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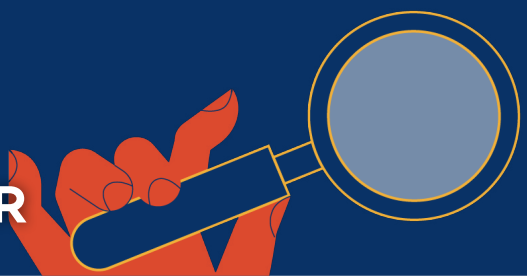

WORKING PAPER

An Intersectional Approach to Climate Risk Assessment

A working framework

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June 2026

Introduction

The concept of climate justice is grounded in human rights, with an understanding that the impacts of climate change interact with existing inequities, placing some countries, groups, and individuals at higher risk (Intergovernmental Panel on Climate Change [IPCC], 2022). While there is broad recognition that effective adaptation must benefit those who are in situations of higher vulnerability (IPCC, 2022), there remain challenges in ensuring that adaptation actions yield equitable benefits and address the systemic drivers of vulnerability (Araos, et al., 2021; Atteridge & Remling, 2017; IPCC, 2022). This difficulty increases when the intersecting nature of systems of inequity is considered (Crenshaw, 1989), requiring more nuanced and participatory analysis to grasp the complexity and ensure that climate action "protect[s] and fulfil[s] the rights of all persons" (Office of the High Commissioner for Human Rights, 2016, p. 1).

Building on a previous knowledge co-production workshop held in 2024, the International Institute for Sustainable Development convened a workshop in May 2025 to discuss how to apply an intersectional approach to climate risk assessments (CRAs). The workshop brought together researchers, advocates, and practitioners in a co-production process to explore how intersecting systems of inequity could be reflected in the assessment of climate risks. The output was a working framework for an intersectional approach to CRA, which is currently being tested through participatory case study research in Nepal and South Africa.

This working paper explains how this framework was produced and provides an overview of the approach. The contributions of all participants at the workshop in the development of this working framework are gratefully acknowledged. Please see page 12 for a list of all those who generously shared their knowledge and perspectives. The working paper will

interest adaptation practitioners, researchers, and policy-makers exploring how to adopt an intersectional approach when assessing climate risks.

Why Do We Need an Intersectional Approach to CRAs?

In our previous working paper (Dazé & Christofferson, 2025), we argued that an intersectional approach to adaptation is needed, recognizing that people who are intersectionally marginalized (Crenshaw, 1989) are often most at risk from the impacts of climate change (Dazé & Christoffersen, 2025). We noted that this approach has multiple benefits, in terms of integrating different knowledges and strengthening the agency and engagement of people who are disproportionately affected by the impacts of climate change (Dazé & Christoffersen, 2025). Recognizing that an intersectional approach is relevant throughout the iterative adaptation cycle as it is presented by the United Nations Framework Convention on Climate Change (UNFCCC), we focus here on the first phase, where impacts, vulnerabilities, and risks are assessed (UNFCCC, 2022, 2023).

CRAs are the foundation for adaptation decision making. They assess exposure to climate hazards and how these hazards impact economies, ecosystems, and people. CRAs also analyze vulnerabilities to work toward an understanding of the degree of risk for different entities within the system under assessment. This enables the identification and prioritization of adaptation actions that address the identified impacts and vulnerabilities (Canadian Council of Ministers of the Environment, 2021; CDP, 2022; European Union, 2024; International Organization for Standardization [ISO], 2019). However, in many cases, CRAs are conducted for sectors or geographic areas, without adequate attention to the social dynamics that exacerbate vulnerability for particular groups (Choong et al., 2024; Soden et al., 2023; United Nations Development Programme, 2017).

Given the importance of social factors in determining climate risks, more attention is needed to identify particularly vulnerable groups. But identifying who is most vulnerable is only a first step; we also need to understand why they are more vulnerable. Too often, analysis of these dynamics is overlooked, oversimplified, or grounded in assumptions and generalizations. An intersectional approach to CRA helps to overcome these gaps by analyzing how systems of inequity overlap and interact, as well as how they create structural barriers that increase vulnerability to climate change (Dekens et al., 2026).

