Sustainable adaptation principles to address the *development-climate change nexus*



Deliverable 1 of Policy Supporting Research (PSR):

"How to better integrate the environmental dimension in the Belgian development cooperation in Morocco - Nexus development/climate"

February 2022

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Preface

The adoption of the Sustainable Development Goals (SDGs) and the Paris Agreement on Climate Change converged to consolidate an international consensus on the need for integrated development, environment and climate change agendas. Such an approach aims at addressing the embedded interlinkages and manage potential trade-offs that could result in unsustainable development trajectories and/or maladaptation to climate change.

Morocco clearly illustrates the imperative of conciliating development programmes and actions with the environment and climate change ones. According to the country's 'Projet de Stratégie Nationale de Développement Durable 2030', Morocco faces interconnected socio-environmental challenges, social vulnerabilities and rising inequalities in a context of acute climatic variability and change. The Belgian Development Cooperation has embarked on the challenge to work together with Moroccan actors towards addressing intertwining socio-environmental issues and giving a renewed relevance to these agendas in the country.

In this context, ADAPTtoDEVELOP, acronym for this PSR project, applied a participatory research methodology to co-produce with various actors in Morocco an inclusive, climate-resilient and sustainable vision for the country, as well as a roadmap defining Morocco's priorities in terms of the development-climate change nexus. The vision and the roadmap, together with the rest of the ADAPTtoDEVELOP analysis, can help the Belgian Development Cooperation to define strategic and operational steps to dive into Morocco's development challenges considering in a substantial way environmental and climate change aspects.

This is the first Deliverable of the ADAPTtoDEVELOP project and presents its main concepts and analytical framework. Conceptualising the development-climate change nexus, the framework proposes a set of 'sustainable adaptation principles' i.e., principles for development efforts that are integrated and mutually supportive with climate change adaptation (CCA) strategies and actions. The findings presented in this document will be integrated with those of Deliverable 2 and Deliverable 3 to formulate the ADAPTtoDEVELOP's final recommendations (roadmap) to the Belgian Development Cooperation (Deliverable 4).

Colophon

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All documents and project updates can be found in our ADAPTtoDEVELOP website here.

Glossary

Drawing from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (WGII AR5)[1], this glossary aims at helping the reader to navigate core climate change concepts that are crucial to apprehend the development-climate change nexus in the context of ADAPTtoDEVELOP.

Risk: The potential for consequences [= *impacts*] where something of value is at stake and where the outcome is uncertain. Risk results from the interaction of *hazard*, *exposure* and *vulnerability*. In ADAPTtoDEVELOP, the term risk is used primarily to refer to the risks related to climate change intertwined with other drivers impacting on the *exposed* systems (e.g., a country, region, community, livelihoods, social groups or individuals) of interest. In this sense, for human/social systems in particular, the *risk* and its *impact* should not be used to ascribe exclusive causality to climate change.

Hazard: The potential occurrence of a natural or human-induced physical event or trend or physical impact that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems, and environmental resources. In ADAPTtoDEVELOP, the term hazard usually refers to climate-related physical events or trends or their physical *impacts*. A hazard becomes a risk when *exposed* elements are in place.

Exposure: The presence of people, livelihoods, species or ecosystems, environmental functions and resources, infrastructure, or economic, social, or cultural assets in places and settings that could be adversely affected by the *impacts* of a *hazard* – or else, they are at *risk*. The degree of *exposure* can be expressed by absolute numbers, densities or proportions etc. of the elements at *risk*.

Vulnerability: The propensity or predisposition to be adversely affected. *Vulnerability* encompasses a variety of concepts and elements, including *sensitivity* to harm and lack of *capacity* to cope and *adapt*. *Vulnerability* encompasses those attributes of the *exposed* elements and of the context in which they are embedded that may increase the potential consequences of a specific climate *hazard*.

Sensitivity: is determined by those factors that directly affect the consequences of a hazard. Sensitivity may include physical attributes of a system (e.g., building material of houses, type of soil on agriculture fields), social, economic and cultural attributes (e.g., age structure, income structure).

