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To cite this article: Patrick Kirkby, Casey Williams & Saleemul Huq (2017): Community-based adaptation (CBA): adding conceptual clarity to the approach, and establishing its principles and challenges, Climate and Development, DOI: [10.1080/17565529.2017.1372265](https://doi.org/10.1080/17565529.2017.1372265)

To link to this article: <http://dx.doi.org/10.1080/17565529.2017.1372265>



Published online: 09 Oct 2017.



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## REVIEW ARTICLE

# Community-based adaptation (CBA): adding conceptual clarity to the approach, and establishing its principles and challenges

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(Received 13 December 2015; final version received 11 April 2017)

Community-based adaptation (CBA) is an approach to strengthening the adaptive capacity of local communities vulnerable to climate change. The CBA approach increasingly features in discussions among policy makers, planners, advocates, and researchers, and has been endorsed and adopted by numerous governmental and non-governmental organizations. However, to date the CBA approach has lacked conceptual clarity, and the term is interpreted and deployed in various and often contradictory ways. This paper seeks to address this deficit by explaining the rationale put forth for CBA by its proponents, outlining its guiding principles, and theorizing some of its key challenges, which often point to opportunities for the approach to evolve.

**Keywords:** Community-based adaptation; adaptation; least developed countries; participation; climate policy

## 1. Introduction

Community-based adaptation (CBA) is generally described as a bottom-up and strengths-based approach to strengthening community-level adaptive capacity, focussed upon vulnerable communities. It is regarded by some as a ‘vital approach to the threat climate change poses to the poor’ (Huq & Reid, 2007, p. 1). However, despite CBA’s growing popularity and use, and its burgeoning community of practice (Gundel, Anderson, Nanki, & Schoch, 2013), the term CBA is interpreted and deployed in various and often contradictory ways by different stakeholders. This lack of conceptual clarity can result in issues in implementation, as well as challenges in procuring adequate finances and institutional support.

No publications to date have focussed on clarifying the CBA concept. This review, based on a study of the relevant literature as well as our longstanding engagement with the CBA community of practice, seeks to provide a general overview of CBA. By clarifying CBA’s meaning and purpose, and synthesizing its guiding principles and challenges, this analysis provides direction for the CBA approach to evolve, enabling researchers and practitioners to engage more thoughtfully and effectively to support those most vulnerable to climate change.

Section 1 outlines the rationale for CBA – a need to strengthen the adaptive capacity of communities most vulnerable to climate change. Section 2 seeks to establish a set

of guiding principles for the CBA approach. The CBA approach, as described in Section 2, is critiqued in Section 3, which describes key challenges encountered in implementing CBA, and suggests opportunities to address these challenges.

## 2. A rationale for community-based adaptation

The CBA approach emerged from, and further stimulated, discourses around the climate vulnerable poor, the relative weaknesses of top-down approaches, and relative advantages of bottom-up approaches in strengthening community-level adaptive capacity. This section introduces the CBA approach by seeking to synthesize the rationale for CBA, as articulated from the perspective of its key proponents.

In the 1990s, international policy and discussion around anthropogenic climate change focused primarily on mitigation – reducing the sources of and/or expanding sinks for greenhouse gases (IPCC, 2014a). During that time, a low priority was placed upon adaptation to climate change – adjustments in natural or human systems in response to or anticipation of climate change risks and impacts, which moderate harm and/or exploit beneficial opportunities (IPCC, 2014b; Smithers & Smit, 1997). This was partly due to widespread belief that climate risks could be dealt with by incremental autonomous responses (Burton,

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2008), and partly due to concerns held by policymakers that emphasizing adaptation would direct attention away from the urgent need for mitigation (Swart & Raes, 2007). However, there is scientific consensus that human action is interfering with the climate, causing measurable and often deleterious changes in socio-ecological systems (IPCC, 2014a). These changes are occurring more rapidly than most scientists initially anticipated, and projections suggest that impacts will continue to worsen (IPCC, 2014a).

Actors in civil society and industry have failed to adequately mitigate their emissions (IPCC, 2014a). Furthermore, intergovernmental progress to negotiate adequate and binding emissions reduction targets has been slow, and has been disrupted by political leaders such as the American President Donald Trump who has reversed pre-established emissions reduction targets (Costanza, 2017). As a result, adaptation now occupies a prominent place in global scientific and policy discourses and is seen as an essential means of addressing climate change vulnerability – ‘the propensity or predisposition to be adversely affected’ (IPCC, 2014b, p. 5) – under the United Nations Framework Convention on Climate Change (UNFCCC). Adaptation experts are now anticipating and planning for an increase of 4°C or higher in mean global temperatures by 2100 (World Bank, 2012). Scientists, experts, governments and local communities insist that planned and proactive adaptation support is imperative, since autonomous and incremental adaptation actions are unlikely to achieve the extensive and often transformational adaptation required to address the threat that climate change poses for vulnerable communities (IPCC, 2014b).

The perceived need to adapt to a likely 2–4°C rise in global temperature over the next century has prompted international discussions over who bears responsibility for driving and financing adaptation efforts. The scientific community has highlighted that members of poor and marginalized groups tend to be highly vulnerable to climate change, and yet tend also to have low per capita greenhouse gas emissions (IPCC, 2014b; Knox, 2014; Stern, 2007). Drawing on this evidence, advocates for ‘climate justice’ suggest that it is unfair for those least responsible for climate change to face its most adverse consequences (Huq & Reid, 2007) and contend that the governments and peoples of developed countries (which bear primary responsibility for climate change) have a responsibility not only to dramatically reduce their carbon emissions, but also to provide funding and support for planned and proactive adaptation in developing countries and regions (Ayers & Huq, 2013; UNFCCC, 1992).

