

1. Introduction: Why another guide?

General acceptance of sustainability

Sustainability is socially established as a concept and a requirement. A simulation model originally designed for the preservation of resources and associated discourse (Meadows/Meadows et al. 1972) was already expanded in the Brundtland Report to include the objective to combine ecological, social and economic goals in such a way that corresponding resources should also be available to future generations (Hauff 1987). At the latest with the adoption of the *Sustainable Development Goals* (SDGs) by the United Nations in 2015 the legitimacy of this objective and the heterogeneity of the associated goals became widely recognised across societal actors (Pfister/Schweighofer et al. 2016). The broad consensus and high level of acceptance became clear at the 2015 World Climate Summit in Paris, where representatives of politics, business and various sectors of civil society were able to find common ground on at least one internationally valid agreement with sufficiently ambitious climate targets.

Sustainability as an empty signifier?

This general acceptance of sustainability, however, brings with it a fundamental difficulty: as sustainability refers to heterogeneous objectives, and different social groups define and claim “sustainability” for themselves, the term becomes increasingly blurred. This already becomes clear in the above-mentioned SDGs, as there are partial contradictions between them and their underlying goals (Koehler 2016, Stevens/Kanie 2016, Nielsson et al. 2018). Sustainability threatens to become an *empty signifier that is in many respects connectable*. As a “black box”, however, it can simultaneously be strategically filled and concretised in many ways, e.g., with initiatives on the bioeconomy (Gottwald/Krätzer 2014) and on geoengineering (Galaz 2012) but also with demands from cultural sciences to abolish anthropocentrism (Ribot 2014), or with a turn towards posthumanism (Badmington 2000). At the same time, the vagueness of the term opens the door for doubts regarding the legitimacy of sustainability – critique of sustainabili-

ty projects and transformative research then ranges from accusations of “*green washing*” by purely profit-oriented interests to accusations of “trans-disciplinary solutionism” (Strohschneider 2014, Wehling 2022). Critique of the concept of the Anthropocene, which is dominated by technology and the natural sciences (Bonneuil/Fressoz 2016), or critique from countries of the Global South and from gender research, which see strategies for affirming long-established, discriminatory dualisms (North/South, man/woman) behind “sustainable development” (Simon-Kumar/MacBride-Stewart et al. 2017, Henkel/Bergmann et al. 2018: 147), also go in this direction.

Resulting challenge for sustainability projects and their funding

This overall constellation of, on the one hand, a great acceptance of sustainability and, on the other hand, an equally great diversity of understandings and criticisms of sustainability is fundamentally problematic for all those who want to make a positive contribution to sustainability themselves – i.e., for all those who plan, implement or finance sustainability projects. Sustainability as a discourse and as a social concern does bring important ethical dimensions into everyday consciousness (preservation of ecological resources and ways of life, fair distribution of wealth, non-discriminatory treatment of each other, etc.). However, sustainability itself does not offer any clear specifications and criteria as to which of these demands should be translated into standards, how they should be weighed, and by means of which measures they should then be mandatorily achieved for which dimension. In every effort to make a positive contribution to sustainability, misunderstandings, negotiation processes, conflicts and dilemmas are therefore inevitable as to whether, to what extent and with regard to which aspects a concrete measure or a research project can meaningfully claim the designation “sustainable”. At the same time, precisely these disagreements and practical dilemmas can be used to assert interests or serve as an invitation to shifting responsibility for one's own problematic actions (cf. Henkel/Bergmann et al. 2018: 147f).

Analytical understanding of sustainability as a “third way”

Two obvious responses to these challenges are to either abandon the concept of sustainability altogether or to develop a concept of sustainability

that is as clear-cut as possible and operationalisable, and to use it as a guide for action. With this guide, we choose a third way. In doing so, we assume that “sustainability” has an irreplaceable orienting function despite the known difficulties. At the same time, for the purposes of this guide, we do not assume a specific concept of sustainability. Instead, we take an analytical understanding of sustainability as a basis. In the context of this guide, the term sustainability does not refer to specific properties or qualities. Rather, it refers to a discourse that spans different definitions, concepts and objectives, as has been the case since the 1970s under keywords such as sustainable development or sustainability. What these heterogeneous terms have in common is the assumption of a coupled relationship between society and nature, the premise of a temporal development and the assumption of a transformation potential of knowledge. The analytical understanding of sustainability proposed here refers to this thematic definition without preferring a concretisation as a specific understanding of sustainability itself. Rather, it contains a multitude of possible substantive concretisations and formulations of objectives without defining one understanding in advance as the only valid one. It thus describes a kind of corridor in which conflicting or even contradictory operationalisations are possible.

Aims of the Guide

Against this background, *this guide* provides the opportunity to reflect on the understanding of sustainability used in each case and thus to concretely determine the specific contribution as well as the limitations it entails.

As a heuristic for such a reflection, we resort to dilemmas of sustainability. The heterogeneous objectives, time policies, forms of knowledge, actors and their interests gathered under the umbrella of sustainability quickly come into conflict with each other and turn into seemingly unsolvable dilemmas: every concrete attempt to implement “sustainability” (in certain respects) then leads to a foreseeable violation of “sustainability” (in other respects) and thus has unsustainable consequences. Our proposal is not to understand dilemmas of sustainability merely as unsolvable obstacles to action that have to be circumvented conceptually. Instead, we advocate using dilemmas in a productive way as a heuristic for reflecting on the problems of sustainability. This requires *dealing with areas of tension for the early recognition of dilemmas, the clarification of a possible strategic use of dilemmas and the processing of dilemmas in sustainability research*.