Capacity: refers to the ability of societies and communities to prepare for and respond to current and future climate *impacts*. It comprises adaptive, coping, transformative capacity. ***Adaptive capacity*** refers to the ability of the *exposed* elements to adjust to potential damage, to take advantage of opportunities, or to respond to consequences. ***Coping capacity*** *refers to* the ability of *exposed* elements to address, manage, and overcome adverse conditions in the short to medium term. ***Transformative capacity*** refers to the ability of *exposed* elements to change fundamental attributes in order address root-causes of their *vulnerability* rather than just addressing the climate *impacts*.

(Climate change) adaptation: The process of adjustment to actual or expected climate and its effects in order to moderate or avoid harm or exploit beneficial opportunities. Generally, formal or spontaneous adaptation actions can reduce the *risk* by reducing *vulnerability* and in certain cases also *exposure*.

[1] For the full glossary see here: https://www.ipcc.ch/report/ar5/wg2/

Introduction

The International Development Cooperation has historically been driven by the goal of poverty reduction. While the Rio 1992 Conference proclaimed that development and environment are twin interconnected issues and new global socio-ecological challenges started challenging the international community, the Millennium Development Goals signed in 2000, remained largely inspired by an idea of human development that strongly emphasises poverty eradication. Nevertheless, 2015 signalled the emergence of a new framework for the International Development Cooperation (Orliange, 2020). This framework is based on an approach to human development with explicit sustainability considerations; the environment, economy and society are viewed as interconnected systems, rather than separate pillars to be addressed individually (OECD, 2019). The adoption of the Sustainable Development Goals, the 2030 Agenda and the Paris Agreement on Climate Change converged to consolidate the international consensus on the urgent need for integrated environment, climate change and development agendas. This integration is particularly important for middle-income countries such as Morocco, where poverty eradication has advanced and new development challenges arise. The aim of this integration is to address the complex interlinkages therein and manage trade-offs that could result in unsustainable development trajectories and/or increased vulnerability to climatic and other socio-ecological risks.

Having this context of ambitious commitments as a backdrop, the question about how integrated approaches reconciling development, environmental and climate concerns should be conceptualised and addressed in practical terms is challenging academics and actors of development cooperation all over the world. Earlier approaches in this respect have tended to focus on the notion of 'mainstreaming', understood in this context as adding certain environmental and climate change considerations into ongoing development planning and decision-making – often with a technical 'climate-proofing' lens per sector (Ayers et al., 2014). However, a growing amount of evidence suggests that this approach is not enough; it can redistribute vulnerabilities across space, time and society, introduce new risks and sources of vulnerability (Eriksen et al., 2021); it does not translate into the realization of the full potential of development interventions to build sustainable and resilient societies (Ayers et al., 2014). This evidence, along with the current calls for enabling 'transformative adaptation', referring to adaptation to climate change that aims at addressing the fundamental drivers of vulnerability and unsustainable development trajectories (Pelling et al., 2015), stresses the need for more comprehensive approaches to address the development-climate change nexus (Eriksen et al., 2021; Funder et al., 2020).

The Policy Supporting Research (PSR) project ADAPTtoDEVELOP aims at structuring and suggesting to the Belgian Development Cooperation a systemic and comprehensive approach to the challenge of integrating the environment and climate change with development strategies in Morocco and beyond. The current document has been prepared as part of the PSR ADAPTtoDEVELOP and presents the project's analytical framework. Conceptualising the development-climate change nexus, the framework proposes a set of 'sustainable adaptations principles' or else principles for development efforts that are integrated and mutually supportive with climate change adaptation related strategies and actions. This document conceptualises the development-climate change nexus based on scientific and grey literature and presents 'sustainable adaptation principles' that could provide the main guides for the Belgian Development Cooperation to develop actions that address the development-climate change nexus. The findings presented here will be integrated with those of Deliverable 2 and Deliverable 3 to formulate the ADAPTtoDEVELOP's final recommendations to the Belgian Development Cooperation for engaging with the development-climate change nexus in Morocco (Deliverable 4).

1. Conceptualising the development-climate change nexus

Addressing the development-climate change nexus means engaging with development efforts that are integrated and mutually supportive with climate change related strategies and actions (Funder et al., 2020). This constitutes the core focus of ADAPTtoDEVELOP. Here, we start by presenting the full spectrum of CCA that development actors should consider. We move on to discuss the development-climate change nexus, showing the close interrelations between development and CCA interventions but also the need to distinguish between the two and adopt development approaches and practices that explicitly consider and address climate risk.