Climate justice advocates also argue that at least some adaptation support must be pro-poor – directed towards poor and marginalized communities (Kates, 2000; OECD, 2003; Ribot, 2009; Tanner & Mitchell, 2008) – since many poor communities cannot sufficiently meet their adaptation needs through autonomous actions (Ayers &

Dodman, 2010; Yohe, Burton, Huq, & Rosegrant, 2007). Analysts argue that the capacity of poor people to adapt is constrained by a number of factors, including a lack of land, and limited access to productive credit, markets, technology, public services, reliable infrastructure, formal education, networks that allow for collective action and opportunities to gain new knowledge and skills (Ensor & Berger, 2009b). These constraints often prevent the poor from migrating or adopting alternative livelihoods. Some analysts contend that poor people also tend to live in environmentally risky areas – such as low-lying coastal deltas, which tend to be remote from services and information, prone to disasters and economically unproductive. In rural areas, where over 78% of the world’s poor people reside (Olinto, Beegle, Sobrado, & Uematsu, 2013, p. 6), climate change is seen to threaten the viability of natural resource-based livelihoods, on which many of the world’s poor rely (Cannon, 2014; IPCC, 2014b).

Under the UNFCCC mechanism, commitments have been made to mobilize USD 100 billion annually by 2020 onwards, to support climate action in developing countries (Fukuoka et al., 2014; IPCC, 2014b). This presents an opportunity to provide large-scale financing for adaptation projects targeting vulnerable communities. It remains unclear, however, which adaptation approaches and measures are most socially just, effective and cost-efficient (Mustelin, 2013). Some analysts have highlighted the deficiencies of conventional top-down approaches to development, on which many adaptation strategies have been modelled. Their analyses indicate that top-down development tends to be bureaucratic, elitist, costly, and short-lived (Chambers, 1997; Mansuri & Rao, 2004). Similarly, top-down adaptation efforts to date have reportedly failed to provide adequate adaptation support to those most vulnerable to climate change (Ayers & Huq, 2013; Reid, 2014a). Critics contend that a top-down adaptation approach privileges hard infrastructure projects and technological responses to discrete climate impacts, rather than initiatives to strengthen the long-term adaptive capacity of vulnerable groups (Reid, 2014a).

Since the 1990s, top-down developmental approaches have increasingly been supplanted by participatory, bottom-up and community-driven approaches (Chambers, 1997; Mansuri & Rao, 2004). Similarly, contemporary adaptation discourses reflect a growing appreciation for the value of bottom-up approaches, which seek to improve the long-term wellbeing of climatically vulnerable groups by encouraging community ownership of locally relevant interventions. Bottom-up approaches are observed to have the potential advantages of reducing costs, enhancing participation of local stakeholders, mobilizing local knowledge, decreasing administrative burdens, improving local accountability and transparency, and improving outcomes for targeted populations (Binswanger-Mkhize, De Regt, & Spector, 2010; Chambers, 1997).

### 3. Guiding principles of CBA

The term ‘Community-Based Adaptation (CBA)’ first came into usage in 2005, described as an approach to adaptation research and practice that explicitly focuses on the communities most vulnerable to climate change (Ayers & Huq, 2009). The CBA approach is receiving increased attention at the international level, including at the Conference of the Parties to the UNFCCC, and CBA papers are increasingly being synthesized into IPCC reports. Despite its growing popularity and use, CBA remains poorly conceptualized. In this section, we aim to provide a broad yet concise overview of the guiding principles of the CBA approach, based on our analysis of the relevant literature on CBA, our experiences working in and with the CBA community of practice, and informal discussions held with practitioners, advocates, researchers and critics with expertise in the field. The CBA approach will be critiqued in Section 3, which describes challenges of implementing CBA, and suggests opportunities to enhance its effectiveness.

Broadly speaking, CBA is an attempt to break away from hegemonic discourses of climate change vulnerability and adaptation. It uses the principles of bottom-up and participatory adaptation to amplify local voices in decision-making processes and support local solutions to self-identified problems (Warrick, 2011). CBA is defined by its proponents as ‘a community-led process, based on communities’ priorities, needs, knowledge, and capacities, which should empower people to plan for and cope with the impacts of climate change’ (Reid et al., 2009b, p. 13). Practitioners of CBA identify and work in partnership with place-based communities to improve their capacity to adapt to climatic variability and change (Ayers & Forsyth, 2009; Ayers & Huq, 2009, 2013; Dodman & Mitlin, 2013; Ensor & Berger, 2009b; Ensor, Berger, & Huq, 2014; Forsyth, 2013; Huq & Reid, 2007; Magee, 2013; Miyaguchi, 2011; Reid et al., 2009a; Schipper, Ayers, Reid, Huq, & Rahman, 2014). The grounded, place-based, bottom-up, and pro-poor agenda of CBA has led to increased recognition of the approach internationally.

CBA practice comprises project implementation, policy formation and action research. However, CBA is more than a project, it is a socio-political landscape where the decisions on adaptation are based on the needs and priorities of those who will be affected the most. At the level of implementation, CBA is largely supported and funded by non-governmental organizations (NGOs) and/or government agencies – in collaboration with local ‘communities’. The key proponents in the institutional framework of CBA include:

- Financing agencies:
  - Multilateral: The World Bank, and UN agencies such as the United Nations Development Programme (UNDP); and,

- Bi-lateral: overseas aid agencies such as those of the UK, Australia, US and Canada;
- Facilitation, planning, research and advocacy agencies:
  - International NGOs such as OXFAM, Practical Action, Action Aid, and CARE;
  - Government agencies, national, regional and local; and,
  - Universities, and non-governmental research institutes such as the International Institute of Environment and Development (IIED), The International Centre for Climate Change and Development (ICCCAD), The Bangladesh Centre for Advanced Studies (BCAS), and the Overseas Development Institute (ODI);
- Implementation:
  - place-based communities;
  - local NGOs;
  - community-based organizations (CBOs).