Dilemmas of sustainability

Dilemmas are situations in which actors have to choose between several bad alternatives, cannot change the conditions of the situation, and cannot carry out a hierarchisation of the given alternatives. To act in spite of these conditions eventually requires unjustified, arbitrary action (Mader 2023). *Dilemmas of sustainability exist because of the contradictory nature of relevant objectives, forms of knowledge involved, actors involved, valid time policies and normative orientations.*

Every understanding of sustainability provides orientation in dealing with these dilemmas. *However*, this orientation looks different depending on the focus of the understanding of sustainability – sustainability as post-growth is oriented differently than sustainability in the sense of the three-pillar model or sustainability as climate neutrality. This in itself gives rise to tensions that can manifest themselves as practical dilemmas. *Above all, however:* no matter what orientation a concrete understanding of sustainability provides – the orientation remains at the level of subjective preferences and cannot fundamentally expand the external conditions for action, i.e., the available options. Regardless of the concrete understanding of sustainability, the dilemmas of sustainability can therefore remain – the arbitrary action required under such conditions of dilemmas in sustainability research merely turn out differently.

Early recognition, clarification and processing of dilemmas

Dilemmas are understood here as an instrument with a heuristic, analytical and operative function. Given the above-mentioned ambiguities of a heterogeneous sustainability discourse and the potential conflicts in view of specific areas of tension in the context of sustainability, this instrument serves to reflexively strengthen one's own ability to act. This can be achieved through *early recognition, clarification and processing of dilemmas:*

Early recognition of dilemmas: in the field of sustainability, there are many areas of tension and contradictions. It is important to reflect on these at an early stage with regard to potential dilemmas. In this way, the view is widened in advance for possible tensions, difficulties or requirements for negotiation. Thus, the emergence of dilemmas can potentially be avoided before a problem or conflict occurs. The instrument of dilemmas helps to intellectually focus areas of tension, etc..

Clarification of dilemmas: when it comes to sustainability, dilemmas are often claimed in order to justify certain strategies of action as a way out or to criticise others as inadequate. A falsely claimed dilemma can be just as problematic as denying that dilemmas actually exist. The analysis of dilemma as an instrument helps to be sensitive to such strategic conceptualisations, to reflect on them critically and thus to gain greater sovereignty of action and decision-making.

Processing of dilemmas: even with early recognition and successful clarification, dilemmas of sustainability can block situations of action and decision-making. This can happen regardless of which concrete objective is being pursued as sustainable. The instrument of dilemmas helps to avoid the inability to act by reflecting on, organising and acknowledging negative implications of positive action. The realisation that win-win situations may not be available can help to act responsibly nevertheless.

Target group of the guide

Against this background, the guide presented here is directed at those projects and project funders that aim at sustainability while taking scientific knowledge into consideration. In addition to transdisciplinary projects (Hirsch Hadorn/Hoffmann-Riem et al. 2008, Bergmann/Jahn et al. 2010, Jahn/Bergmann et al. 2012, Lang/ Wiek et al. 2012) or living labs (Schneidewind/Scheck 2013, Schäpke/Stelzer et al. 2017, Wagner/Grunwald 2019), these include all those projects that incorporate theories and methods from the natural sciences, engineering, social sciences or humanities to research or promote sustainability. This guide provides such projects orientation in dealing with dilemmas of sustainability.

Metacriteria of sustainability

Against this backdrop, it is important to reflect on possible conflicts arising from different understandings of sustainability; to reflect on possible real-world problems represented in research, such as those emerging due to different interests, limited resources and manageable time horizons; and to visualise possible negative implications of a sustainability that is intended to be positive as well as the limitations of any understanding of sustainability. Metacriteria of sustainability serve this purpose.

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Metacriteria of sustainability are criteria for thinking about sustainability research and the use of the term sustainability. They make it possible to reflect on areas of tension in the context of sustainability, to clarify the talk of dilemmas and to deal with practical dilemmas. This requires three things:

Firstly, explaining *one's own understanding of sustainability* and thus revealing the standard that orients action under areas of tension and conditions of dilemmas.

Secondly, to disclose which *concrete contribution to sustainability* has been achieved with the decisions thus made.

Thirdly, to reflect on the *unintended and negative consequences of the decisions made* – which unsustainable effects are accepted as a trade-off for one's own positive contribution to sustainability. In short, this would mean to account for whether and to what extent dilemmas of sustainability are actually present.

The reflection by means of meta-criteria of sustainability thus allows to operationalise the instrument of dilemmas and thus to support early recognition, clarification and processing of dilemmas.

The basis of this guide

This guide is based on the interplay between an empirical examination of dilemmas of sustainability in sustainability research (Müller/Berg 2023) and a conceptual-analytical examination of dilemmas of sustainability in the literature (against the background of knowledge and processing of different understandings of sustainability). Although developed in the course of dealing with projects and programmes in this field, this guide can be used whenever projects or funding directed at such projects describe themselves as being aimed at sustainability.

In accordance with this general and fundamental orientation, this guide is intended as a supplement to guidelines of project evaluation. While such guidelines focus on planning, implementation and completion of projects in terms of quality criteria, this guide aims to reflect on particular challenges that the standard of sustainability entails. This applies not only but also to transdisciplinary projects. Transdisciplinary projects are already characterised by a high level of reflection on the special challenges of this type of project, for which independent evaluation guidelines are available (cf. in particular Bergmann/Brohmman et al. 2005). This guide

complements the literature and aims at reflecting on the understanding of sustainability, the contribution and the respective trade-offs of sustainability as well as the early recognition, clarification, and processing of dilemmas.