1.1 The full spectrum of climate change adaptation

From small-scale farmers in the Brazilian Sertão shifting their activities to adapt to increasing temperatures, to the City of Malmö in Sweden introducing multifunctional rainwater ponds to its parks in order to accommodate extreme precipitation, climate change adaptation (CCA) is a societal imperative driving research and policy discussions all over the world. CCA interventions have usually included downscaling climate models, identifying key exposed policy sectors and implementing incremental techno-managerial adjustments complementing mitigation efforts such as integrating CCA with disaster risk reduction, designing adaptation-specific infrastructures, and investing in novel technologies. Innovating and building with technology and various forms of physical and ecological infrastructure has a crucial role to play in CCA. Nevertheless, adaptation to proximate climate risk is only one of the numerous responses to consider. Moreover, by now there is enough evidence that a technical approach to CCA alone is not always enough, especially because it can perpetuate unsustainable development trajectories, while remaining silent about social vulnerability and the underpinning socio-political issues at stake (Nightingale et al., 2019).

Efforts to reduce social vulnerability have added additional dimensions to the challenge of enhancing adaptive capacity of communities, groups and/or individuals giving rise to recommendations to support sustainable livelihoods, improve governance and make institutions more accountable and participatory as part of adaptation support (Ayers et al., 2014). As stressed by Mikulewicz (2018), one of the most significant contributions of social vulnerability considerations is the recognition that due to the social, economic, cultural, and political hierarchies operating on the ground, CCA – among others – has the potential to (re-)produce 'winners and losers'. Indeed, evidence shows that due to the complex social vulnerability context, adaptation interventions in developing countries are prone to elite capture, often reinforcing existing power relations and entrenching vulnerabilities (Eriksen et al., 2021). Considering social vulnerability also highlights the need for adaptation interventions to be sensitive to socio-cultural diversity and inequalities. For instance, aspects of local culture, place attachment and family responsibilities may keep people in certain places despite growing risks; it is also crucial that CCA interventions consider voluntary immobility aspirations and do not impose (re)settlement strategies, which would maybe be the straightforward solution (Blondin, 2021).

The most recent generation of adaptation measures has moved beyond incremental adaptation to transformative adaptation or transformation. *Incremental adaptation* is defined here as the adjustments made to manage proximate climate risks and impacts that do not necessarily address the historical and structural conditions driving climate risk and social vulnerability (Chung Tiam Fook, 2017). *Transformative adaptation*, on the other hand, views adaptation as an opportunity 'to reconfigure the meaning and trajectory of development' (Pelling, 2011: 167) and aims at addressing the fundamental drivers of social vulnerability and unsustainable development trajectories, by shifting the paradigms within which both they are (re)produced (Eriksen et al., 2021; Pelling et al., 2015). Asking why social vulnerability exists rather than merely demonstrating how it manifests and attempting to 'manage' it is a key analytical shift

characterising the *transformative approaches to adaptation* (Mikulewicz, 2018).

