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Strengthening regional cooperation on climate change adaptation

Bottom-up scaling of transboundary cooperation in the Hindu Kush Himalaya

Master's thesis

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Abstract

The world's 'Third Pole', the Hindu Kush Himalaya, is increasingly affected by the irreversible impacts of climate change making climate change adaptation in this region crucial for the billions of people depending on its resources. Contributing to the limited academic literature on the role that lower levels of governance can play in the scaling of transboundary cooperation on climate change adaptation, this thesis builds on Hoffmann & Bernstein's (2018) analytical framework to examine the potential for scaling of cross-border cooperation through the concepts of normalization, adaptive capacity building, and coalition building. In the thesis we examine how local cross-border climate change adaptation initiatives in the Hindu Kush Himalaya can facilitate scaling of cooperation on adaptation in the region. Through interviews with stakeholders working on local cross-border adaptation initiatives in the region we analyze the potential for scaling of cooperation between countries. Based on this research we conclude on the constraints in the scaling of cross-border cooperation on adaptation which include limited formal institutions to facilitate cooperation and differences in political decision-making structures in the countries of the region. Furthermore, we identify a series of opportunities to facilitate stronger transboundary cooperation. These include focusing on increasing investments in cross-border adaptation activities and taking mountainous communities' perspectives into account in the design of cross-border adaptation initiatives. Furthermore, the thesis concludes that building onto existing informal cross-border cooperation at the local level and strengthening formal and informal institutions to facilitate transboundary cooperation on adaptation is a key opportunity to facilitate scaling of cross-border cooperation on adaptation in the Hindu Kush Himalaya.

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CHAPTER 1
Introduction

1.0 Introduction (CN, SA)

There is a global consensus that climate change is one of the most complex and important issues the world faces today and in the future. However, the consequences of global climate changes are often very local, and vulnerable communities and countries in the global South are affected the hardest (Matthews & Nel, 2019). Here, the negative consequences of climate change are further exacerbated by the lack of resources to implement sufficient adaptation measures (Eckstein et al., 2021, p. 23). As Engberg-Pedersen puts it*: "The nature of climate change is largely 'produced' in the global North while being largely 'experienced' in the global South."* (Engberg-Pedersen, 2011, p. 10). While serious efforts on climate change mitigation are more crucial than ever, science has concluded that global temperature will inevitably continue to increase during the 21st century and extend beyond the ambition to limit global temperature increase to below 1.5 degrees Celsius (IPCC, 2021, p. 17). It is therefore clear that climate change adaptation must be given key priority on global and national policy agendas, especially in countries in the global South which are particularly experiencing the devastating consequences of climate change.

The severe consequences of climate change are especially evident in the area of the Hindu Kush Himalaya (HKH). The HKH is a geo-ecological area in South Asia, centered around the Himalaya mountains, and is often referred to as the world's 'Third Pole' as it has the largest area of permanent ice outside the North and South poles (Sharma et al., 2019, p. 3). The area covers a territory of eight different countries: Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan. However, climate change does not abide by the borders of nation-states but by the ecosystems of the mountains, glaciers, and rivers (Pillai, 2021, p. 1). In this region, it is therefore more crucial than anywhere that efforts on climate change adaptation are driven by cross-border cooperation and not bounded by national borders.

Despite the HKH countries' high ambitions on addressing climate change, regional cooperation on climate adaptation still remains primarily limited to bilateral cooperation on a case-to-case basis (Ojha et al., 2019, p. 562). While regional cooperation between HKH countries on climate change adaptation may be limited, local authorities and actors have a unique position in climate governance and are central to the success of adaptation efforts (UNCDF, 2020; Sippel & Jenssen., 2009, p. 39). A challenge with cooperation on climate

change adaptation across borders in the HKH is the large gap between policy goals and addressing the actual needs of local communities in the HKH (Mishra et al., 2019, p. 460). When it comes to efforts on climate change adaptation, local levels of governance can play a key role as they are closer to vulnerable communities in the region allowing them to take into account the context-specific circumstances of climate change in their respective areas (Sippel & Jenssen, 2009, p. 39). Building on this, we start the thesis from an assumption that cooperation on climate change adaptation across borders in the HKH at the local level may be less challenging than cooperation between countries at higher levels of governance. As actors at the local level sharing a country-border operate in similar contexts and experience similar challenges, cooperation across borders at the local level may provide an opportunity to impact and strengthen cooperation between countries at higher levels of governance.

In this thesis, we examine the potential for cooperation on climate change adaptation across borders at the local level to facilitate stronger cooperation on adaptation between countries in the HKH at higher levels. We conceptualize this process of bottom-up impact as a process of vertical and horizontal scaling of cooperation across borders. Vertical scaling entails that cooperation on climate change adaptation moves from one level of governance to a higher level of governance while horizontal scaling entails that adaptation efforts are moved across borders at the same level of governance. We examine the potential for the scaling process to happen by focusing on specific identified climate change adaptation initiatives being implemented across country borders in the HKH region. To limit the scope of our research, we focus specifically on adaptation initiatives being implemented between Nepal, as a central country in the region, and its bordering countries. This will be elaborated in coming sections. Furthermore, we will focus on local cross-border adaptation initiatives implemented by or in collaboration with the intergovernmental organization, the International Centre for Integrated Mountain Development (ICIMOD), which focuses on increasing regional cooperation on climate change in the HKH (ICIMOD, 2021a). We examine how these local cross-border initiatives and interactions can potentially increase and strengthen cooperation on climate change adaptation throughout the HKH. We aim to answer the research question:

How can local cross-border climate change adaptation initiatives in the Hindu Kush Himalaya facilitate scaling of cooperation on adaptation between countries in the region?

The thesis is divided into different chapters as follows. First, we introduce the HKH region and unfold the concept of climate change adaptation. Following this, we present the theoretical and methodological framework for the thesis. Here, we outline the analytical framework employed in the thesis which conceptualizes the potential for scaling as generated by processes of normalization, adaptive capacity building, and coalition building. We draw on qualitative interview-based data as the empirical foundation for the thesis. Following this, we employ the analytical framework and draw on the collected empirical data in examining the potential for scaling of local cross-border cooperation on adaptation in the region. Based on the conclusions of the analysis, we follow with a section presenting four key policy recommendations for policy makers and other stakeholders which may increase the potential for scaling of cross-border cooperation in the HKH. The last section provides a discussion of limitations and opportunities in the methodological approach and analytical framework employed in the thesis. Lastly, we conclude on the potential and constraints for local cross-border climate change adaptation to facilitate scaling of cooperation between HKH countries.

2.0 Climate change adaptation in the Hindu Kush Himalaya

In the following chapter, we firstly look further into the Hindu Kush Himalaya as a crucial area of research on climate change. Secondly, we argue for the focus of the thesis on cooperation on climate *adaptation* in the region and investigate the concept of climate adaptation and its relationship with climate mitigation. Lastly, we briefly map the central types of actors being further investigated throughout the thesis and outline why these actors are expected to impact the potential for scaling of cross-border cooperation on adaptation in the HKH.

2.1 The Hindu Kush Himalaya (CN)

In this section, we outline the characteristics of the Hindu Kush Himalaya as an important area for climate change adaptation. Secondly, we outline the current state of cooperation on climate change adaptation between the HKH countries as primarily bilateral and argue for the importance of focusing on the local level in research on climate change governance which will be elaborated further in the next chapter.

2.1.1 A crucial region

As mentioned, the HKH covers territory of eight different countries: Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan. All of these countries, besides China, were in 2020 categorized as lower middle- or low-income countries (World Bank, 2020). There is often a dominant narrative that developing countries are reluctant to commit to ambitious climate change measures because of higher priority to economic development (Silwal et al., 2019). However, a report published by UNDP in 2019 actually concludes that "*developing nations are currently the front-runners in preparations to revise plans for combatting the climate crisis over the next decade by 2020*" (UNDP, 2019, p. 6) and that developing countries' high ambitions on climate action are increasing (Pandey et al., 2021; Ali, 2021; Gerretsen, 2020). This marks an interesting development in recent years towards developing countries increasingly pushing for action on climate change which is closely related to the fact that such countries are often more affected by and vulnerable to negative consequences of climate change. This recent development underlines the need to

study the HKH since this region is an example of several developing countries sharing similar challenges as a result of climate change in the region.

The HKH provides ecosystem services, such as water, food, and energy, that directly sustain the livelihoods of 240 million people (Sharma et al., 2019, p. 3). Additionally, nearly 1.9 billion people live in the 10 river basins in the HKH and hence also benefit directly and indirectly from the resources of the region while more than 3 billion people worldwide enjoy the food produced in the river basins of the HKH (Sharma et al., 2019, p. 3). As the region experiences increasing climate related problems such as floods, natural disasters, and unpredictable weather patterns, the many people depending on the resources of the region experience their livelihoods threatened (Krishnan et al., 2019, p. 58). Especially at the local level, some of the main challenges related to climate change are increasingly extreme weather events which result in more frequent natural disasters such as floods and food insecurity (Krishnan et al., 2019, p. 58).

Figure 1. The Hindu Kush Himalayan region and its 10 major river basins

Image from Sharma et al. (2019, p. 3).

The region is not only of key importance for the many people depending on its resources. Nearly half of the world's biodiversity 'hotspots' are also located in mountain areas, such as the HKH, giving mountain regions crucial importance for the well-being of many central ecosystems in the world (Sharma et al., 2019, p. 2). Sufficient data on the impacts of climate change in mountain areas have historically been lacking as these areas are, due to high altitudes and harsh weather conditions, harder to access and gather data from (IPCC, 2021, p.

73). However, more research has been conducted during the last decades which underlines the importance of addressing climate change in mountain areas. Despite ambitions to reduce emissions and the rising temperatures, recent analyses conclude, as mentioned, that global temperatures will, under all scenarios considered, continue to increase during the 21st century and extend beyond the ambition of 1.5 degrees Celsius (IPCC, 2021, p. 17). However, research on the impacts of climate change in the mountains of the HKH concludes that even if global warming is kept to 1.5 degrees celsius ambition, the HKH will likely experience temperature rises between at least 0.3 and 0.7 degrees celsius higher (Krishnan et al., 2019, p. 58). This is not only the case for the HKH but all mountain regions, as temperature rises accelerate the higher the altitude (Krishnan et al., 2019, p. 58).

Hence, addressing climate change in the HKH is crucial due to the many people directly and indirectly depending on resources from the mountains - both in the sub-region and globally. Additionally, further research and action on climate change in mountain regions, such as the HKH, are highly important for global ecosystems and for securing the 'water towers' of the world. As climate change will continue to increasingly impact the HKH, the urgent need for ambitious climate change adaptation efforts in the region is incontestable.

2.1.2 The state of climate cooperation in the HKH

Research indicates that regional cooperation on issues related to climate change might, in many cases, be more effective than cooperation at the global level (Asheim et al., 2006, p. 105). As countries in the same geographical region tend to have similar preferences and climate change challenges, they may be more likely to cooperate on climate change related issues of shared concern (Asheim et al., 2006, p. 105). Regional cooperation on climate change adaptation between countries in the HKH therefore provides an opportunity for more effective cooperation on climate change governance in the region.

Despite this, the current state of transboundary cooperation on climate change between countries in the HKH is challenged by a number of factors. While there are certain formal intergovernmental institutions in place to facilitate regional cooperation, agreements reached in these fora are non-binding and have overall not been successful in effectively integrating regional cooperation on climate change (Ojha et al., 2019, p. 566). ICIMOD's Hindu Kush Himalaya assessment report from 2019 finds, for example, that cooperation between countries in the region is often driven by economic interests or political bargaining and that

there are very few processes in place to facilitate regional environmental governance (Ojha et al., 2019, pp. 546,562).

There are examples of areas related to climate change adaptation where multilateral agreements and treaties have been signed, for example, on the issue of water management (Ojha et al., 2019, p. 562). Such agreements provide an opportunity for increased regional cooperation on climate change adaptation. In most areas, however, agreements on issues related to climate change adaptation are established bi- or tri-laterally and are often limited to a case-to-case basis (Ojha et al., 2019, pp. 562-563). Formalized regional cooperation on climate change adaptation between countries in the HKH is therefore very limited. There are a number of reasons for this such as geopolitical tensions between several countries in the region or difficulties for the larger powers of the region, such as India and China, to reach agreements with the smaller countries despite the smaller countries holding larger parts of the HKH territory (Tiwari & Joshi, 2015, p. 71; Ojha et al., 2019, p. 562). We will investigate some of these further in the thesis.

While regional cooperation on climate change adaptation is currently limited in the HKH, there are a number of examples of successful local adaptation initiatives in different HKH countries and ICIMOD's assessment 2019 report finds that environmental governance in the HKH is a highly local phenomenon (Ojha et al., 2019, p. 556). The interesting question is, however, whether such local climate change adaptation efforts can play a role in strengthening cooperation *between* countries in the region beyond the positive impacts they can have in their own local, national contexts. This is what we aim to investigate in this thesis.

2.2 Climate change adaptation (SA)

In the following, we further unfold the concept of climate change adaptation. We, firstly, outline the importance of climate change adaptation and unfold the closely related concept of adaptive capacity which we employ in the analytical framework of the thesis. Secondly, we engage with critiques of the adaptation concept and the relation between climate change adaptation and mitigation arguing that action on climate change adaptation can positively impact mitigation efforts.

2.2.1 Adaptation and the concept of adaptive capacity

The field of literature on climate change adaptation is broad and many scholars and practitioners have engaged with the question of how to create successful climate adaptation (Sovacool et al., 2012; McDowell et al., 2016; Reid & Schnipper, 2014). The need for adaptation as a response to climate change has gained significantly more attention within the last two decades which has resulted in adaptation programmes increasingly being initiated around the world (Mishra et al., 2019, p. 462). This increasing global focus on climate change adaptation became clear in the Paris Agreement from 2015 which emphasized the need for adaptation efforts in the most vulnerable regions (Salzmann et al., 2016, p. 5). In the Paris Agreement, article 7 expresses *"[…] the global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change."* (UNFCCC, 2015). In this thesis we do, however, not engage with the literature on successful and best practices for climate change adaptation as such. As our focus is on the scaling of cooperation on climate change cooperation between countries in the HKH, we are more interested in the process of scaling than in the success of adaptation initiatives. However, we argue that unfolding the concept of climate change adaptation is beneficial for two reasons. Firstly, outlining our understanding of climate change adaptation is necessary to situate the thesis within the field of research on climate change adaptation. Secondly, assuming that cross-border adaptation initiatives must, to some extent, be 'successful' to generate scaling, understanding the theory behind adaptation gives us important insights to build our research on.

In continuation of the importance of climate change adaptation as such, the concept of adaptive capacity is central to this thesis. The conceptualization of adaptive capacity varies within the literature. Engle (2011) argues how the different conceptualizations are especially divided between the 'vulnerability literature' and 'resilience literature' (Engle, 2011, p. 649). The resilience literature on adaptive capacity has often been focused more on ecology science and mathematical modeling (Engle, 2011, p. 649). The understanding of adaptive capacity employed here, builds on the vulnerability literature emphasizing human interactions and power relations as central to adaptive capacity. Specifically, we build on Armitage & Plummer's definition of adaptive capacity as the ability of social systems to be robust to disturbance and capable of responding to change (Armitage & Plummer, 2010, p. 1). In Armitage & Plummer's understanding of adaptive capacity, the concept consists of four

components, namely learning to live with change and uncertainty, nurturing diversity for resilience, combining different types of knowledge for learning, and creating opportunities for self-organization toward social-ecological sustainability (Armitage & Plummer, 2010, pp. 1-2). The concept of adaptive capacity hereby focuses on the ability of systems, hereunder actors and communities in it, to adjust to climate change. Hence, the concept is not only useful in understanding HKH communities' ability to adapt to climate change but also political systems and processes' ability to adapt and change. Therefore, we argue that the concept of adaptive capacity is closely related to the potential for scaling cooperation, which is the area of research for this thesis. Adaptive capacity is central for understanding the rigidity and/or flexibility of political processes in the HKH which impact the potential for scaling of cooperation on climate change adaptation. We therefore employ the concept of adaptive capacity building as a central part of the analytical framework of this thesis, which is elaborated further in the coming chapter.

2.2.2. Critiques of the adaptation concept

The concept of climate adaptation has faced several critiques. In the following, we engage with some of these to further unfold the concept of climate change adaptation. The adaptation concept has, firstly, been critiqued for implicitly implying that countries affected by climate change should indeed *adapt,* removing focus from addressing the roots of climate change. Ribot (2013) argues that the term adaptation naturalizes that people and communities should just adapt to the situation (Ribot, 2013, p. 194). Hereby, the burden is placed on the vulnerable units affected instead of the actors who are responsible for causing the burden (Ribot, 2013, p. 194). This factor is important to consider, especially in the HKH region where the communities are particularly vulnerable (McDowell et al., 2016, p. 28). This also underlines the need for not only looking at stand-alone examples of adaptation initiatives but also at how these can be scaled up and thereby create an opportunity for both local communities and the responsible and capable actors at higher policy levels to cooperate on creating favorable solutions. In this thesis, we therefore wish to examine the opportunities and barriers for scaling of cross-border local adaptation initiatives into the international policy arena between countries in the HKH. By looking beyond adaptation initiatives at the local level and turning our attention to vertical scaling to other policy levels, we can begin to address the misconception that adaptation is something for which communities themselves are responsible.

Another common critique of the climate change adaptation concept is that it can be a distraction from implementing mitigation policies, which will provide "the real solution" to climate change by reducing emissions of greenhouse gasses. Of course, mitigation of climate change has been, and should be, considered central to the global approach to climate change (Benchekroun et al., 2011, p. 3). However, it can be argued that this critique, firstly, underestimates the irreversible parts of climate changes and hereby the presence of lags and feedback dynamics (Sovacool et al., 2012, p. 113). Adaptation initiatives give direct benefits to local communities whereas climate mitigation is seen as a public good where actors can have less incentive to cooperate and act (Sovacool et al., 2012, p. 113). Extensive mitigation policies are clearly needed to address climate change. However, even extensive mitigation action is not going to prevent climate change in the near future (Burton et al., 2007, p. 372). The damage of climate change will continue to impact the most vulnerable countries underlining the need for increased adaptation efforts.

Climate adaptation, as opposed to mitigation, can also provide countries with more incentive to implement ambitious policies and initiatives as these can create direct benefits for their population. This perspective emphasizes the importance of adaptation in addressing devastating consequences of climate change for vulnerable communities. For example, ecosystem services directly sustain the livelihoods of millions of people in the HKH region (Sharma et al., 2019, p. 1). Hence, climate change adaptation is crucial to prepare communities in the region for the irreversible parts of climate change and it can be expected that countries in the HKH hence have quite high incentives to strengthen their efforts on adaptation. Considering the volume of people depending on these ecosystem services in the HKH it is furthermore clear that investigating climate adaptation in the region is crucial in understanding how efforts on climate adaptation can be intensified in this climatically important region.

Furthermore, climate adaptation and mitigation can be perceived as inherently interlinked, highlighting that adaptation is not just a question of preparing for the effects of climate change; it can also have important impacts on climate mitigation. Burton et al. (2017) argue that climate change has previously been conceptualized as an issue of environmental pollution with the primary focus being on mitigation which has led to other climate policy

solutions, such as adaptation, being neglected (Burton et al., 2007, p. 371). However, there has recently been a shift in both academic literature and on the political agenda towards understanding climate change adaptation as central and inherently interconnected with mitigation (Sovacool et al., 2012, p. 113; Ford & Smit, 2004, p. 391; Biesbroek & Lesnikowski, 2018, p. 303). Benchekroun et al. (2011), for example, argue that the success of climate mitigation efforts in fact depends on adaptation efforts (Benchekroun et al., 2011, p. 3). Increases in the effectiveness of climate change adaptation, they argue, reduce countries' incentives to free ride on mitigation efforts and makes it less costly for them to cooperate on emission reduction strategies, highlighting the interlinked nature of climate mitigation and adaptation (Benchekroun et al., 2011, p. 19). I

t is important to mention that the severe, extensive, and complex reality of climate change naturally calls for a comprehensive and multifaceted approach and therefore that synergy between both mitigation and adaptation efforts is needed. In its nature, mitigation might propose itself as a solution to a 'global' problem and adaptation as a solution to a 'local' problem. However, these 'local' problems might have global implications in the form of e.g., food insecurity and climate migration - both issues highly present in the HKH region (Biesbroek & Lesnikowski, 2018, p. 307). For the purpose of this thesis, we hence employ the understanding that climate change mitigation and adaptation are increasingly seen as 'two sides of one coin' in academic literature and politics, and that the success of climate mitigation in fact depends on the success of adaptation (Bausch & Koziol, 2020, p. 1). Adaptation initiatives, despite often being local, can have key global implications which underlines the need for research on how cooperation on adaptation can be governed and scaled to create regional and broader solutions to climate change adaptation. Therefore, we focus on local cross-border adaptation initiatives.

2.3 Types of actors and their role in scaling (CN)

In the final section of this chapter, we provide a brief introduction to actors involved in the cross-border adaptation initiatives which will be examined further in the thesis. While the analysis of the thesis will investigate actors and the role they play in cross-border cooperation on climate change adaptation in depth, the purpose of this section is to introduce some of the central actors and outline why they are important for the potential of scaling.

The first type of actors of interest in our research are different levels of public authorities in the respective HKH countries, from the highest central government level down

to local authorities. Examining the roles of these actors enables us to understand the linkages between different levels of governance and hence examine the potential for scaling of cross-border cooperation across levels of governance in the HKH. As we will elaborate further in the next chapter, lower levels of governance have the potential to play important roles in governance of climate change adaptation. It is therefore necessary to investigate the linkages between levels of climate change adaptation governance in order to understand and assess the potential for scaling of cooperation on adaptation.

Secondly, we look into non-state actors. These include communities living in areas involved in the cross-border adaptation initiatives on which we base the analysis of the thesis, and civil society actors such as NGOs. The increasing body of literature on transnational climate governance notes that other actors than national governments are increasingly involved in filling gaps of implementation of initiatives and action on climate change (Bäckstrand, 2008, p. 77). Communities themselves and civil society actors can play an important role in the facilitation and implementation of cross-border climate change adaptation initiatives. We therefore assume that this type of actors, to some degree, impact cross-border cooperation on climate change adaptation between HKH countries. Furthermore, NGOs are involved in implementing some of the cross-border adaptation initiatives identified for further analysis in this thesis and are therefore key actors in terms of the potential for scaling. We will elaborate further on this in later chapters. In addition to communities and civil society actors, we also conduct our research from an assumption that private actors, international organizations, and donors may play a role in the potential for scaling of cooperation as these types of actors are increasingly involved in climate change governance (Cao & Ward, 2017, p. 97).

Lastly, we are interested in the role intergovernmental institutions can play in the potential for scaling of cross-border cooperation on adaptation in the HKH. As such institutions provide formal platforms for cooperation between countries, they are important to examine in order to answer our research question. As we will elaborate in the coming chapters, we base the analysis of this thesis on a number of local cross-border adaptation initiatives in the HKH, most of them being implemented by ICIMOD, an intergovernmental organization between the eight countries in the HKH working specifically on climate change in the region (ICIMOD, 2021a). Therefore, ICIMOD is, as an intergovernmental organization, particularly expected to play a key role in the potential for scaling of cooperation as a result of the local cross-border adaptation initiatives they are implementing.