CBA can be conceptualized as a movement, since it involves a community with a shared interest in advocating for institutional and financial support for vulnerable communities to adapt to climate change. CBA is also a community of practice (Gundel et al., 2013) with members drawn from fields including disaster risk reduction, natural resource management, sustainable livelihoods and development. In principle, this transdisciplinary approach allows CBA to contribute not only to building local capacity to adapt to climate stress, but also to promoting human development, poverty reduction, livelihood security, ecological conservation and climate change mitigation. CBA largely operates within an ‘action research’ model, involving ‘learning-by-doing’ (Huq, 2011), which allows practitioners to feed lessons learnt in practice into theoretical frameworks, improving the integration of adaptation theory and practice (Patwardhan, Downing, Leary, & Wilbanks, 2009).

The CBA community of practice is organized around an annual (previously biannual) conference, held since 2005, attended by stakeholders from governments, intergovernmental, multilateral and bilateral institutions, aid and donor agencies, NGOs, civil society organizations, research institutions and communities themselves. The aim of the CBA conferences is to share knowledge, strengthen connections, build capacity and inform policy and practice (Reid et al., 2015). The community of practice is also supported by an online platform, GICBA – the Global Initiative on CBA (WeADAPT, 2017).

The objective of CBA practice is to enable communities to drive their own self-sufficient and sustained adaptation by allowing them to determine the methods and goals of adaptation for themselves (Dodman & Mitlin, 2013; Ensor, 2014; Reid et al., 2009b). This is achieved through a process of empowerment that involves mobilizing the energy, effort, enthusiasm, knowledge and



experience of individuals and communities (Reid et al., 2009b). Thus, CBA is ‘about the community making choices, not having them imposed from outside’ (Jones & Rahman, 2007, p. 28). CBA policies and interventions should reflect local values, priorities and conceptions of wellbeing – as opposed to those of external actors – and ‘should be done *with* rather than *to* or *for* communities’ (Warrick, 2011, p. 3). In order to ensure that local communities drive adaptation, NGOs and governments cannot direct adaptation efforts. Their role must be facilitative and supportive. In some cases this involves devolution: delegating authority and power to the local level, typically through existing institutional structures (Dietz, Ostrom, & Stern, 2003). Decentralization and devolution of decision-making authority and administrative control are considered necessary to mainstream CBA into existing development processes (Regmi & Star, 2014).

In well-executed CBA projects, local peoples participate in all stages of the process – from assessment and planning, through to implementation and evaluation – and all sections of local society and relevant stakeholders are represented. *Active, free, and meaningful* participation ensures that vulnerability assessments and the development of appropriate adaptation responses are guided by local priorities, concerns, vulnerabilities and capacities – as articulated by the people themselves, according to their cultural perspectives. Effective participatory processes not only have the potential to strengthen local autonomy (Chambers, 1997), but are also likely to result in adaptation actions that are suitable to the local context and congruent with local worldviews, beliefs, values and aspirations (Reid et al., 2009b). Such adaptation measures are more likely to be adopted and endorsed by targeted communities, and thus more likely to produce more effective and sustainable outcomes (Sherman & Ford, 2014).

Top-down inputs of information, expertise and technology are often required, as part of CBA practice, to strengthen local adaptive capacities. Meteorological projections and technical information about adaptation options may need to come from government, NGOs and other non-local sources. Moreover, top-down attempts to educate people about climate change and the need for adaptation have the potential to improve the ability of local peoples to predict, prepare for and respond to climatic changes in ways that serve their interests (Williams, Fenton, & Huq, 2015). Top-down and bottom-up inputs are not mutually exclusive, however. In many cases, CBA researchers and practitioners work with local peoples to co-produce local and scientific knowledges, technologies and approaches in order to develop adaptation strategies that reflect changing local circumstances (Armitage, Berkes, Dale, Kocho-Schellenberg, & Patton, 2011; Kelman, Mercer, & West, 2009).

Climate change is only one among many natural, social and economic risks faced by communities; some of the

most entrenched problems facing communities in the developing world reflect pre-existing development issues (Ayers & Huq, 2013). Interventions that target climate risk at the expense of other stressors often fail to address the full range of community priorities (Reid et al., 2009b), and analysts suggest that interventions designed to address specific climate risks are unlikely to succeed if they do not also address the underlying factors that make people vulnerable (Smit & Wandel, 2006). For CBA advocates, the limited scope and efficacy of interventions tailored to specific climate risks highlights the value of an approach that seeks to build overall adaptive capacity. Proponents also suggest that CBA practice must be cognizant of the role that ecosystem conservation and natural resource management play in adaptation planning, particularly for poor communities, which are often disproportionately reliant on natural resources for their lives and livelihoods (Giroto, Ehrhart, & Oglethorpe, 2012; Jeans, Oglethorpe, Phillips, & Reid, 2014; Reid, 2014b).

In addition to being community-driven, CBA is a *vulnerability-led* approach: it begins with an assessment of a group’s climate-related vulnerabilities and the factors that underlie them (Ensor & Berger, 2009b). Such an assessment recognizes that vulnerability to climate change is a function not just of exposure to climate-related stressors, but also of an array of interacting economic, social, physical and cultural factors (Ayers & Huq, 2013). CBA practitioners attempt to address vulnerabilities by working to strengthen communities’ ‘adaptive capacity’: ‘The ability of systems, institutions, humans, and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences’ (IPCC, 2014d, p. 2). Adaptation approaches that focus on strengthening adaptive capacity have sometimes been described as ‘adaptation as development’ approaches (Ayers & Dodman, 2010), since building adaptive capacity not only improves communities’ ability to deal with climate stress, but also often addresses existing ‘development deficits’ (Parry et al., 2009). This approach is closely linked with the principle of ‘no regrets,’ according to which CBA practitioners work with communities to strengthen the overall adaptive capacity to environmental change regardless of whether or not specific climate change impacts manifest (Ensor & Berger, 2009b, p. 16; Heltberg, Siegel, & Jorgensen, 2009).