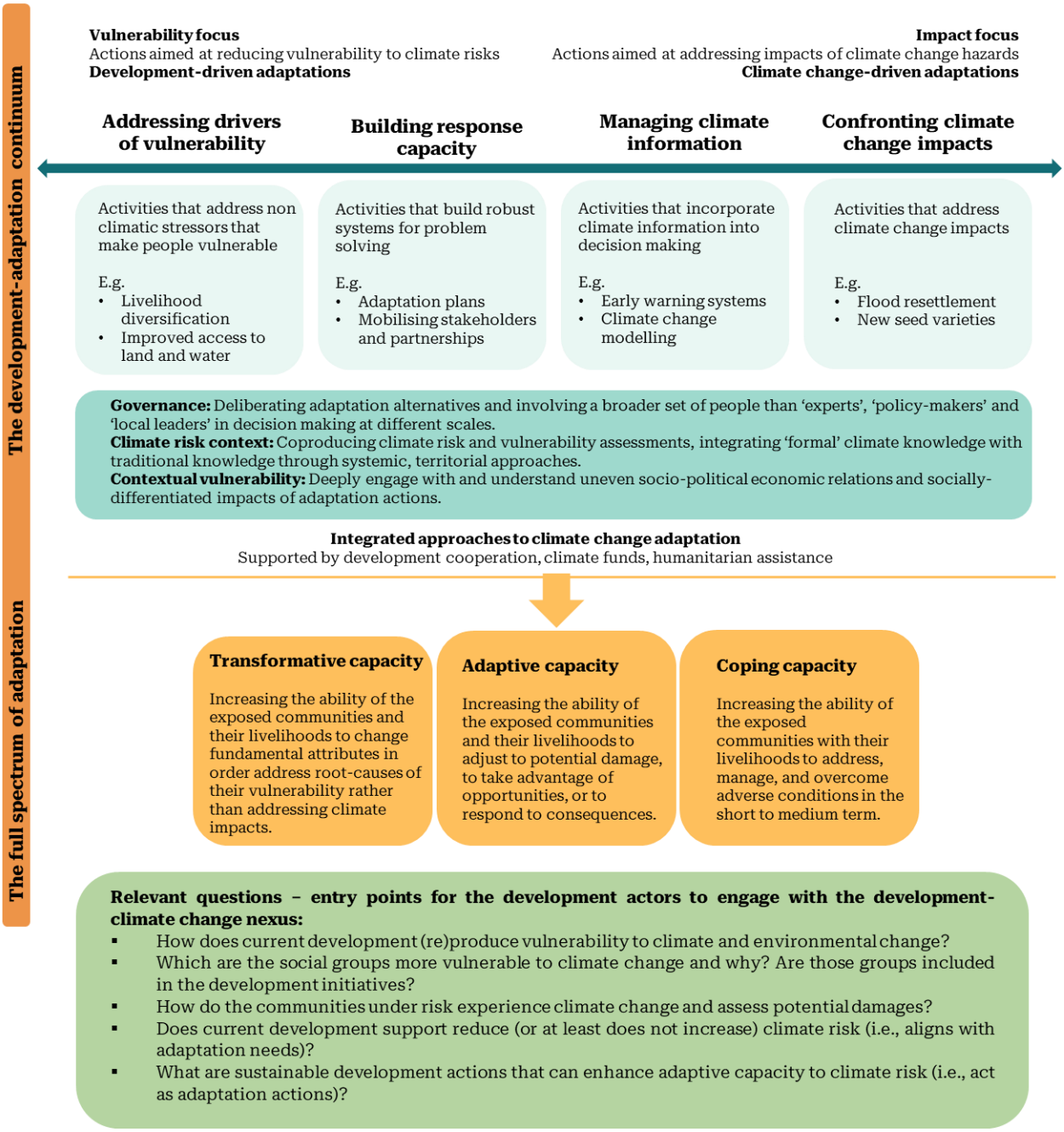


FIGURE 1 THE FULL SPECTRUM OF ADAPTATION, THE DEVELOPMENT-ADAPTATION CONTINUUM AND GUIDING QUESTIONS FOR DEVELOPMENT ACTORS. SOURCE: ADAPTED FROM FUNDER ET AL. 2020, MCGRAY ET AL., 2007

Acknowledging and considering the full spectrum of CCA, which refers to enhancing the coping, adaptive and transformative capacities of communities (Figure 1), permits to view adaptation strategies in terms of their substance and outcomes (e.g., adapting to the tangible, biophysical impacts of climate change in a given geographic area) but also in terms of a socio-political contested governance mission. As such, adaptation is more than a technical exercise and thus demands open and inclusive deliberation based on the different knowledge claims and values involved. In this sense, CCA must be seen as inseparable of other local, regional and global socio-economic, socio-ecological – thus developmental – challenges. This realisation requires the adoption of a multi-scalar and cross-sectoral approach, and to

pay particular attention to how the whole CCA spectrum can be integrated with development support (Funder et al., 2020).

1.2 The development - climate change nexus

Long-lasting climatic changes are underway and pose major threats to development aspirations and to achieving the Sustainable Development Goals, making adaptation critical for development (Rozenberg & Hallegatte, 2015). According to World Bank estimates, up to 40% of development financed by overseas assistance and concessional loans is sensitive to climatic risk (Ayers et al., 2014). At the same time, 'good' development that addresses, among others, issues of poverty and inequalities is often considered a starting point for adaptation and the main way to address an existing 'adaptation deficit', which refers to the incapacity of many vulnerable countries and groups to cope with and adapt to existing climate risks (Ibid.). Just as adaptation and development can be mutually supportive, they can also affect each other negatively. Certain development interventions can increase or redistribute vulnerability and result in maladaptation, while poorly planned adaptation support can eventually lead to unsustainable development trajectories (Eriksen et al., 2021; Funder et al., 2020).