By examining the roles that these types of actors play in the potential for scaling of cooperation on adaptation in the HKH, we are able to investigate the complexity of climate change adaptation governance processes. This complexity is key as climate change governance often and increasingly happens at multiple levels involving many different types of actors (Bausch & Koziol, 2020, p. 1).

CHAPTER 2
Theoretical and methodological approach

3.0 Theoretical approach

In this chapter, we explain the theoretical and conceptual framework of the thesis. Having unfolded the concept of climate change adaptation and its relationship with mitigation in the previous section, we now look further into the theory behind how climate change adaptation can be governed. Here, we first explore the theory surrounding climate change governance. Thereafter, we investigate the concept of scaling and unfold the analytical framework employed in the thesis.

3.1 Governing climate change adaptation (SA)

In this section, we firstly unfold the theory of transnational climate change governance. Secondly, we elaborate on top-down and bottom-up processes of climate change governance arguing for the importance of further research on the importance of lower levels of governance in climate change governance. Following this, we elaborate further on different levels of climate change governance through which we are able to examine the potential for scaling of cross-border cooperation on adaptation in the HKH.

3.1.1 Transnational climate change governance

Overall, the governance of climate change issues has evolved to include new varieties of cross-border governance with networks and linkages to all kinds of actors - such as cities, local governments, and NGOs (Roger et al., 2017, p. 1). Bernstein and Hoffmann (2018) argue that this evolution especially became evident in the Paris Agreement of 2015 since it showed a *"[...] recognition that the practice of climate governance already involved an array of actors and institutions at multiple scales."* (Bernstein & Hoffmann, 2018, p. 189). Climate governance is increasingly considered to be highly transnational, transcending the traditional nation state center of governance by involving a complex network of both private and public actors operating in the political sphere of climate change governance (Andonova et al., 2009, p. 69; Bulkeley et al., 2014; Lin, 2018).

These increasingly complex networks of climate governance between public and private actors, can also be argued to have a direct effect on ties and cooperation between countries. For example, Cao & Ward (2017) argue that transnational ties in climate governance not only

link organizations or companies involved, but also establish conduits through which information can flow between countries (Cao & Ward, 2017, p. 97). When examining cross-border adaptation initiatives in the HKH, this insight suggests that not only public actors, such as local authorities, but also private actors, such as local NGOs or companies, can play an important role in strengthening ties and collaboration between the countries in the region. When it comes to the effectiveness of transnational climate governance, exactly the interplay between public and private actors is important. For example, a number of studies on the effectiveness of transnational climate governance initiatives highlight that that despite increasingly important roles of private actors, the involvement of public authorities in climate governance efforts increases the chances of successful and effective policies (Michaelowa & Michaelowa, 2017, p. 151; Cao & Ward, 2017, p. 80).

In this thesis, we specifically investigate cross-border adaptation initiatives implemented by the organization, ICIMOD, which is an intergovernmental organization aiming to increase cooperation between the eight countries in the HKH (ICIMOD, 2021a). ICIMOD is in many ways a clear example of the increasingly transnational nature of climate action. The organization works closely with the governing bodies of the eight HKH member countries which constitute the regional members of the organization (ICIMOD, 2021a). However, the organization also collaborates with a number of different partners including UN agencies with more global outlooks, private actors, as well as local NGOs and other organizations (ICIMOD, 2021b). This way, ICIMOD's work places itself in the field of transnational climate action working with a broad variety of both private and public actors at different levels.

The theory outlined above also suggests that public authorities and domestic legislation are of key importance in securing success of adaptation initiatives. However, research clearly highlights that understanding the transnational interplay between actors and levels in climate governance is also crucial in order to fully grasp the complex network of climate change governance. In the case of climate change adaptation governance in the HKH, it is hence important to examine the linkages between both public and private actors in cross-border adaptation initiatives.

3.1.3 Top-down and bottom-up

Within international environmental law, the so-called "matching principle" suggests that the level of jurisdiction should "match" the scope of the problem (Sovacool & Brown, 2009, p. 318). Hereby, smaller problems in communities should be dealt with by local governments or communal entities. This principle creates problems with the scope of climate change and climate change adaptation since climate change is a global problem that hits locally. In a sense, all communities and countries are responsible for emitting greenhouse gasses (Sovacool & Brown, 2009, p. 318). However, due to the differences in vulnerability and responsibility, we argue that there is a need for a more nuanced understanding of the "matching principle". In continuation of this, we argue that because of the severe nature of climate change, we need to understand how local solutions to "local" problems can be a way of addressing the global challenge of climate change.

Efforts to address the problems of climate change can emerge both by a purposeful effort by central players to implement initiatives 'top-down' or it can emerge from a more decentralized scope by a set of localized actors who are trying to address the problems 'bottom-up' (Sabel & Victor, 2017, p. 15). The top-down approach to climate change governance has often been praised for being more effective and comprehensive in solving the problem of global coordination to the climate change problem (Sabel & Victor, 2017, p. 16). Indeed, large-scale solutions are needed when it comes to climate change and a top-down approach can in many cases be necessary. However, this notion of 'effectiveness' also builds on the assumption that the key actors facilitating the solutions and policies top-down have the necessary knowledge and understanding of the needs of the actors involved at lower levels (Sabel & Victor, 2017, p. 16). On the other hand, the importance of including a bottom-up approach in climate governance is, for example, expressed by Sovacool & Brown (2009) by the argument that *"[…] how we regulate something is almost as important as what we regulate. "*(Sovacool & Brown, 2009, p. 318).

By examining how local cross-border climate adaptation initiatives in the HKH can facilitate scaled cooperation on climate change adaptation between countries in the region, we focus on bottom-up mechanisms of adaptation governance. There are several reasons for arguing that a bottom-up approach to climate change adaptation governance has advantages over the top-down approach making this an interesting area for further research.

Firstly, with the rise of academic research on transnational climate governance, increasing attention has been given to lower levels of climate change governance than the international (Sippel & Jenssen, 2009, p. 39; GIZ, 2013; Bausch & Koziol, 2020; Adhikari & Taylor, 2012). Even when climate agreements are reached at the international level, the local level has often been neglected in research despite the local level being the primary implementation level of climate policies (Sippel & Jenssen, 2009, p. 39). In fact, local authorities often have significant influence on several important topics related to climate change adaptation and can hence play a crucial role in the success of adaptation initiatives (Sippel & Jenssen, 2009, p. 40; UNCDF, 2020). The importance of local level governance of adaptation in cities has, for example, increasingly gained attention in academic literature (see e.g., Sippel & Jenssen, 2009; Sethi & Oliveira, 2015; Gordon, 2020; Van der Heijden, 2017). This can largely be explained by the rapid growth of urban populations worldwide. However, rural and municipality levels of climate governance have often been neglected in literature (Jänicke, 2017, p. 112; Bausch & Koziol, 2020, p. 1). Despite this, it can be argued that climate change adaptation in rural areas is of great importance considering that about half the world's population lives in rural areas and that the countryside in fact provides necessary sinks in the sequestration of CO2 (Bausch & Koziol, 2020, p. 1). Furthermore, in the context of the HKH, people living in rural areas are often particularly vulnerable to climate change as their direct dependence on ecosystem services for sustaining livelihoods is higher than in urban areas. Local authorities are closer to the people in the areas they cover, allowing them to take into account the specificities and context-specific circumstances of climate change in their respective areas (Sippel & Jenssen., 2009, p. 39). Hence, more research on the role of local levels of governance in terms of both climate change mitigation and adaptation is needed. By examining processes of local levels of governance, even down to rural municipality level, we can obtain insights into the role of lower levels of governance in facilitating cross-border cooperation on climate change adaptation in a crucial region of the world.

Secondly, it is also well-established that communities and people in areas affected by climate change often have significant resources in terms of knowledge which can prove to be key in designing successful adaptation initiatives (Sogani, 2012, p. 265). Creating initiatives tailored and based on local experiences and knowledge can furthermore provide new opportunities for technological and policy innovations (Sippel & Jenssen, 2009, p. 39). As Adhikari and Taylor put it: "*[...] while policy from the top must support adaptation at the*

bottom, community adaptation should circle upwards to influence policy strongly." (Adhikari & Taylor, 2012, p. 1). An example of this can be found in the HKH's long-lasting tradition for cross-border cooperation on e.g., forest management (Xu et al., 2019, p. 150). Traditions of such cooperation have built unique knowledge and understanding of climate change issues over a long period of time – knowledge which can be utilized in creating successful adaptation policies at the local level with the potential to influence adaptation policies at higher levels bottom-up (Xu et al., 2019, p. 150).

Lastly, it is not only the rural, local level that has been overlooked in research on climate adaptation governance, but also the role of meso-level institutions. A study conducted by the Danish Institute of International Studies (DIIS) highlights that research on climate change adaptation has overlooked the role of meso-institutions located at e.g., district or province levels in governance (DIIS, 2021). Their research suggests that meso-level institutions' role in climate policy implementation is crucial as they; "*occupy a strategic position between the ministries at the center and the different actors in the local context.*" (DIIS, 2021). Adhikari & Taylor argue, as mentioned, that local and community adaptation efforts should 'circle upwards' and aim at influencing policy strongly (Adhikari & Taylor, 2012, p. 54). In this perspective, meso-level institutions can be perceived as levels through which the process of scaling can happen. It can hence be argued that there is a gap in academic literature on the role of 'less-than' national levels of climate adaptation governance. Subsequently, despite increasing attention to e.g., the role that cities play in climate adaptation governance, governance at the local rural municipality or at meso-levels is still largely overlooked. This process of influence and interplay from cross-border adaptation initiatives at the local level towards higher levels of policy is what we research in this thesis in an attempt to fill this gap. Mapping out and understanding these processes of influence and the actors involved in them, allow us to further investigate the potential for local adaptation initiatives to influence adaptation cooperation between countries in the HKH at e.g., municipality, district, or province level. These processes are key in understanding the potential for scaling of cooperation on climate change adaptation.

3.1.2 Levels of governance

In continuation of the importance of understanding the bottom-up process of climate change adaptation governance, further clarification on the notion of 'levels' in climate change governance is needed. There are different conceptual frameworks of 'levels' in literature on

climate change governance. Sethi & Oliveira (2015), for example, understands rural and urban levels of climate change governance to be the central analytical distinctions as most emissions happens in cities despite only about half of the world's population living in urban areas (Sethi & Oliveira, 2015, pp. 530-532). Jänicke (2017) is another scholar to outline different conceptualizations of levels of climate governance drawing on UN frameworks and work of other researchers (Jänicke, 2017). He, overall, distinguishes between global, world regions, national, provincial/state, city, rural local communities, down to the microlevel of individuals (Jänicke, 2017, p. 112). While an analytical distinction between urban and rural levels could be useful in the case of this thesis considering that HKH communities close to country-borders are predominantly placed in rural areas, we build on Jänicke's conceptualization of levels of governance. As we are interested in the process of scaling cooperation across policy levels from the lowest levels of governance, employing a more detailed analytical distinction of levels of governance is useful to our research.

Not all levels presented by Jänicke (2017) and outlined above are relevant in the context of this thesis. For example, cross-border adaptation initiatives in the HKH are, as mentioned, often located outside of cities meaning that governance at the city level is not expected to be significant in the process of scaling cooperation on cross-border adaptation initiatives. The level of rural local communities has, as mentioned, often been overlooked in research on climate governance but is increasingly being seen as an important level of climate change adaptation governance (Jänicke, 2017, p. 114). While Jänicke argues that the city-level is an important part of climate governance as this level often has influence on important policy areas related to climate, we use the notion of municipality instead in order to capture that we look at adaptation initiatives predominantly outside cities. The meso-levels of governance, such as provincial and district levels, can, as touched earlier, provide an important bridge between state- and national level policy making and community- and municipality level. Additionally, as we focus on the potential for local cross-border cooperation to move to higher policy levels, we do not perceive the micro-level of individuals to be at the core of this process, despite acknowledging that individual persons may play significant roles in the scaling of initiatives.

In this thesis, we therefore focus on the rural local community level in which identified initiatives are being implemented, municipality level, provincial/district level, state level, and

central government level in individual countries. We hereby attempt to include all levels of governance which we assume could potentially prove significant for the scaling processes investigated in the analysis. However, it should be noted that the importance of the different levels may differ significantly for different identified cross-border adaptation initiatives. For example, for an initiative between country A and B, the provincial level in country A may play a key role in the scaling process in country A where this may not be the case in country B due to differentiated political and institutional structures of the two countries. By considering the different levels of governance in the scaling process, we are able to examine and discuss implications of the process more in depth. In the table below, we have summarized the levels of governance we are focusing on in this thesis, which were outlined in a previous section.

Table 1. Levels of governance investigated in the analysis of potential for scaling of cross-border cooperation in the HKH

Level	**Explanation**
Central government	National level of each of the eight HKH countries.
State	States in identified individual HKH countries.
Provincial / district	Meso-level of governance of identified individual HKH countries.
Municipality level	Municipalities of individual HKH countries closest to identified adaptation initiatives.
Community / local authority	The 'lowest' level of governance in which the identified initiatives are being implemented including community level.

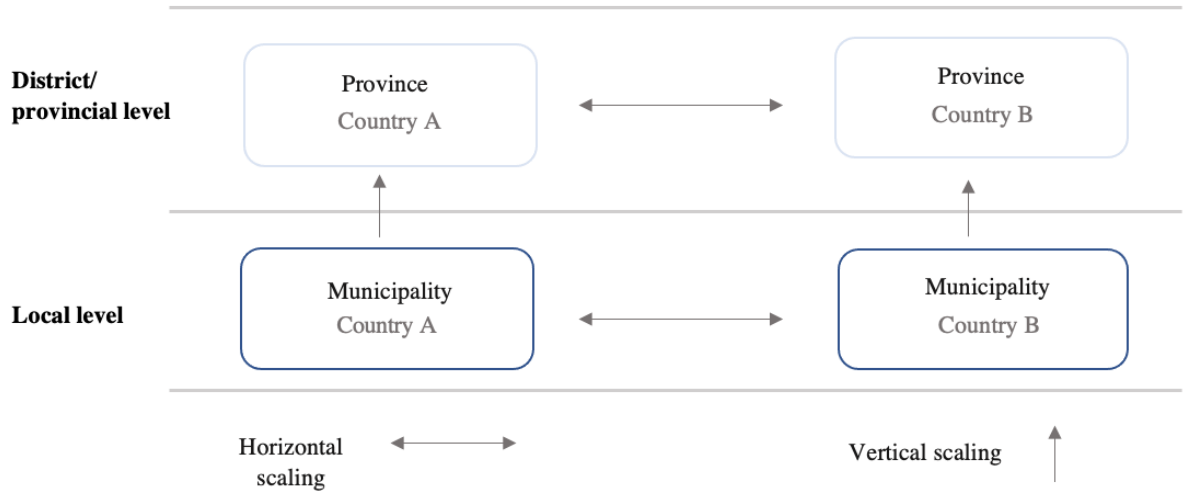
3.2 Scaling cooperation on adaptation (CN)

Having argued that a bottom-up understanding of the process of climate change adaptation governance across levels is beneficial in the case of the HKH and for the importance of examining the involvement of different types of public and non-public actors in adaptation initiatives, we now turn to have a closer look at the concept of scaling. First, we unfold the concept of horizontal and vertical scaling of climate change adaptation initiatives. Thereafter, we present the theory around how scaling can be generated.

3.2.1 Horizontal and vertical scaling

Reid & Schipper (2014) outlines how the process of scaling adaptation initiatives can happen both horizontally and vertically (Reid & Schipper, 2014, p. 9). Horizontal scaling, also referred to as 'scaling out', is when specific initiatives are carried out on a larger scale, but often at the same level. Hereby, it is defined as a spatial extension to impact a larger entity (Snapp & Heong, 2003, p. 67). The scaling can also be a vertical 'upscaling' where adaptation initiatives are moved to higher levels of decision-making (Rossing et al., 2014, p. 105). This move to a higher level of policy can both happen within a country, e.g., from local level to national level, or it can happen at a larger scale regionally to globally (Rossing et al., 2014, p. 105). The process of scaling initiatives needs to include tools that can help facilitate that initiatives can be reproduced, but still take the given context into consideration (Rossing et al., 2014, p. 105). In the figure below, we have illustrated an example of how we conceptualize the process of vertical and horizontal scaling between two levels of governance in two countries. The arrows illustrate the process of vertical scaling across levels of governance, and the process of horizontal scaling between two or more countries at the same level of governance. For the sake of the illustration, we have simplified the process of scaling and only illustrated two levels of governance. It should hence be kept in mind that we investigate more levels of governance in this thesis and that that process of vertical scaling can also happen between e.g., the local and state level and not only from one level to the next.

Figure 2. Illustration of horizontal and vertical scaling



In this thesis, we focus on both horizontal and vertical scaling. As we look at cross-border adaptation initiatives, horizontal scaling can be considered a central aspect of implementing an adaptation initiative across a country-border. Understanding the process of horizontal scaling, enables us to examine the linkages and interactions which are established between actors at the same level but in different countries. We work with an assumption that these same-level interactions can have an impact on interactions between countries at higher levels. For example, a local cross-border adaptation initiative between country A and B, which creates interactions between local authorities in both countries, may result in these local authorities engaging with their respective provincial governments which may generate vertical scaling. Examining the process of horizontal scaling is hence a means to understand the potential for vertical scaling of cooperation on climate change adaptation between the countries involved in identified cross-border adaptation initiatives in the HKH.

In order to achieve a successful horizontal and vertical scaling, it is important that adaptation initiatives are applied at the correct level (Rossing, 2014, p. 115). Hereby, the optimal and well-functioning initiatives at the local level can help facilitate better practices for initiatives at the local- and regional level (Rossing, 2014, p. 115). Local adaptation initiatives can indeed impact decision making at higher levels (Adhikari & Taylor, 2012, p. 63). Hence, analyzing the process of vertical scaling via the previously outlined levels of governance is a useful analytical tool in understanding at which levels in the process, vertical scaling is enabled or constrained. While horizontal scaling is central in implementing a local adaptation initiative across a country's border, the process of vertical scaling is especially important when it comes to the potential for lower levels of governance to ‘circle upwards’ and influence cooperation on adaptation at higher levels. This movement across levels of governance is conceptualized as the process of vertical scaling.

3.2.2 Generating scaling

Having conceptualized the concepts of horizontal and vertical scaling, we now turn to unfold the theory behind how scaling can be generated. Based on our conceptualization of the framework developed by Bernstein and Hoffmann (2018), we investigate normalization, adaptive capacity building, and coalition building as mechanisms which can generate scaling of cross-border cooperation on adaptation. Lastly, we summarize by presenting the analytical framework for the thesis at the end of the section.

Bernstein and Hoffmann (2018) have developed a framework to understand how different mechanisms can contribute to the process of scaling across different jurisdictions (Bernstein & Hoffmann, 2018). They argue that scaling can happen when interventions successfully contribute to normalization, capacity building and/or coalition building (Bernstein & Hoffmann, 2018, p. 201). When these three aspects, or some of the aspects, are present, the different policies and practices can be scaled (Bernstein & Hoffmann, 2018, p. 201). It should here be mentioned that, according to Bernstein & Hoffmann, these three mechanisms can potentially also facilitate a process of entrenchment (Bernstein & Hoffmann, 2018, p. 202). However, since we examine the potential for scaling of cooperation on climate change adaptation, the question of entrenchment is beyond the scope of this thesis.

As previously mentioned, the process of scaling initiatives needs to include tools that can help facilitate that initiatives can be replicated, but still take the given context into consideration (Rossing et al., 2014, p. 105). Bernstein & Hoffman's framework provides us with such tools that allow us to investigate the mechanisms which need to be in place to generate scaling of local cross-border adaptation initiatives in the HKH and hence increase the potential for strengthened cooperation on adaptation between countries in the region.

3.2.2.1 Normalization

The first aspect of *normalizatio*n is a process where the view on specific policy responses and behavior shifts so the responses are seen as the "best" and "most appropriate" solutions to the problem (Bernstein & Hoffmann, 2018, p. 198). This process can result in policy changes and open room for new solutions and approaches to e.g., the problem of climate change vulnerability (Bernstein & Hoffmann, 2018, p. 198). According to Bernstein and Hoffmann, two specific aspects can facilitate this process of normalization: norm entrepreneurs and practices (Bernstein & Hoffmann, 2018, p. 198).

First, certain actors can promote and advocate for specific new ways to perceive the problems and thereby engender new ways to act (Bernstein & Hoffmann, 2018, p. 198). These actors are often referred to as "norm entrepreneurs" within the literature (Bernstein & Hoffmann 2018, p. 198; Finnemore & Sikkink, 1998, p. 897). Norm entrepreneurs are important in the initial state since they can help create new norms by calling attention to specific issues (Finnemore & Sikkink, 1998, p. 897). Hereby, norm entrepreneurs can be actors who raise awareness of the extreme weather events in the HKH affecting specific parts

of agriculture. A common question in this regard is how many actors must share the same view and way of acting before it can be categorized as a norm (Finnemore & Sikkink, 1998, p. 892). Norms can be present within a region or community; however, they are often continuous entities (Finnemore & Sikkink, 1998, p. 892). Therefore, it can be difficult to distinguish and encircle different norms. However, normalization through norm entrepreneurs can be a key driver in scaling and hence, we will in this thesis explore how different norms can affect specific actions towards adaptation policies and facilitate scaling. An initial expectation for our thesis in this regard is that ICIMOD potentially plays a role as a norm entrepreneur. However, it may also be the case that other, perhaps unexpected, actors play such a role at different levels of governance. This could be leaders of local communities involved in identified adaptation initiatives, public actors at the provincial level, or certain actors in a specific ministry at the national level.

The second part of normalization focuses on how practice can shape and affect the way actors perceive different issues, for example, the issue of climate change adaptation (Bernstein & Hoffmann, 2018, p. 198). If people are involved in different practices, such as cross-border adaptation initiatives, it can affect how they view the issue of climate change adaptation and cooperation across borders. Pouliot (2011) argues how this aspect works both ways since people both act according to their beliefs and what they consider to be appropriate, but that actions themselves also alter people's beliefs (Pouliot, 2011, p. 21). Hereby, a specific policy initiative might affect and shape how actors in a local community, but also at higher levels, perceive the world and the need for applying a more comprehensive approach to tackling climate change issues (Bernstein & Hoffmann, 2018, p. 198). Circling back to the introduction of this thesis, it could, for example, be noted how countries in the HKH have significantly increased their ambitions on climate change over the last decades. Examining how such practices can contribute to and be a product of normalization, is hence important to understand the potential for scaling of cooperation on climate adaptation initiatives in the region.

3.2.2.2 Adaptive capacity building

The second mechanism that can contribute to the process of scaling is capacity building. According to Bernstein & Hoffmann's framework, this mechanism involves developing and altering the capabilities within a system to deal with climate changes (Bernstein & Hoffmann, 2018, p. 199). The mechanism of capacity building can move across different systems and jurisdictions as well (Bernstein & Hoffmann, 2018, p. 199). In our case, efforts on cross-

border capacity building are relevant to look at as it allows us to understand whether capacities are in place to generate scaling of cooperation across levels of governance.

