacobi)
- In space + time: effect orders: 1st order = changes that occur within the duration and/or spatial scope of the project; 2nd order = changes that occur within the close temporal and/or spatial context of the project; 3rd order = changes beyond the temporal and/or spatial context of the project (e.g. institutional consolidation or imitation) (Schäfer/Kny)

*Impact pathways concepts are widely used*

- Belcher/Claus, ImpresS, Schäfer/Kny, Fritz, Allweiss

*Iterative approaches are dominant (formative evaluation)*

- ImpresS, Schäfer/Kny, Belcher/Claus, Allweiss, Llanque/Jacobi, SIF
- Iterative approaches are used in formative health evaluations (similar to ImpresS, Allweiss), but are not used in clinical health research (which uses pre-determined impact pathways based on the UK Pathways to Impact guidance) (Harris)
- unclear: Wanner, Fritz

## KEY CHALLENGES

### CONCEPTUAL CHALLENGES

- wide definition of impact makes focus and identification of indicators & contributions hard (Allweiss, Belcher/Claus)

- capturing complexity and 'soft' effects (e.g. interactions, relationships), describe them and make them measurable/quantifiable if adequate (Harris, Belcher/Claus, Fritz, SIF)
- counterfactual impossible to assess: What would have happened without the intervention? & alternative explanations (Belcher/Claus, ImpresS, Harris)
- subjectivity: reliance on expert/participants judgement and opinion for significance of contributions (Belcher/Claus, ImpresS)

### PROCEDURAL CHALLENGES

- different 'languages'/jargons of participants, ambiguity and lack of consistency in 'impact terminology' (Harris, Belcher/Claus, Fritz, Schäfer/Kny, Wanner)
- evaluation team needs strong facilitation skills to address power imbalances & different 'languages' (ImpresS, Llanque/Jacobi)
- creation of safe environments and awareness of unequal power relations (Harris, ImpresS)
- tension between manageable workshop format and sufficient time to initiate reflection and understanding processes (overview vs. 'complete' picture) (Schäfer/Kny)
- approaches are time-consuming/resource intensive (Allweiss, Harris, Belcher/Claus, Llanque/Jacobi)
- convincing key practitioners (with limited resources) to take part in the joint reflection of effects and explaining/realizing the benefits of their participation (Schäfer/Kny) -> How do other approaches solve this?
- uncertainty and complexity of a long-term rather exploratory or only partly structured approach and how to 'sell' it to funders (Allweiss, Harris)
- pre-post comparison only possible with long-term evaluation planning (Allweiss)
- cross-case comparability difficult due to case-specific interpretation/adaptation of standardized process vs. high level of abstraction (ImpresS, Fritz, SIF)
- limited testing to date (Schäfer/Kny, Fritz, SIF)

## VISUALISATION AND NARRATIVES

- visualisation used as a boundary object in the participatory process (and in a consolidated form to present results):
    - impact mapping structured by questions regarding the identification of impact pathways, demonstrating and describing impact, supporting further impact (Allweiss, ImpresS, Schäfer/Kny, Fritz)
    - boxes and arrows, spheres diagram (Belcher/Claus, Fritz, Schäfer/Kny)
    - chronogram of the innovation process (key research actions, contextual factors, key actors) (ImpresS)
    - actor map (Allweiss, ImpresS, Schäfer/Kny)
    - impact radar (ImpresS)
    - grid with research process, impacts, key mechanism or elements (SIF)
    - ripple effect mapping is used in participatory health research (Harris)
    - The CBPR conceptual model is used ito guide impact mapping in participatory health research https://cpr.unm.edu/research-projects/cbpr-project/cbpr-model.html (Harris)

- narratives used for a presentation of results at different stages in the research process serving as a boundary object (Allweiss, Harris, Belcher/Claus, ImpresS, Schäfer/Kny, SIF)
- visualisation in a broader sense: photovoice, pictures, drama, music, poetry (Harris); infographics and video narratives (Llanque/Jacobi)

## STRENGTHS AND WEAKNESSES

### STRENGTHS

#### CONCEPTUAL

+ multi-method and participatory approach enables a multifaceted view on impact -> validity (Allweiss, Harris, Belcher/Claus, ImpresS, Llanque/Jacobi)