The limits between what constitutes adaptation and what development interventions often seem blurred. An often-cited review of CCA examples drawn from the Global South has found that in practice, adaptation and development strategies are not implemented as discreet interventions, but instead lie on a continuum (McGray et al., 2007 – Figure 1). On the left side of the continuum, the adaptation efforts reflect an awareness of how the impacts of climate change intersect with poverty, discrimination, resource degradation, and other underlying sources of vulnerability traditionally tackled by the development community. On the far right, highly specialized activities target distinct possible future climate impacts, and fall outside the realm of development as we knew it until recently. In practice, McGray et al. (2007) commented that many adaptation efforts fall between the two extremes of the continuum: adaptation interventions might be taken with a specific type of climate impact in mind, but nevertheless involve activities with more general benefits in reducing vulnerability – intersecting with development efforts.

Funder et al. (2020) stress that most of the practical activities illustrated on the continuum are already well-known in the field of development, which means that development actors have already important experience to bring on board when discussing an integrated approach to development-climate change agendas. They also highlight 'governance' as a key factor cutting across all aspects of the continuum. In section 1.1, we acknowledged adaptation as a socio-political contested governance mission. This is because the adaptation challenge involves fundamental aspects of society and the economy such as natural resources, production and livelihoods. As such, it demands deliberating adaptation alternatives and involving a broader set of people than 'experts', 'policy-makers' and 'local leaders' in decision making (Eriksen et al., 2021). The governance aspect has only recently started being addressed within the adaptation community, drawing directly from existing approaches of the development cooperation (Funder et al., 2020). In direct connection to the transversal aspect of governance we should add here the transversal aspects and needs for development actors to engage with the climate risk context and contextual vulnerability, which we discuss in section 1.3.

1.3 The climate risk context and contextual vulnerability

Although development efforts seem generally aligned with certain adaptation needs, this does not mean that 'business-as-usual' development is an option against the backdrop of irreversible climate change. First, Hammill and McGray (2018) stress that 'it is important to distinguish between recognizing the adaptation function of many development activities and simply trusting that activities on the left side of

the continuum on their own will convey the right benefits for people to thrive in a changing climate'. In this sense, understanding what development actions count as CCA requires knowledge on what this action can achieve in its 'climate risk context' as this is formulated by climate change trends, climate impacts, exposure and vulnerability. With an assessment of the climate risk context in hand, development efforts that are aligned and mutually supportive with CCA needs are then those that could also plausibly reduce future risk (creating synergies) or that at least do not increase it (avoiding trade-offs). A good understanding of the climate risk context and the implemented or planned CCA provides the basis for assessing the CCA function of development actions but also for identifying novel development-climate change actions drawing from all across the continuum.

Second, we should highlight that 'whilst related, adaptation and development are not the same, with a major difference being that the former addresses current and future climate risk and the socio-environmental causes of vulnerability, which often demands to rethink how current development may in fact be producing vulnerability relations' (Eriksen et al., 2021: 8). This means that to effectively address the development-climate change nexus, development interventions should not only engage with the climate risk context, but they should especially dive into the vulnerability of communities to this climate risk factors. This opens up space for the contestation of predominant development choices. The social sciences climate change literature differentiates between two complementary interpretations of the vulnerability concept: outcome vulnerability and contextual vulnerability (O'Brien et al., 2007). 'Outcome vulnerability is considered a linear result of the projected impacts of climate change on a particular exposure unit (either biophysical or social), offset by adaptation measures' (O'Brien et al., 2007: 75). This interpretation connects to the right side of Figure 1, where the focus is on limiting the impacts of climate change hazards. In contrast, contextual vulnerability emphasizes the social and political determinants that shape processes, responses, and outcomes of climate change. From this perspective, vulnerability is addressed through actions that engage with the political, institutional, economic and social structures forming the vulnerability context (Mikulewicz, 2018; Eriksen et al., 2021). Either outcome or contextual, vulnerability brings to the foreground the question of who is negatively affected by climate change. While outcome studies often focus on economic sectors or professions, the contextual vulnerability framing goes a step further to investigate vulnerability using a systemic, territorial perspective and from an intersectional understanding in terms of class, ethnicity, age, gender or other context-specific power structures based on social categorisations (Kaijser & Kronsell, 2014). This perspective puts focus on the development-climate change interactions on the ground, and adds the crucial question of why certain social groups are more vulnerable than others. As such, it demands to understand how poverty, exclusion, resource degradation, and other sources of vulnerability – traditionally tackled by development actors – intersect with the potential impacts of climate (Mikulewicz, 2018; O'Brien et al., 2017).

