



Analysis

Institutional Analysis in Climate Change Adaptation Research: A Systematic Literature Review

Alexander Bisaro^{a,*}, Matteo Roggero^b, Sergio Villamayor-Tomas^c^a Global Climate Forum, Neue Promenade 6, 10178 Berlin, Germany^b Resource Economics Group, Humboldt Universität zu Berlin, Unter den Linden 6, 10099 Berlin, Germany^c Institute of Environmental Science and Technology (ICTA), Autonomous University of Barcelona, Edifici Z, Carrer de les Columnes, Campus de la UAB, 08193 Bellaterra, Barcelona, Spain

ARTICLE INFO

Keywords:

Adaptation

Institutions

Governance

Philosophy of Science

Post-Normal Science

ABSTRACT

Appropriate institutions are essential for climate change adaptation. Yet diverse approaches to institutional analysis are available, encompassing different ontological and epistemological assumptions, and thus yielding insights on very different aspects of institutions in adaptation. Therefore, efforts to expand knowledge in this domain can be usefully informed by an assessment of approaches to institutional analysis in the adaptation literature, which is to date lacking. We address this gap by conducting a systematic review of the adaptation literature addressing institutions. Our review characterises approaches to institutional analysis by identifying methodological choices and the philosophy of science underpinning them. We then analyze the distribution of approaches to institutional analysis across different adaptation situations, contextualizing our results within methodological debates in adaptation research regarding the appropriateness of positivist, interpretative, or post-normal approaches. We find that institutional analysis of adaptation is now engaging with ‘how’ and ‘why’ questions, beyond descriptive questions that characterise the adaptation ‘barriers’ literature, that diverse philosophies of science drive methodological choice, and that post-normal approaches, e.g. co-design approaches, hardly address institutions. We conclude that support for interpretative approaches, and for institutional analysis in post-normal approaches is needed. The latter is important for adaptation planning processes in developing countries under the UNFCCC.

1. Introduction

As climate change adaptation has moved onto policy agendas around the world, implementation has been impeded by various institutional barriers (Biesbroek et al., 2010). Appropriate institutions are thus increasingly seen as essential to advancing adaptation (Eisenack et al., 2014; Moser and Ekstrom, 2010), particularly with respect to integrating societal and ecological dimensions (Paavola and Adger, 2005). In order to design and shape appropriate institutions, more research to improve understanding of institutions in adaptation is needed (Adger et al., 2009). The recent IPCC AR5 (2014) emphasizes that not only are institutional dimensions of adaptation generally under-researched, but theoretically-grounded empirical research in this area is particularly limited (Wong et al., 2014).

Yet a wide diversity of approaches and theories are available for institutional analysis in adaptation. The social science literature makes clear that these various approaches encompass different ontological and epistemological assumptions, leading to methodological choices that

influence the research questions addressed, the types of knowledge produced and explanations invoked regarding a given phenomenon (Grix, 2002; Little, 1991). For adaptation, such different approaches to institutional analysis can yield complementary insights on very different aspects of institutions. For instance, rational choice scholars may focus on incentives for adaptation created by resource characteristics, e.g. a depleting water aquifer, generating insights regarding the design of institutions for monitoring and evaluating water appropriation (Varela-Ortega et al., 2016). In contrast, anthropologists studying the same situation may focus on the meaning given to a shared water resource in a specific cultural context generating insights regarding power relations in rural communities (Mosse, 2006). The particular approach to institutional analysis taken thus influences the development of knowledge on institutions in adaptation. Moreover, as several decades of debate in climate adaptation research, and particularly vulnerability assessment, has shown different approaches and methods can influence policy prescriptions resulting from a study or assessment (O'Brien et al., 2007).

* Corresponding author.

E-mail address: sandy.bisaro@globalclimateforum.org (A. Bisaro).

Given this influence, efforts to expand knowledge on institutions in adaptation can be usefully informed by an assessment of approaches to institutional analysis applied in the adaptation literature (Roggero et al., 2017). Indeed, given the diversity of approaches available, important questions are which approaches to institutional analysis have been applied to empirically analyze institutions in the adaptation literature? Which approaches dominate and what are the consequences of such dominance, for example, in terms of giving rise to patterns in methodological choices and limiting particular types of research questions or data collection methods? Further, given that adaptation is heterogeneous involving different configurations of actors at different levels of political and social organization, which approaches to institutional analysis are appropriate for tackling these heterogeneous situations?

To date, an assessment addressing such questions is lacking. Studies of methodological choices in adaptation have addressed the wider transdisciplinary domain, e.g., including climate impact modeling or decision-analysis (Hinkel and Bisaro, 2015; Hofmann et al., 2011), without a specific focus on institutional analysis. Some studies have addressed institutions in particular, analyzing their role in planning or implementing adaptation, but not addressing methodological issues (Berrang-Ford et al., 2011; Biesbroek et al., 2010). Others have focused on only a limited part of the adaptation literature addressing institutions, i.e. the barriers literature (Biesbroek et al., 2013).