CBA is also *strengths-based*. CBA practitioners attempt to identify and engage the existing adaptive capacities of vulnerable groups, using lessons from successful autonomous adaptation efforts to develop planned adaptation measures. Humans have been adjusting autonomously to climatic and biophysical stresses for all of human history (Orlove, 2005), and many communities have embraced a culture of adaptability, innovation and experimentation in order to survive and flourish in marginal environments and in variable and extreme climates (Berkes & Jolly, 2001; Ensor & Berger, 2009a). For

example, many communities living in low-lying coastal deltaic environments have developed practices, technologies and ‘ways of thinking’ that enable them to survive in their environments (Ayers & Forsyth, 2009).

CBA was initially conceptualized as a ‘projectized’ approach – implemented as small-scale, localized, stand-alone, short-term, NGO-led projects (Ayers & Forsyth, 2009). Such projects were useful pilots. They showed practitioners, donors, NGOs and governments how ‘strengthening adaptive capacity’ and ‘building climate resilience’ may or may not work, and helped to build institutional capacity for broader-scale climate change planning (Ayers, Huq, Faisal, & Hussain, 2014). However, small-scale CBA ‘projects’ may only produce small ‘islands of success’ (Huq & Faulkner, 2013), insufficient to meet the adaptation needs of the vast populations of climatically vulnerable peoples (Pelling, 2011; Schipper et al., 2014; UNDP-UNEP, 2011).

For this reason, CBA analysts have begun to focus on the need for *scaling-up* and *scaling-out*. *Scaling-up* means scaling the CBA approach *vertically* – from the local level to higher levels of decision-making, regionally, nationally and/or globally in order to feed local insights and needs into broader-scale policy and planning processes (Reid & Schipper, 2014). *Scaling-out* means expanding CBA horizontally – applying lessons learned from projects to large-scale endeavours, and/or expanding local adaptations over a large geographic area (Reid & Schipper, 2014).

The imperative of *scaling up* and *scaling-out* CBA also emerged from the recognition in the CBA community of practice that, although climate change is felt locally, its effects cross geographic and political boundaries, and many of the factors contributing to local vulnerabilities originate outside the community (Reid & Schipper, 2014; Yates, 2014). Analysts of CBA concluded that the focus of adaptation practitioners had to extend beyond the community-scale in order to effectively strengthen the adaptive capacities of local communities (Yates, 2014). This meant transforming broader-scale enabling conditions, including regional, national and international-level plans, policies, processes and power structures (Schipper et al., 2014), as well as market or economic dynamics, political or governance factors, and access to services (Dixit, McGray, Gonzales, & Desmond, 2012; Ensor & Berger, 2009b; Yates, 2014).

The advantages of an approach that seeks to build overall adaptive capacity have led many analysts to call for development and adaptation ‘mainstreaming.’ ‘Mainstreaming’ typically means integrating adaptation priorities into development planning, or development priorities into adaptation planning, and can include activities ranging from ‘climate-proofing’ development to finding transformational opportunities for building climate resilience (Ayers et al., 2014). Proponents of mainstreaming (Ayers et al., 2014) argue that mainstreaming adaptation and

development can address mutual concerns more effectively than a siloed approach (Ayers et al., 2014; Ayers & Dodman, 2010; Huq et al., 2004; Klein, Schipper, & Dessai, 2005), while avoiding maladaptation that might result from trade-offs between adaptation and development priorities (Ayers & Huq, 2009, 2013; Ayers et al., 2014; Huq & Ayers, 2008; Huq et al., 2004; Klein et al., 2005). In theory, mainstreaming allows both government and non-government stakeholders to achieve maximum impact at scale (benefitting more people across broader geographic areas), and use resources efficiently, since it does not require them to design and manage separate adaptation and development programmes (Ayers & Huq, 2009, 2013; Huq & Ayers, 2008; Huq et al., 2004; Klein et al., 2005).

The process of mainstreaming CBA is perhaps best illustrated by the case of Nepal. The Government of Nepal have developed Local Adaptation Plans of Action (LAPAs), which feed into the National Adaptation Programme of Action (NAPA), and which embed local priorities, needs and capacities into national-level planning, policies and action (Government of Nepal, 2011). This system represents a national commitment to addressing local priorities, and establishes a clear mechanism for integrating local needs and concerns into national-level policy. Despite providing a useful example of policy mainstreaming, the LAPA process has faced challenges in practice (Fenton, Gallagher, Wright, Huq, & Nyandiga, 2014), illustrating the difficulty of integrating elements of CBA into top-down planning while continuing to address the needs of the poor. Lessons learnt from programmes like this, as well as from CBA pilots across the globe, can help practitioners bring local-level adaptation innovations to scale (Reid & Schipper, 2014). Highlighting examples such as Nepal, Reid and Schipper (2014) suggest that it is possible, albeit difficult, for the priorities of communities to remain central when CBA is scaled-up.

#### 4. Challenges in implementing the CBA approach

The CBA approach is described by its advocates as empowering, participatory, community-led and strengths-based. However, the approach faces many conceptual and practical challenges. In this section we present a sympathetic but critical analysis of CBA’s key challenges. We hope that this critique will provide direction as to how the approach may be improved, in terms of its fairness, achievability, cost-efficiency and effectiveness. This analysis also provides a direction for future research.