With the focus of this thesis being on climate change adaptation, we argue that the concept of 'adaptive capacity', as outlined in the introduction of the thesis, is useful in clarifying the concept of capacity building. As mentioned, we build on Armitage & Plummer's definition of adaptive capacity as the ability of social systems to be robust to disturbance and capable of responding to change (Armitage & Plummer, 2010, p. 1). Adaptive capacity is related to the skills, resources, and information that actors are able to use in need of change (Berger et al., 2014, p. 22). Adaptive capacity is not a homogenous concept since adaptability can vary within communities and systems due to differences in socio-economic and institutional capacities (Ford & Smit, 2004, p. 393). Such differences in adaptive capacities are particularly important to consider when examining the scaling potential of cross-border cooperation on adaptation in the HKH. Inherently, cross-border adaptation initiatives involve actors and entities in at least two different countries. Despite bordering communities often sharing many of the same circumstances, the same environments, and the same climate challenges, they can still have very different adaptive capacities for different reasons. Additionally, differentiated adaptive capacities at different levels in the respective countries can have important implications for the horizontal and vertical scaling potential of cross-border cooperation on adaptation. If we, for example, imagine a cross-border climate adaptation initiative between country A and B, the process of vertical scaling might be constrained in country A but not in country B due to differences in adaptive capacity.

Following from this, we, inspired by Armitage & Plummer's conceptualization of adaptive capacity, apply an understanding of adaptive capacity as the process of change which entities in cross-border climate adaptation initiatives are able to enforce in the process of horizontally and vertically scaling efforts when faced with climate change. Subsequently, we argue that adaptive capacities of entities play a role in the potential for scaling of adaptation initiatives and eventually increased cross-border cooperation on adaptation between the countries involved in local adaptation initiatives at higher levels. Based on this, we therefore build further on Bernstein and Hoffmann's concept of capacity building, conceptualizing it as *adaptive* capacity building for the purpose of this thesis. The concept of adaptive capacity can, as outlined in the introduction, help us understand the flexibility and/or rigidity of

adaptation governance across borders in the HKH making it useful for the analytical framework employed in the thesis.

As mentioned, adaptive capacity depends on a number of both socio-economic and institutional factors. Within the literature on adaptation, there is often a distinction between 'hard adaptation' and 'soft adaptation' (McDowell et al., 2016; Sovacool et al., 2012). Hard adaptation focuses on the implementation of hardware solutions, such as infrastructure, and solutions which are often more capital-intensive (McDowell et al., 2016, p. 20). This is hereby closely related to material capacity building which is one of the three aspects of capacity building presented by Bernstein and Hoffmann (Bernstein & Hoffmann, 2018, p. 199). Contrary, soft adaptation involves strengthening a community and creating cohesion within the communities. Hereby, it is related more to Bernstein and Hoffman's two other types of capacity building, institutional and cognitive capacity building (Bernstein & Hofmann, 2018, p. 199). This furthermore underlines how the concepts of capacity building and adaptation are closely interlinked.

To capture the different aspects of adaptive capacity building, we, firstly, divide the concept of adaptive capacity building into material adaptive capacity building and institutional adaptive capacity building based on two of Bernstein and Hoffmann's three types of capacity building outlined above. As mentioned, material capacity building is closely related to hard adaptation. and hereby focus on financial means and physical resources. Institutional capacity is for the purpose of this thesis understood as the different mechanisms in place to foster and enable cooperation between the countries in the HKH. Hereby, such institutions mediate different kinds of cooperation. Bernstein & Hoffman's third type of capacity building, cognitive capacity building, is not considered in this thesis. The reason for this is that the concept of cognitive capacity building relates to the cognitive limitations of individuals (Weible, 2014, p. 3 as cited in Bernstein & Hoffmann, 2018, p. 199). As the focus of our research is on levels of governance rather than individuals, this aspect is beyond the scope of this thesis. We do, however, in addition to material and institutional adaptive capacity building look at what we refer to as political adaptive capacity building. Political adaptive capacity is conceptualized as related to vertical scaling in particular and is understood as the ability for lower levels, such as district and rural municipal authorities or communities, to impact higher levels of governance when it comes to climate change adaptation.

Together, these aspects of adaptive capacity building can, at the local level of the cross-border adaptation initiatives we examine, enable scaling of cooperation on adaptation to happen. In this thesis, the central interest is not only the adaptive capacity building in place to facilitate cooperation between actors in the countries involved in a cross-border local adaptation initiative. Central are also differences in adaptive capacity between actors in the respective countries at different levels as these differences are significant for the potential for cross-border initiatives to generate scaling of cooperation on adaptation between HKH countries. Our conceptualization of adaptive capacity building is summarized in the table below.

Table 2. Conceptualization of adaptive capacity building summarized

Aspect of adaptive capacity building	**Explanation**	**Assumption**
Material adaptive capacity building	Capacity building on financial means and physical resources to support cross-border adaptation initiatives.	Cooperation between actors involved in a cross-border adaptation initiative in terms of material adaptive capacity building related to the initiative can generate potential for scaling of cooperation.
Institutional adaptive capacity building	Building capacity of formal and informal institutions involving actors from two countries involved in a cross-border adaptation initiative.	Stronger formal and informal institutions on cross-border adaptation can strengthen cooperation between the involved countries on adaptation and hence generate scaling of cooperation.
Political adaptive capacity building	Political capacity building of actors involved with cross-border adaptation initiatives strengthening involved actors' influence on decisions related to climate adaptation in their respective countries.	Political adaptive capacity building for actors involved in a cross-border adaptation initiative can enable these actors to influence higher policy levels as well as generate cooperation between actors in the involved countries at different levels. This can generate potential for vertical scaling of cooperation.

3.2.2.3 Coalition building

The third mechanism to enable scaling is coalition building. In this regard, it is relevant to look at how specific interventions spur or strengthen cooperation that can facilitate new initiatives to address climate change (Bernstein & Hoffmann, 2018, p. 200). Hereby, certain interventions or adaptation programs can spur and facilitate further economic and political

coalitions that can facilitate frameworks for new initiatives and scaling of existing cooperation (Bernstein & Hoffmann, 2018, p. 200). In the case of climate change adaptation, the process of coalition building can link actors positively engaged in efforts on adaptation, counterbalancing the influence of actors who, for example, work against increased cooperation on adaptation (Bernstein & Hoffmann, 2018, p. 200). Hereby, the "winners" can facilitate climate change action together and build new coalitions that can ensure the work against climate change (Bernstein & Hoffmann, 2018, p. 200). Eventually, this can in its purest form be considered the optimal goal of regional climate adaptation cooperation between countries in the HKH, but such coalition building can also happen at very local levels. Especially when it comes to vertical scaling of the identified local cross-border adaptation initiatives from one policy level to another, coalition building can be of key importance as it can create linkages or interactions between entities in the countries involved in the initiative. Hence, coalition building can be a driver in strengthening cooperation on climate adaptation between countries at higher policy levels. Focusing on local cross-border adaptation initiatives implemented by ICIMOD hence makes an interesting case to research coalition building as ICIMOD's main goal is to increase knowledge and information sharing, as well as interactions and cooperation on climate change between countries in the HKH (ICIMOD, 2021a).

If all or some of the different mechanisms, normalization, *adaptive* capacity building and coalition building, are present in the cross-border adaptation initiatives, they can provide potential for generating scaling (Bernstein & Hoffmann, 2018, p. 200). In continuation of this, it is important to highlight two aspects. Firstly, we are examining whether the right conditions are present for the *potential* of scaling of cooperation to happen. It should therefore be mentioned that, due to the complexity and interlinkages between the different mechanisms and the fact that other conditions might affect whether this potential can be realized, we cannot predict what will happen in the future (Bernstein & Hoffmann, 2018, p. 201). However, this framework can be used to examine the potential for scaling and hence strengthening of cooperation between countries in the HKH and still provide us with perspectives on how this ambition may be redeemed in the future. Hence, we work with an assumption based on this typology, that the stronger these three mechanisms are, the more likely are horizontal and vertical scaling of local cross-border adaptation initiatives and cross-border cooperation to happen. We use the three favorable aspects of scaling to guide the development of our methodological approach.

Secondly, scaling can also happen as a result of the fact that interventions open up a space for more action by releasing political and economic space for more extensive activity (Bernstein & Hoffmann, 2018, p. 201). These mechanisms are, additionally, especially relevant to look at in our case since we focus on how 'small' localized projects can facilitate larger cooperation and hence how the local level of adaptation initiatives can be a facilitator of cross-border cooperation. Thereby, it challenges the perception that high-level policies are the best way to ensure cooperation on climate governance (Sabel & Victor, 2017, p. 15). In this thesis, we can thereby explore the potential in which local adaptation initiatives engender new forms of cooperation (Bernstein & Hoffmann, 2018, p. 201).

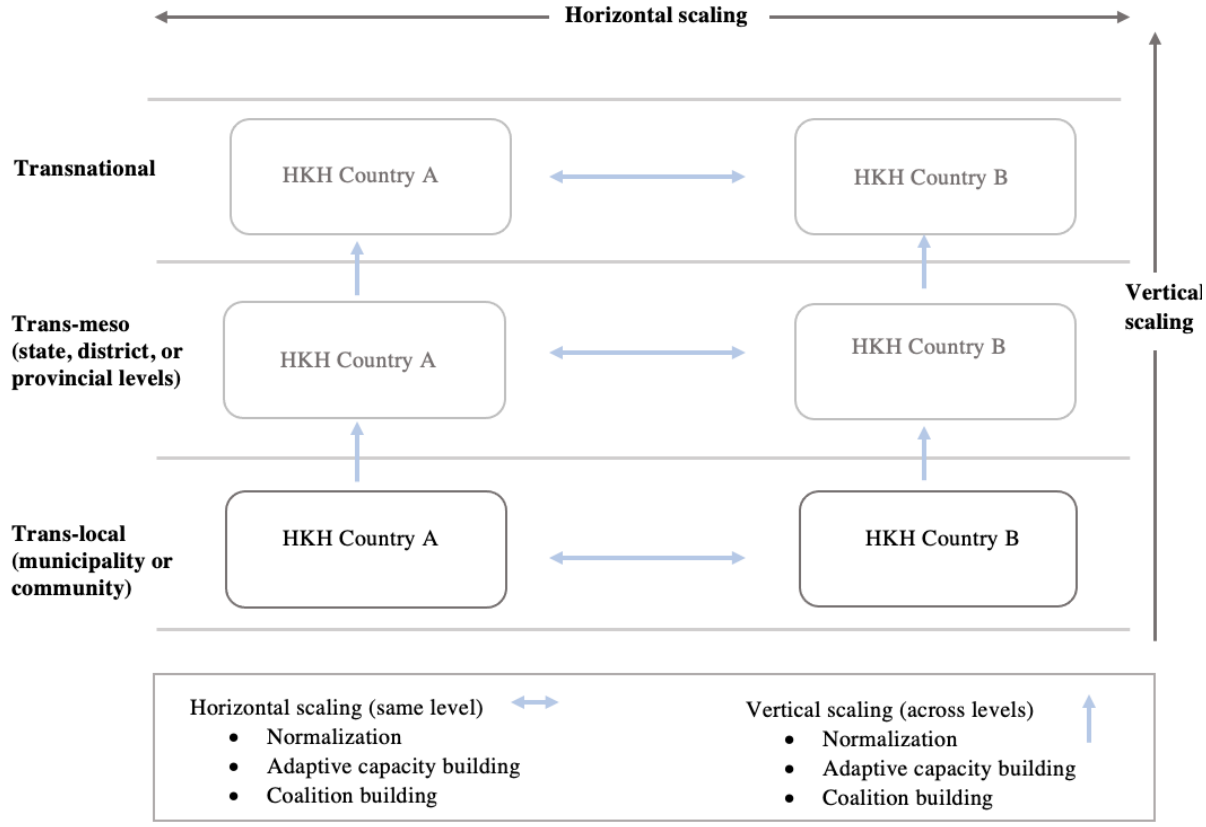
3.3 Analytical framework (CN, SA)

In the previous section, we engaged with three mechanisms to generate scaling of local cross-border cooperation on adaptation building on Bernstein & Hoffmann's (2018) analytical framework; normalization, *adaptive* capacity building, and coalition building. Building on this, we now move to present the analytical framework of the thesis which is illustrated in the figure below. Our analytical framework builds on the levels of climate change adaptation governance presented in this chapter. For the sake of the illustration, we have simplified the levels of governance outlined in the previous section. Hence, the levels of provincial/district and state are included in what we refer to as the meso level in the illustration whereas the levels of community, local authority, and municipality are included in what is referred to as the local level. We understand the process of horizontal scaling illustrated in the figure as happening between at least two countries at the same level of governance. Furthermore, the process of vertical scaling happens bottom-up across levels of governance. In examining the potential for scaling of cross-border cooperation on adaptation, we employ the concepts of normalization, adaptive capacity building, and coalition building as outlined in the previous section.

The analytical framework allows us to investigate the process of horizontal scaling of cooperation on climate change adaptation across borders in the HKH. Additionally, it allows us to investigate the bottom-up process of scaling cooperation on adaptation between countries in the HKH from local cross-border adaptation initiatives across levels of governance. This framework enables us to understand how scaling of cross-border

cooperation on climate change adaptation can be facilitated by local cross-border adaptation initiatives in the region.

Figure 3: Analytical framework for examining the potential for scaling of local cross-border adaptation initiatives



4.0 Method and empirics

In this chapter, we introduce the methodological foundation and approach of the thesis. First, we present the case selection for the thesis and narrow the scope of the analysis. Second, we present the qualitative approach and interview-based data collection forming the empirical foundation for the thesis and analysis.

4.1 Case selection (SA)

This section presents the arguments for narrowing our analytical focus to local cross-border adaptation initiatives between Nepal and bordering countries implemented by or in collaboration with the organization ICIMOD. Following this, the section presents the identified local cross-border adaptation initiatives chosen for further examination in the analysis of the thesis.

4.1.1 The International Centre for Integrated Mountain Development

For the purpose of this thesis, we specifically examine local cross-border adaptation initiatives implemented by or in collaboration with the International Centre for Integrated Mountain Development (ICIMOD). ICIMOD is, as previously mentioned, an intergovernmental organization between the eight countries in the HKH (ICIMOD, 2021a). There are several considerations and reasons for choosing ICIMOD's adaptation initiatives as the focus of our research.

Firstly, ICIMOD's intergovernmental organizational nature gives the organization access to work at different levels - from the very local level to engagements with national governments in transnational and international fora. ICIMOD works primarily to enhance knowledge-sharing and cooperation on policy making in the HKH but has also functioned as a forum for multilateral discussions between the eight HKH countries and pushed for strengthened regional cooperation on climate change in the HKH (ICIMOD, 2021a; Molden et al., 2017). Hence, a case study on the adaptation initiatives implemented by or in collaboration with ICIMOD can provide us important insights into cooperation on climate change adaptation in the region as ICIMOD is, at this point in time, the only intergovernmental organization specifically dedicated to working on climate change in the HKH. ICIMOD's work at different levels provides an interesting case to examine the

interplay between different policy levels and actors in local cross-border adaptation initiatives.

Secondly, ICIMOD works closely with both the national governments and local authorities in the HKH countries as well as NGOs and actors from the private sector (ICIMOD, 2021b). Due to ICIMOD's vast range of partners and collaborating entities, its adaptation initiatives present a great case to analyze in terms of understanding the different actors, dynamics, and interplays existing in the process of scaling cross-border cooperation on climate change adaptation in the HKH.

Lastly, ICIMOD's aim is to promote transnational cooperation in the HKH on both research, knowledge-sharing, and policy (ICIMOD, 2021c). As a result of this, its local initiatives have a transnational outlook and often have an aim to be scaled and implemented across country-borders. The nature of climate change is transboundary and eco-systems do not abide by the structure of the modern state (Pillai, 2021, p. 1). Therefore, initiatives implemented by an organization like ICIMOD, which aims to implement initiatives that follow the eco-systems and not the borders of the different states, provide an ideal case for studying scaled and transnational cooperation on climate change adaptation.

4.1.2 Nepal and its bordering countries

We furthermore limit our analytical focus to local adaptation initiatives being implemented between Nepal and its bordering countries. While the characteristics of cross-border cooperation on adaptation between these countries may not be the same as between other countries in the HKH, we argue that transboundary climate change cooperation between Nepal and its bordering countries, China, India, and Bhutan, are key in strengthening cooperation on adaptation in the HKH. Nepal will act as a starting-point for identifying cross-border adaptation initiatives. The argument for this is threefold.

Firstly, Nepal is one of the most vulnerable countries to climate change in the world (UNDP Nepal, 2021). This is due to the country's fragile geography and the fact that most of the population's livelihoods are natural resource based (Piya et al., 2019, p. 3). Nepal's economy is thereby highly dependent on climate-sensitive sectors (Shresta & Aryal, 2011, p. 65). Therefore, the population is especially vulnerable to the changing and more extreme weather patterns such an increased intensity in monsoon rain, higher risk for flash flooding, and landslides (Piya et al., 2019, p. 3). All countries in the HKH experience these increased

risks. However, in Nepal, it can play a significant role in exacerbating the vulnerability and existing poverty (Piya et al., 2019, p. 3). Hence, climate change adaptation policies in Nepal are of great importance as the vast majority of its population is faced with great risks as a result of climate change.

Secondly, Nepal is geographically placed in the center of the HKH region and is, together with Bhutan, the only of the eight countries in the region whose territory is fully included in the HKH (Sharma et al., 2019, p. 4). Therefore, Nepal is ideal as a *critical case* and we argue that successful climate change adaptation and cooperation across borders are most likely to be prioritized and acted on compared to other countries in the region (Neergard, 2010, p. 9). Furthermore, many of the main rivers in the region start in the Himalaya mountains of Nepal which underlines Nepal's central position in the HKH. Lastly, Nepal, being a country transitioning towards higher ambitions on addressing climate change, provides a critical case in examining strengthening of regional adaptation cooperation in the region (Pandey et al., 2021).

Lastly, a large part of the literature focusing on climate change adaptation in Asia often tends to focus on more developed and larger countries like India and China (Sovacool et al., 2012, p. 113). Therefore, we want to contribute to literature on climate change adaptation in less developed countries by including Nepal and Bhutan in the cluster of HKH countries examined in this thesis. This is furthermore important due the high inequality in vulnerability between the countries in the HKH. The mountain communities in the HKH are the most affected and most vulnerable to climate change impacts (Mishra et al., 2019, p. 462). Therefore, mountainous communities in China and India might be just as vulnerable to climate change as mountainous communities in Nepal. However, for countries such as India and China, mountain communities are only part of large and very diverse populations out of which many communities are not directly affected by climate change in the HKH. Therefore, a country like Nepal, which is predominantly a mountain country, is ideal to examine as the basis for cross-border cooperation on adaptation in the HKH.

Nepal’s bordering countries, China and India, are two of the largest countries and economies of the world. Considering India and China’s relative power in the HKH region these two countries are central to scaling of cooperation on climate change adaptation in the region. Examining cross-border adaptation initiatives between Nepal and its bordering countries, India, and China, therefore provides a critical case in terms of increased transnational

cooperation on adaptation in the HKH. While Nepal does not technically border Bhutan, we will in the thesis also consider Bhutan a bordering country of Nepal. Bhutan shares several similarities with Nepal by also being categorized as a LDC as well as being fully covered in mountains. Furthermore, Bhutan is the first and only carbon-negative country in the world implementing highly ambitious climate policies (Climate Council, 2017). As we will elaborate in the coming section, the identified local cross-border adaptation initiatives, which we investigate during the analysis, are selected with Nepal as the base. However, as some of the identified initiatives also include Bhutan, we argue that Bhutan can together with India and China be considered bordering countries of Nepal for the purpose of studying cross-border adaptation initiatives in this part of the HKH region.

Limiting our analytical focus to Nepal and its bordering countries means that we cannot generalize conclusions to the HKH as a whole, considering that specific factors might impact cooperation on adaptation between other HKH countries in different ways than between Nepal and its bordering countries. However, taking into account that India and China can be considered the key players in integrated regional cooperation on climate change adaptation in the HKH, we argue that the conclusions reached throughout the thesis are still of value in understanding scaling of cooperation on adaptation in the HKH as a whole. The overall aim of conducting a case study of Nepal and its bordering countries is furthermore not to generalize the results to other areas of the world which are vulnerable to climate change. Due to the characteristics of the HKH, the results found in the analysis will likely be unique to the region. However, an aim of our thesis is to conduct what Yin (2014) conceptualizes as analytical generalization. With analytical generalization, the analytical framework should be able to be expanded, reproduced, and used in other cases (Yin, 2014, p. 15). By conducting our research, we are hereby testing whether the analytical framework employed is sufficient to answer the question of scaling cross-border cooperation on climate change adaptation.

4.1.3 Identifying local cross-border adaptation initiatives

In this thesis, we examine local cross-border initiatives related to ICIMOD's work on climate change adaptation in the HKH. We employ, as previously mentioned, a broad understanding of climate change adaptation. Subsequently, we note that most of ICIMOD's activities are related to climate change adaptation in a broad sense as the organization overall focuses on ensuring sustainable development in the HKH and hence increasing the adaptive capacity of

actors and communities affected by climate change in the region (ICIMOD, 2021d). Our approach to identifying adaptation initiatives for further study is based on three criteria. First, the initiatives must be cross-border initiatives. This entails the initiatives are present at both sides of a border. While such initiatives must not necessarily be located directly at a border, the activities on each side of a border must be linked to each other in the design of the initiatives. This criterion enables us to understand the mechanisms for scaling of cross-border cooperation. The second criterion is that the activities under the initiatives are broadly related to climate change adaptation. Lastly, the initiatives should be local which entails that local actors and governments are included in their implementation. This enables us to examine the process of scaling cooperation from the local level, the focus of this thesis. Based on these three criteria, we have identified three of ICIMOD's so-called regional programmes for further examination. Under these regional programmes, we specifically focus on the initiatives involving Nepal, as outlined in the previous section. Additionally, we have identified two initiatives implemented by Oxfam Nepal and WWF Nepal in partnership with ICIMOD respectively for further examination.

The first identified ICIMOD programme is the Adaptation and Resilience Building programme (ICIMOD, 2021e). The overall aim of this programme is to "[...] *enhance resilience of women and men of the HKH to socioeconomic and environmental changes, including climate change.*" (ICIMOD, 2021e). The argument for choosing this regional programme is twofold. First, the programme is specifically dedicated to climate change adaptation. Secondly, one of the goals of the programme is *"[...] to ensure that these solutions are scaled up and scaled out to reach as many communities as possible."* (ICIMOD, 2021f). These two aspects show why this regional programme is ideal to examine since it aligns with our theoretical framework and the overall focus of our research. Under this regional programme we focus specifically on the Resilient Mountain Solutions (RMS) initiative (ICIMOD 2021f). The goal of this initiative is: "*Enhanced resilience and adaptive capacities of HKH communities through the research, piloting, and adoption of resilient solution packages, along with knowledge sharing and capacity building.*" (ICIMOD, 2021f). Furthermore, the programme focuses on horizontal scaling of initiatives and on bridging the policy-practice divide by engaging a variety of stakeholders across levels and sectors (ICIMOD, 2021f).

The second regional programme for further examination is the Transboundary Landscape programme. The overall aim of this programme is "*improved transboundary cooperation among member countries demonstrated through regional policies and strategic partnerships leading to the sustenance of mountain ecosystem services and equitable livelihood benefits in the HKH.*" (ICIMOD, 2021g). It takes its starting point in pre-identified biodiversity landscapes in the HKH which spread out across country-borders including territory of several different countries in the region. While some aspects of the programme are focused on conservation and others on e.g., maintaining indigenous groups' livelihoods and cultures, the programme is overall created to bridge and strengthen cross-border cooperation between people in the identified landscapes whether government officials or local communities (ICIMOD, 2021g). Hence, examining initiatives under this regional programme provides us important insights on climate change adaptation cooperation in the region. Under this regional programme we focus specifically on the two initiatives involving Nepal, namely the Kailash Sacred Landscape Conservation and Development Initiative on the border between India, Nepal, and China, and the Kanchenjunga Landscape Conservation and Development Initiative on the border between India, Nepal, and Bhutan (ICIMOD, 2021g).

