



Climate knowledge cultures: Stakeholder perspectives on change and adaptation in Nusa Tenggara Barat, Indonesia



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ARTICLE INFO

Article history:

Received 20 March 2015

Revised 17 October 2015

Accepted 6 November 2015

Available online 1 December 2015

Keywords:

Beliefs

Climate engagement

Knowledge

Organisations

Stakeholder

Values

ABSTRACT

Effective climate adaptation requires engagement (awareness, motivation, and capacity to act) at relevant scales, from individuals to global institutions. In many parts of the world, research attention has focused on the engagement of the general public. We suggest that studies also need to focus on key stakeholders in the government and non-governmental sectors who participate in adaptation planning processes, so that a better understanding may be achieved of the distinct knowledge cultures that influence their engagement with climate change. Indonesia is a key actor in climate adaptation because of the potentially dire consequences for its population's livelihoods and well-being. In this paper we consider whether 'climate knowledge cultures' exist amongst stakeholders at multiple organisational levels in Nusa Tenggara Barat (NTB) Province, Eastern Indonesia. Surveys were conducted with 124 stakeholders from differing levels at the beginning of four multi-stakeholder climate adaptation workshops. Questions elicited perceptions of their region's challenges, observation and awareness of climate change, feelings they associated with climate change, beliefs regarding causes, risks and preparedness for climate change, and timeframes they associated with the future. Across all levels, climate change ranked highest as the first challenge participants identified, followed by food security, but well-being ranked highest when the top three challenges were combined. Most participants believed climate change was happening, but those working at higher organisational levels were more likely to attribute climate change to human factors whereas those at lower levels were more likely to think it was a natural phenomenon. Women were in greater agreement and more optimistic than men about current government policies to cope with climate change. Perceptions differed between sub-districts, reflecting NTB's climatic diversity. We note that although climate change is an issue of concern among NTB stakeholders, the potential privileging of some knowledge cultures may lead to its association with cultural and political elitism. Second, climate change needs to be viewed alongside the myriad other challenges facing NTB, some of which have greater perceived immediacy. This analysis highlights the need for planning that can accommodate and integrate the diverse knowledge cultures and adaptation objectives that exist at multiple levels.

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Introduction

Climate engagement and knowledge cultures

To be able to adapt to climate change, people – individuals, households, communities, organisations – must be engaged: they must understand what climate change is, feel a motivation to respond to it, and have the capacity to act (Lorenzoni et al., 2007). In practice, the meaning of engagement can be elusive. A substantial body of research has addressed the inter-related cognitive, affective and behavioural dimensions of climate change engagement at the individual level, and has shown that collective human experience with climate change is highly varied (Wolf and Moser, 2011).

For many, climate change is a distant, intractable problem. It is also a contested problem: research in developed countries shows that climate change views of public citizens often (and increasingly) diverge from scientific consensus (Weber and Stern, 2011; Leviston and Walker, 2012) and highlight that the journalistic norms of mass media have wedged apart scientific and popular discourse on the issue (Boykoff, 2011). In the developing world, a contrast is more often drawn between western scientific epistemologies of climate change and local perspectives (Byg and Salick, 2009; Orr et al., 2012). Yet none of these discourses is homogenous, with divergence of views evident among sub-groups of society (Moloney et al., 2014).

What people ‘know’ about climate change is as much a reflection of their beliefs, values, worldviews and objectives as a descriptive account of what climate change is (Weber, 2006) and what they must do about it. Knowledge of climate change exists in a knowledge-belief-practice complex (Berkes, 1999); that is, knowledge is related to what one believes and what one does. Because climate change cannot always be directly or immediately sensed, individuals are especially reliant on social and cultural cues to inform them about climate change, the risks it poses, and how to respond. Accordingly, several strands of scientific research have focused on social and cultural influences on climate engagement. Kahan et al. (2011) explain climate beliefs through the lens of cultural cognition, whereby individuals adopt views aligned with those of one’s cultural community. Leviston et al. (2013) explore cognitive biases in individuals’ own beliefs about climate change as well as their opinions of what others believe. Moloney et al. (2014) investigate social representations of climate change, arguing that beliefs and behaviour coexist as part of the system of meaning – the tacit frameworks – used to understand climate change. In their study of Kenyan fishers, Crona and Bodin (2006) consider the role of social networks in shaping ecological and climate knowledge, and whether “what you know is who you know”.

This paper is based on the premise that social and cultural influences on knowledge are significantly pervasive to give rise to distinct “knowledge cultures” (Brown, 2008). Knowledge cultures characterise different groups – whether individuals, communities, specialists, organisations or creative thinkers – who use different languages to describe climate change, choose different avenues of action, and are directed towards different outcomes. Notably, Brown asserts, these produce “patterns of difference that are...not primarily matters of right and wrong” but “different interpretations of the same reality, each internally consistent and valid within their own terms” (2008, p. 5).

But whose knowledge cultures matter where climate change is concerned? The focus of research on climate engagement on the individual is largely warranted (Rickard et al., 2014): individuals have adapted to climate variability for millennia, and to varying degrees they will be required to adapt to future climate variability and change regardless of institutional frameworks in place that support (or constrain) adaptation. Yet climate adaptation happens on both autonomous individual and planned—often institutional—levels (IPCC, 2007). Furthermore, much of the literature argues that significant barriers to engaging with climate change persist at both individual and societal levels (Lorenzoni et al., 2007; Waters et al., 2014). Thus, research on climate engagement among the general public (e.g. Nisbet and Myers, 2007) needs to be supplemented with studies that focus on individuals who are linked to broader climate adaptation decision-making and planning processes. While research has addressed how to better engage government stakeholders on the issue of climate change through participatory processes (e.g. Shaw et al., 2009), little research has addressed government or other organisational stakeholders’ perceptions of climate change, and the distinct understandings and objectives of different subgroups of society in dealing with climate change (but see Moloney et al., 2014).

In this paper we strive to fill a gap by examining understandings of Indonesian stakeholders who are potential ‘change agents’ for addressing climate adaptation as individuals working within organisations (Visser and Crane, 2010). We anticipate that different knowledge cultures are present within groups of organisational stakeholders with varying levels of exposure to and engagement with climate information in their professional roles and varying local knowledge about climate change. We argue that thinking about engagement with climate change through the lens of knowledge cultures can help inform the design of multi-scale climate adaptation planning processes.

Engagement with climate change in Indonesia

Indonesia is a key actor in climate adaptation given its contribution to CO₂ emissions, but also because of the potentially dire consequences for human livelihoods and well-being due to the island archipelagic nature of the country (Butler et al., 2014). Climate change in Indonesia is anticipated to manifest primarily as changing weather patterns for some regions and higher air and sea surface temperatures (Indonesia Ministry of Environment, 2010), driving increasing extreme weather events and sea level rise. The country has experienced numerous earthquakes, tsunamis and volcanic eruptions throughout its history, and while not climate-related, these events have nonetheless heightened Indonesian experience of environmental

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