##### 4.1 Equating poverty with vulnerability to climate change

The IPCC AR5 report suggests that poverty is a key determinant of vulnerability to climate change, and that poor

communities are often highly vulnerable to climatic hazards (IPCC, 2014c). Advocates of pro-poor adaptation highlight the linkages between poverty and vulnerability in order to argue that ‘poor and marginalised communities’ should be prioritized for adaptation financing and support (Ayers & Huq, 2013; Huq et al., 2004; Ribot, 2009; Yohe et al., 2007). However, poverty does not always mean vulnerability. While there is a linkage between them, it is not appropriate in all cases to equate poverty with vulnerability. Some poor communities, if they had a stronger voice, might dispute claims that they are ‘most vulnerable’. They may also disapprove of top-down, power-laden and non-participatory decision-making structures that allow powerful actors to determine who is most vulnerable. As detailed in Section 2, many communities have intrinsic, and often intangible, adaptive capacities that are embedded in their culture and often overlooked in mainstream assessments of vulnerability.

#### 4.2 *Adaptation as additional to and distinct from development*

In practice, CBA interventions often resemble mainstream development actions, since, in order to address factors that underlie local vulnerabilities, CBA practitioners must address existing ‘development deficits’. The result is that ‘adaptation’ activities at the community-scale often coincide with activities necessary for ‘sustainable development’ (Ayers & Dodman, 2010; Ayers & Forsyth, 2009; Warrick, 2011). Unlike ‘sustainable development,’ however, CBA addresses the current and potential future impacts of climate change on livelihoods and disaster vulnerability (Reid, 2014b). In this sense, the differences between adaptation and development at the local level are not principally in the intervention itself, but in the way that interventions are developed – ‘not *what* is being done at the community level, but *why*, and *with what knowledge* – or, more specifically, *whose knowledge*’ (Ayers & Huq, 2013, p. 212).

CBA researchers and practitioners debate whether CBA should form a discrete field of theory and practice – separate not only from sustainable development, but also from climate change adaptation. The overlap between community-based ‘adaptation’ and community-based ‘development’ has presented problems for developing policy mechanisms for CBA (Ayers & Dodman, 2010). This overlap has also complicated CBA financing, since donors controlling adaptation finances often require their implementing partners to demonstrate that project activities are specifically contributing to climate change adaptation (Berger & Ensor, 2014, p. 5).

It remains contested whether CBA should involve the development of new approaches and institutions, or be ‘normalized’ and integrated into existing frameworks for adaptation and development. Although CBA differs

considerably from traditional development, treating CBA as a discrete field of practice poses its own risks, and cannot be assumed to be beneficial for ‘those most vulnerable’. This is in part because framing adaptation as ‘additional’ to development amounts to artificially separating climate-related stresses from existing development issues (Warrick, 2011). A separation of this sort not only risks overlooking the underlying drivers of climate vulnerability, but may also mean that CBA could fail to be integrated into the implementation of the post-2015 Sustainable Development Goals. Framing CBA as a discrete field may also encourage the CBA community to become insular and self-referencing, potentially overlooking important contributions from other disciplines. Furthermore, divorcing CBA from the broader development research agenda risks excluding relevant knowledge about how a changing climate might affect development priorities (Schipper, 2007).

#### 4.3 *Achieving participatory community-led engagement*

The notion of ‘participatory’ engagement – allowing local communities to engage in decision-making related to adaptation – has gained considerable purchase in the discourses and literature on CBA (Reid et al., 2009a). However, CBA actors have largely overlooked critiques of participation (e.g. Cooke & Kothari, 2001). In a critique from the field of development, Mansuri and Rao (2013, p. 3) question the value of participatory engagement, asserting that the popularity of participatory processes tends to be ‘driven more by ideology and optimism than by systematic analysis, either theoretical or empirical’.

Despite examples illustrating how the efficacy of adaptation projects can be enhanced through participatory engagement (e.g. see: Conde & Lonsdale, 2005; Steynor, Gawith, & Street, 2012), participatory approaches face a number of challenges. Participatory processes cannot be assumed to work in every case, to have intrinsic and instrumental value or to lead to improved project outcomes (Burton & Mustelin, 2013; Mansuri & Rao, 2013; Preston, Mustelin, & Maloney, 2015). In practice, participatory processes have often been reduced to a means for powerful institutional actors to legitimate and build public acceptance for pre-determined agendas, policies and interventions (Leach, Scoones, & Wynne, 2005). In these cases, actors have presented citizens with a pre-set menu of development options, rather than enabling citizens to shape development agendas based on their own priorities (Gaventa & Cornwall, 2001). In other cases, ‘participation’ has involved outside actors inappropriately imposing technical and complex decision-making processes upon local civil society (Leach et al., 2005).

Even when participatory engagement is done with good intention, meaningful participation is difficult to achieve

for several reasons. First, the system of knowledge production on which most adaptation efforts rely privileges western science over local knowledges, limiting what local peoples are able to contribute to adaptation planning and implementation processes. The dominant scientific framing of climate impacts – as primarily biophysical phenomena – reflects the reductive scientific and technocratic biases of the international adaptation community (Warrick, 2011). Even though this framing often appears objective and politically neutral, reducing climate impacts to biophysical changes privileges top-down techno-scientific responses (technical solutions) to particular climate stressors, while undermining sustained efforts to strengthen adaptive capacity across scales (Warrick, 2011). Privileging the knowledge systems of powerful institutional actors (‘experts’, ‘scientists’ and ‘professionals’) risks subordinating local knowledges, perspectives, priorities and values (Chambers, 1997; Leach et al., 2005; Warrick, 2011). The result is the inhibiting of meaningful and inclusive participation and community self-determination, as well as the devaluing of local adaptive capacities.