The last regional programme for further examination is called River Basins and Cryosphere (ICIMOD, 2021h). We focus specifically on the Koshi Basin Initiative under the regional programme as this initiative is implemented in the Koshi Basin on the border between India, China, and Nepal. The overall goal of the initiative is "*improved water resource management in the Koshi basin and enhanced livelihoods through evidence-based decision making and basin-wide cooperation.*" (ICIMOD, 2021h). Rivers flowing from the mountains are transboundary in nature and their river basins are central to people on all sides of the borders' livelihoods. This initiative can therefore provide important insights on how cross-border cooperation on water management, a central area for climate change adaptation, is facilitated in the region.

In addition to ICIMOD's own initiatives, we have chosen to include two other local cross-border climate change adaptation projects in the region. These projects have in common that they are implemented in partnership with ICIMOD. The first initiative is a project named Transboundary Rivers of South Asia (TROSA) (Oxfam Nepal, 2020). The project is a cooperation between Oxfam Nepal and ICIMOD and "*focuses on supporting rural river*

communities to remain connected to, and in control of, their lands, waters and resources." (Oxfam Nepal, 2020). The project aims to implement activities in a number of districts on the border between Nepal and India (Oxfam Nepal, 2020). The second initiative is the 5-year partnership that WWF Nepal and ICIMOD have recently engaged in (WWF Nepal, 2021). This partnership focuses on "*working towards common goals for landscape-level conservation, including protected area management, biodiversity conservation, climate change adaptation, tackling climate change-related disasters, reducing air pollution and resilience-building of mountain communities.*" (WWF Nepal, 2021).

While the TROSA project focuses more on local communities, the partnership between ICIMOD and WWF Nepal also focuses on conservation and cooperation on managing this (Oxfam Nepal, 2020; WWF Nepal, 2021). The purpose of looking into these initiatives is to gain an understanding of how actors, such as NGOs, can play a role in the facilitation process of scaling cross-border cooperation between countries in the HKH. Drawing on the previously outlined insights on transnational climate governance NGOs have, for example, gained significance in climate change governance over the last decades. Hence, examining these initiatives can provide us with an understanding of the interplay between NGOs, intergovernmental organizations such as ICIMOD, and the stakeholders involved in local cross-border adaptation initiatives in the HKH. The table below summarizes the identified initiatives which we base the analysis of this thesis on.

Table 3. Overview of identified local cross-border adaptation initiatives

Programme	**Initiative(s)**	**Implementing organization**	**Transboundary cooperation**
Adaptation and Resilience Building	Resilient Mountain Solutions (RMS)	ICIMOD	All of HKH
Transboundary Landscapes	Kailash Sacred Landscape Conservation and Development Initiative	ICIMOD	China, Nepal, India
	Kanchenjunga Landscape Conservation and Development Initiative	ICIMOD	India, Nepal, Bhutan
River Basins and Cryosphere	Koshi River Basin Initiative	ICIMOD	China, India, Nepal
Transboundary Rivers of South Asia (TROSA)		Oxfam Nepal in partnership with ICIMOD	Nepal and India
5-year partnership		WWF Nepal in partnership with ICIMOD	All of HKH

Information on programmes and initiatives are extracted from ICIMOD's website.

4.2 Methodological approach (CN)

In this thesis, we take a qualitative methodological approach to our research. The primary empirical foundation of the thesis is interviews conducted with key stakeholders involved in the identified cross-border adaptation initiatives. In this section, we outline the methodological approach of the thesis, the interview selection strategy, elaborate on additional qualitative data used to support the analysis, and, lastly, on our strategy in processing the collected interview data.

4.2.1 Qualitative interview-based approach

We are applying a qualitative approach in order to answer our research question. A qualitative approach allows us to understand the different views and perspectives of the people working with climate change adaptation in the region (Yin, 2016, p. 8). Hereby, we can better understand the complexities of the issues investigated which is important in researching an issue such as scaling of cross-border cooperation where a variety of factors and actors can play a role in a complex process. The strengths of applying a qualitative approach are hereby further underlined in the capability of the qualitative approach to capture contextual conditions (Yin, 2016, p. 8). In our case, this is essential so we can understand the complexities of cooperation on climate change adaptation between Nepal and its bordering countries and what possible context-specific opportunities and barriers affect the potential for scaling initiatives and cooperation. With a qualitative approach we can accommodate the complexities by conducting an in-depth case study of the specific context of cross-border cooperation in the HKH and discuss its wider implications (Creswell et al., 2007, pp. 239;245).

To gain an in-depth understanding of the potential for scaling, we have chosen to conduct interviews. This method is beneficial for several reasons. Firstly, our aim is to understand the potential for scaling of cross-border cooperation facilitated by local adaptation initiatives. In this regard, interviews are beneficial since they allow us to understand the informal mechanisms in everyday cooperation between local actors, such as communities and local authorities, which are hard to capture through other qualitative approaches such as document analysis. Conducting interviews with key stakeholders working on cross-border adaptation allows us to get unique perspectives on the processes of normalization, adaptive capacity building, and coalition building. These processes can potentially be characterized by informal

and latent mechanisms which are difficult to quantify but can be explored by the nature of the interview (Harrits et al., 2012, p. 145). Secondly, the qualitative interview can catch the different context-specific variations in adaptation initiatives and cross-border cooperation on adaptation in the HKH. Therefore, interviews are ideal in understanding the underlying mechanisms and context-specific perspectives in our case.

Based on the analytical framework presented in the previous chapter we prepared a semi-structured interview guide (see appendix for interview guide). The semi-structured interview guide is divided into themes based on the analytical concepts of normalization, adaptive capacity building, and coalition building. By conducting semi-structured interviews, we are able to employ an open approach during the course of the interviews to accommodate unexpected themes which may come up or adjust the interview to the specific interviewee, while still discussing the overall themes identified on the basis of our analytical framework (Harrits et al., 2012, p. 150). The interview guide prepared prior to the interviews therefore functions as a 'checklist' of themes to be discussed while the progression and weight of themes for each interview may differ (Harrits et al., 2012, p. 150). In the preparation of the interview guide we included different types of questions to approach the identified themes from different angles as well as potential follow-up questions (Harrits et al., 2012, p. 155).

4.2.2 Interview selection strategy

We take an explorative approach to our research by identifying interviewees using a 'snowball' strategy (Harrits et al., 2012, p. 163). Employing this strategy, we initially identify a few relevant interviewees working on the identified initiatives with ICIMOD. Following this, we use the identified interviewees as gatekeepers to other relevant stakeholders both within and external from ICIMOD. In this initial phase we conduct semi-structured interviews with the identified interviewees guided by the prepared interview guide. Following the semi-structured interview guide we are in the second phase of interviews able to slightly moderate each interview to the individual interviewees based on experiences during interviews in the first phase. By interviewing actors from both within and outside ICIMOD, we are able to get a more nuanced picture of the different identified adaptation initiatives as well as access to interview stakeholders through referral by interviewees in the initial stage.

Overall, there are several advantages of using the snowball-strategy to identify relevant stakeholders. Particularly, the strategy allows us to gain insights from interviewees in the first

phase and use their expertise and knowledge to engage with relevant people both within and outside ICIMOD (Harrits et al., 2012, 163). This is a key consideration when studying local climate change adaptation initiatives in the HKH. As these initiatives and the processes surrounding them are complex and often highly local, it is challenging as outside researchers to map out and approach the relevant stakeholders prior to engaging with gatekeepers who are able to assist in identifying relevant actors to approach as well as provide a foundational understanding of the initiatives. Hence, the snowball-strategy provides us the opportunity to address this and access actors involved in transboundary adaptation processes which our access to would otherwise have been limited. The access to interviewees is also supported by the fact that we have chosen to travel to Nepal to conduct the interviews. Hereby, we are able to reach stakeholders which it might not have been possible to reach online due to time limitations and priorities of employees in a large organization such as ICIMOD.

However, using the snowball-strategy also poses limitations and issues. Using this strategy poses the risk that interviewees refer us to other actors involved in the initiatives which have similar perspectives to those of the initial interviewees (Harrits et al., 2012, p. 163; Miles & Huberman, 1994, p. 28). This risk of 'selection bias' emphasizes the overdependence on social capital and network in the approach and can result in a largely homogenous group of people selected and hence bias in the results of research (Parker et al., 2019, pp. 4-5). Miles and Huberman (1994) argue that including lower-status informants is a way of avoiding "elite bias" (Miles & Huberman, 1994, p. 266). While this remains a potential bias in our selection strategy as we are as outside researchers not able to engage with, for example, local communities involved in the identified adaptation initiatives, we address this bias by traveling to Nepal to conduct the interviews. By being in Nepal, we are able to access more actors which we would potentially not have been able to coordinate interviews with remotely. Hereby, we attempt to address the potential elite bias since the more informal nature of meeting the interviewees personally makes it possible to interact with interviewees in a way which can provide the foundation for more nuanced insights. Furthermore, by being in Nepal we are able to get opportunities to make more repeated observations during our interviews. This will increase the validity of our research since we are able to obtain other perspectives that might be latent or invisible in the spoken words during the interviews. Maxwell (2013) points to the fact that intensive long-term field involvement is one way to increase validity (Maxwell, 2013, p. 126). Despite our research not being long-term due to our limited time

frame we can get more in-depth perspectives and a more intensive study by being in Nepal. This approach is also a way to triangulate and hence increase the validity of our data which we will elaborate further on later.

As a result of our selection strategy of interviewees we initially managed to secure interviews with a few ICIMOD employees who referred us to other stakeholders within and external from ICIMOD. We interviewed project coordinators, project managers, and project officers working on the identified cross-border adaptation initiatives, specified in a previous section, implemented by ICIMOD, Oxfam Nepal, and WWF Nepal. For the purpose of anonymity their identities are not revealed here. The identified interviewees additionally came from different countries in the HKH which is a way to address a potential bias stemming from certain historical, geopolitical, and cultural tensions between HKH countries and their populations. We conducted interviews with nine people and each interview lasted between 45 minutes and one hour and 38 minutes (see appendix for transcribed interviews).

4.2.3 Documentary evidence triangulation

As previously mentioned, using the 'snowball' strategy poses the risk of 'selection bias' and a large degree of homogeneity amongst the people being interviewed. We interview people directly working on and implementing the identified initiatives about their own initiative and hence the risk of getting the same perspectives and overlooking other perspectives is present. We, firstly, attempt to address this risk by interviewing people working on several different cross-border adaptation initiatives to get different perspectives and experiences. Secondly, we employ the method of triangulation which entails the intersection of different data sources or methods to validate the results (Yin, 2016, p. 87). Overall, we supply our analysis with documentary evidence in order to validate the quotes and perspectives from our interviewees. Hereby, we are able to avoid a potential bias of our interviewees. This will overall strengthen the validity of our study since we are able to obtain different perspectives that can both validate or contradict some of the perspectives from our interviewees (Patton, 2002, p. 267).

There are several different types of triangulations since the variation to increase validity can exist in both sources, methodology, theory, and through having several researchers (Yin, 2016, p. 87). However, the overall aim of triangulation is to choose methods and data that have different strengths so they can complement each other (Miles & Huberman, 1994, p.

267). In our study, the interviews act as the main data source. Overall, the interviewees will provide the answers for our research questions and not the documents alone. However, we find it important to include additional documentary evidence for two main reasons.

Firstly, with document analysis we are able to avoid any political or empirical interests of employees of ICIMOD or collaborating entities might have to promote a specific agenda about the adaptation initiatives (Bowen, 2009, p. 31). Since ICIMOD is dependent on funding from entities such as the European Union (EU) or United States Agency for International Development (USAID), the employees might be biased in their answers since they want to promote a more "positive" insight into the adaptation programmes. By incorporating documentary evidence, we can "equalize" this potential bias the interviews might have. Hereby, we are increasing the validity of our research.

Secondly, the inclusion of documentary evidence will also increase the validity by its ability to minimize the potential effect we as researchers might have on the outcome of the interviews and overall research (Bowen, 2009, p. 31). The benefits of including documentary evidence are characterized by the documents' stability, meaning that the researcher's presence does not affect what is being researched (Bowen, 2009, p. 31). Therefore, the implications of social interaction in the interviews are hereby counterweighted by the document analysis. One of the disadvantages of document analysis is that documents can often not provide enough details to answer the research question. However, this underlines the advantage of evidence triangulation since the interviews can provide us with the needed details and the supporting documentary evidence can provide us with stability and the absence of biases resulting from both the interviewees' and researchers' preferences.

Lastly, it should be noted, that despite this thesis analytically focusing on ICIMOD's initiatives and programmes, the aim of the thesis is not to conduct an evaluation of the success of these initiatives. Rather, examining ICIMOD's initiatives is a tool to understand mechanisms and scaling potential of cooperation between countries in the region at different policy levels. As ICIMOD, as an intergovernmental organization, has a regional mandate and access to different policy levels, their experiences with cross-border cooperation can provide key insights which we would not have been able to get through document analysis alone. The focus of this thesis, and subsequently the interviews, is not on the initiatives themselves but rather on experiences stemming from interacting with actors in the implementation of the initiatives. Therefore, the risk of ICIMOD interviewees presenting initiatives in a specific

light is not as great as had the interviews focused on the results and success of the ICIMOD initiatives themselves.

4.2.4 Processing interview data

To process our interview data, we record and transcribe the interviews. During the interviews, we additionally write observational notes since the full recording combined with notes offer the best approach for obtaining truthful results (David & Sutton, 2004, p. 192). In order to comply with the general principles of ethical research, all interviewees sign a "third party agreement" where it is made clear that their information will not be shared beyond us, our supervisor, and external examiner without their consent.

In order to section and code the interview data we use NVivo, a software programme for qualitative data-processing. Coding entails a process of sectioning qualitative data into sections based on different themes in terms of specific keywords, phrases, or meanings (David & Sutton, 2004, p. 195). By coding our material, we are able to reduce our data to what is relevant for our research question (David & Sutton, 2004, p. 203). This is especially necessary when conducting semi-structured interviews where some of the perspectives and routes in the interviews might be irrelevant to our analysis. The coding will to a large degree be deductive since we have identified the key concepts of normalization, adaptive capacity building, and coalition-building, based on the analytical framework employed in this thesis, prior to conducting the interviews (see appendix for list of codes). Therefore, our coding book will consist of a number of codes from the beginning. The predefined codes could be considered a weakness in our approach to manage the interview data as open coding can provide a way to examine perspectives which our theoretical framework might not capture (David & Sutton, 2004, p. 205).

However, there are two main reasons why we have not chosen an open approach to coding the interview data. Firstly, the semi-structured interview guide used during the interviews is based on the analytical framework guiding our research, and interview questions as well as the codes are therefore centered around these same analytical concepts. Secondly, the analytical framework employed in the thesis employs quite broad analytical categories which subsequently lead to our codes being similarly broad. Therefore, while we use a predefined coding list to process interviews, the codes are flexible and open 'enough' to capture complexities of perspectives revealed during the interviews. As mentioned earlier, the

concepts in our analytical framework, normalization, adaptive capacity building, and coalition-building, are not independent factors but should more be seen as an "*analytic convenience"* (Bernstein & Hoffmann, 2018, p. 201). In continuation of this, we have not conducted an intercoder reliability test (ICR) which is often recommended when conducting qualitative data analysis as the analytical concepts of our framework might in reality be overlapping with and affecting each other (O'Connor & Joffe, 2020, p. 1). We therefore use coding as a tool to categorize data and aim to increase reliability and address researcher's bias by heavy reliance on direct quotations from interviewees during the analysis of the thesis.

CHAPTER 3
Analysis of the potential for scaling of cross-border cooperation on adaptation

5.0 Potential for scaling of cross-border cooperation on adaptation

We will now begin the analysis of the thesis where we examine the potential for local cross-border climate change adaptation initiatives in the HKH to facilitate scaling of cooperation on adaptation between the HKH countries. We structure the analysis after the analytical framework presented in an earlier section. Firstly, we look at processes of normalization. Secondly, we investigate capacities and adaptive capacity building efforts to facilitate cross-border cooperation employing the concepts of material, institutional, and political adaptive capacity building. Lastly, we use the conclusions reached throughout the analysis to investigate coalition building impacting cross-border cooperation on adaptation. In the end of the section, we summarize how the three types of mechanisms affect the potential for scaling of cross-border cooperation on climate change adaptation in the HKH.

5.1 Normalization

In this first section we analyze the process of normalization and how this affects the potential for scaling of local cross-border initiatives and cooperation in the HKH. As mentioned in the theory section, normalization happens when certain ways to see and thereby act on a problem are promoted and legitimized (Bernstein & Hoffman, 2018, p. 198). This is often seen as a two-step process of norm entrepreneurs facilitating and advocating for new perspectives and norms, and hereafter a change in practice due to the change in norms (Finnemore & Sikkink, 1998, p. 897). Therefore, this section will be divided into an analysis of potential norm entrepreneurs and whether a change in practice is evident.

5.1.1. Norm entrepreneurs (SA)

Through the conducted interviews three types of norm entrepreneurs were identified, namely international organizations and donors, individuals at the local level, and national politicians. Overall, these norm entrepreneurs have increased the normalization of action on climate change adaptation which can increase the potential for scaling of cross-border cooperation on adaptation.

5.1.1.1 A global push

In 'normalizing' issues, actors and institutions play an important role in narrating different policy issues and how they should be perceived – both in the beginning by putting an emphasis on the problem and in the implementation of actions (Vij et al., 2019). Throughout the interviews it became evident how the process of normalization and focus on climate change adaptation are impacted by the agenda of donors and international organizations like the UN. This is expressed by one of our interviewees who says: "*We are also prioritizing and agreeing and understanding what the global discourses are and trying to bridge."* (IP1, 21/10/2021). The interviews also reveal how the UN and donor countries in general have pushed the agenda towards a bigger focus on adaptation in HKH countries, "[*...] probably also because of the global push and understanding that we need to collaborate and work with each other."* (IP4, 26/10/2021). By facilitating this "global push" the UN and the donor countries have acted and still act as 'norm entrepreneurs' in a long process of normalization which can increase the potential for scaling of cooperation on adaptation.

From the beginning of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 there were mentions in the convention of measures concerning adaptation to the impacts of climate change (Ciplet et al., 2013, p. 51). This can be seen as the beginning of a long process of normalization in which the UN has acted as a norm entrepreneur. In 2001 at the Seventh Session of the Conference of Parties (COP 7) the Least Developed Countries (LDCs) coalized and pushed for the creation of funds such as the Least Developed Countries Fund (LDCF), the Special Climate Change Fund (SCCF), and the Adaptation Fund (McGinn & Isenhour, 2021, p. 386). This coalition between the Least Developed Countries can be seen as a move to normalize LDCs working on climate change adaptation. Hereby, the normalization process can be characterized as a dual process in which both the UN and LDCs have underpinned each other. Several of the interviewees mentioned how the HKH countries are "[...] *in the process of preparing for the LDCF*" which underlines the important role of both the LDCs and the UN as an institution in the normalization process of adaptation issues in the HKH (IP9, 12/11/2021).

In the beginning, the UNFCCC framed adaptation as a challenge for the low-income countries (Lesnikowski et al., 2017, p. 827). In this regard the so-called National Adaptation Programmes of Action (NAPAs) were established to ensure that all development programmes

take adaptation into consideration (Nightingale, 2015, p. 223). The NAPAs were established to support the Least Developed Countries, which in the case of the HKH include Afghanistan, Bangladesh, Bhutan, Myanmar, and Nepal, who are particularly vulnerable to climate change (UNCTAD, 2021; UNFCCC, 2021a). Hereby, adaptation policies became closely interlinked with development. In the interviews, this dynamic between poverty reduction and climate change adaptation also became clear:

"And they [provincial governments] *are still in the process of preparing different kinds of policies, like few of them have prepared environmental protection rules and regulations, but several of them still need to prepare. And climate change policy hasn't been prepared at the provincial level yet. So, there is more focus on, you know, the utilization of natural resources. Yeah, the benefits are for generation of revenue. But climate change is a very new thing to them."* (IP9, 12/11/2021).

Silwal et al. (2019) argue that governments in developing countries often prioritize economic development and poverty reduction as more urgent than adaptation programmes (Silwal et al., 2019). Therefore, the emphasized focus on climate change adaptation will be led by donor countries (Silwal et al., 2019, p. 886). The quote above indicates that economy and poverty reduction, exemplified as the utilization of national resources, still remain key concerns for, in this case, provincial governments in the HKH. However, an increasing perception of adaptation as linked with poverty reduction and hence the benefits of adaptation activities is also clear. This development increases the potential for scaling of climate change adaptation efforts which can subsequently increase the potential for more cross-border cooperation on adaptation.

The previously mentioned funds, such as SCCF and the Adaptation Fund, have supported the implementation of the NAPAs in low-income countries (McGinn & Isenhour, 2021, p. 386). Despite the UNFCCC framing adaptation as a question of global solidarity, the role of implementation is a national responsibility (Kohler et. al., 2016, p. 273). This underlines how the UN and international donors have affected the way that low-income countries work with climate change adaptation. Looking at the HKH, all five LDC countries in the region have followed global guidelines and produced NAPAs (Silwal et al., 2019, p. 887; UNFCCC, 2021b). Looking specifically at Nepal and its bordering countries, the analytical focus of the

thesis, Nepal's NAPA was created by the Ministry of Environment in collaboration with other ministries, top-level government officials, and international consultants in 2010 while Bhutan's NAPA was, similarly, created with the involvement of stakeholders from different ministries and sectors at national and district levels (Nightingale, 2015, p. 223; NEC RGoB, 2006, p. 70). China and India, the other bordering countries of Nepal, have not developed NAPAs as they are not characterized as LDCs. However, the process of normalizing adaptation in the national contexts of India and China is also evident, for example in India's National Action Plan on Climate Change (NAPCC) from 2008 emphasizing the need for adaptation policies and actions specifically in the Himalayan regions of the country (GoI DST, 2021). In the beginning of the normalization process, the NAPAs were overall focusing on short-term adaptation policies resulting in an emphasis on immediate responses to local disasters and potential threats (GIZ, 2013). However, at COP13 in 2007 there was a shift from focusing on short-term adaptation needs to medium- and long-term solutions (Lesnikowski et al., 2017, p. 826). This development also became evident during our interviews where an interviewee described the long-term perspective of all cross-border adaptation initiatives being implemented by ICIMOD, the empirical focus of this thesis:

"And that's why another important thing to be noted is the long-term perspective, we cannot achieve this goal in just one year, two years or five years. So, that's why we have a program vision for 20 years. If we think that it can be done, these kinds of goals can be achieved on transboundary cooperation, in five years, we are wrong. Especially in this part of the world." (IP3, 26/10/2021).

