



ELSEVIER

Contents lists available at ScienceDirect

Climate Risk Management

journal homepage: www.elsevier.com/locate/crm

A critical assessment of knowledge quality for climate adaptation in Sylhet Division, Bangladesh

Mohammad Mahfujul Haque^{a,*}, Scott Bremer^b, Saifullah Bin Aziz^a, Jeroen P. van der Sluijs^{b,c,d}^a Department of Aquaculture, Bangladesh Agricultural University, Mymensingh, Bangladesh^b Centre for the Study of the Sciences and the Humanities, University of Bergen, Bergen, Norway^c Department of Chemistry, University of Bergen, Bergen, Norway^d Copernicus Institute of Sustainable Development, Utrecht University, The Netherlands

ARTICLE INFO

Article history:

Received 11 August 2016

Revised 1 December 2016

Accepted 17 December 2016

Available online xxxx

Keywords:

Climate

Adaptation

Knowledge quality

Sylhet Division

Bangladesh

ABSTRACT

There are numerous challenges to mobilising high quality knowledge in support of climate adaptation. Urgent adaptive action often has to be taken on the basis of imperfect information, with the risk of maladaptive consequences. These issues of knowledge quality can be particularly acute in vulnerable developing countries like Bangladesh, where there can be less capacity for producing and using climate knowledge. This paper argues that climate change adaptation in places like Bangladesh would benefit from a more self-conscious critical review of the knowledge systems mobilised in support of action, and suggests that 'knowledge quality assessment' (KQA) tools can structure this review. It presents a desktop assessment of information used for climate change adaptation projects in Sylhet Division in Bangladesh, steered by the six themes of the 'Guidance for Uncertainty Assessment and Communication' KQA tool. The assessment found important differences in approaches to mobilising knowledge, particularly between governmental and non-governmental organisations (NGOs). It demonstrated that *problem framing* has an impact on project success; projects that adopt a narrow techno-scientific framing can lead to significant adverse side effects. Recognising this some projects are *engaging stakeholders* in framing adaptation. It found a lack of national policy Guidance on the use of *indicators* or appraisal of *uncertainty*, seeing government agencies fall back on their risk-based calculations, and NGOs attempt to identify indicators and uncertainties via community engagement, with mixed success. Moreover, the adaptation knowledge base is relatively disintegrated, despite tentative steps toward its *consolidation and appraisal*, potentially related to on-going friction impeding vertical *communication* within government, and horizontal communication between government, NGOs and stakeholders. This all suggests that the Bangladeshi practices at the adaptation science-policy interface can benefit from reflection on KQA criteria; reflection that could concretely be encouraged through revision of the national policy framework.

© 2016 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

* Corresponding author.

E-mail address: mmhaque1974@yahoo.com (M.M. Haque).

<http://dx.doi.org/10.1016/j.crm.2016.12.002>

2212-0963/© 2016 The Authors. Published by Elsevier B.V.

This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

There are on-going debates around the particular challenges to mobilising high quality climate knowledge in support of climate adaptation. Scholars argue for reorganising ‘adaptation science’ in recognition of the challenges of: (i) framing climate science at a regional or local scale; (ii) addressing significant uncertainties; (iii) navigating contested and corrupted science; (iv) creating the institutional conditions for ‘coproducing’ information in partnership between the scientific community and other knowledge-holders; (v) making this climate information more useable for adaptation, tailored to particular institutions and users; and (vi) muddling forward with imperfect information (Armitage et al., 2011; Dilling and Lemos, 2011; Hallegate and Mach, 2016; Kerr, 2011; Moss et al., 2013; van Bree and van der Sluijs, 2014; Brammer, 2014b). Together these challenges mean that urgent, high stakes adaptive action often has to be taken on the basis of low quality climate knowledge, which can lead to maladaptive outcomes (Moss et al., 2013). Indeed, these challenges are compounded in the vulnerable developing world, where there may be less expertise and capacity for producing and using adaptation science, and attendantly, where science may be either misused or go unused (Pasgaard et al., 2015). This paper argues alongside others that adaptation actors need to be acutely aware of the (high or low) quality of climate knowledge they use, if adaptation is to be successful.