Second, inequitable distributions of power within a community can limit inclusive participation and effective adaptation, since power relations affect the way that decisions are made, and with what effect (Mansuri & Rao, 2013). In many cases, those in power – the wealthier, more educated and higher social status ‘elite’ – are not only over-represented in participatory activities, but also strongly influence project outcomes and sometimes unfairly capture the majority of project benefits (Cooke & Kothari, 2001; Wong, 2010). In instances where power differentials contribute to local vulnerabilities and inhibit fair and equitable adaptation, CBA interventions may need to play a role in shifting power dynamics.

Furthermore, participatory adaptation decision-making is likely to be challenged by diverse and potentially conflicting worldviews, values, priorities and perspectives – within local communities, between local populations and external organizations, and within and between organizations (Mustelin, 2013). It is unlikely that all stakeholders will unanimously support any prospective adaptation measures. Moreover, participation in adaptation planning and implementation is not always warranted. Some stakeholders may not be interested in participating, may not have sufficient time, may have other priorities, or may not find climate change adaptation relevant to their institutional mandates (Mansuri & Rao, 2013; Preston et al., 2015). Further research is needed to determine in which instances participatory processes may be desirable, appropriate or feasible in CBA practice.

Some local communities and their supporting institutions may also disdain, distrust or be sceptical of external actors, particularly development agencies and governments. Scepticism and resistance are likely to be strongest in communities subjected to colonization, top-down and

state-led development, marginalization and exploitation – particularly aboriginal, indigenous, and other ethno-cultural minority groups (Scott, 2010). Overcoming this resistance might require external actors, including CBA practitioners, to engage in sustained efforts to build *social capital* – both in the community itself, and between the community and external organizations (Mansuri & Rao, 2004). Doing so must involve acts of reciprocity, building trust and demonstrating responsiveness and accountability to the community (Mansuri & Rao, 2004). The participatory approaches employed must be relevant and appropriate to local socio-cultural contexts (Cooke & Kothari, 2001; Ensor et al., 2014). Sustained facilitation, careful design and an enabling policy environment are likely to be key to achieving effective participation (Mansuri & Rao, 2004).

#### 4.4 *Recognizing complex realities of ‘local communities’*

The term ‘community’ usually implies a cohesive group of people with a shared culture, a willingness to work collectively to make decisions, plan and act, and an orientation around homogeneous values, aspirations and goals (Murphree, 2000; Panelli & Welch, 2005). However, such a romantic notion of ‘community’ does not often reflect reality (Pandey, 2005), and CBA practitioners should resist viewing groups of local peoples as stable ‘communities’. Instead, practitioners should understand ‘communities’ as loosely connected, economically stratified, socio-culturally heterogeneous entities with limited social cohesion (Miyaguchi, 2011). ‘Communities’ tend to contain diverse beliefs, values, languages and histories, and are heterogeneous in their priorities, needs, vulnerabilities and capacities, with such differences often outweighing commonalities (Murphree, 2000; Reid et al., 2009b). Moreover, ‘community’ members tend to have different levels of power and access to knowledge, resources, and decision-making structures – inequalities which are typically differentiated along lines of gender, religion, ethnicity, age and class (Yates, 2014). In particular, women, children and low-caste persons are often excluded from decision-making and planning. ‘Communities’ also lack stable geographic boundaries, since a range of structures – for example, markets, political institutions, kinship ties – connect them with groups in different places (Yates, 2014).

#### 4.5 *Co-producing adaptation strategies through integration of local and scientific knowledges*

In principle, CBA attempts to integrate local and ‘western scientific’ knowledge systems. This integration is difficult to achieve in practice, however, since local and ‘western scientific’ knowledge systems are embedded in different and often contrasting ontologies, epistemologies and



values (Dietz et al., 2003). In many cases, external actors are reluctant to trust local knowledges, which are believed to lack rigour, and conversely, local people sometimes question the credibility, relevance or legitimacy of information provided by external actors (Cash et al., 2003). Even when local knowledge is relevant, so far ‘the transfer of knowledge and practice from local adaptation experience appears to be rare’ (Wright et al., 2014, p. 319), despite evidence that local innovations – for example, in agricultural practices – can spread to other areas and groups (Rogers, 2003). On the other hand, technical solutions derived from Western science and implemented by external actors can be useful, but may prove ineffective if they are not legitimized through participatory processes, fail to respond to local priorities or are not accompanied by the required skill and knowledge building – if, in short, they are not ‘owned’ by communities.

Ultimately, local knowledge should not be assumed to be a panacea for adaptation (Kelman et al., 2009). Some local knowledge is becoming less relevant in the context of rapid global social and environmental change (Lebel, 2013), and, in some cases, may conflict with and encourage resistance to transformational change. Furthermore, romanticizing local knowledge can sometimes result in its usurping Western science as the hegemonic knowledge system (Briggs, 2005) – a situation Cleaver (1999, p. 605) describes as ‘swinging from one untenable position (“we know best”) to an equally untenable and damaging one (“they know best”)’.

#### **4.6 Tailoring to local cultural contexts**

In principle, CBA practitioners are responsive to local cultural contexts (Ayers & Forsyth, 2009; Ayers & Huq, 2013; Dodman & Mitlin, 2013). However, concepts like ‘cultural sensitivity’ receive only superficial treatment in the literature and discourse on CBA, and ‘culture’ is often conceptualized and deployed in a way that overlooks its contested, complex and dynamic nature. This suggests that the nexus between culture and CBA is poorly understood in theory, and gives little reassurance that ‘tailoring to local cultural contexts’ is being realized in practice.

We suggest that cultural factors may contribute to community-level vulnerabilities (inhibiting adaptation) and adaptive capacities (enabling adaptation). As described in Section 2, many communities have evolved a culture that is inherently adaptive and resilient. However, cultural factors can also underpin vulnerabilities, and inhibit fair, equitable and meaningful adaptation. For example, cultural norms can inhibit the capacity of women and/or low-caste persons to adopt alternative livelihoods, or contribute to participatory decision-making processes (for an example from Nepal, see: Jones & Boyd, 2011).