Furthering the Co-Production Approach

Our first co-production workshop in 2024 yielded a set of principles for an intersectional approach to climate change adaptation, documented in the aforementioned working paper. Convinced of the value of this approach, we organized a second co-production workshop in 2025, where we worked through the CRA process, unpacking how an intersectional approach could be applied in each step. We used case study examples of fictional communities to ground the discussions in practical realities. Design sprints—a structured process that moves quickly from ideation to testing and refinement (Google Ventures, 2019)—helped shape the

approach. This created space to engage with the complexity through an iterative process. A sensemaking step helped the group to converge on the essential elements, resulting in a working framework co-owned by all participants.

Key Steps in a CRA

There are many approaches to CRA and a considerable amount of guidance already available. To guide discussions at the co-production workshop, we defined a six-step process for conducting a CRA, adapted from existing guidance (Canadian Council of Ministers of the Environment, 2021; CDP, 2022; European Union, 2024; ISO, 2019). The steps are described below, along with explanations of the key outputs for each. While the steps are presented sequentially, in reality, they unfold in an iterative and interconnected manner.

Step 1. Defining the purpose and scope of the CRA

In the first step, we define the purpose and scope of the CRA. The purpose is the intended use of the assessment, in terms of what decisions it will inform (for example, to guide adaptation planning by a local government). The scope identifies the system of focus, which is the geographic scope of the assessment (for example, a city)—and, in some cases, additional specific elements of focus, which may include sectors, ecosystems, livelihood groups, or particular assets, such as infrastructure.

↳ Output

Purpose, system of focus, and (if relevant) specific elements of focus for the CRA

Knowledge co-production workshop participants (please see page 12 for a list of names and affiliations)

Step 2. Identifying climate hazards

The second step involves identifying the climate hazards that could affect the system of focus. Climate hazards are climate-related events or trends with potential negative effects (IPCC, 2021). Events have an identifiable start and end (for example, a drought), while trends are changes that occur over time (such as changing temperatures). Here, we want to consider both historical hazards that have occurred and new hazards that may occur in a changing climate.

↳ Output

List of climate hazards of concern for the system of focus

Step 3. Assessing exposure

Next, we identify the people and assets within the system of focus that are located in areas exposed to the climate hazards. For people, exposure relates to whether their homes, places of work, or other activities are within the area exposed to specific hazards (for example, a labourer working in fields located on a floodplain is exposed to flooding). When it comes to assets, exposure depends on their location in the system of focus (for example, fields on the floodplain are exposed to flooding, while a forest located uphill from the river is not).

We define assets broadly, as things that provide tangible or intangible value (Chambers & Conway, 1992; IPCC, 2021). These can include social, cultural, and economic assets and resources important for livelihoods, health and well-being, infrastructure, and services, as well as ecosystems, species, and ecosystem services (Department for International Development, 1999; Scoones, 1998). However, if the CRA has specific elements of focus, this may narrow the scope of assets being considered (for example, a CRA for the health sector might specifically focus on assets related to health and well-being, infrastructure, and services).

↳ Output

List of people and assets within the system of focus that are exposed to the climate hazards of concern

Step 4. Assessing impacts

In this step, we identify the observed and/or potential negative impacts of the climate hazards on exposed people and assets. We do this by building impact chains that capture immediate impacts (first-order impacts) and their consequences (second-order impacts), as well as the indirect and/or longer-term consequences (third-order impacts). Using the impact chain approach enables us to think beyond the immediate impacts and see how impacts interact, both within a chain for an individual hazard and across chains for the different hazards that are assessed.

↳ Output

Impact chains for each of the climate hazards of concern

Step 5. Assessing vulnerability

The vulnerability assessment step identifies the people and assets with higher vulnerability—that is, those more prone to negative impacts from the climate hazards (IPCC, 2021). We identify who or what is disproportionately or uniquely affected by the impacts identified in the impact chains, and importantly, why. In assessing vulnerability, we consider both sensitivity, which refers to characteristics of a person or asset that make them more susceptible to negative effects, and adaptive capacity, which comprises factors that enable the person or asset to take action or make adjustments to minimize the negative effects (IPCC, 2021).