This indicates a change during the normalization process from a focus on immediate responses to a focus on longer-term adaptation solutions. As an intergovernmental organization in the HKH, ICIMOD's emphasis on long-term projects can contribute to the process of normalizing a long-term perspective on adaptation in the HKH countries. However, several of the interviewees also mention that *"[…] investors, including donors, are not inclined to invest for a long time."* (IP2, 21/10/2021). This is due to several factors. First, according to the interviewees, the investors and donors need to see results – and often within a relatively short period of time. This documentation of results can be problematic in mountainous regions where adaptation initiatives often require more funding and longer timeframes than adaptation initiatives in the lowlands. As an example, one of the

interviewees mentioned how mountainous regions often give less "value for money", *"So for X amount of dollars, so in the plains, you can probably benefit one million people versus in the mountains it is only 1000 people. And donors will ask 'where's your value for money?"* (IP5, 29/10/2021). While the increased focus on the need for long-term adaptation might increase the potential for scaling of adaptation initiatives, the narrative of "value for money" is, according to our interviewees, dominant for donors whether the initiatives are short- or long-term. This can potentially complicate or impede the process of scaling local cross-border adaptation initiatives. Overall, it can especially affect the process of vertical scaling since the central HKH governments might be more critical towards the costs and efficiency of local cross-border adaptation initiatives in the HKH.

In continuation of this it became clear during the interviews that there is a gap between the focus on climate change adaptation becoming a norm and focus on climate change adaptation for the *mountainous* regions becoming a norm. In the interviews it is underlined how the agenda of adaptation in the mountainous regions is generally given a lower priority by the central governments in the HKH region:

"But I always say that this is one of the challenges of mountain people. At the central government, mountains are not a priority for the central governments. It's so far away. And you don't really connect to these issues as a politician because it's never happened to you." (IP5, 29/10/2021).

Despite the overall global and national acknowledgement of the importance of adaptation seen through the establishment of different funds, the NAPAs, and the focus on the need for long-term adaptation initiatives, this underlines that in the process of normalization there is still a lack of focus on mountainous communities. This gap between focusing on adaptation as such and focusing on adaptation in the mountainous communities is, according to an interviewee, both evident in the prioritization by international organizations and by national politicians in the HKH (IP5, 29/10/2021). Hereby, the process of normalization is still lacking in some areas. This neglect of mountainous communities by international organizations and central HKH governments can impede the potential for, especially, vertical scaling of local cross-border adaptation initiatives in the mountainous regions of HKH since the perspectives of local communities are not prioritized.

While action plans on adaptation, such as NAPAs, are developed by and implemented in individual countries, the potential for cross-border *cooperation* on adaptation can subsequently increase as adaptation moves up on political agendas in the HKH. In this process ICIMOD has, as an intergovernmental organization in the HKH, also functioned as a norm entrepreneur. In October 2020, ICIMOD facilitated the first HKH Ministerial Mountain Summit with representatives from the eight HKH countries (ICIMOD, 2020a). As a result of the Summit, all eight Ministers signed a declaration on the ambition to increase regional cooperation on climate change as well as promote a unified voice of the HKH countries in regional and global platforms (ICIMOD, 2020a). The declaration refers to UN frameworks on climate change situating it in the process of normalizing adaptation outlined throughout this section. This indicates that the process of normalization facilitated by international organizations can increase the potential for scaling of climate change adaptation initiatives as well as the potential for scaling of cooperation on adaptation in the HKH - at least on paper.

5.1.1.2 The local champion

Aside from the role of international organizations and donors in the normalization process, local actors are also playing an important role in creating new norms and facilitating room for vertical scaling of adaptation initiatives and cooperation. One of our interviewees described the dual need for a strong organization as well as a "local champion" to facilitate the attention to adaptation initiatives,

"*The local champion and the leadership of the local champion is very important. And of course, you also need to have enough leadership as yourselves, but also somebody on the ground with whom you can really work together. They can make it all happen*." (IP3, 26/10/2021).

In the process of focusing more on adaptation and shaping policy in the HKH, some scholars argue that local- and civil actors often remain a "reactive participant" (Aryal et al., 2021, p. 83). As briefly mentioned in the previous section, the interviews showed that there is a continuous dual process between external international actors shaping the agenda and local champions both acting and reacting to the internationally facilitated focus on climate change adaptation. The difference in whether certain actors within a local community act as norm

entrepreneurs or more as reactive participants might depend on the individual. This is expressed by one of our interviewees saying:

"Not everybody has that quality. I think we have managed to get the right person […] So local champions, it can be local community leaders, it can be a local government leader, or it can be a person in the ministry, who is really committed and with whom we have built trust." (IP3, 26/10/2021).

These local champions can be a crucial part of the normalization process at the local level and can help facilitate both vertical and horizontal scaling of local cross-border adaptation initiatives and cooperation in the HKH. In order to ensure sufficient and effective solutions it is key that the local champions are not only part of the normalization process but also the implementation process as the inclusion of local actors is crucial for effective policy delivery (Aryal et al., 2021, p. 85). Additionally, local actors performing a role as norm entrepreneurs can especially be important in the process of scaling cross-border *cooperation* as cross-border ties between actors are often stronger at the local level. This will be investigated further later in the analysis.

While the process of normalization is a continuous process with both international- and local actors acting as norm entrepreneurs there are still some challenges arising from this interplay. Nepal's NAPA, for example, asserts that the adaptation planning comes from international organizations, donors, and central governments, and that the people of the mountainous regions lack the capabilities and knowledge to deal with several issues of adaptation (Nightingale, 2015, p. 224). The process of normalization facilitated by international organizations and donors might therefore be normalizing new solutions that are neglecting the inclusion of local perspectives as the NAPAs are prepared through a top-down approach following the agenda of donors instead of being driven by active engagement with the local communities affected by climate changes (Ojha et al., 2016). This underlines the importance of looking further at the capacities of local actors in the process of scaling which will be investigated later in the analysis.

5.1.1.3 Politicians and continuity

The last types of norm entrepreneurs facilitating the normalization process are politicians in the HKH. Through an examination of the interviews, we see that politicians and especially

continuity in politicians play a big role in the process of normalization. Overall, two patterns emerged in the interviews. First, the role of the individual national politician is very important in the work of potentially creating new climate change adaptation policies and solutions. This is seen by the interviewees mentioning specific politicians who helped facilitate room for ICIMOD's adaptation initiatives and put focus on climate change adaptation in general:

"Because at that point of time, there was a minister who was very positive, energetic, and receptive. And he took it instantly and he realized that if we have to do something at the regional scale, then addressing climate change to landscape approach is important. So, he agreed, and it happened. That one individual person's role was important." (IP1, 21/10/2021).

Hereby, individual politicians can act as norm entrepreneurs and facilitate the process of normalization. However, it is also clear how the emphasis on the individual can be a spanner in the works. This is, for example, the case when the specific politician playing a role in the normalization process is replaced due to elections or other factors. Hereby, the normalization process might be negatively affected. This can become a central obstacle to the potential for scaling.

"[…] Right now, I work with a local politician. He's from a certain political party. Now the elections are coming in 2022. And I don't know if this same guy is going to win or lose. If someone from his party wins, okay, at least we build this work. But if someone else comes, then I have to start the whole cycle again." (IP5, 29/10/2021).

The quote above furthermore underlines the importance of trust in the normalization process. In the interviewees' experience, newly elected politicians might, for example, be reluctant to work with ICIMOD or other relevant stakeholders on cross-border adaptation initiatives if these stakeholders have been working with politicians from other parties (IP5, 29/10/2021). As a result, the process of normalization can particularly at the local level be affected by changing politicians and political environments. Establishing engagements with politicians to facilitate the normalization of adaptation initiatives is experienced as a process of trust building (IP5, 29/10/2021). Therefore, the role of personal relationships between people

working on a specific cross-border adaptation initiative and certain local politicians is central. This means that changes in staff of organizations implementing cross-border adaptation initiatives, such as ICIMOD, can similarly impact the continuity of the normalization process. However, this effect is possibly smaller due to the apolitical of ICIMOD contrary to the distrust between political parties in many HKH countries. Overall, politicians can therefore play an important role as norm entrepreneurs in the normalization process which can increase the potential for scaling of cross-border adaptation initiatives. However, the reliance on the individual may present a challenge for the continuity of the normalization process and hence potential for scaling of cooperation.

Secondly, it was revealed during our interviews that the effects of events such as elections affecting the normalization process are smaller at the local level. An interviewee, for example, mentioned how the local community level is affected less by political shifts and dynamics: "*[…] And especially at the community level, I find more consistency, because they* [community leaders or actors] *are already there. But in the bureaucracy, there are a lot of dynamics."* (IP3, 26/10/2021). This ties back to the previous section on the importance of the 'local champion' underlining that local actors, such as community leaders, play an important role in the *continuity* of the normalization process at the local level. While national politicians play a role as norm entrepreneurs in the normalization process, the potential for scaling of cross-border adaptation initiatives can therefore be increased by also engaging with local norm entrepreneurs at the community level.

5.1.2. Practice (CN)

Having investigated the norm entrepreneurs playing a role in the normalization process of cross-border adaptation initiatives in the HKH, we now turn to look further at whether a change in practice is evident as a result of the change in norms. First, we examine the gap between norms and practice in the implementation of adaptation efforts in HKH countries. Hereafter, we investigate how this gap differs at different levels. Lastly, we look beyond state-actors and investigate the increasing 'green' investments in the economic sphere. We argue that a change in practice is, to some extent, present but highlight several gaps impeding the potential for scaling of cross-border cooperation on adaptation.

5.1.2.1 Implementation of adaptation activities

As examined earlier, different actors have acted as norm entrepreneurs on climate change adaptation in the HKH. However, our research revealed that there is a gap between the norm entrepreneurs facilitating a focus on the need to address climate change in the HKH and an actual change in practice. Some interviewees mentioned how there is a clear recognition of the need to address climate change challenges in the HKH but how to address them is still an uncertain question, *"[…] So, in terms of realization…. that climate change is affecting us, I think that is there. We know that we have to do something. But what to do, how to do it…that is a work in progress, I think it will take time.*" (IP2, 21/10/2021).

In the interviews it was mentioned how, for example, Nepal's adaptation policies and goals are quite ambitious. However, it was also highlighted that these ambitious plans need to be supported further by action. According to one of our interviewees, "*[…] Nepal has, I might be honest, I will say they talk a lot about climate change… But in terms of mountain issues as such, I think that's a very low priority."* (IP5, 29/10/2021). An explanatory factor of the gap between norms and practices in the HKH is, as mentioned, that adaptation specifically in mountain areas is a lower priority for many HKH countries. This is especially the case for larger countries such as India or China where the mountainous HKH territories only make up small parts of the countries (IP5, 29/10/2021). Research furthermore underlines that many policies and strategies on climate change adaptation are not translated into practice in HKH countries, not only in terms of the mountainous regions (Ojha et al., 2019, p. 548; Ahmed et al., 2019). This is, for example, explained by lacking implementation capacity such as limited material resources or disconnect between levels of governance on adaptation (Ahmed et al., 2019, p. 146). This means, that despite ambitions and increasing normalization of the importance of adaptation, lacking capacities contribute to the gap between norms and practice underlining the need to study adaptive capacity building further. This is the topic of a later section of the analysis.

Despite the gaps between norms and practice on climate change, our research indicates that the gap between norms and practice is smaller in terms of climate change *adaptation* specifically. An example of this is the National Determined Contributions (NDC) which are a core part of the Paris Agreement from 2016 and centers around individual countries designing their own NDC taking into account differences in capabilities and ambitions

(Laudari et al., 2021, p. 2). Taking Nepal as an example, some scholars argue that little progress has been made in terms of reaching the targets in its NDC - except for the targets related to adaptation (Laudari, 2021, p. 5). The country has, for example, prepared Local Adaptation Plans of Action (LAPAs) as part of reaching the targets of the NDA (MoPE, 2016). The interviews indicated, that the LAPAs have in fact also impacted practice: "*[...] and we* [WWF] *have been preparing so many LAPA's, as I said, for the local government, to different projects, not only our own, but also for other projects that are being funded.*" (IP9, 12/11/2021). Examples of efforts decreasing the gap between norms and practice in terms of adaptation can also be found in Nepal's bordering countries. Research finds that for example India's National Action Plan on Climate Change (NAPCC) has, despite remaining gaps in terms of budget allocation, impacted that Indian states consider long-term climate change impacts in planning and activities to a larger degree in practice (Prasad & Sud, 2019, p. 364). Similarly, China has made positive progress on the implementation of adaptation programmes in certain areas (Cao et al., 2012, p. 59). While there are gaps between norms and practices on climate change in the HKH, it is therefore important to note that the gaps are smaller in terms of adaptation issues, despite remaining gaps when it comes to addressing adaptation specifically in mountain regions. This indicates a certain space for scaling of cross-border adaptation initiatives in the HKH, where implementation of adaptation efforts at the local level, such as LAPAs, can help facilitate the process of horizontal scaling of adaptation initiatives. It is, however, also clear that gaps between norms and practice overall affect the potential for scaling of adaptation initiatives negatively.

5.1.2.2 Normalizing adaptation at the local level

The gap between norms and practice furthermore varies at different levels. Overall, our research indicates that local governments are more likely to be affected by the norm advocacy of norm entrepreneurs and hereby change their practice when it comes to specific local cross-border adaptation initiatives. This is expressed by an interviewee saying, " *So, it's easy to, you know, like lobby or advocate with a local government. After that, then they will feel it, they will internalize it."* (IP6, 28/10/2021). Overall, the processes of normalization and changing practices are more challenging at higher policy levels. An explanation for this is that local governments in mountainous regions particularly impacted by climate change may, unlike central governments, prioritize adaptation higher. The fact that it is often easier to normalize adaptation at the local level might increase the potential for scaling of local cross-

border initiatives. However, there is also sometimes a reluctance for local governments to push for the implementation of adaptation initiatives:

"[…] because the local government, they have the feeling…like a fear…that this is not our duty. And if we take some initiative on it, then there will be some punishment, or the central government will not like it. So based on those perceptions, they are not willing to initiate it." (IP6, 28/10/2021).

Despite this reluctance impacting the potential for a change in practice it also became evident through the interviews that the perception in the local governments has slowly changed increasing local governments' willingness to support local cross-border adaptation projects (IP6, 28/10/2021). There are several differences in the willingness and ability of local governments in Nepal and its bordering countries to support cross-border adaptation projects which will be investigated further in the later section on political adaptive capacity building. In terms of normalization these differences, however, impact the potential for scaling of local cross-border adaptation initiatives as normalization of adaptation might happen while the implementation of initiatives is in practice constrained.

5.1.2.3 Greener investments

A change in practice is, lastly, reflected through investments in green businesses and initiatives. The interviewees experienced that governments in the HKH are increasingly focusing on promoting entrepreneurs in green businesses (IP4, 26/10/2021). This underlines that the normalization process has also changed practice in terms of promoting values related to sustainability and adaptation instead of only maximizing profits. This perception is supported by research concluding that capital flows are increasingly seeking more sustainable and 'greener' investments in the HKH region (Sekine, 2021). Hereby, the normalization process affects the economic aspect of cross-border cooperation in the HKH. As part of the adaptation initiatives examined in this thesis, ICIMOD is trying to utilize this change in practice by promoting cross-border cooperation on unique products found in the region, "*We are trying to enhance their* [the communities] *adaptive capacity by trying to capitalize on elite products which are found in the landscapes as natural biodiversity elements."* (IP1, 21/10/2021). Efforts to increase sustainable cross-border cooperation on local products have been integrated into several of the investigated adaptation initiatives (IP1, 21/10/2021; IP5,

29/10/2021; IP3, 26/10/2021). This increased focus on transboundary cooperation on investments in sustainable small businesses can increase the potential for horizontal scaling of local cross-border cooperation and adaptation.

There are, however, two main challenges in terms of the current increase in green investments in the HKH. First, the investments are often more in initiatives related to mitigation efforts than adaptation. Hereby, there is still a neglect of taking adaptation into account (Mishra et al., 2019, p. 481). In terms of increasing the scaling potential this changed practice therefore might make it easier to scale climate change initiatives in general, however, not necessarily adaptation initiatives. Secondly, despite increased focus on the need for green investments, the interviewees also mentioned that this might contain conflicting interests," *As much as you want to protect and to conserve the areas, sometimes economics overwrites people's desires."* (IP3, 26/10/2021). This is underlined by research indicating that investments in, for example, "sustainable" hydropower in Nepal, India, and Bhutan are often not taking environmental impacts sufficiently into account (Seidler et al., 2018, p. 99). These conflicting interests might be an impediment to the scaling of sufficiently effective adaptation initiatives and in establishing adaptation initiatives in general. As mentioned earlier, higher levels of policy might be more aware of the costs and efficiency of local adaptation projects. Therefore, the contradiction between economics and conservation might at times limit the potential for vertical scaling of local cross-border adaptation initiatives. However, the increased awareness is also necessary in order to help companies and communities incorporate the needed perspectives for effective solutions that can be vertically scaled.

A last important aspect of the process of changing practices towards investing more in sustainable adaptation initiatives is that it generally facilitates transnational cooperation and knowledge exchange. This not only helps normalize the need for adaptation initiatives but also supports the process of scaling cross-border cooperation on adaptation. One of our interviewees gives an example that shows how the change in practice is facilitated by central governments in the HKH through collaboration with each other and knowledge sharing:

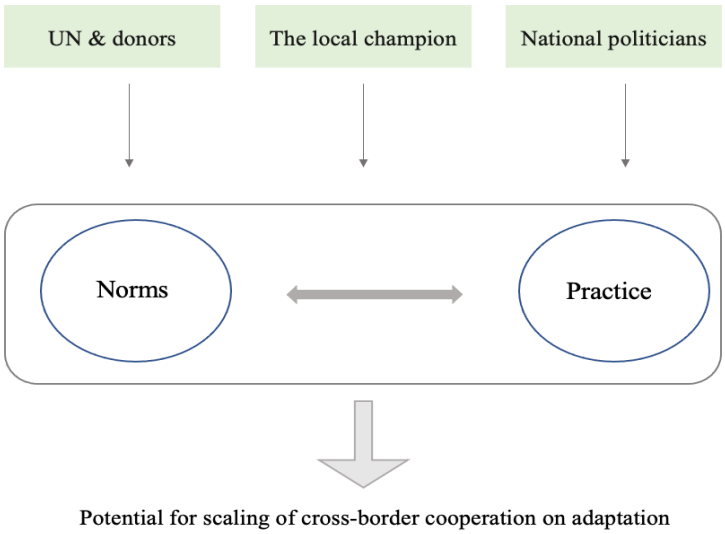
"Bhutan wanted to promote the entrepreneurs for green businesses. So, we got the main decision makers of Bhutan to visit India and Nepal, because India and Nepal are very vibrant when it comes to interfering entrepreneurial ecosystems…and Bhutan has been very dormant

and are just still evolving. So, they learned a lot from what is happening in Nepal, what is happening in India with young entrepreneurs, and how the government is supporting them, what is needed for the whole process, and then they went back, and they initiated some programs in Bhutan." (IP4, 26/10/2021).

This process also underlines the importance of informal relations in bridging the gap between norm entrepreneurs promoting increased focus on adaptation and a change in practice. Through informal engagements, such as the exchange of learning, norm entrepreneurs can impact a change in practices. This process is the epitome of the normalization process. By showing new narratives through increased cooperation and knowledge-sharing, norm entrepreneurs are facilitating a change in practice.

"So, you have to start from informality. Like developing with the same level of frequency of understanding about the subject matters and the story. Yes, it is important when you explain to bring the different perspectives, including scientific solutions and community benefits….and after that slowly and gradually it changes." (IP2, 21/10/2021).

Figure 4. Illustration of the process of normalizations impact on the potential for scaling of cross-border cooperation on adaptation



5.1.3. Summary (CN, SA)

Overall, this section showed that the normalization process of climate change adaptation evident in the HKH has been facilitated by several types of norm entrepreneurs. First of all, the UN has been a vital part of creating a 'global push' which has facilitated a bigger focus on climate change adaptation in the HKH. Despite this increased focus there is still a neglect of adaptation in mountainous communities. This can especially impede the potential for vertical scaling. In some aspects this can be addressed by certain 'local champions' or politicians who are acting as norm entrepreneurs. The normalization process has, in several aspects, also resulted in a change in practice such as increasing 'green' investments and effective implementation of certain adaptation policies. However, a gap continues to exist between ambitions on climate change adaptation on paper, and practice. This gap is smaller at the local level increasing the potential for scaling of local adaptation initiatives and hence cross-border cooperation on adaptation at the local level. Despite this, local governments are in some cases unwilling or unable to support cross-border adaptation initiatives which impedes the potential for scaling adaptation initiatives and cross-border cooperation. This will be investigated further in the next chapter on adaptive capacity building. The change facilitated by norm entrepreneurs is therefore, to some extent, also experienced as a change in practice. This first step of normalization is crucial for the continuous process of increasing the potential for scaling cross-border cooperation on climate change adaptation.

5.2 Adaptive capacity building

To utilize the potential for scaling facilitated by the process of normalization, a certain adaptive capacity as well as adaptive capacity building are necessary. Therefore, we move on to examine existing adaptive capacities and adaptive capacity building stemming from local cross-border adaptation initiatives in the HKH. We examine adaptive capacity building, as outlined in the theory section, by looking at material, institutional, and political adaptive capacity building respectively. This will enable us to understand the possibilities and constraints of adaptive capacity building in terms of scaling cooperation on climate change adaptation between countries in the HKH.

5.2.1 Material adaptive capacity building (SA)

Material adaptive capacity and adaptive capacity building are central in understanding the potential for scaling of cooperation on climate change adaptation between countries in the HKH. Firstly, investigating existing material capacities in place enables us to recognize opportunities and gaps in sustaining cross-border adaptation initiatives in the region. Secondly, analyzing efforts on material adaptive capacity building to facilitate cross-border cooperation can help us understand whether there is material adaptive capacity in place to facilitate scaling of cooperation on adaptation between the HKH countries.

5.2.1.1 Investments in cross-border adaptation

As there are no formal institutions in place to facilitate funding of cross-border adaptation initiatives in the HKH as such, funding directly from the respective countries to cross-border initiatives is limited. As shown in the previous section, the normalization process has led to an increase in green investments throughout the HKH. However, several of the interviewees highlighted that the countries included in cross-border initiatives mainly invest in climate change adaptation on their side of a border (IP1, 21/10/2021; IP3, 26/10/2021). As one of our interviewees put it: "[*...] the government of India doesn't have a policy to invest in China [...].*" (IP1, 21/10/2021). In this regard, intergovernmental organizations working on climate change adaptation in the region, such as ICIMOD, or NGOs play a key role in funding cross-border initiatives. ICIMOD receives an annual contribution from each of the eight HKH member countries which go into and covers 5-10% of the core funding of ICIMOD (IP1, 21/10/2021). Subsequently, this core funding is, together with funding from external donors

outside the HKH, part of funding cross-border adaptation initiatives implemented by ICIMOD (IP1, 21/10/2021).