2. Sustainable adaptation principles

At the bottom of Figure 1, we present a list of questions that can guide development actors and provide 'entry points' for engagement with the development-climate change nexus. Thinking in terms of these questions can help to add certain climate change considerations in development programmes and projects, or can result in the development of novel development-climate change programmes and projects. How to address those questions though? What are some principles in terms of methodologies and content that development efforts should follow to ensure that these are integrated and mutually supportive with CCA strategies and actions? In other words, how could development actors contribute to the challenge of enabling sustainable adaptations on the ground? In the context of ADAPTtoDEVELOP, we define sustainable adaptations as those development efforts that strive for simultaneously supporting sustainable development and CCA, building synergies and accounting for trade-offs therein. In what

follows, we build on all the literature discussed above to suggest a general list of principles that will be tailored to the needs of Morocco in Deliverable 4.

TABLE 1 PRINCIPLES FOR SUSTAINABLE ADAPTATION IN ADAPTTODEVELOP. SOURCE: AUTHORS BUILDING ON ERIKSEN ET AL., 2021, FUNDER ET AL. 2020, MCGRAY ET AL. 2007

Principles for sustainable adaptations	
1. Assess the climate risk context and the context for vulnerability to climate risks for current and future situation	Accompany development programmes and projects with climate and vulnerability risk assessments so that the development efforts are always positioned and assessed also against their contribution in addressing current and future climate risk and vulnerabilities.
2. Strive for inclusive participation in planning and implementation of development-climate change interventions	A focus on inclusive participatory governance for development and/or CCA interventions is necessary. The CCA community still struggles to engage with the governance issue, while development has long experience in this field. Attention to mechanisms that make people excluded/marginalised could be a valuable contribution in assessing and addressing drivers of vulnerability to climate risk and promote sustainable development at once.
3. Integrate local knowledge/culture both to assess climate risk and vulnerability, and decide on development-climate change interventions	Transdisciplinary risk and vulnerability assessments through a combination of climate data analysis and participatory methods could be key for integrating climate considerations in development agendas in a time and cost-efficient manner. Most importantly, they give an idea of what communities and social groups need and value most, which opens up the space to consider alternative socio-culturally sensitive development and adaptation agendas.
4. Beyond the 'community scale': acknowledge communities as heterogeneous to identify socially differentiated vulnerabilities	An inclusive development-climate change agenda requires awareness of the social, cultural, economic and political heterogeneity of a community or group. Communities have their own socio-economic and political inequalities, and these lead to socially differentiated vulnerabilities. This awareness should translate into attention and care for vulnerabilities (re)produced due to gender, intersectionality, class, ethnicity and other issues generating exclusion. At the same time, assessments and programmes should consider the changing character of communities and localities. Culture and other social characteristics of different groups are not only diverse but also change over time.
5. Consider the full spectrum of CCA and ensure a good understanding of context-specific needs, moving beyond the 'adaptation deficit'	All components of the continuum are important and their relevance is context-specific. This means that development-climate change programmes should be tailored to the specific needs of each context and draw from some components of the continuum accordingly. This presupposes development efforts being accompanied by evidence-based climate risk assessments for the particular territories under question. At the same time, adaptation-driven interventions still focus on technical measures – it is on the expertise but also responsibility of the development actors to engage particularly with those more transformative actions.
6. Obtain a territorial, cross-sectoral and systemic approach in programme and project design	A territorial approach, somewhere at the regional scale between the national and local, means that the programme/project is contextualised according to territorial socio-ecological specificities. The focus then is the communities, their livelihoods and the interaction with the biophysical and socio-economic surroundings at multiple scales but also on the potential for territorial interactions in the form of mutual support and solidarity. This approach ensures that we move beyond a sectoral understanding of both development and CCA, and search for feedbacks and processes that could re-distribute vulnerability across society, sectors, space.

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