Vulnerability is greater for people and assets that have higher sensitivity (for example, older people and pregnant persons may be more sensitive to heat stress) and/or lower adaptive capacity (for example, a lack of access to financial services can constrain options for managing climate risks). What is important at this step is to unpack why vulnerability is higher. This process can lead to refinement of the impact chains, as it provides a better understanding of how the impacts play out.

↳ **Output**
Mapping of people and assets with higher vulnerability; explanation of why this is the case

Step 6. Evaluating future risk

In this last step, we prioritize risks based on the future likelihood of the climate hazards and the degree of consequences for the identified vulnerable people and assets, taking into account health and safety, functionality of services, economic impacts, impacts on ecosystems and biodiversity, and structural integrity. The likelihood of each climate hazard is assessed based on observed trends and future projections. Assessment of consequences considers magnitude, scale, and distribution of harm, based on the best available information (ISO, 2018). This enables the identification of priority risks for the people and assets of concern.

Because there are inherent uncertainties in future climate scenarios and in our understanding of climate impacts, vulnerability, and risk, this evaluation should not be undertaken or used in isolation. The risk matrix produced should be considered alongside the other outputs, notably the exposure assessment, impact chains, and vulnerability assessment, as well as other available information on the unique context of the system of focus.

↳ **Output**
Risk matrix for the most vulnerable people and assets

Applying an Intersectional Approach to CRA

To apply an intersectional approach to CRA, we follow the same six steps and generate the same outputs; however, we aim to answer additional questions in order to understand how intersecting inequities influence climate risks. These key questions for each step are presented in Figure 1. Again, this is an iterative process—completion of later steps leads to refinement of the analysis in earlier steps, as described below.

Figure 1. Framework for an intersectional approach to CRA

1. Defining the purpose and scope of the CRA	What are the most impactful [intersecting] systems of inequity in the system of focus?
2. Identifying climate hazards	Same as general CRA
3. Assessing exposure	Which intersectionally marginalized groups are present in the exposed population? What exposed assests are important to the intersectionally marginalized groups?
4. Assessing impacts	What are the specific and disproportionate impacts on the intersectionally marginalized groups?
5. Assessing vulnerability	What factors increase the vulnerability of the intersectionally marginalized groups? How do compounding impacts of climate change further exacerbate their vulnerability?
6. Evaluating future risks	How might the climate hazards increase inequities in the future?

Source: Adapted by the authors from Canadian Council of Ministers of the Environment, 2021; CDP, 2022; European Union, 2024; ISO, 2019.

In the first step, where we are defining the scope of the CRA, we want to identify the most impactful systems of inequity in our system of focus, meaning those that create the greatest inequities, based on available data, a review of the literature, and the engagement of relevant actors within the system of focus (for example, rights organizations or service providers that work with disadvantaged groups). Examples of systems of inequity include racism, ableism, and patriarchy (Dekens et al., 2026). At this stage, we aim to have a broad understanding of these systems and how they came to be and play out in the particular context of our system of focus; we are not yet making the link to climate change.