Despite the lack of shared formal funding mechanisms for cross-border initiatives between involved countries, there are still some interesting mechanisms for material adaptive capacity building to further investigate. Our research reveals that for specific cross-border initiatives, the countries sharing the border allocate more funding to supporting activities in their respective countries, than for other cross-border initiatives. An example where more funding is allocated is the case of the Koshi River Basin initiative on the border between Nepal, India, and China. ICIMOD has here, amongst other things, been implementing an Early Warning System (IP8, 11/11/2021). The system measures rising water levels in upstream areas and alerts people giving them time to prepare accordingly before a flood hits their area (IP8, 11/11/2021). The idea behind the system is that upstream communities can alert communities downstream which, in many cases, has saved both lives and livelihoods (IP8, 11/11/2021). During the implementation of these systems, the rural municipality on the Nepali side of the basin approached ICIMOD requesting it for support in installing the system in more communities in Nepal (IP8, 11/11/2021). Following this, the rural municipality in question approached bordering municipalities in Nepal to gather sufficient funding to sustain the Early Warning Systems without ICIMOD's financial support (IP8, 11/11/2021). Despite this funding being invested only in Nepali communities in the area, the engagement of rural municipalities has pushed for closer informal cooperation between stakeholders in Nepal and India. One of our interviewees describes the process as:

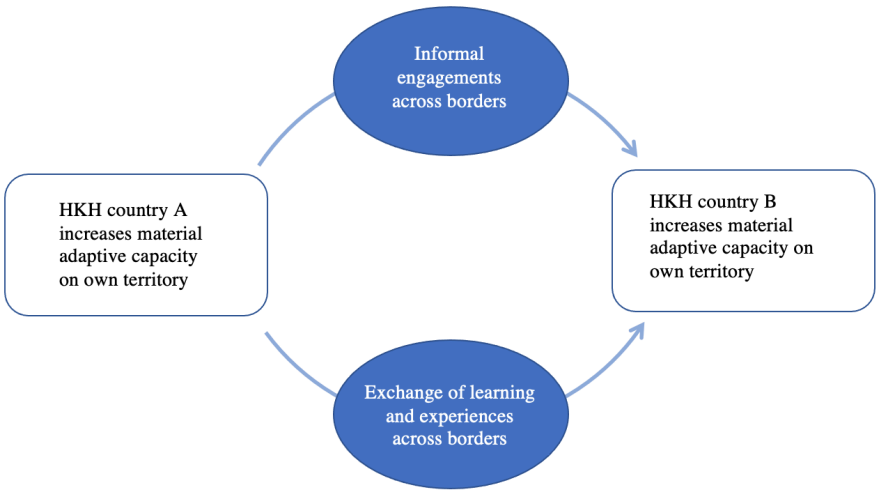
"*And now, they are also informally sharing the information to the downstream communities in the India side. And we had played a role in facilitating bringing the people from India to Nepal and building that relationship. We helped them at the local level. So, now they are friends, and they have their mobile numbers, and we have the communication channels, so that they can send the information to the other side also."* (IP8, 11/11/2021).

This example highlights that despite the lack of formal funding mechanisms allocated specifically to cross-border activities, financial investments in adaptation by authorities on their own side of the border have the potential to create informal cross-border cooperation between actors. This underlines the importance of informality when it comes to cooperation

on climate change adaptation between countries in the HKH. We will examine this factor further later in the analysis. The process of engaging local authorities in funding adaptation activities in border-areas can hence be seen as a way to increase, not material adaptive capacity as such, but authorities' willingness to allocate existing material resources to adaptation initiatives. This can then potentially spillover across a country-border through informal engagements between stakeholders in two or more countries.

Another important example can be found in the Resilient Mountain Solutions initiative implemented by ICIMOD. While the local activities are initially implemented and funded by ICIMOD, there are several examples where ICIMOD's local partners working on the ground have approached national governments to share success and experiences with a certain initiative (IP4, 26/10/2021). As a result of this, in some cases, the national governments have decided to fund implementation of similar programs in other parts of their respective countries (IP4, 26/10/2021). While this process, again, happens within the respective countries and not between them, it does create a certain potential for scaling of cooperation between countries. As ICIMOD works on implementing initiatives on the territory of several countries, the sharing of success and experiences happens from ICIMOD's partners at the local level in different countries to each of their respective national or subnational governments (IP4, 26/10/2021). Getting authorities in one HKH country involved in funding adaptation initiatives in their own country can hereby, through horizontal scaling, impact authorities in other HKH countries to do the same. For example, when Bhutan decided to move towards organic farming, they were informed that the Indian province of Sikkim already had very strong practices and experiences with organic farming. ICIMOD could hence build on this to facilitate delegation visits and enable networks between stakeholders in Bhutan and Sikkim which are still in place to this day (IP4, 26/10/2021). There are other similar examples where the implementation of an initiative in one country has led to NGOs in another HKH country approaching their government or ICIMOD itself for funding to implement similar initiatives in their country (IP4, 26/10/2021). This indirectly impacts the material adaptive capacity of countries in the HKH as experiences with funding adaptation-related activities from one country can provide the foundation for other countries' activities.

Figure 5. Potential for HKH countries to impact other HKH countries' material adaptive capacity on adaptation



The processes examined here can enable a pathway for local cross-border initiatives facilitated by outside organizations such as ICIMOD to generate horizontal scaling of similar same-level initiatives. Through learning and exchanges between the HKH countries, new opportunities for horizontal scaling of funding adaptation initiatives can arise. Activities by organizations working on cross-border adaptation initiatives in the HKH can hence lower the costs for countries to invest in similar initiatives as approaches are tested and adjusted first, and as organizations can facilitate exchanges of experiences between countries on specific topics indirectly increasing the material adaptive capacity of countries.

5.2.1.2 Differences in infrastructure

Another aspect in terms of material adaptive capacity which was revealed during our research relates to infrastructure. For example, in the Kailash landscape shared between India, Nepal, and China, there is a specific ethnic group who traditionally move across the country-borders throughout the year for food, etc. (IP5, 29/10/2021). Because of the impacts of climate change and increasing extreme weather events, moving across borders has become more difficult for this group during certain seasons (IP5, 29/10/2021). However, there are large differences between infrastructure in Nepal, and India and China which pose challenges to the movement across borders:

"*So, at certain points where you just have to go to India and come back to Nepal, because you can't cross a certain place. So, they* [members of the ethnic groups] *make these very temporary bridges, cutting wood tree trunks and all that. And when I see photographs like that, and then on the other side of the border in India, they've made a road all the way to the border with China. And then I've also been to some other villages in the Indian part of the landscape. The government has already invested in roads, very nice roads.*" (IP5, 29/10/2021).

This highlights the problem of lacking institutional funding mechanisms for cross-border activities in the HKH. While infrastructure is not directly related to adaptation from the first look, it is, as elaborated above, central in accommodating changing needs of certain communities living in border areas as a result of changed weather patterns. The lack of collaboration between HKH countries on investments in infrastructure going across borders is hence an obstacle for the material adaptive capacity of communities depending on crossing borders. Additionally, when it comes to material capacities to facilitate local cross-border initiatives, this quote also highlights a disconnect between, in this case, Nepal, and China and India. In the specific area referred to in the quote, the Kailash region, the interviewee highlights how infrastructure on the Indian and Chinese territory in the landscape enables opportunities for local communities to move across these borders. However, the poor infrastructure in Nepal in the area poses an obstacle for movement across borders. This is interesting, as it paints a different picture than our initial expectation that Nepal, being covered in mountains and being one of two countries, whose territory is fully included in the HKH, would prioritize such investments higher than e.g., China and India which are only partly covered by HKH territory. Investments in material capacities to support local communities' ability to adapt to climate change are hence not necessarily higher for a country like Nepal despite Nepal presumably having higher incentives to invest in e.g., infrastructure in mountain regions. An explanation for this could be that Nepal, as a Least Developed Country, has less material capacity to invest in adaptation than countries such as India or China.

There is, as mentioned, no formal regional mechanism for funding cross-border infrastructure to accommodate changing needs of local communities as a result of climate change. There are, however, examples of bilateral agreements between countries in the region focusing on

strengthening cross-border connectivity between the countries. Examples of such cooperation include the India-Nepal joint commission discussing opportunities to increase cross-border connectivity between the countries, and Nepal's ambitions to enhance cross-border connectivity with China under the Belt and Road initiative and other forms of infrastructure cooperation (SASEC, 2021; PTI, 2018; MoFA Nepal, 2019). These types of initiatives do not, however, focus specifically on rural and remote mountain areas but predominantly on connectivity between larger cities. This underlines that sufficient investments in cross-border infrastructure in mountain regions are lacking. This can be explained by the fact that working in mountains is expensive and that mountain communities are simply not a priority for many governments in the HKH as they are so relatively small compared to other groups of the population (IP5, 29/10/2021). The low quality and level of cooperation on cross-border infrastructure in mountain areas in the HKH is hence an obstacle for material adaptive capacity in certain areas of the region.

5.2.1.3 Sustainability and continuous funding

While HKH countries' investments in cross-border activities are very limited, intergovernmental organizations such as ICIMOD or even NGOs can, as mentioned, play a role in funding cross-border adaptation activities. Hereby, such organizations can help facilitate increased material adaptive capacity and investments since the HKH countries are provided evidence for the success of different adaptation initiatives. This can eventually impact increased investments from the HKH countries themselves in sustaining initiatives as was the case with the Early Warning System examined earlier. Hereby, ICIMOD might facilitate the initial funding, but the countries of HKH will be sustaining the initiatives and providing the needed funding later on.

A key component of the success of the Early Warning System is, according to an interviewee, the caretaker who is a community member in upstream areas responsible for monitoring warnings of floods and starting the communication chain of warning downstream communities - also across the border (IP8, 11/11/2021). ICIMOD experienced that it was important to give incentives, often financial, to the caretakers to ensure an efficient chain of communication to downstream communities and sustain the Early Warning System (IP8, 11/11/2021). While ICIMOD initially provided such token payments to caretakers of the system, ICIMOD's dependence on funding and project cycles became a challenge in maintaining the payments (IP8, 11/11/2021). After implementing the system in different

communities in the river basin, the rural municipalities of Nepal started, as mentioned, funding implementation of the system in more communities in Nepal underlining how organizations such as ICIMOD can help facilitate continuous funding and increase the material adaptive capacity (IP8, 11/11/2021). As a result of this, it furthermore became possible to transfer the responsibility for paying caretakers to the Nepali rural municipalities:

"*When we started, we used to give small amounts of money as a token, so that he or she is motivated. As the project phases out, that is also gone [...]. So that's how we have integrated this person's remuneration in the basket fund by the government of Nepal. So, they have set aside some budget for the caretaker, they have set aside some budget for the maintenance of the system. And that's how the sustainability of the system goes on.*" (IP8, 11/11/2021).

With such processes, it can become possible for ICIMOD's cross-border initiatives to play a role in pushing rural municipal governments in the respective countries to provide funding to ensure the sustainability of initiatives beyond ICIMOD project cycles. This can increase the potential for scaling by increasing material adaptive capacity. In the Koshi Basin, for example, this process indirectly facilitates cross-border cooperation at the very local level as the communication chain from upstream to downstream communities in different countries becomes more efficient due to payments provided to the caretakers of the Early Warning Systems. Additionally, as noted in a previous section, the process can also push local governments in the other countries to allocate funding to similar initiatives through exchange of learning and experiences. However, the gap when it comes to sustainability of funding for *cross-border* adaptation activities in particular is still evident. One of our interviewees noted about the motivation of governments to fund initiatives:

"*They're very much motivated in their country, I will rather put it in that way. Across the border, when it goes at the government level, they have to go through different channels which cannot be avoided [...]. One thing we are trying to also do is to put this early warning system into the implementation and disaster management plan at the local level. If it is already integrated in their* [local governments] *annual disaster management plan, then it will be easier for them to set aside a budget for the implementation.*" (IP8, 11/11/2021).

This underlines the challenges of getting funding specifically for cross-border adaptation activities from government entities due to structures of political decision making in the HKH countries. This is a key point which we will elaborate more on in the later section on political adaptive capacity. ICIMOD has, despite this challenge, had success in creating increased cross-border cooperation by tapping into the fact that many HKH countries already have budgets set aside for learning and exchange on climate change across borders (IP4, 26/10/2021). Furthermore, the quote underlines that sustainability of funding for adaptation initiatives appears to be more successful when an implementing organization, such as ICIMOD, taps into budgets already set aside in the respective HKH countries. Getting local governments involved in funding adaptation initiatives can hence increase material sustainability of cross-border adaptation efforts beyond funding cycles which organizations, such as ICIMOD, depend on.

In continuation of this, it can be a challenge to ensure sufficient material capacities for adaptation initiatives when existing budgets, for example for disaster management, at the lower levels of governance cannot be utilized directly. This challenge is particularly evident when it comes to funding of *cross-border* adaptation initiatives, as authorities in HKH countries are, as mentioned, less inclined to invest in cross-border activities. It should here be mentioned that, for example, bi- and multilateral cross-border cooperation on disaster management, closely related to adaptation, has become a priority in some HKH countries. In Nepal's National Policy for Disaster Risk Reduction, for example, one of the goals is that: *"[...] bilateral, regional and international coordination, cooperation and collaboration in disaster risk reduction, preparedness, recovery, rehabilitation and reconstruction will be promoted."* (DRR, 2018, p. 23). Similar notions can be found in e.g., the Indian context where the National Policy on Disaster Management emphasizes that: *"Disasters do not recognize geographical boundaries. Major disasters may often simultaneously affect several countries. It will be the National endeavor to develop close cooperation and coordination and the International level in all spheres of disaster management."* (NDMA, 2009). The recognition, at least on paper, of the need for cross-border cooperation on disaster management and preparedness could indicate a space to facilitate increased investments in *cross-border* adaptation activities. However, as the analysis in this section indicated, the current limited investments in cross-border cooperation on adaptation in the HKH poses an obstacle for material adaptive capacity building. Despite this, formal policies, such as the

ones mentioned above, can provide an opportunity for increasing investments in cross-border adaptation activities and hence scaling of cross-border cooperation. As previously examined, utilizing existing budgets of local governments has proven to increase sustainability and investments in adaptation in the respective HKH countries. By utilizing the formal policy frameworks on areas such as disaster management, a similar process could be facilitated if levels of governance in the HKH countries are receptive and able to increase investments in cross-border adaptation. We will investigate this further in the section on political adaptive capacity building.

5.2.1.4 Summary

Limited material capacities allocated specifically to cross-border adaptation activities pose a constraint for material adaptive capacity building and hence scaling of cross-border cooperation on adaptation in the HKH. While there are no significant funding mechanisms on cross-border climate adaptation for the HKH countries, there are, however, a number of processes which can potentially enable allocation of resources for cross-border adaptation in the region. Firstly, investments in initiatives from organizations such as ICIMOD can build material adaptive capacity and sustainability in the sense that national governments are more inclined to invest in vertical or horizontal scaling of initiatives once they have evidence for the success of activities. This can enable investments in climate change adaptation within a country which can subsequently, through the process of exchanging experiences informally across borders, create horizontal scaling and impact that other HKH countries do the same. Building on existing material capacities allocated for climate change adaptation in the respective countries can increase the opportunities of being successful in getting public authorities involved in sustaining initiatives. There are, however, still large constraints in terms of increasing cooperation on and scaling of climate change adaptation in the HKH due to both differences in material adaptive capacity between the countries and limited investments in e.g., cross-border infrastructure to support cooperation and activities in shared territory.

5.2.2 Institutional adaptive capacity building (CN)

In this section, we look further into institutional adaptive capacities and capacity building. First, we look into some of the formal institutions as well as bi- and multilateral agreements in place to facilitate cross-border cooperation. Following this, we examine informal institutions at the local level arguing that while formal institutions to facilitate cross-border cooperation have several shortcomings, informal institutional adaptive capacity building at the local level has potential of scaling cooperation on adaptation between HKH countries.

5.2.2.1 Formal institutions and their effectiveness

Despite, as outlined earlier in the introduction, only few formal institutions to facilitate cross-border cooperation on climate change adaptation in the HKH, there are some examples of formal institutions which are interesting to examine further. While these institutions are not at the local level and hence do not provide significant insights into the bottom-up process of scaling cooperation, the focus of this thesis, they provide us with key information in understanding the possibilities and limitations of institutional frameworks in place to facilitate cooperation at higher policy levels. These insights are important for the further analysis of the potential for scaling of cooperation.

The first central formal institution which was mentioned during our interviews was ASEAN (IP4, 26/10/2021). While only Myanmar out of the eight HKH states is a member country of ASEAN, India, China, Bangladesh, and Pakistan are members of the so-called ASEAN Regional Forum and hence participate in dialogue in the institutional platform of ASEAN (Asean Regional Forum, 2021). The members of the Regional Forum are believed to have an impact on the direction of ASEAN as the members of the forum participate in important discussions (Singh, 2021). The forum hence provides a potential platform to facilitate cooperation between countries in the region. While ASEAN has not traditionally dealt much with climate change, it recently published its first State of Climate Change Report which outlines ambitious regional targets on emission-cuts and climate change action (Arino & Prabhakar, 2021). However, ASEAN has often been criticized for being unable to play a sufficiently prominent role in the region due to its large emphasis on domestic sovereignty (Narine, 2009). This underlines a key point from previous sections, namely that HKH countries, even in interconnected territory, primarily invest in and focus activities on their side of a border. Secondly, as climate change is not part of ASEAN's primary mandate as

well as the fact that not all HKH countries participate directly in the organization, it can be argued that ASEAN provides a platform to facilitate cooperation between some HKH countries but does not specifically foster cooperation on climate change adaptation in the region.

The second formal institution mentioned during our interviews is the Bangladesh, Bhutan, India, Nepal (BBIN) initiative aiming to improve economic cooperation and connectivity between the four countries (Pal, 2016, p. 1). Lacking infrastructural connectivity limiting the opportunities for cross-border adaptation was highlighted as a challenge in a previous section. Therefore, this institution has potential to be a platform to facilitate cooperation between the four countries, impacting the material adaptive capacity for cross-border cooperation on issues related to climate change adaptation. However, scholars have argued that the BBIN initiative is being dominated by India due to the differences in size and economic power of the four countries which can create problems in aligning priorities and hence action for cooperation between the countries (Pal, 2016, p. 6).

Another central formal institution is the South Asian Association for Regional Cooperation (SAARC) of which Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka are members (SAARC, 2020; Mishra et al., 2019, p. 483). SAARC's ambition is to promote cooperation between the eight member countries in a variety of different areas (SAARC, 2020). Considering the scope of SAARC and the fact that most HKH countries are members of this institution, SAARC could in theory provide a platform to facilitate cooperation on adaptation between the countries. For example, SAARC's action plan on climate change emphasizes an ambition for increased regional action and cooperation on climate change adaptation (SAARC, 2008). Despite this, it has been argued by scholars that the non-binding nature of SAARC agreements means that SAARC has not been able to play an effective role in ensuring regional cooperation on climate change adaptation in the HKH (Tiwari & Joshi, 2015, p. 71).

Lastly, as an intergovernmental organization working specifically on climate change adaptation in the HKH, ICIMOD itself can play a role in facilitating cross-border cooperation between countries in the region. Board members of ICIMOD are secretaries, heads of

ministries or heads of departments of ministries working on environment and climate change in the respective eight member countries (ICIMOD, 2021i):

"So we meet them on a regular basis, at our Board meeting and through other platforms. So there, we discussed these issues of local solutions that are relevant for other countries, and the transboundary issues that need to be addressed and resolved. That is the topmost level where these kinds of interactions take place. And sometimes we do sign some kind of agreement also between countries." (IP4, 26/10/2021).

Hence, ICIMOD also has potential to function as a platform to reach formal agreements between the HKH countries on issues related to climate change adaptation. However, as the other formal institutions examined above, ICIMOD's mandate is limited. As an interviewee puts it: "*[…] we don't get into legally binding commitments where governments can put pressure on each other, or we will put sanctions […].*" (IP4, 26/10/2021). This is important to note, because it highlights similar institutional constraints to cross-border cooperation in the HKH as with ASEAN, BBIN, and SAARC. The formal institutions in place to facilitate cooperation on climate change adaptation in the region have very limited power to undertake legally binding agreements and if they do, have limited enforcement mechanisms. We can hence conclude that formal high-level institutions to facilitate effective cross-border cooperation between the HKH countries on climate change adaptation are, at this point in time, limited. Despite this, formal institutions can provide a platform for dialogue which could indirectly and eventually impact cross-border cooperation on adaptation in the region.

5.2.2.2 Bi- and multilateral agreements

Despite limitations of multilateral institutions to facilitate cooperation on climate change between the HKH countries, there are quite a wide range of, especially, bilateral agreements between countries in the HKH on specific issues related to climate change and adaptation. However, establishing formal agreements between countries in the HKH remains a challenge. One of our interviewees describes how establishing bilateral agreements entails a long process of getting decision makers from two countries together to discuss the content:

"*And having a discussion means taking all procedures or approvals from the respective authorities. For example, China has its own system, Pakistan has its own system. In terms of results and achievements, they have different levels also. So matching all this is really*

challenging. I think it's necessary to have flexible institutions and networks where you have a rhythm of the dialogue continuously […]." (IP2, 21/10/2021).

This, firstly, indicates that the different political structures of the respective HKH countries pose obstacles in terms of entering into formal agreements which will be examined further later in the analysis. Secondly, there is a central distinction between the local and central government level when it comes to entering formal agreements: "*[…] technically, the local governments can speak and interact with local governments on the other side. But as far as I know, they're not allowed to make agreements or anything."* (IP5, 29/10/2021). The respective external affairs ministries need to be involved and approve when formal agreements related to adaptation between HKH countries are being established (IP4, 26/10/2021). The process of entering formal agreements related to cross-border cooperation on adaptation is therefore inherently top-down. The top-down characteristic of the process constrains the potential for bottom-up generation of scaling cooperation on adaptation as lower levels of governance, formally, have very low influence on formal agreements. This underlines the need to further investigate the interplay between formal agreements entered at central government level, and lower levels of authority in the HKH countries. We return to this later in the section on political adaptive capacity building.

Our interviews revealed that there are specific areas with more bilateral agreements than others. Namely, agreements on tourism, illegal wildlife trade, and economic issues such as trade (IP5, 29/10/2021; IP1, 21/10/2021; MoFA Nepal, 2019). For example, Nepal and China signed an agreement on promoting cooperation on biodiversity conservation, forest management and protection of wildlife in 2010 which particularly focuses on managing illegal wildlife trade (WWF, 2010) while Tibet (as an autonomous region of China) and Nepal similarly has a bilateral agreement on tourism (IP5, 29/10/2021). An interviewee highlighted that it appears easier for, for example, Nepal and China to enter bilateral agreements on areas related to food security as Nepal is highly dependent on China in this area and China hence has an economic interest in securing trade (IP5, 29/10/2021). Similarly, our interviewees have experienced a keen interest from public authorities in the HKH countries, sharing specific biodiversity landscapes, in promoting cross-border cooperation on tourism and managing illegal wildlife trade (IP5, 29/10/2021; IP1, 21/10/2021). Common for these areas of cooperation is that they provide economic benefits to both local communities

living in mountains and border areas but also for the involved countries as such (IP5, 29/10/2021). This supports a finding in ICIMOD's HKH assessment report from 2019 stating that: "*[…] the practices of cooperation among the HKH countries are being driven increasingly by economic interests or political bargaining.*" (Ojha et al., 2019, p. 562). The emphasis on economic interests in many bilateral agreements can impede the potential for scaling of cooperation on adaptation as agreements on such issues are prioritized over formal agreements to generally increase cross-border cooperation on adaptation.