+ qualitative, iterative approach makes it possible to show impact pathways and grasp complexity by creating boundary objects that can be referred to continually (Allweiss, Belcher/Claus, ImpresS, Fritz, Schäfer/Kny, SIF)

+ make tacit assumptions about interrelations explicit, transparent, and testable (Fritz, Belcher/Claus, Schäfer/Kny, SIF); make clear links between the impact and how that was achieved, value of being able to articulate non-causal links and identify the 'unexpected' (SIF)

+ consistent application of precise definitions and terminology in the approach to address the challenge of conceptual clarity (Belcher/Claus) vs. easy-to-use terminology: simply ask for changes, then disentangle by means of system contexts/orders (Fritz, Schäfer/Kny)

+ “deductive, hypothesis-testing evaluation approach fits well with scientific approach of the research we are evaluating” (Belcher/Claus)

+ long-term analysis of the innovation history, resp. td/tf research (ImpresS, Wanner) vs. introduction of project teams to impact reflection (Schäfer/Kny)

+ “sharpens view for small scale effects closely tied to the interactions and relations of the involved actors as well as for feedback effects (e.g. developing a common language or building trust dynamically shape researcher-practitioner interactions)” (Fritz, SIF)

+ potentially good cross-case comparability (Wanner)

+ formative and summative utility for learning, and accountability, respectively (Belcher/Claus)

### WEAKNESSES

#### CONCEPTUAL

- uncertainty about cause-effect relationships (Allweiss)

- limited/special scope of project outcomes on an abstract level that often does not cover visible project outputs and outcomes (Wanner)

#### PROCEDURAL

- dependence upon funder and commissioner support for impact assessment (Harris)

- reliance on researcher and informant access and buy-in (Belcher/Claus, ImpresS, Schäfer/Kny, Llanque/Jacobi)

## OVERALL ASPECTS, THOUGHTS & OPEN QUESTIONS

- how to support further impact/learning (for future projects) is an explicit goal of the impact assessment approach (Allweiss, Harris, Belcher/Claus, ImpresS, SIF)

- focus on project or program level? project: Schäfer/Kny; project + program: Allweiss, Belcher/Claus, Fritz, Llanque/Jacobi , ImpresS ('social innovation process'), Harris, SIF

- the role of context/external factors in impact assessment (Harris, Belcher/Claus, ImpresS, SIF) vs. exclusion of those due to a specific focus (e.g. on participation effects) (Fritz)

- the role of participation:

    - principle of 'knowledge democracy', but the extent of involvement varies in practice (Harris)

    - of explicit importance with the goal to foster "a culture of impact based on reflexive capacity in the institution" (ImpresS)

    - empowerment and ownership of participants as an explicit goal (ImpresS, Harris, Llanque/Jacobi)

    - "need for grounding studies of the societal effects of TD research in a procedural and dynamic understanding of participation, including personal and collective participation histories." (Fritz)

    - "strong" transdisciplinarity: includes the epistemological challenge of embracing different realities, understandings, and perspectives (Llanque/Jacobi)

- the role of process design to achieve impact

    - mentioned by Harris, Belcher/Claus, ImpresS, Fritz, Llanque/Jacobi, SIF

- What time span are the approaches looking at? "long-term (sometimes 20+ years) innovations processes" (ImpresS)

- contribution analysis: explicit focus on causal linkages given (Belcher/Claus, ImpresS, Fritz, SIF, Allweiss, Harris), tentatively traced (Schäfer/Kny, Allweiss), explicitly neglected (Wanner)

- focus on self-reported effects of participants (Fritz, Schäfer/Kny, Wanner, Allweiss), resp. predominantly researchers (Llanque/Jacobi, SIF) vs attempt to collect primary data to assess and triangulate whether and how effects were realized (ImpresS, Belcher/Claus, Harris)

## IDEAS TO STRUCTURE THE DISCUSSION: QUESTIONS TO DISCUSS IN SMALL GROUPS

### IMPACT PATHWAYS:

The (re-)construction of impact pathways is part of several of the described approaches. However, there might be differences in the basic assumptions leading to impact pathways and the purposes this methodical element is used for.

