



Asking about climate change: Reflections on methodology in qualitative climate change research published in Global Environmental Change since 2000



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ABSTRACT

There is increasing evidence that climate change will strongly affect people across the globe. Likely impacts of and adaptations to climate change are drawing the attention of researchers from many disciplines. In adaptation research focus is often on perceptions of climate change and on vulnerability and adaptation strategies in a particular region or community. But how do we research the ways in which people experience changing climatic conditions, the processes of decision-making, the actual adaptation strategies carried out and the consequences of these for actors living and dealing with climate change? On the basis of a literature review of all articles published in *Global Environmental Change* between 2000 and 2012 that deal with human dimensions of climate change using qualitative methods this paper provides some answers but also raises some concerns. The period and length of fieldwork and the number and types of interviews conducted are, for example, not always clear. Information on crucial aspects of qualitative research like researcher positionality, social positions of key informants, the use of field assistants, language issues and post-fieldwork treatment of data is also lacking in many articles. We argue that this lack of methodological information and reflections is particularly problematic in an interdisciplinary field such as climate change research and journals such as *Global Environmental Change* and that clearer communication is key to facilitate truly interdisciplinary dialogue.

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1. Introduction

Current global challenges like climate change require research based solutions beyond any single scientific discipline. Interdisciplinarity understood as scientific activities where the traditional boundaries between sub-disciplines and between the natural sciences, social sciences and the humanities are crossed in some way (e.g. [Bjurström and Polk, 2011](#); [Jacobs and Frickel, 2009](#); [Klein, 1990](#)) is therefore increasingly proposed and argued to take place in the international global climate change research community (e.g. [Mooney et al., 2013](#); [Lenhard et al., 2006](#); [Saloranta, 2001](#)). However, an analysis of one of the prime examples of climate change research, the IPCC's Third Assessment Report, concluded that the report "is weak in broad interdisciplinarity, which is defined as the transgressing of boundaries between disciplines

with dissimilar epistemologies" and that "integration occurs mainly between related disciplines (narrow interdisciplinarity) which indicates an overall disciplinary basis of climate research" ([Bjurström and Polk, 2011](#), p. 543; see also [Porter and Rafols, 2009](#)). A general move towards true interdisciplinarity in climate change research is hence not necessarily supported by empirical evidence.

There may be many reasons for this but poor communication on central aspects of research processes such as research design, theoretical framework and methodologies across particularly the qualitative–quantitative divide has been argued to constitute a barrier for interdisciplinary cooperation in global environmental change research ([Baxter and Eyles, 1997](#); [Bradshaw and Bekoff, 2001](#); [Strang, 2009](#); [Jahn et al., 2012](#)). This is because different disciplines have different epistemologies, or theories of knowledge, and as such each discipline has a different idea of what constitutes knowledge, how this is produced and communicated ([Rescher, 2003](#); [Miller et al., 2008](#)). Regarding the latter, biases based partly on pre-analytic assumptions and assumed shared understandings of methodologies within qualitative as well as quantitative disciplines also represent a real challenge (e.g. [Wilholt, 2009](#); [Miller et al., 2008](#); [Jahn et al., 2012](#)). The

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implications, practices and utility surrounding particular methods often appear fairly self-evident to the individual researcher and the discipline to which s/he belongs, “yet they may appear quite exotic to scientists from other disciplines” (Rasmussen and Arler, 2010, p. 43). To improve mutual understanding it has hence been argued that the methodological aspects of scientific knowledge production need to be made more explicit for other sciences engaged in the solution of the same problem (Strang, 2009; Wilholt, 2009; Jahn et al., 2012). This can only be done by exposing and communicating the methodological approaches and biases of the research presented (be it natural, social or human science) in a clear manner. A central claim in the literature is thus that a clear presentation, description and discussion of methods used are particularly important in interdisciplinary research including global climate change research. Knowledge production is not only a matter of ‘what we know’ but ‘how we communicate’ it (Klein, 2004).