Despite many bi- and multilateral agreements focusing on issues related to economic interests, there are, for example, also several formal agreements in place on the area of transboundary water management which is central to cross-border adaptation in the HKH (Ojha et al., 2019, p. 563). One of the adaptation initiatives investigated in this thesis, being implemented in the Mahakali River basin, has, for example, the Treaty of Mahakali from 1996 supported by the Mahakali River Commission which is a bilateral mechanism to cooperate cooperation between India and Nepal in the river basin (Ojha et al., 2019, p. 563). The treaty, however, emphasizes that *"[…] operation of any work on the tributaries of the Mahakali River to be carried out independently by either party on its own territory.*" (Ojha et al., 2019, p. 563). This emphasis on activities taking place in each party's territory creates challenges for transboundary cooperation as experienced by one of the interviewees working on a cross-border adaptation initiative in the area:

"*The Nepali Government is making the Mahakali basin plan. But they are not considering that more than 60% of the basin lies in India. So, same for India. India is also making the basin plan but not considering the basin on the Nepali side. So, any plan that is developed in that area, that needs to be coordinated. […] it needs to be shared and there must be proper coordination between the Government of Nepal and India.*" (IP6, 28/10/2021).

This indicates that despite bilateral agreements between HKH countries on important areas for adaptation, such as water management, the emphasis on sovereignty instead of transboundary action continues to be a challenge in scaling cooperation on adaptation between countries in the HKH. Furthermore, existing treaties and formal agreements are often ineffective in practice (IP6, 28/10/2021). A main reason for this ineffectiveness is, according to the interviewees, mistrust between parties:

"*We have a number of good things which have been written in the treaty, but it's really difficult to implement the treaty, because of different versions of the treaty. So, Nepal believes that Nepal is not getting sufficient resources from the treaty. So, they want that to be changed, amended. And India says, 'we have already done a lot'. So, that means there is kind of a mistrust along with the treaty.*" (IP6, 28/10/2021).

It can be argued that this mistrust is central in explaining why integrated regional cooperation between countries in the HKH on climate change adaptation is so limited (Tiwari & Joshi, 2015, p. 71; Ojha, 2019, p. 566). Overall, the region is characterized by geopolitical tensions and conflict between India and China, India, and Pakistan, but also strained relations between e.g., Bhutan and Nepal over the prosecution of a Nepali-speaking community in Bhutan and between Nepal and India over territory disputes (Frelick, 2008; Ethirajan, 2020). Furthermore, the Tibet Autonomous Region, in the middle of the HKH, and the question of Tibetan sovereignty creates tensions that can affect cooperation throughout the HKH (Barnett, 2016). These tensions can have severe consequences for the possibility of entering into effective formal agreements on climate change adaptation and hence for scaling cooperation on adaptation at higher policy levels. Through the interviews, it became evident that the geopolitical tensions have led to increased militarization in several areas of the HKH. One of the interviewees underlines the militarization, "*and even China, and especially that large part of China* [Tibet] *is actually a very militarized area. It's not free movement.*" (IP5, 29/10/2021). This militarization often improves infrastructure in the high altitudes and could hereby increase the material adaptive capacity of communities (Davis et al., 2020, p. 11). However, the new roads are made with a focus on troop movements rather than local transportation or environmental considerations in mind (Davis et al., 2020, p. 11). These geopolitical tensions are also affecting the institutional adaptive capacity in the region. As an example, India and China engaged in a bilateral water data sharing treaty in 2016. However, this agreement broke down after the so-called Doklam Incident where Chinese armed engineers wanted to build a road in the Doklam area claimed by both China and Bhutan (Deka et al., 2019). By request from Bhutan, India intervened, and the Chinese engineers stopped their work. This underlines the fragility of the formal institutional adaptive capacity in the HKH. Due to geopolitical tensions, both high-level cooperation, agreements and formal institutions can easily be affected by small incidents. These tensions partly explain the

emphasis on national sovereignty and specific economic issues in most bi- and multilateral agreements on issues related to cross-border adaptation activities in the HKH. The focus on sovereignty and national borders instead of transnational ecological systems creates immense barriers for enhancing institutional adaptive capacity to facilitate cooperation on adaptation in the region. This obstacle is particularly central at the formal, central government levels which underlines the need to investigate institutional adaptive capacity to facilitate cooperation at lower levels of governance as an alternative.

5.2.2.3 Local institutions, their impacts, and the aspect of informality

Despite the challenges in formal institutional adaptive capacities to facilitate cross-border cooperation on climate change adaptation in the HKH, our research revealed that institutions at the local level can play an important role in facilitating cooperation. In the following, we investigate some of the prominent institutional mechanisms at the local level. There are a number of important local institutions in place inside the borders of HKH countries which work on issues of climate change adaptation such as forest 'panchayats' of Uttarakhand in India or community forestry in Nepal (Tiwari & Joshi, 2015, pp. 69-70). ICIMOD finds that environmental governance in the HKH is in practice mainly driven by local-level institutions and communities which indicates opportunities in terms of strengthening cross-border cooperation on adaptation at the local level (Ojha et al., 2019, p. 556). Despite a variety of local institutions working on climate change adaptation in the individual HKH countries, we are specifically investigating cross-border cooperation between such local institutions in the following.

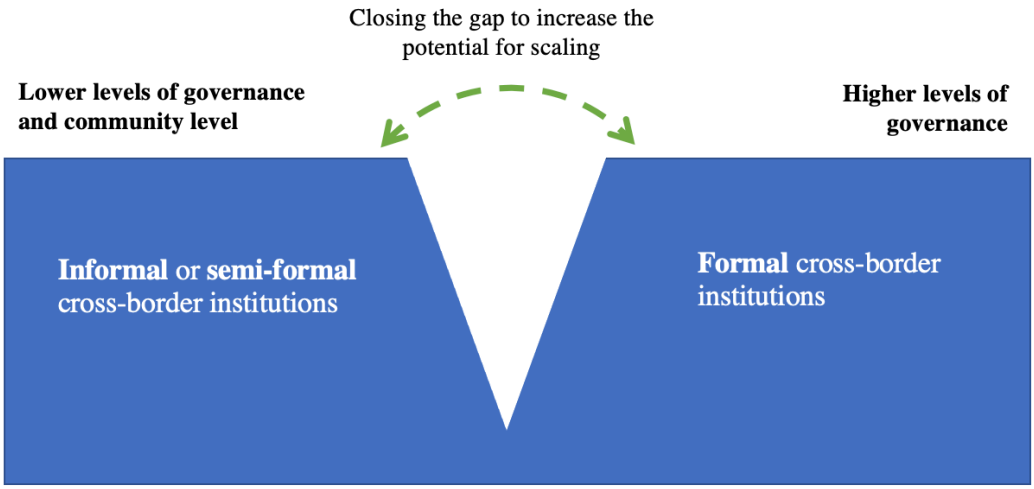
There are several initiatives by ICIMOD facilitating cross-border cooperation at the local level. For example, the Kailash confluence brings together local bordering governments from Nepal and China to discuss issues related to the shared Kailash landscape (IP5, 29/10/2021). The platform connects government representatives in discussing issues related to cross-border trade and tourism in the region (ICIMOD, 2021j). This corresponds with the previously investigated fact that HKH countries are often more inclined to cooperate on specific issues related to economic interests, such as tourism and trade. Despite this, the confluence is still an interesting example of how local institutional platforms build on formal cooperation between countries at higher policy levels. The most recent Kailash confluence in 2019, for example, builds on the bilateral central-government agreement between Nepal and China signed in 2016 where the countries agreed to construct a bridge as well as improving 100 km. road

connecting their two territories (ICIMOD, 2021j). This underlines how institutional platforms at the local level can build on bilateral agreements entered by central governments and hence indicates the interconnectedness between levels of governance.

The second informal institution we wish to highlight is the Mahakali dialogue which is a forum facilitated by ICIMOD where actors such as communities, civil society organizations, and representatives from the private sector from Nepal and India are invited to discuss common challenges and make plans of action in the Mahakali River basin (IP6, 28/10/2021). Informal institutions, such as the Mahakali dialogue, can play an important role in terms of increasing the potential for scaling of cooperation on cross-border adaptation. One central issue in the HKH, however, is that the formal and more informal institutions are often not synchronized (Wang, 2019, p. 35). This lack of synergy between formal and informal institutions is often more present at the local levels since local communities often prioritize informal institutions over formal as formal institutions are less visible and present at this level (Scott et al., 2019, p. 288). However, by facilitating these different dialogues and forums, it is possible to bring formal and informal institutions closer together and possibly synchronize the different types of institutions further. In an example from the Mahakali River basin, two villages on the Indian and Nepali side of the basin, have established a forum to discuss the issues within the riverine communities (Lohar, 2019, p. 14).

By the establishment of such forums, new solutions to the climate change problems faced by local communities can be facilitated. Informal institutional platforms can enable processes of horizontal scaling between communities on each side of a border, but also vertical scaling by bringing topics of cross-border adaptation to higher levels of governance. This will be investigated further in the coming section on political adaptive capacity building. Such local institutional mechanisms can help address the lack of synergy between informal and formal institutions in the HKH at the local level. By trying to bridge the gap between formal and informal institutions in the region, such platforms can support the facilitation of scaling cross-border cooperation on adaptation.

Figure 6. Opportunity to close the gap between formal and informal cross-border institutions to increase the potential for scaling on cooperation



5.2.2.4 Summary

In this section, we investigated the institutional adaptive capacities to facilitate cooperation between HKH countries on climate change adaptation. While there are several formal institutions in place which could facilitate cross-border cooperation on adaptation in the HKH, there are currently a number of limitations to their effectiveness. These limitations are especially caused by the geopolitical tensions in the region and hereby the large emphasis on national sovereignty, as well as the non-binding nature of agreements. Furthermore, there are a range of bi- and multilateral agreements between HKH countries on issues related to climate change adaptation. Agreements provide formal frameworks to facilitate cross-border cooperation on issues related to adaptation. However, the majority of agreements are insufficient due to mistrust between parties. While there is stronger institutional adaptive capacity to deal with certain issues, e.g., related to trade or tourism, institutional adaptive capacity to deal with cross-border adaptation generally lacks at central government levels in the HKH. At the local level, there are, however, certain informal institutions such as dialogue forums which can help address the lack of synergy between formal institutions at higher levels of policy, and informal local institutions which can facilitate cross-border cooperation on adaptation. Such informal institutions can increase the potential for scaling of cooperation on adaptation by facilitating a process of vertical scaling. The ability of local informal institutions to generate vertical scaling of cooperation, however, depends on the political structures which we turn to in the next section.

5.2.3 Political adaptive capacity building (CN)

In the following and final section on adaptive capacity and capacity building, we investigate political adaptive capacity. Political adaptive capacity, as outlined in the theory section, especially relates to the process of vertical scaling through the ability for lower levels to impact higher levels of governance when it comes to cooperation on adaptation. In this section we, firstly, look at the different political decision-making structures in the HKH countries and investigate how they impact the potential for scaling of cooperation. We use these insights to, secondly, examine the potential for influence across levels to understand the process of vertical scaling.

5.2.3.1 Differences in political structures

Our research revealed that one of the most central aspects for the scaling potential of cross-border cooperation in the HKH is political decision-making structures in the respective countries. As it was briefly noted in a previous section, a key constraint in vertical scaling of formal cross-border cooperation in the HKH is that cross-border cooperation is inherently a matter of external relations and hence entails that ministries of external affairs in the respective countries need to be involved (IP4, 26/10/2021; IP6, 28/10/2021). This can create obstacles for processes of bottom-up influencing and hence scaling of cross-border cooperation on climate change adaptation from lower to higher policy levels. ICIMOD's HKH assessment report finds that most HKH countries are in fact characterized by a disconnect in coordination across policy levels and that much planning and decision-making power is placed with central authorities as opposed to regional and local authorities (Ojha et al., 2019, p. 547). Despite continued disconnect and lack of coordination from local to higher policy levels, many HKH countries have experienced a development towards increased decentralization (Ojha et al., 2019, p. 553). To understand the implications of this for cross-border cooperation, we here investigate further the different processes of planning and decision-making power in Nepal and its bordering countries.

In 2015, Nepal's constitution was changed starting the transformation of Nepal into a federation consisting of local, provincial, and federal level governments which has formally placed significant decision-making power with lower-level governments (Bhattarai, 2019). Despite a number of prominent challenges in the federalization process of Nepal, such as elite capture, mistrust, and large power-share still resting with the federal government (Bhattarai,

2019), our interviewees have experienced a positive change since the federalization process begun:

"*After federalization more power is given to the local government. Before they used to be more dependent on the budget that had been allocated from the central level. But now each government has their own budget. So, the processes are more local now and local governments are, for example, also preparing the local adaptation plan of action."* (IP9, 12/11/2021).

In the case of Nepal, the emerging decentralized political structures provide potential for increased local cross-border cooperation as implementing organizations, such as ICIMOD, can work directly with lower levels of government instead of having to go through the central government. For example, this provides an opportunity to engage with lower levels of governance in Nepal in the preparation of Local Adaptation Plans of Action (LAPAs), investigated in a previous section. It also provides an opportunity to advocate for allocation of existing local government budgets to adaptation initiatives as was the case in the previously mentioned example of getting rural municipalities in Nepal involved in funding Early Warning Systems in the Koshi river basin. Our interviewees experience that it has become easier to 'lobby' and convince local governments to discuss cross-border water governance issues which has resulted in local governments increasingly discussing these issues (IP6, 28/11/2021). The emerging decentralized structure of political decision making in Nepal also means that ICIMOD has, in most cases, worked directly with local-level authorities on cross-border adaptation initiatives: "*Honestly speaking, we are working right at the bottom and have not yet worked at the provincial level. Municipal governments are very strong here* [in Nepal] *and we have a very good working relationship.*" (IP3, 26/10/2021).

Being able to work directly with governments at the local level in Nepal in the process of implementing cross-border adaptation initiatives, creates a potential for scaling cross-border cooperation as the constraints for cross-border cooperation at the central governments level are hereby less significant. There are, however, still a number of constraints in the process of engaging different levels of governance in strengthened cross-border cooperation.

Firstly, provincial governments in Nepal are still very new and in the process of getting in charge, and climate change policies have not yet been prepared at the provincial

level (IP9, 12/11/2021). As long as the process of federalization has not been finalized and consolidated, this may pose certain constraints in fully utilizing the increasing importance of local-level governance in terms of cross-border cooperation on adaptation. This, however, also depends on the type of cross-border initiatives in question. While engagements with the provincial and district levels have been limited, for example, in the case of the Kanchenjunga landscape initiative, engagements with these levels have been frequent and effective in the Koshi river basin initiative (IP3, 26/10/2021; IP8, 11/11/2021). Despite ICIMOD's good cooperation with rural municipal governments in bordering HKH countries, the weak linkages between levels of governance in the HKH can pose a challenge in vertical scaling of cross-border cooperation. This is underlined by the fact that ICIMOD's engagements with provincial governments are still limited in certain initiatives (IP3, 26/10/2021).

Secondly, despite significant decision making and planning power formally placed with lower levels of governance after Nepal's federalization, the central government still plays a significant role. About the process of local governments in Nepal influencing higher levels of governance in terms of cross-border cooperation, one of the interviewees notes that:

"The local governments, they have a fear, that 'it is not our duty, and if we take some initiative on it, then there will be some punishment, or the central government will not like it'. So based on those perceptions, they are not willing to initially. But now we see, you know, like their perception has changed and they are more willing to support it." (IP6, 28/10/2021).

The process of decentralizing planning and decision-making power to local levels of governance in Nepal hence provides opportunities for scaling of cross-border cooperation on climate change adaptation. It becomes possible to engage directly with local governments, who know the context better than the central governments, which makes it possible to avoid going through higher levels of governance to impact cross-border cooperation on adaptation in the HKH. This is an opportunity in terms of cross-border cooperation in the HKH as climate adaptation in mountain areas is generally not a priority for central governments (IP5, 29/10/2021). However, the decentralization in Nepal is still in process which creates constraints in terms of vertically scaling cross-border cooperation through bottom-up impacting local levels of governance to take cross-border issues to higher levels of governance. As an interviewee puts it:

"This federal system of government is very new to Nepal, and people are still feeling around. And the local government is responsible to the Ministry of Federal Affairs and general administration [...]. So that linkage from local to district and then to state and Central is very weak." (IP5, 29/10/2021).

When it comes to structures of political decision making in Nepal's bordering countries, India, China, and Bhutan, these differ from the structures of Nepal which can impact the potential for scaling local cross-border cooperation on climate change adaptation. We will therefore look further at the political decision-making structures of these three countries. When working on cross-border adaptation initiatives with Bhutan, interviewees generally experience that the central government is the primary access point to facilitate cooperation:

"*For example, Bhutan is a very small state, right? So, we have a very direct link with the central government. And it takes time to link to the local government because our partnership is more or less with the central government agencies.*" (IP3, 26/10/2021).

While the decentralization process has, in the case of Nepal, resulted in easier access to engage local-level authorities in cross-border adaptation initiatives, the importance of the central-level government in Bhutan can pose constraints in this regard. Despite this, ICIMOD has experienced that engaging both Bhutan and Nepal in cross-border cooperation has generally been easier than other countries in the region (IP1, 21/10/2021). This can be explained by the fact that Bhutan has shown a considerable interest in strengthening regional cooperation on climate change and generally has high ambitions on climate change action (IP1, 21/10/2021; Neslen, 2015). It could also indicate that Nepal and Bhutan have greater interest in addressing climate change adaptation in the HKH as they are the only two countries whose territory is fully included in the HKH.

If we look to India and China, there are a number of ways in which the political structures of these countries constrain the potential for local cross-border cooperation to generate scaling of cooperation between Nepal and bordering countries.
In both India and China, the significant decision-making and planning power is centralized. Despite India being a federation, it is well-established that the reliance on the central government in various processes and decision making is significant (Singh & Verney, 2003;

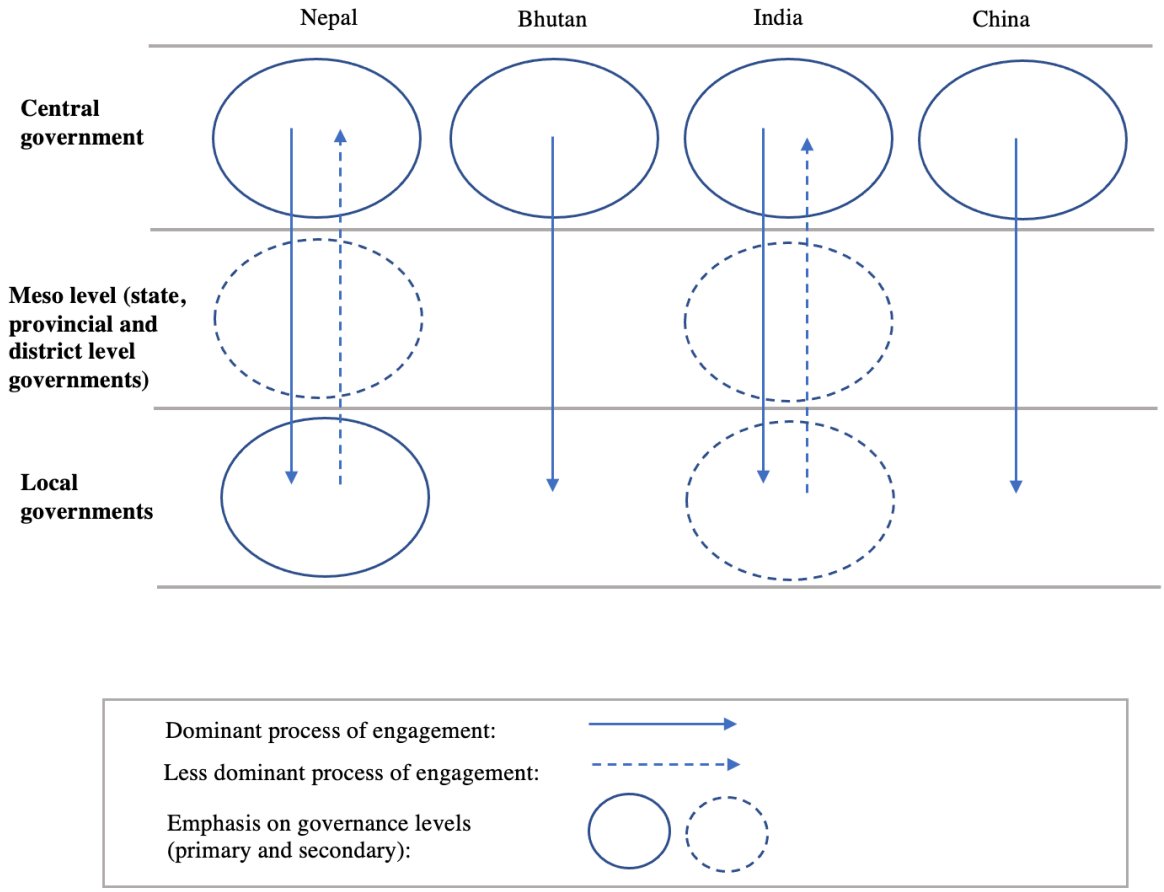
IP1, 21/10/2021; IP3, 26/10/2021). Especially in practice, the central government of India is involved in several areas which formally fall under state jurisdiction (Khosla & Vaishnav, 2021). This corresponds with ICIMOD's general experience that when approaching local-level governments in India on cross-border cooperation, approval often happens through a top-down process from the central government (IP1, 21/10/2021). The centralized characteristic of India in practice results in certain constraints when it comes to engaging with local or state governments on cross-border cooperation:

"*The state of Sikkim has its own governing system, at least at the provincial level. And West Bengal has its own governing system at the state level* [both states bordering Nepal]. *And both states are part of the federal government of India. Anything dealing with external affairs needs to be approved by Delhi, not Gangtok and not by Calcutta* [capitals of Sikkim and Bengal]. *So that means, any formal mechanism needs to be guided, approved and accredited by Delhi.*" (IP1, 21/10/2021).

Despite both Nepal and India being federations, this means that it is in practice more difficult to engage directly with lower levels of governance in India than in Nepal when it comes to enabling cross-border cooperation on climate change adaptation (IP1, 21/10/2021). Due to the size of India, it is a challenge to penetrate bureaucratic processes which makes it more time consuming to get things related to cross-border cooperation approved (IP3, 26/10/2021).

Looking to China, political decision making, planning, and implementation power is highly and increasingly centralized at the central government level (Kazuko, 2020, p. 1). For example, ICIMOD's engagements with China almost exclusively go through research institutes, which are controlled by the state (IP5, 29/10/2021). The process of engaging with China to strengthen cross-border cooperation on climate change adaptation is hence a top-down exercise. Therefore, formal cross-border cooperation between e.g., Nepal and China are challenged by the fact that local-level governments in Nepal may be able to engage in some form of cross-border cooperation while this is not possible for China. The processes of engaging with the respective countries on issues related to cross-border climate change adaptation are summarized in the figure below.

Figure 7. Processes of engagements with levels of governance on climate change adaptation in Nepal and its bordering countries



The differentiated political decision-making structures of the HKH countries outlined here hence both provide opportunities for a country like Nepal or states of India with a degree of autonomy to make decisions on cross-border adaptation initiatives at the local level. While engagements with both Bhutan and China mainly happen top-down through the central governments, there is still a difference between the countries since this process is generally easier when engaging with Bhutan than with China. Similarly, despite both Nepal and India being federations with an amount of decision-making power left to lower levels of governance, India is considerably more centralized than Nepal in practice. This means that engagements regarding cross-border cooperation on adaptation often have to go through the central government of India while working directly with local levels of governance is easier in Nepal. These differences can be a constraint in strengthening cross-border cooperation on climate change adaptation. The different governing mechanisms can be contradictory and conflicting (IP1, 21/10/2021). It is hence not always possible to establish formal cross-border

cooperation at lower than central-governance level between, for example, Nepal and China as local governments in China do not have the same planning and decision-making powers as those in Nepal. In continuation of this, *informal* processes of lower-level cross-border cooperation's influence on cooperation at higher levels are interesting to investigate further. We turn to this in the next section.