***Experience:*** What impact pathways have you observed in your research experience?

***Purpose:*** What do you think is the purpose of building impact pathways (e.g. in your discipline/field of research)? How can the iterative process of re-constructing impact pathways be used to adapt research strategies?

***Influence of contextual factors:*** How do/would you consider the influence of contextual factors on impact pathways? What methods do/could you use?

***Visualisation:*** What differences stand out to you in the visualizations of impact pathways? How are the models constructed and to serve which purpose(s)? What do you think are the strengths of each visualization?

***Causality:*** To which extent do the links between activities, outputs, outcome and impact (or 1st and 2nd order effects) describe causal relations, which can be verified empirically? Or do impact pathways rather serve as hypotheses about possible relations?

### SCALES/ORDERS/LEVELS OF EFFECTS:

All approaches differentiate in activities (research process), outputs and effects on different scales/orders/spheres/arenas: effects that can directly be attributed to research activities and those that are occurring in "further distance" of the research process (in the wider societal context).

"Distance" of effects can be captured in terms of temporal distance (within and beyond the course of the project), spatial distance (in the project context and beyond) and group of actors which are part of the research process (direct contact to the research team) and those that weren't (mediated e.g. by intermediaries or transfer activities; "spill over", "chain of events").

Despite that different terms are used for research outputs and effects (outcome, impact) there seems to be a common basic understanding of the need to differentiate between different scales. Several approaches agree/suggest that the influence of the research activities is decreasing with increased distance from the project (some capture it explicitly with spheres/arenas of control, influence, interest).

- ➔ How do the four dimensions (temporal and spatial, actor groups, influence) help to identify and describe different forms of effects?
- ➔ To what degree are researchers responsible for the uptake of their research and what is beyond their influence?

### FORMS OF EFFECTS

While many different terms and categories are used, all approaches differentiate between similar categories of effects (as e.g. learning processes, change of behavior/practices) in different organizational settings (e.g. individuals, institutions, communities of practices).

- ➔ To which extent do the different approaches apply their concepts of form of effects in an inductive or deductive way? Is the differentiation in different forms of effects helpful as a heuristic for empirical analyses or is an inductive approach more feasible to be open for new categories?

➔ Is the differentiation in different forms of effects on different scales helpful or can all forms of effects occur on the different levels?

## CHALLENGES

### VALIDITY, COMPARABILITY & GENERALIZATION

- Knowledge about different scales and forms of effects are mostly won on the basis of case studies: challenge of context specifics and deduction of "general" categories as well cross-case comparison

➔ How can this be mitigated? What are conceptual ideas and methodical solutions to deal with this problem?

- Most approaches rely on expert/participants judgement regarding the significance of their contribution to societal effects

➔ Which approaches/ complementary methods are used to "validate" the subjective judgements of research teams regarding the effects of their research? How can the risk of reducing empirical analyses to "measurable" effects be reduced?

- Counterfactual impossible to assess: What would have happened without the intervention? & alternative explanations

➔ How can this challenge be approached? What are conceptual ideas and methodical solutions to deal with this problem?

### ASSESSING THE BENEFITS & "SELLING" THE METHOD

- Difficulty "to sell" qualitative, resource-intensive methodology to research teams (esp. practitioners) and funders

➔ How can the benefit of the qualitative approaches be communicated a) to different members of the project team, b) to funders? Is there some evidence (especially from ex-ante and accompanying approaches) of learning processes within the research teams, iterative adaptation of research strategies etc. due to application of the approaches?

## DIFFERENCES BETWEEN RESEARCH FIELDS (HEALTH, DEVELOPMENT, SUSTAINABILITY)

On the basis of the handed in templates, differences between research fields (health, development, sustainability) seem to play a minor role when comparing the different impact assessment approaches.

As a tentative hypothesis, the notion of 'empowerment' of local or disadvantaged actors resp. communities as well as dealing with power imbalances is mentioned explicitly in PHR and research for development, less explicit in sustainability science.

➔ What differences could be pointed out when regarded from the different research field backgrounds?

➔ Regarding the first impression: How can the lack of significant differences be explained?