



## Preparing for the health impacts of climate change in Indigenous communities: The role of community-based adaptation

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### ABSTRACT

Climate change presents substantial risks to the health of Indigenous peoples. Research is needed to inform health policy and practice for managing risks, with community based adaptation (CBA) emerging as one approach to conducting research to support such efforts. Few, if any, studies however, have critically examined the application of CBA in a health or Indigenous peoples context. We examine the strengths, challenges, and opportunities of health-related CBA research in Indigenous community settings, drawing on the experiences of the multi-nation interdisciplinary Indigenous Health Adaptation to Climate Change (IHACC) project. Data collection was guided by a framework developed to evaluate CBA projects. Semi-structured interviews ( $n = 114$ ) and focus groups ( $n = 23, 177$  participants) were conducted with faculty-based researchers, institutional partners, community members, students, and trainees involved in the IHACC project in Canada, Uganda, and Peru. Results illustrate the importance of CBA in co-generating knowledge on climate-health vulnerability and adaptation options, capacity building, and informing decision choices. There are also significant challenges of conducting CBA which can have unintended negative consequences, with results emphasizing the importance of managing the tension between health research and tangible and immediate benefits; developing a working architecture for collective impact, including team building, identification of common goals, and meaningful engagement of knowledge users; and the need to continuously monitor and evaluate progress. CBA holds significant promise in a health adaptation context, but only in the 'right' circumstances, where considerable time is spent developing the work with partners.

### 1. Introduction

Climate change has been identified as one of the biggest threats to health this century (Smith et al., 2014; Watts et al., 2015). The impacts on health will be unequal, with Indigenous populations among those identified as highly sensitive, reflecting existing social gradients in health, close relationships with the rapidly changing environment for livelihoods and wellbeing, institutional and educational capacity challenges, and colonial legacies (PROVIA; Ford et al., 2010; Maldonado et al., 2013; Maru et al., 2014). Research has documented climate change to be already challenging human rights, livelihoods, and the

health of Indigenous peoples globally (Ford, 2012). Reflecting existing and projected climate impacts, the importance of adaptation involving policies, measures, strategies, or actions designed to reduce climate change vulnerability and support resilience is increasingly being recognized, and has been identified as a grand challenge for global public health (Costello et al., 2009; Moss et al., 2013; Watts et al., 2015; WHO, 2015). Herein, adaptation is synonymous with prevention in a health context, and may involve primary, secondary, and tertiary interventions (Ebi and Semenza, 2008).

Science has an important role in climate-health adaptation, helping to understand decision processes and information requirements,

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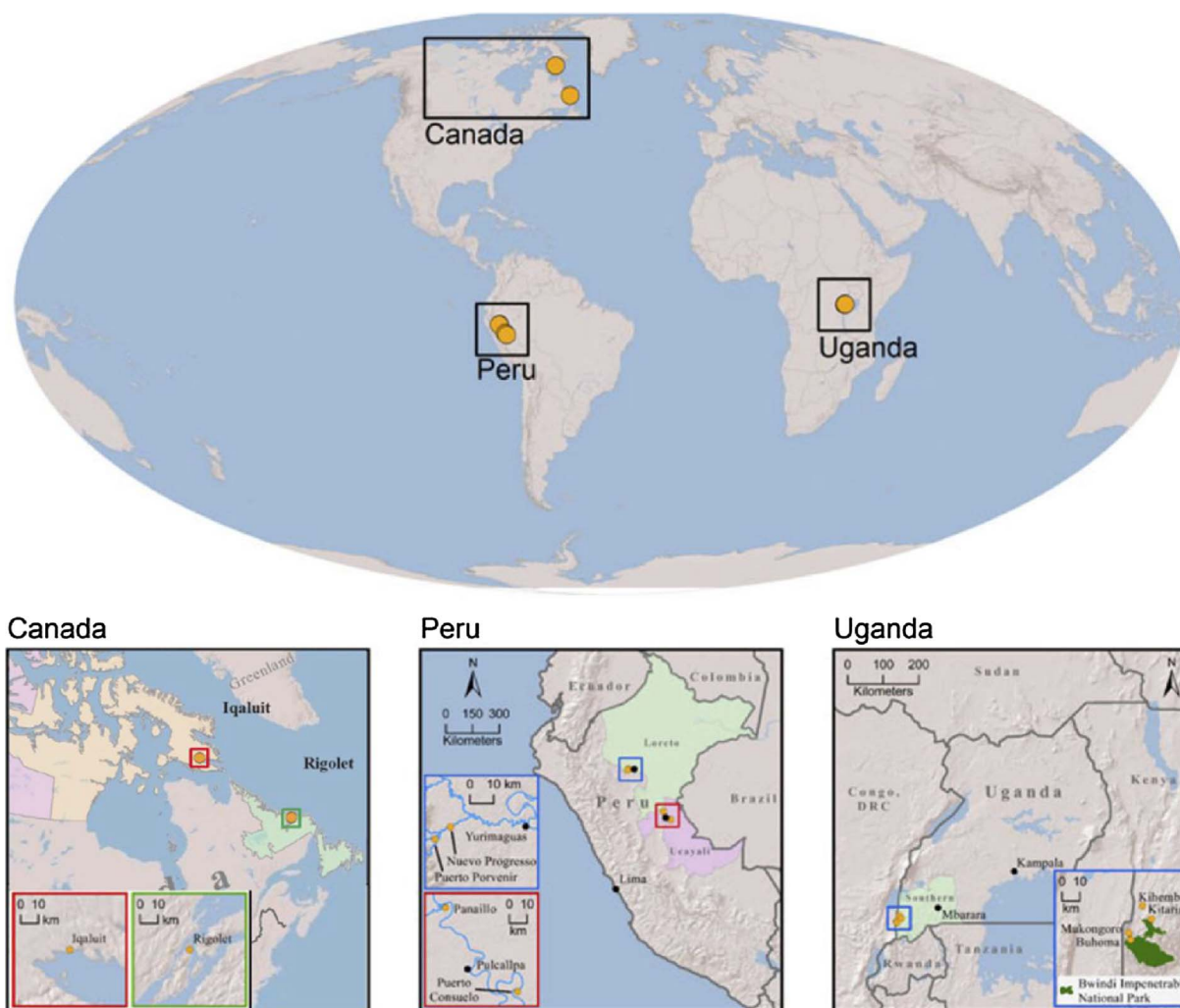