Further research is needed to understand how local cultures – including the worldviews, beliefs, values and

motivations of local peoples – influence pathways and outcomes of both planned and autonomous adaptation. A deeper understanding of local cultural contexts, and the cultural lens of local peoples, could lead to greater participation, as well as the formulation of policies and interventions that are more appropriate to local cultural contexts. This would likely improve community ownership, and therefore the effectiveness and sustainability, of adaptation policies and interventions.

Further discussion is needed to determine whether the practice of CBA (and, more broadly, mainstream development) should drive local socio-cultural change – whether CBA has a role to play in changing cultural norms and practices, and/or provide an enabling environment for cultural change. Deploying CBA as a tool of cultural change risks allowing external actors to use their own worldviews and value-laden perspectives to judge what is ‘right’ and ‘wrong’ in local cultures. In short, it risks cultural imperialism – an approach embedded in historic modernistic approaches to development, in which powerful actors from the Global North set the agenda for development in the Global South. This issue remains highly contentious and has been largely avoided by institutional actors, many of whom have sought to maintain a neutral standpoint in order to avoid being seen as imposing on local peoples. We suggest that the political, cultural and religious sensitivities that have, until now been tip-toed around, ought to be transparent and more honestly addressed in contemporary praxis.

#### **4.7 Negotiating institutional barriers**

The efforts of institutions (e.g. governmental and non-governmental organizations) to effectively implement CBA are constrained by a lack of coordination between implementing actors, vested interests and opportunity costs, the influence of powerful local stakeholders, and contrasting values, motivations and perspectives (Ayers et al., 2014; Regmi & Star, 2014; Reid et al., 2013; Wright et al., 2014). Moreover, institutional capacity to implement CBA has been limited by a lack of adequate services, expertise, human resources and incentives (Wright et al., 2014). Governments, moreover, can be slow to take action and may fail to pay adequate attention to the needs of the poorest and most vulnerable (Wright et al., 2014). Governmental and non-governmental organizations may also be out of touch with local realities and priorities, causing their projects to fail to achieve genuine and inclusive civil participation (Reid, 2014b), ensure local ‘ownership’ over decisions and resources, and accommodate the diversity of local priorities (Wright et al., 2014). Empowerment and socio-cultural change – hallmarks of the CBA approach – can be difficult to achieve within the constrained time-frames, budgets and organizational structures of conventional NGO- and government-led projects (Reid, 2014b).

These barriers have been particularly apparent in the process of mainstreaming CBA into national-level plans, policies and actions, and scaling up CBA initiatives (Wright et al., 2014). The process of mainstreaming CBA has been particularly difficult in developing countries (Ayers et al., 2014; Regmi & Star, 2014) due to corrupt and unstable political systems with rapidly shifting political agendas, as well as underdeveloped structures of governance, markets, policy and regulation (Wright et al., 2014). In some cases, attempts to mainstream CBA into national-level planning efforts risk undermining core principles of CBA – a community-driven, participatory and bottom-up approach – and subordinating community priorities to those of government actors (Wright et al., 2014).

For CBA to remain community-centred but go beyond the local project scale, it needs to be embedded in a system of governance that supports local decision-making within a broader planning and implementation framework (Regmi & Star, 2014). Achieving this ‘devolution’ is critical. It is particularly important for governments to achieve devolution, since only governments have the capacity to operate at the scale needed for effective adaptation. For devolution to be effective, each level of government – federal, state and local – needs to have the appropriate level of authority, responsibility and capacity. The Government of Nepal is currently a world-leader in achieving ‘devolution’ in their planning for climate change adaptation – through their national framework on local adaptation plans for action (LAPA) (outlined in Section 2).

#### 4.8. Deficiencies in financing

Under the Paris Agreement, adopted by the UNFCCC in 2015, commitments have been made for developed countries ‘to a collective goal of providing USD 100 billion per year to 2025, and beyond 2025 with USD 100 billion as a floor’ in order to support climate action in developing countries (Climate Focus, 2015, p. 2). However, the share of this funding to be allocated to adaptation is yet to be decided (Fenton et al., 2014). Furthermore, contributions to date to climate funds under the UNFCCC have been grossly inadequate (Fenton et al., 2014). Moreover, given that adapting to a 2°C warmer planet by 2050 is estimated to cost USD 70–100 billion a year until 2050 (World Bank, 2010), the current level and pace of financing may be insufficient to meet the adaptation needs of billions of vulnerable people (Fenton et al., 2014).

The total amount of climate finance being channelled towards CBA remains unknown, but it is likely that CBA initiatives are predominantly financed through official development assistance (ODA), multilateral agencies and government funds (Fenton et al., 2014). There is, however, a lack of commitment at the international level

to channel adaptation finances to local actors, and the mechanisms set up to finance local adaptation remain underdeveloped (Fenton et al., 2014). This is occurring despite general agreement that most adaptation must occur at the local level, and that the work of local institutions is critical in ensuring that adaptation is effective (Agrawal, 2008). Difficulties in accessing financing have constrained efforts to mainstream CBA into government policies and programmes (Wright et al., 2014).

Without an international commitment to financing local adaptation, funds mobilized under the UNFCCC will likely continue to be used to finance top-down adaptation efforts. These efforts may suit the interests of powerful stakeholders and allow for more transparent financial accounting (Brown & Kaur, 2009), but they may not be able to effectively address the needs of vulnerable local communities (Fenton et al., 2014). The overlap between community-based ‘adaptation’ and community-based ‘development’ has also presented problems for financing CBA (Ayers & Dodman, 2010), since climate change adaptation finances flowing through multilateral institutions cannot currently be used to fund activities that seek to rectify ‘adaptation deficits’ (Fenton et al., 2014). Considerable financial and in-kind support for CBA will likely need to come from communities themselves, with multilateral and bilateral funds playing a catalytic and supportive role in fostering CBA (Reid, 2015, Pers. Comm.).