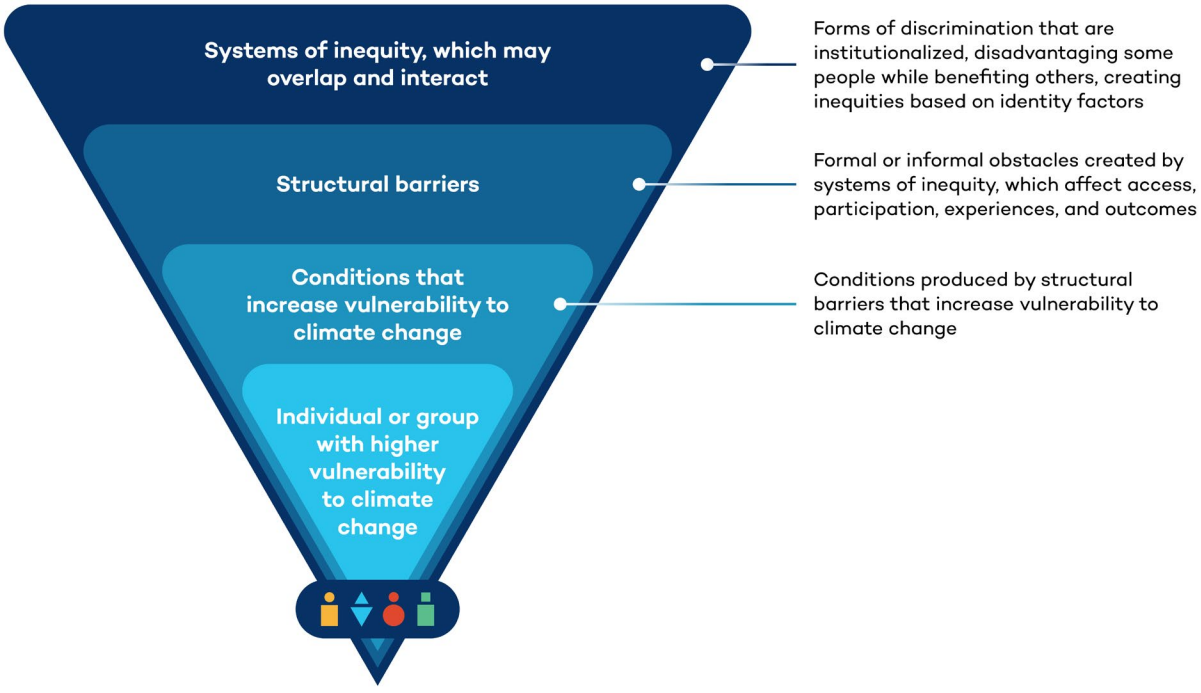
When we reach the exposure assessment step, we need to understand which intersectionally marginalized groups are present in the exposed population. For example, if we have identified patriarchy and ableism as impactful systems of inequity, then women with disabilities are an intersectionally marginalized group that should be considered in the CRA. Having identified the groups, we also consider the assets that are important to them that are exposed to climate hazards. To continue our example, women with disabilities living in a coastal area might attend a women's health clinic, making this an important asset that could be threatened by hurricanes and flooding.

With the impact chains, we aim to understand how the identified intersectionally marginalized groups are affected, both directly and through impacts on the assets that are important to them. We can characterize the impacts as follows:

- **common impacts**: impacts that affect everyone in the system of focus in much the same way.
- **disproportionate impacts**: impacts that affect everyone but disproportionately affect the intersectionally marginalized groups due to their circumstances or lived experience. For example, flooded houses will displace all people living in the affected area; however, older people or persons with disabilities may find it more difficult to have their needs met in temporary housing situations.
- **specific impacts**: impacts that exclusively affect the intersectionally marginalized groups. For example, trans women or older people with disabilities may rely on temperature-sensitive medications that can be compromised during extreme heat events.

For the disproportionate and specific impacts, the vulnerability assessment step involves an analysis of why the intersectionally marginalized groups are more or differently vulnerable, considering the conditions that increase their vulnerability, how these conditions are created by structural barriers, and how these barriers are created by the systems of inequity they experience (Dekens et al., 2026). Figure 2 shows the relationships between these different elements of the analysis.

Figure 2. Relationship between systems of inequity and vulnerability to climate change



Source: Dekens et al., 2026.

To provide an example, racialized people in LGBTQIA+ communities may be more likely to be unhoused or live in poor-quality dwellings, which is a condition that makes them more vulnerable to climate hazards, such as heat waves. This condition is the result of a number of structural barriers, which include reduced employment opportunities, spatial segregation, and discrimination by landlords. These barriers may be created by racism, LGBTQIA+ discrimination, or both. Unpacking the factors that drive vulnerability in this way helps clarify how systems of inequity relate to climate change and how they interact to create situations that make intersectionally marginalized groups particularly vulnerable. This step may also point to other systems of inequity that were not considered particularly impactful in the first step but become so when viewed from a climate change perspective.

We also look at the impact chains to assess how compounding impacts from different hazards may further exacerbate the conditions that make them more vulnerable. For example, many climate hazards have negative consequences for people's health, which can disproportionately impact, for example, women with disabilities due to underlying conditions and barriers in accessing appropriate health services. The compounding effect of multiple hazards can accumulate over time, leading to even worse health outcomes and further undermining resilience to future hazards.