Fig. 1. The IHACC study regions and partner communities.

characterizing current and future vulnerabilities, and for identifying and evaluating potential adaptation options (Ebi and Semenza, 2008; Moss et al., 2013). Adaptation science is expanding rapidly, including research *about* adaptation which seeks fundamental understanding on adaptation processes in human and natural systems, and research *for* adaptation which is explicitly designed to inform policy and practice for adapting (Hosking and Campbell-Lendrum, 2012; Hess et al., 2014; Swart et al., 2014; Preston et al., 2015; Tschakert et al., 2016; Bremer and Meisch, 2017). Community-based adaptation (CBA) has emerged as a key component of research approaches that seek to inform adaptation decision-making (Ebi and Semenza, 2008; Forsyth, 2013; Ford et al., 2016; McNamara and Buggy, 2017; Ensor et al., 2018). Evolving from the participatory action research field, particularly in development studies, CBA can be defined as “a community-led process, based on communities’ priorities, needs, knowledge, and capacities, which empowers people to plan for and cope with the impacts of climate change” (Reid et al., 2009, p13).

CBA emphasizes the importance of researchers and practitioners working in collaboration with communities, in which decision-making is shared and underpinned by frequent dialogue (Ensor et al., 2018). The inclusion of local/Indigenous knowledge is central to CBA projects which are diverse in nature, including work centered on vulnerability assessment, adaptation planning and preparedness, and, more recently, the design, monitoring, and evaluation of adaptation interventions. Different orientations are discernible in CBA projects. On the one hand, research-orientated CBA projects have an emphasis on knowledge co-

generation and informing decision making on vulnerability reduction through the research process, including through capacity building, knowledge mobilization, empowerment, and training. While such projects may target supporting actual interventions, knowledge co-generation is the primary motivation. On the other hand, development- or policy-orientated CBA projects have an overarching emphasis on developing and supporting interventions and program development, and are typically initiated by civil society organizations, development donors, or communities themselves (Dodman and Mitlin, 2013; Schipper et al., 2014).

While CBA has been widely promoted as an effective approach for research to assist adaptation, some have argued that uncritically adopted community based approaches can be maladaptive, further perpetuate colonization, and may not be appropriate for all situations (Dodman and Mitlin, 2013; Forsyth, 2013; Ford et al., 2016; McNie et al., 2016). Yet few have critically examined CBA approaches (McNamara and Buggy, 2017), and this gap is particularly evident in the climate and health field, which has been slow to focus on adaptation at the community level but is increasingly adopting community-based approaches and recognizing that community action is critical to achieving climate-resilience (Hess et al., 2008; Miller and Bowen, 2013; Tschakert et al., 2014; McDowell et al., 2016; WHO, 2015). In this paper, we evaluate the strengths, challenges, and opportunities of research-orientated CBA projects in rural Indigenous community settings, drawing upon the experience and perspectives of communities, decision makers, students, and faculty-based researchers engaged in a CBA

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