#### 4.9. Demonstrating effectiveness of CBA activities

There has, so far, been inadequate monitoring and evaluation (MandE) to assess the effectiveness of CBA programmes, policies and interventions. MandE frameworks for CBA programmes exist (CARE, 2014; Faulkner & Ali, 2012; Faulkner, Ayers, & Huq, 2015; Huq & Faulkner, 2013), but few rigorous and comprehensive evaluations of CBA have been completed (Reid, 2014b). There has not been sufficient time for existing MandE frameworks to evolve based on lessons learnt from their initial deployment, and there remains poor coordination among actors designing, implementing and evaluating CBA interventions – as well as inconsistencies in goals, evaluation criteria and terminology between different actors and organizations. Existing MandE frameworks for CBA have been critiqued for focusing on benefits, while overlooking social, economic and environmental costs (Doswald et al., 2014). Moreover, much of the evidence indicating the effectiveness of CBA is anecdotal and gathered from field-level CBA activities (Reid, 2014a), and little evidence exists to date to determine whether CBA can be more effective and cost-efficient than ‘hard’ adaptation projects (e.g. embankments, raised houses, etc.). Existing MandE frameworks for CBA are also weak on measuring ecosystem and natural resource components (Doswald et al., 2014), which is important because

vulnerable communities are often highly reliant on natural resources for their livelihoods and wellbeing (Reid, 2014b).

Robust MandE frameworks, including appropriate metrics of success, are needed to ensure transparency and accountability, and enable practitioners to document successes and failures and develop strategies for improvement. Evidence of success is needed to stimulate the mainstreaming of CBA into existing adaptation and development policies and programmes. Evidence of CBA's effectiveness could also help implementing agencies procure the financing needed to apply the lessons of small-scale local initiatives to other regions and scales. MandE also allows actors to identify and share important lessons that can inform the work of other actors.

If CBA is to be truly participatory, citizens must be involved in MandE processes (CARE, 2014). Community-led MandE not only ensures that adaptation resources are reaching the most vulnerable people, but also assesses the effectiveness of adaptation in terms of community needs, goals and values. Engaging citizens and community-level institutions in MandE processes may be challenging, but CBA practitioners must ensure that attempts to strengthen MandE processes do not undermine the goal of inclusive, participatory and community-driven adaptation.

In addition to a deficiency in MandE, there also remains a dearth of peer-reviewed literature on CBA (noted by: Dumar, 2010, p. 751; Girot et al., 2012, p. 12; Warrick, 2011, p. 69). This is due, in part, to the widespread adoption of an 'action research' approach by CBA practitioners – privileging informal, practical knowledge sharing over academic publication (Huq, 2011). Furthermore, CBA practitioners often work in NGOs and government agencies where it is difficult to dedicate much time to publishing work in academic journals. Practitioners of CBA are also primarily based in the Global South, where there are often fewer incentives and opportunities to publish in peer-reviewed journals (Denton, Anderson, & Ayers, 2011).

#### 4.10 *Transdisciplinary collaboration*

Transdisciplinary collaboration can be challenging, requiring partnerships between practitioners hailing from various disciplines. Often practitioners from different fields hold different and potentially conflicting worldviews, values and motivations, use different professional vocabularies, adopt different approaches, and are constrained by specific policies and financing arrangements. These challenges are encountered across sectors and scales, for example between and within government ministries, academic disciplines and NGOs.

Despite these differences, fields such as climate change adaptation, ecosystem-based adaptation, sustainable development, disaster risk reduction and natural resource management all ultimately aim to improve the wellbeing of local people and their environments. Thus, such fields

can be complementary and overlapping. CBA provides an opportunity for collaboration across fields that have traditionally operated separately, allowing practitioners to achieve mutual objectives and share learning that can improve praxis.

#### 5. **Conclusion: the way forward**

The CBA approach is increasingly being discussed, endorsed and deployed. However, the guiding principles of CBA, and how the approach is to be implemented, remains loosely interpreted, and is occasionally weakly defined and poorly applied. In principle, CBA aspires to be an effective, socially just and sustainable approach to adaptation. It seeks to use adaptation financing to support the adaptation needs of place-based communities that are vulnerable to climate change. The CBA approach is characterized by a bottom-up and participatory process that is inclusive, community-led, strengths-based and empowering. Practitioners attempt to work in partnership with communities to co-produce adaptation measures that are congruent with local cultural contexts, perspectives, priorities and motivations. For its proponents, CBA presents an opportunity to learn from potential failures of top-down, 'one size fits all' approaches to development, as well as 'hard', *impact-led* approaches to adaptation.

However, as with any development paradigm, achieving these goals can be challenging in practice. Attempts to realize the principles of CBA are constrained by deficiencies in financing; embedded institutional cultures and professional attitudes; 'western scientific' framings of adaptation; conflicting interests and diverse perspectives; the challenging realities of seeking participatory, effective and meaningful collaborations between implementing agencies and local communities; and difficulties scaling up CBA activities beyond local stand-alone initiatives and mainstreaming them into national-level policies and programmes.

CBA researchers and practitioners will need to continue to assess and debate the ethics and efficacy of working with local communities. They must also consider how lessons learnt in practice can inform theory, and conversely, how theory can influence practice. Developing an ethic of reflexivity and self-criticism within the CBA community of practice promises to improve the efficacy of the CBA approach and, consequently, the wellbeing of those most vulnerable to climate change.

#### **Disclosure statement**

No potential conflict of interest was reported by the authors.

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