In the final step, we evaluate and prioritize risks for the intersectionally marginalized groups. The risk evaluation considers the future likelihood of climate hazards and the degree of consequences of their impacts. The key additional element for consideration here in an intersectional approach is to evaluate whether the impacts of climate hazards, both individual and compounding, may increase inequities in the future, further exacerbating vulnerability for intersectionally marginalized groups. If so, this step should also consider how this occurs. For example, if future projections suggest that flooding may occur on a more frequent basis and the assessment has shown that intersectionally marginalized groups are more likely to be poorer and live in substandard housing, they are at higher risk of damage to their homes and less able to afford repairs. This can increase the divide between people who can access quality housing and those who cannot, further exacerbating vulnerability to future hazards.

Taking It Forward: Testing the framework in the real world

The co-production workshop came at an ideal time, as we were in the process of launching a new project that would allow us to test the CRA framework in the real world. Understanding Climate Risks Through an Intersectional Approach (iCRA) is an action research project investigating how intersecting systems of inequity shape vulnerability to climate change. It involves collaborative case study research with partners in Nepal and South Africa to test how intersectional CRAs can help to advance inclusive and effective adaptation in practice and policies.

The research in Nepal focuses on the case of Mardhar, a rural community in the Terai region, exploring drought and flood risks for people who experience intersecting caste- and gender-based discrimination and ageism. The case study is led by Prakriti Resources Centre, in partnership with the Community Development and Advocacy Forum Nepal (CDAFN)

and Tewa – Women's Fund of Nepal. In South Africa, Urban Earth is leading the case study research, in collaboration with the Triangle Project, an LGBTQI+ rights organization, and Western Cape Association of and for Persons with Disabilities (WCAPD). It focuses on risks associated with drought and extreme heat for people experiencing intersecting racism, ableism, and discrimination against LGBTQIA+ communities in Elsies River, a neighbourhood in Cape Town.

The case studies are already providing useful insights, both on the process of applying an intersectional approach in CRAs and on the implications of climate change for intersectionally marginalized groups in the communities under study. The knowledge gained through the research will be used to refine and further develop the framework for an intersectional approach to CRA presented here, as well as to inform discussions around adaptation policies and planning in the two countries. Further work in this area will focus on the broader policy and institutional dimensions of applying intersectional approaches to climate change adaptation, as well as continued co-production of knowledge on their practical applications.

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Acknowledgements

This working paper aims to summarize and further develop the thinking that was co-produced during a workshop in Istanbul in May 2025. The authors are deeply grateful to all the participants in this workshop:

Joanita Babirye

Girls for Climate Action Uganda

Raju Chhetri

Prakriti Resources Centre

Ashlee Christoffersen

York University and independent consultant

Diego De Leon

Out for Sustainability

Lynn (Ling) Fester

Triangle Project

Alex Gordon

Women's Environment and Development Organization

Anne Hammill

International Institute for Sustainable Development

Prabin Man Singh

Prakriti Resources Centre

Margaret McKenzie

Urban Earth

Bimal Regmi

Oxford Policy Management

Zizo Stimela

Urban Earth

Shannon Sutton

International Development Research Centre

Jhannel Tomlinson

GirlsCARE Jamaica

Nagdev Yadav

Community Development & Advocacy Forum Nepal

We sincerely appreciate the contributions of our talented facilitators, Adriana Costa Souza and Dani Prisacariu, whose support was invaluable in designing and delivering the workshop.

We would also like to thank the following people who reviewed and provided specific inputs to this working paper: Ashlee Cristoffersen (York University and independent consultant), Diego De Leon (Out for Sustainability), Alex Gordon (Women's Environment and Development Organization), and Anne Hammill (International Institute for Sustainable Development).

This working paper was developed with the financial support of Irish Aid, with cofinancing provided by the UK government and by the International Development Research Centre, Ottawa, Canada, as part of the Climate Adaptation and Resilience (CLARE) research program. The ideas, opinions, and comments herein are entirely the responsibility of the authors and do not necessarily represent or reflect the funders' policy.

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