In the present article we explore how research articles published in *Global Environmental Change* (hereafter GEC) in the period 2000–2012, and focusing on the human dimensions of climate change using qualitative methods, communicate methodological aspects of the research process. The articles included in the review ($n = 82$) attempt to understand actual human practices and processes of adaptation, vulnerability and resilience to climate change as well as perceptions of climatic change/s often in a particular region or community (Smit and Wandel, 2006). Focus is on documenting the ways in which such communities experience or perceive changing climatic conditions, the processes of decision making, the socioeconomic barriers, the actual strategies pursued and the consequences of these for the actors, by employing the experience and knowledge of community members (e.g. Vásquez-Leon et al., 2003; Ford and Smit, 2004; Coulthard, 2008; Nielsen and Vigh, 2012). This is done by employing various types of qualitative methods such as interviews and participant observation. To answer how the here reviewed papers presented, described and discussed such methods we conducted a systematic literature review collecting information on the methods used, the selection criteria of research subjects, sample size, where research took place, the period and length of research, the use of translators and reflections on researcher positionality as these are generally accepted as crucial aspects of qualitative research in the relevant literature (e.g. Denzin and Lincoln, 2011).

The paper starts by describing the methodology behind our literature review. It then moves on to the findings. First we present the results of our review of the research articles (meta-analysis). We identify the main methods and trends in the articles under review. Particular focus is on the presentation of the methods within the articles. In the subsequent section, we discuss the main findings. This discussion is rooted in the importance of clear communication of methodology in interdisciplinary settings and focuses on what we consider problematic about the way in which methods are generally described, presented and/or discussed in the articles reviewed. This is followed by the conclusion.

2. Methods

2.1. Document selection

Systematic literature reviews involve reviewing documents according to clearly formulated questions by using systematic and explicit criteria for selecting and appraising relevant research (Petticrew and Roberts, 2006). The selection of papers for this review was based on place and date published, topic and methodology.

Only original research articles published in GEC, including special issues, were considered ($n = 622$). GEC was chosen because: (1) it is an interdisciplinary journal, hence methodologies cannot be presumed shared or implicitly understood by the readers of the journal, (2) it ranks as first in Geography out of 73 journals, first in Environmental Studies out of 89 journals and fourth in Environmental Sciences out of 205 journals and it has an Impact Factor of 6.87 (November 2012) and rising (5-Year Impact Factor 8.26) – i.e. articles published in GEC are widely read and cited, (3) it has a large number of articles on human dimensions of climate change and (4) a high number of these articles are based on qualitative methods.

Articles published from volume 10 issue 1, 2000, until and including volume 22 issue 4, 2012, were reviewed. Global climate change was hard to discern as a particular topic in articles published prior to 2000 and the first 10 volumes of GEC were therefore disregarded.

For all 622 articles the title, research highlights (when available), abstract and key words were read. If the term ‘climate change’ appeared in any of these or if these indicated in another way that climate change might be treated in the article, the article was downloaded and checked more thoroughly. This was done by reading the introduction and searching the document for the terms ‘climate change’ and ‘global environmental change’ via the search option in Adobe Reader. If climate change was a topic, we further looked at how climate change was treated. If the article did not explicitly focus on humans and climate change (i.e. treated biophysical aspects of climate change only) it was disregarded. The articles were then checked for the methodology applied. Only articles using qualitative methods were retained. Under qualitative methods, we included individual and focus group interviews, observations of and/or participation in activities at the study site(s), fieldwork and questionnaires. Articles based solely on questionnaire data analyzed in a strictly quantitative manner were however disregarded.

The remaining articles were now scanned for the words ‘qualitative’, ‘interview’, ‘participation’, ‘observation’, ‘questionnaire’, ‘survey’, ‘focus’ and ‘group’. Title, research highlights (where available), abstract and key words were included in the search, but most attention was paid to the method section. Some articles did not have a separate method section (e.g. Jewett and Baker, 2012) and often, additional method information – even in articles with a well-developed separate method section – was located elsewhere in the article. The scan was therefore expanded to include entire articles. Articles based on interdisciplinary research or using mixed methods ($n = 14$) were included when some of the methods used were qualitative. Articles likely based on qualitative methods as indicated by the results presented were disregarded when methods could not be discerned or disentangled by searching and reading the paper ($n = 3$). Certain meta-studies were also disregarded (e.g. Larson, 2011) as the high number of different case studies made it very difficult to discern actual qualitative research methods.

2.2. Document review

Following document screening and selection, 82 articles were retained for full review (a full list of these is available in Appendix A). A questionnaire was developed to survey the selected articles and to document the review process. We used the questionnaire to standardize analysis and to enable some statistical testing to identify and examine key trends (see Berrang-Ford et al., 2011). The questionnaire (see Appendix B) started with questions on the general characteristics of the article in terms of title and authorship, year published, region of interest, topic, number of sites at which research was conducted, scale (local, regional, national, international), whether research was conducted alone or

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