Problems of knowledge quality have been discussed for more than 40 years by scholars in the philosophy of science (Ravetz, 1971; Funtowicz and Ravetz, 1993), science and technology studies (Clark and Majone, 1985), and environmental governance (Bremer, 2013; Cash et al., 2003). Clark and Majone (1985, p. 6) note that, “Among the many prescriptions offered for the mitigation of such questions (...) the repeated calls for strengthened mechanisms of peer review and critical evaluation stand out”. But, as a departure from ‘normal’ scientific practices of peer review, these scholars argue that science (or knowledge) for policy demands different practices and norms of evaluation. Alternative perspectives on peer review, such as theories of ‘post-normal science’ (Funtowicz and Ravetz, 1993), propose extending the peer community to include the full diversity of relevant knowledge holders and users, exercising a self-conscious and reflexive review of knowledge quality, according to criteria that are meaningful for a particular context. These theories have also seen the development of a diverse set of ‘knowledge quality assessment’ (KQA) tools, for supporting such processes of peer review (van der Sluijs et al., 2008; Maxim and van der Sluijs, 2011). These perspectives on the critical peer review of knowledge quality have seen some practical application in the field of climate adaptation (Ford et al., 2013; Risbey et al., 1996; Weichselgartner and Kasperson, 2010), but we argue there is much more scope for their use.

This paper argues that climate change adaptation projects, including in Bangladesh, would benefit from a more self-conscious critical review of the knowledge systems mobilised in support of action, and suggests that concepts of ‘quality’ and KQA tools offer one feasible framework for structuring this review. From this point of departure, the paper implements a desk-top KQA of the knowledge used in support of climate adaptation projects in Bangladesh, with a particular focus on the Sylhet Division, and steered by the particular KQA tool presented by ‘The Guidance for Uncertainty Assessment and Communication’ (van der Sluijs et al., 2008). The six themes of knowledge quality in the Guidance are used here as a heuristic for organising reflections on the quality of knowledge mobilised for various adaptation initiatives in Sylhet Division, with regard for the wider Bangladeshi policy context. The study moves from a *description* of knowledge used in support of adaptation, to a systematic *assessment* of knowledge quality, before making *recommendations* on how to improve knowledge quality for adaptation in Bangladesh. In this way the paper aims to both stimulate critical reflection on knowledge quality in Bangladesh, and demonstrate how KQA, including through use of the Guidance, can benefit adaptation practice in other contexts.

The paper begins in Section 2 by presenting some background information on climate adaptation in Bangladesh and Sylhet Division specifically, before Section 3 introduces the Guidance tool and how it was employed in this study. Section 4 presents the results of the knowledge quality assessment, then Section 5 concludes with recommendations.

2. Background: Sylhet’s climate adaptation under uncertainty

2.1. Climate vulnerability and adaptation governance in Bangladesh

Bangladesh has been assessed as one of the countries most vulnerable to climatic change (Maplecroft, 2010; United Nations, 2011). Geographically it is highly exposed to the physical impacts of climate change, with these impacts exacerbating other on-going environmental, social and economic challenges facing this densely-populated country. At the same time, Bangladesh’s capacity to adapt to these impacts has been relatively weak (Ahmed et al., 1999; Mahmud and Prowse, 2012), with Islam et al. (2013, p. 96) noting: “Low economic strength, inadequate infrastructure, a low level of social development, a lack of institutional capacity and a high dependency on the natural resource base make the country more vulnerable”. Bangladesh’s vulnerability is compounded by significant uncertainties around current climate variability and future climate change, and the extent of the resultant impacts; particularly indirect social and economic impacts.

This has seen Bangladesh take a lead role amongst climate vulnerable developing countries, investing \$US10 billion over the past 35 years to reduce its vulnerability, mainly in infrastructure, flood management and climate resilient crops (Islam et al., 2013). It has also led the way in developing national policy, producing the National Adaptation Programme of Action (NAPA) in 2005, and the first nation globally to produce a Climate Change Strategy Action Plan (the Bangladesh CCSAP) in 2009. Under the BCCSAP, a range of government agencies and NGOs are committed to working with climate adaptation

Download English Version:

<https://daneshyari.com/en/article/5115317>

Download Persian Version:

<https://daneshyari.com/article/5115317>

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