This article addresses this gap, and tackles the above questions by conducting a systematic review of the climate adaptation literature addressing institutions. Our systematic review characterises approaches to institutional analysis, by identifying sets of methodological choices within the literature and the philosophy of science underpinning them. We then quantify the distribution of approaches in the literature, and identify gaps in methodological choices observed. Further, starting from the assumption that different problems may require different approaches and methods (O'Brien et al., 2007; Hinkel and Bisaro, 2016) we distinguish between different adaptation situations and analyze the distribution of approaches to institutional analysis across these different adaptation situations.

We are thus able, first, to identify dominant and under-represented approaches to institutional analysis of adaptation. Second, by differentiating our analysis by adaptation situation, we are able to situate our results within broader methodological debates on the appropriateness of positivist, interpretative and post-normal approaches in the adaptation domain (Dessai et al., 2009; O'Brien et al., 2007). Such debates are rooted in long-standing debates in climate vulnerability assessment, e.g. on top-down versus bottom-up approaches (Dessai et al., 2009; Wolf et al., 2013), and appropriate approaches in developing countries contexts for national adaptation planning (Huq et al., 2004) and associated adaptation finance decisions (Persson and Remling, 2014). Our assessment thus allows us to draw insights useful to informing future research directions for institutional analysis in adaptation that may be relevant to, e.g., current debates on national adaptation planning in developing countries.

The paper is organized as follows. In the next section, we introduce key concepts, discussing different philosophies of social science underpinning approaches to institutional analysis and their influence on methodological choices. We also introduce the concept of an adaptation situation, and discuss the appropriateness of institutional analysis approaches to different adaptation situations. In Section 3, we describe our methodology. Section 4 presents our results, identifying dominant approaches to institutional analysis, and differentiates these by adaptation situation. Section 5 discusses these results in the context of current debates on the influence of “barriers” thinking on institutional research in adaptation, and on appropriate approaches to supporting adaptation planning in developing countries. Section 6 concludes.

2. Concepts and Theory

2.1. Institutions

A key criterion for inclusion of a study in our systematic review is naturally that it analyses institutions (see Section 3). Following Roggero et al. (2017), we understand institutions as shared practices through which individuals address their mutual interdependencies (Paavola, 2007), attaching meaning and normativity to particular situations (Vatn, 2005). Institutions are thus never “only” a written rule, but also include a “practical” referent, i.e. the practices entailed or influenced by such written rules. Laws, regulations, professional codes, protocols, agreements, standard practices as well as habits, customs, conventions, and traditions, all represent institutions to the extent that they shape individual behavior in a social setting, regardless whether they are formal or informal. In our systematic review, organizations only count as institutions when analysis focuses on their internal rules and practices, as opposed to treating them as single actors (North, 1994).

2.2. Philosophy of Science and Methodological Considerations

Different theoretical approaches provide alternative analytical lenses through which the same study object, i.e. institutions, can be explored. An approach to institutional analysis relies on various ontological and epistemological, i.e. meta-theoretical, assumptions, which embody the philosophy of science underlying it (Little, 1991). The particular philosophy of science underlying an approach to institutional analysis determines how ontological and epistemological issues are resolved, thus influencing methodological choices, e.g. regarding research questions and data collection methods, in a specific analysis (Rodela et al., 2012). To avoid confusion, it is worth briefly noting here that the term “philosophy of science” can be used in two senses. First, in the general sense, philosophy of science denotes the activity of analyzing the conditions required, and assumptions made, in the production of knowledge. Second, in the particular sense, philosophy of science denotes a particular set of meta-theoretical assumptions made by a researcher working within a given approach or discipline. In the remainder of this article, we use the term in the second (particular) sense.

Three principle philosophies of science are salient to social and institutional aspects of climate adaptation: positivist, interpretative and post-normal (McLaughlin and Dietz, 2008). To these, we add a fourth category, “descriptive”, which is generally prevalent in emerging domains of research (Poteete and Ostrom, 2008), including the adaptation literature (Biesbroek et al., 2013; Moser and Ekstrom, 2010). Descriptive scholarship can be seen as agnostic regarding core ontological and epistemological issues, as describing adaptation without aiming to provide explanations or evaluations of outcomes obviates the need to take a position on epistemological issues, such as, criteria for establishing causal mechanisms.

We wish to emphasize that these 4 categories – positivist, interpretative, post-normal and descriptive – are not meant to be exhaustive. Further differentiations within and across these categories are possible. For instance, radical constructivism, critical realism, etc. are also taken up in the literature. We would nonetheless argue that these 4 categories generally represent the main contrasting positions with respect to methodological choice in adaptation research and related domains, e.g. vulnerability research (McLaughlin and Dietz, 2008).

A further remark is due regarding critical realism in particular because this approach is gaining in importance in environmental science more generally. Critical realism makes the meta-theoretical assumption that the social world consists in open systems, i.e. systems that generally in exchange with their environment (Bhaskar, 1975). This implies that the observation of correlations cannot be used to ascertain causal relationships. From a methodological perspective, this implies the need for multiple methods applied to questions of understanding or explaining institutions. In this sense, critical realism is compatible with

Download English Version:

<https://daneshyari.com/en/article/7343874>

Download Persian Version:

<https://daneshyari.com/article/7343874>

[Daneshyari.com](https://daneshyari.com)