5.2.3.2 Influence and vertical scaling across levels

Having investigated the differences in political structures of Nepal and its bordering countries and how these constraint formal cooperation, we now turn to look further at informal processes of vertical scaling. Here, we are interested in understanding how informal or semi-formal engagements across and within borders can enable the ability of lower levels to impact cross-border cooperation at higher levels of governance.

5.2.3.2.1 From the local to the central government

While there are, as previously outlined, limited effective institutions to facilitate regional cooperation on climate change adaptation at both local and higher levels, there are a number of cross-border interactions at different levels of governance through which informal processes of influence across levels happen. The first example to highlight comes from the Resilient Mountain Solutions initiative. In this initiative, ICIMOD has experienced how informal processes of exchanging learning can impact loose cooperation across levels:

"The process is that even the lowest-level government person, he or she will talk when the district level review is happening. Here, they will tell others about something good that is happening in their village. And then when the provincial level review is happening, district people go and talk at the province and they will tell them that something good is happening." (IP4, 26/10/2021).

These processes provide an opportunity for adaptive capacity building for organizations, such as ICIMOD, working on cross-border adaptation initiatives. By approaching the lowest levels of governance informing them of specific adaptation activities, local levels of governance can start an informal process of vertical scaling, within their respective countries, by bringing certain agendas to higher levels of governance. When cross-border adaptation initiatives are being implemented by an outside organization and not the local governments themselves, it is necessary for e.g., ICIMOD to approach the different levels of governments and inform them

as "*it doesn't spread automatically."* (IP4, 26/10/2021). Therefore, ICIMOD generally approaches all levels of governance in the respective HKH countries to inform them of cross-border adaptation activities (IP4, 26/10/2021). This process is interesting because it highlights the informal nature of influence on climate change adaptation from lower to higher levels of governance in the HKH. It also underlines that despite lack of decision making and planning power at the lower levels of governance in some HKH countries, informal bottom-up processes can play a role in scaling. These informal processes are also present when it comes to horizontal scaling *across* borders:

"Actually, one very important factor is that at the local or district level, they do have contact with the adjacent local bureaucrats or authorities [across the border]. *So, there is a mechanism, they talk to each other, share information, then communicate and then try to address issues together. It is through bureaucrats, but in an informal way. But if they have to deal and come up with a decision-making process, they have to consult the center."* (IP1, 21/10/2021).

There are two takeaways from this. Firstly, there are loose processes of horizontal scaling present between HKH countries in terms of exchanging information and addressing issues on climate change adaptation despite formal limits to decision making power stemming from political structures in the respective countries. This means that while lower levels of governance in the HKH countries do not necessarily have formal power to make decisions on cross-border cooperation, they do share information informally. Subsequently and secondly, the processes of interactions between levels of governance within the respective HKH countries can provide an opportunity for strengthened cross-border cooperation on climate change adaptation. If local bordering authorities in two countries have continuous informal interactions and exchange of information, they can bring cross-border issues to higher levels of governance in their respective countries. This process indirectly generates potential for vertical scaling of cooperation between HKH countries on climate change adaptation at higher levels.

Another example we wish to highlight relates to interactions at lower levels of governance *between* countries. In the Kailash region, shared by China, India, and Nepal, there are annual or biannual transboundary meetings at the district level (IP5, 29/10/2021). These types of

meetings provide a platform for governments at the district level to discuss cross-border adaptation issues with their neighboring countries which has potential for generating scaling of cross-border cooperation. However, an interviewee notes about these transboundary district level meetings in the Kailash region:

"*They go there* [to the meetings] *with these set agendas, they cannot make new decisions. So, there are these subjects, issues, and topics that they talk about. But I think it's already driven by the central governments in terms of the aspects that need to be discussed, done, or signed."* (IP5, 29/10/2021).

This indicates that formal platforms for interactions *between* countries at lower levels of governance are still predominantly limited by the political structures of the respective HKH countries. In summary, lower levels of governance are generally able to influence higher levels of governance on issues related to climate change adaptation *within* their respective countries. Through regular interactions and exchange of information between same-level governance structures in bordering countries, interactions with higher levels of governance within the respective countries can be utilized to generate horizontal scaling of loose cross-border cooperation. However, when it comes to regular interactions between lower levels of governance in *different* countries, the centralized political structures of most HKH countries limit the potential for vertical scaling of cross-border cooperation on adaptation. Here, strengthening the existing *informal* processes of cross-border interaction between and across levels of governance can be an opportunity to generate potential for scaling of cross-border cooperation.

5.2.3.2.2 Communities and CSOs generating scaling

After examining the ability for lower levels of governance to influence higher levels on issues related to climate change adaptation, we now look further at non-state actors' ability to influence levels of governance. We specifically investigate the ability of local communities and CSOs, in areas where cross-border adaptation initiatives are being implemented, to influence different levels of governance. Communities living on each side of a country border in the HKH generally share social relations and experiences which could be assumed to increase their incentives to be engaged in increased cross-border cooperation on climate change adaptation:

"When it comes to the communities, that's where most cooperation happens because of the social relationships and networks in these areas. People get married with each other from across the border. So accordingly, they also have friends and families there. Mainly, that perspective helps a lot, the social network [...]. The informal setting doesn't have to go through the national government or you know, the government side. Information can also be passed and people can be prepared because of these informal channels, the social networks that we have on the ground." (IP8, 11/11/2021).

The above insights, firstly, further highlights the importance of informality when it comes to cross-border cooperation on climate change adaptation at the local level in the HKH. These social relations increase the potential for horizontally scaling informal cooperation on adaptation issues at the community level across country borders. Secondly, several of our interviewees experience, as evident in the quote above, that informal cross-border cooperation at the community level is easier as it builds on already-existing social relations between cross-border communities (IP6, 28/10/2021; IP5, 29/10/2021; IP8, 11/11/2021). When it comes to informal cooperation at community level, "*They help each other in an informal way [...]. It's an automatic mechanism, no need to do any formal thing. So that means, any informal mechanism there is going well and is working but maybe formally, it is not recognized.*" (IP1, 21/10/2021).

While this informal community-level cooperation across borders is evident, the particularly interesting question is whether this cooperation has potential to impact scaling of cooperation on climate change adaptation at policy levels. When it comes to horizontal scaling, an interesting example to highlight comes from the Resilient Mountain Solutions initiative. Here, ICIMOD has experienced how social relations between different communities have an impact on the process of exchanging experience and learning (IP4, 26/10/2021). When specific adaptation solutions have been implemented in certain villages as part of the initiative, people from close-by communities have visited these villages, seen what has been done there, and subsequently started similar initiatives in their own village (IP4, 26/10/2021). In a previous section we investigated how local levels of governance, in some cases, bring successful adaptation experiences to meetings at higher levels of governance in their respective countries. Drawing on this, the process of learning exchange at the very local community-level can hence be a way to informally impact scaling of adaptation cooperation

if communities are able to share their experiences with local levels of governance. A successful example of this in the Resilient Mountain Solutions initiative was highlighted during an interview:

"*I remember one case where we wanted to convince the minister who was not convinced at all [...]. But then the group of community members wrote a letter to the minister saying 'we are doing this very interesting work. Please visit us and see'. He never visited, but then he was convinced; now that local people are saying it, that means it's a good initiative.*" (IP4, 26/10/2021).

This indicates that there is a certain receptiveness at governance levels to communities approaching them for support on adaptation initiatives. In this process, local CSOs can also play a role in impacting levels of governance. In the Mahakali River basin, an interviewee described how CSOs from Nepal and India respectively managed to convince the local governments in both countries that transboundary water management is a central agenda to be discussed at the regular bilateral meetings between actors in the local governments of Nepal and India (IP6, 28/10/2021). The CSOs did this together with the riverine communities living on both sides of the border (IP6, 28/10/2021). Through this process, transboundary water management has now become an issue of formal cooperation between local governments in this area. This is interesting as there used to only be formal cooperation between local governments on issues of managing border security, theft, and robbery (IP6, 28/10/2021).

In the same area, local communities on the Indian and Nepali side wanted to increase the ability to move across the border going through the Mahakali River basin by improving rafting opportunities. Local CSOs from India and Nepal went to India and invited local government leaders from both countries asking them for increased cooperation between the countries in this regard (IP6, 28/10/2021). The local government leaders thereafter contacted the national governments asking them to coordinate this with each other, *"This is an example, where the local government was able to convince their federal government and that made rafting possible in the Mahakali River."* (IP6, 28/10/2021). Our interviewees generally shared the perception that communities are able to influence local governments, and that local governments in the HKH are, to some degree, able to influence higher levels of governance within their respective countries (IP8, 11/11/2021). Even if local governments in the HKH

countries generally do not have jurisdiction to make decisions in issues of transboundary nature, as previously investigated, these examples underline the potential for local communities and CSOs to bottom-up influence governance structures in their respective countries to increase (informal) cooperation on climate change adaptation. While these processes are intra-country, we saw in previous sections how informal and semi-formal structures to facilitate loose cooperation at different levels of governance exist in the HKH. Hence: "*If in two different countries, the government is willing to help their country only, it's also fine because, anyways, [...] information can flow across the border."* (IP8, 11/11/2021).

As briefly touched above, our interviewees experienced that local CSOs and organizations such as ICIMOD can play a significant role in the process of bottom-up influence. Hereby, the organizations can help lobbying and influencing different levels of governance in order to facilitate the process of bottom-up influence. For example, in the Koshi river basin, ICIMOD has, through local CSO partners, had success in lobbying local rural municipalities to integrate cross-border adaptation issues into local-level disaster management plans (IP8, 11/11/2021). As was noted during an interview, HKH countries generally have budgets allocated for disaster management at the local, district, and province level, but a large part of these budgets is being used for post-disaster activities (IP8, 11/11/2021). ICIMOD and local CSOs have been successful in influencing these lower levels of governance to allocate more resources to "disaster preparedness" instead of post-disaster activities (IP8, 11/11/2021). This shift shows how CSOs are able to lobby and exert their political adaptive capacity. Furthermore, this underlines how CSOs, or ICIMOD, can build adaptive capacity to increase cross-border cooperation on climate change adaptation at lower levels of governance by lobbying and influencing the lower levels.

These efforts of organizations trying to build adaptive capacity are similarly evident at the national level. As shown in the section on normalization, ICIMOD has, for example, been involved in the preparation of the national adaptation plan of action in Nepal (IP9, 12/11/2021; MoFE, 2018). Hereby, organizations can both support bottom-up influencing across levels of governance *and* increase the receptiveness at higher levels of governance via adaptive capacity building efforts at the national levels. Organizations working for transboundary cooperation at different levels of governance can hereby help increase the political adaptive capacity at different levels. In the case of ICIMOD, this potential is created

through its engagements with local communities and CSOs as well as mandates at the national levels of governance.

5.2.3.3 Summary

The investigated HKH countries are generally characterized by differences in decision making and planning structures which pose constraints for increased cross-border cooperation on climate change adaptation at the local and meso levels of governance. While there are more opportunities to engage directly with lower levels of governance in Nepal to facilitate cross-border cooperation with bordering countries, opportunities for this are limited in e.g., India and especially China. The different decision-making structures in the individual HKH countries are considered obstacles for lower levels of governance or communities to influence higher levels of governance on issues related to cross-border cooperation. However, local levels' ability to informally or semi-formally impact higher levels is relatively strong in the respective HKH countries. This can create opportunities for vertical scaling. While there is generally a disconnect between levels of governance on climate change in the HKH, there are several informal processes which impact the potential for scaling. Firstly, the strong social relations between local communities and civil society organizations in bordering countries provide an opportunity for these to ‘lobby’ at lower levels of governance in their respective countries to increase activities on cross-border adaptation. Through informal and semi-formal regular interactions between same-levels of governance in bordering countries at higher levels, this bottom-up impact can generate vertical scaling of cooperation on cross-border adaptation activities.

5.3 Coalition building (SA)

In this last section we examine whether and how the processes of normalization and adaptive capacity building have made room for coalition building in the HKH. To do this, we look at some of the initiatives facilitated by ICIMOD as an attempt to facilitate deeper and broader cross-border cooperation. Throughout this section we build on the analytical points made in former sections on normalization and adaptive capacity building and examine whether these processes enhance or impede cross-border cooperation and coalition building in the HKH.

5.3.1 Yak festivals and informal networking

As shown throughout the analysis, informal institutions and networks play an important role in facilitating cross-border cooperation on adaptation in the HKH. This informal collaboration is both important in terms of normalization and adaptive capacity building, but specifically for coalition building. Overall, cross-border community collaborations based on informal understandings, historical cultural ties, mutual herding system, or watershed connectivity are, as previously examined, common in the HKH (Ojha et al., 2019, p. 565). One great example of this are the yak festivals. Generally, yak herding plays a major role in mountain livelihood and in the cultural, religious, and social life of people living in the HKH (Joshi et al., 2020, p. 2). As part of the Kangchenjunga Landscape initiative, ICIMOD has facilitated a festival for yak herders, government agencies, and development partners in both Nepal, Bhutan, and India to address the challenges of the changing climate for yak herders. Climate change adaptation is especially relevant for the yak herders due to their migration between highland summer pastures and warmer lowland wintering areas (Joshi et al., 2020, p. 1). Furthermore, these migration challenges are exacerbated by geopolitical tensions between the countries as mentioned earlier in the section on institutional adaptive capacity (Dorji et al., 2019, p. 1). As an example, the stoppage of cross-border movement of animals between Nepal and the Tibetan Autonomous Region, China, have disrupted the centuries-old movement of yaks across the borders (Dorji et al., 2019, p. 2). As a consequence, this has affected the livelihoods and adaptive capacity of the yak-herding communities living in these areas. Informal networks, such as the yak festivals and yak herding network, can help facilitate both coalition building and increase the potential for scaling of cooperation in several ways.

First of all, the yak festivals can help facilitate the process of normalization. Festivals have a long historical trajectory in the HKH (Wangdi et al., 2021, p. 2). Hereby, one positive aspect of the festivals is their ability to attract people from all groups (Wangdi et al., 2021, p. 2). The interviewees also underlined how festivals can often be a great opportunity for inviting politicians due their more informal and apolitical nature, *"It's difficult to invite them* [politicians] *to conferences and workshops. But for the festivals, it's a politician's political game. They also want to interact with people. They also want votes and support. So as an institution, we capitalize on those.*" (IP3, 26/10/2021). Since both representatives of different highland communities as well as government representatives are present, the festivals offer a unique opportunity for the yak herders to be heard and for informal coalitions to be built. As mentioned, mountainous communities are often not prioritized by the central governments which can disable the process of scaling due to the lack of normalization. The festivals often introduce the yak-based life and the unique nomadic culture (Wangdi et al., 2021, p. 2). Hereby, this can enable the process of normalization since the yak herders' ideas and values are being heard. Furthermore, these informal networks can help bridge the gap between ambitions on climate change adaptation and reality on the ground. As shown in the analysis of the normalization process, this gap needs to be addressed. For policymakers and practitioners, these informal networks can be a way to "control the narrative" about the need for cross-border cooperation on adaptation. Therefore, informal networks are important in terms of acknowledging the need for climate change initiatives and thereby increasing the possibility for scaling of cross-border cooperation.

Secondly, the yak festivals can increase the material adaptive capacity of the mountainous communities. Livestock products and homestays are both important sources of income for the yak herders (Wangdi et al., 2021, p. 5). With the great number of tourists visiting, the yak festivals create a platform for yak herders to sell their products which enhances the material capacity of the communities to adapt to climate change. As seen earlier, this step of increasing the (material) adaptive capacity of mountainous communities is an essential step of the process of scaling. The section on material adaptive capacity also showed how, for some adaptation initiatives, the central governments choose to continue the funding after seeing the successes and impacts which is also possible in terms of the yak festival. Hereby, the yak festivals can furthermore increase the material adaptive capacity of the affected areas.

Lastly, this festival can also enhance the political adaptive capacity of the yak communities and hereby create room for new coalitions. The section on political adaptive capacity showed how lower policy levels and different CSOs have succeeded in lobbying to integrate cross-border adaptation issues into local policy plans. The yak festivals can also play a huge role in lobbying to integrate the yak herders' issues into policy plans. Due to the festivals' more "apolitical" nature, potential cooperation will be less affected by geopolitical tensions. Hereby, organizations, such as ICIMOD, or other actors trying to facilitate climate change cooperation can capitalize on this. On the surface, the festivals present themselves as apolitical. But in reality they act as a great platform for coalition building beyond geopolitical tensions, "*When you look from the outside, it's just a festival. It must be a kind of tourist attraction and why is ICIMOD investing in this? But in the background, it is a different story.*" (IP3, 26/10/2021).

In order to facilitate transboundary cooperation on addressing the challenges of yak communities, several festivals as well as conferences as part of the initiatives investigated in the analysis have been conducted. At the last physical conference in 2019, 70 delegates participated (ICIMOD, 2019). The delegates were yak herder representatives, entrepreneurs, researchers, and policy makers from Bhutan, China, India, Nepal, and Pakistan (ICIMOD, 2019). One yak festival organized by ICIMOD brought more than 1000 people together from both Nepal and India in the bordering province, Sandakphu, in India (Pant & Dorji, 2018). One of the interviewees describes how the participation of different stakeholders can often cause a snowball effect which entails that stakeholders from higher and higher policy levels will attend the festival.

"Everybody likes festivals. That's why there is a lot of presence of local leaders. It's a platform for us. Then you also invite all the three countries. If Nepal is organizing the yak festival, then we also invite relevant stakeholders from Bhutan and from India. We know who to target, with whom we want to work. And this is a big event. So you also invite the politicians. Sometimes prime ministers or other members of parliament. So if ministers and prime ministers are gracing that event, the top bureaucracy will also grace that event." (IP3, 26/10/2021).

Events like these can become unique opportunities to enhance both coalition building between different levels in the individual countries as well as new transboundary cooperation between the countries. By creating these platforms for discussion, the policy makers of different countries are able to discuss new solutions both in terms of addressing the challenges of yak communities as well as climate change adaptation in general. Furthermore, they are able to facilitate coalition building without the pressure of geopolitical tensions and the large emphasis on domestic sovereignty characterizing many of the formal institutions in place to facilitate cross-border cooperation in the HKH.

This potential for scaling of cooperation also lies in the informal collaboration already existing between the yak herders. The collaboration and knowledge sharing between the yak herders are often informal and not determined by national borders. In order for these informal networks to function well, it is important that policy makers and stakeholders support the networks at the local level as well as create an external environment in which these networks can be sustained (Jessica et al., 2013). Therefore, in order to facilitate broader cooperation between the different countries at higher policy levels there is still a need for networks, such as the yak network, to become formalized. This was emphasized by one of the interviewees who showed how the yak herders are sharing their experiences through a WhatsApp group, "*So maybe within this year or next year, we'll be able to have a formal network. The informal network is already there. We have a WhatsApp group on Yak.*" (IP1, 21/10/2021). This underlines how coalition building in this region often starts from the bottom at the more informal level before enabling coalition building at higher policy levels. However, to ensure efficient coalition building, stronger links between the lower informal levels and the higher policy levels are needed. Despite an increased focus on transboundary adaptation initiatives as well as an increase in transboundary community-level cooperation, these coalitions are not endorsed by formal treaties of the participating countries (Ojha et al., 2019, p. 565). Hereby, the informal networks are only the starting point for ensuring the formal coalition building at a higher regional policy level. The informal networks and institutions, such as the yak festival, can hereby both address some of the challenges of normalization and adaptive capacity building processes as well as facilitate coalition building. All these mechanisms can subsequently increase the potential for scaling of cross-border cooperation on adaptation.

5.3.2 Platforms for knowledge-sharing

The different countries in the HKH all have experience in addressing a range of issues related to climate change adaptation. As the section on adaptive capacity building showed, there has been an exchange of learning and experiences between the countries. Hereby, it became evident how learning and exchange of knowledge are specific areas which have potential of scaling cooperation between countries. However, a lot of practices still remain isolated within country borders and are not shared throughout the region (Tiwari & Joshi, 2015). ICIMOD is, for example, facilitating several initiatives focused on facilitating knowledge sharing in order to reach deeper cooperation between the countries. Knowledge networks often entail a more participatory approach and a multi-stakeholder involvement when designing and implementing solutions (Shresta et al., 2021, p. 1).

An example of one of the knowledge networks is the "Knowledge forum on Disaster Risk Reduction and Resilient Livelihoods in Koshi Basin" between India and Nepal. Despite one of the primary objectives of this forum being to *" [...] share the evidence-based knowledge and tools generated by flood."*, the expected outcomes both show an emphasis on knowledge sharing as well as increasing cooperation (ICIMOD, 2016). Hence, these knowledge networks can be a vital part of the coalition building in the HKH. Secondly, they can address some of the former mentioned challenges found throughout the analysis. As stressed earlier in the analysis, the normalization process requires that norm entrepreneurs put a focus on the problem in order for a change in practice to happen. Hereby, knowledge sharing mechanisms can act as platforms for norm entrepreneurs to facilitate a focus on the need for climate change adaptation initiatives.

As mentioned, effective knowledge networks entail multi-stakeholder involvement with both researchers as well as policy makers from local, national, and regional level. Therefore, the difference in government structures of the HKH countries can be a barrier for the creation of strong and sustainable knowledge networks. However, by developing transboundary cooperation and knowledge networks between community and local levels, it is possible to create vertical linkages between the regional actors and hereby foster or create new coalitions (Ojha et al., 2019, p. 566). Therefore, the knowledge networks can act as enablers of deeper cooperation and build coalitions at higher policy levels despite not all policy levels being present. Due to the difference in government- and political structures, the creation of these

linkages between local levels and higher policy levels can have different outcomes in the different countries involved. The linkages have various degrees of effectiveness, are often at the national-level, and are mostly implemented by a top-down approach (Ojha et al., 2019, p. 566). Despite these issues, there is a big potential in the region for sharing knowledge of and experiences on climate change adaptation throughout the region. The analysis showed several examples of this. Both by knowledge sharing in terms of green investments in the normalization process as well as informal learning exchanges and dialogue between and across levels of governance examined in the section on political capacity building. Since this marks the initial step of the process, it is clear that knowledge sharing initiatives create room for both coalition building as well as increase the potential for scaling of local-cross border adaptation initiatives and cooperation.

The fostering of knowledge sharing platforms is also a way to minimize the political limitations for cooperation in the region. The analysis showed that ICIMOD's engagements with China almost exclusively go through research institutes which are controlled and closely interlinked to the state (IP5, 29/10/2021). Hereby, knowledge sharing platforms create an opportunity to invite researchers, not politicians, and facilitate coalition building between countries where cooperation is often limited. Overall, these processes might be led by civil society in the southern countries of HKH, such as Bangladesh, Nepal, and India (Ojha et al., 2019, p. 566). As the previous sections showed, the civil society collaboration between China and other HKH countries often remains limited. Hereby, knowledge sharing platforms are an opportune way to create coalitions. Another example is the Indus Forum which is a multi-stakeholder forum that brings together both research institutions as well as government representatives from countries surrounding the Indus River basin - Afghanistan, China, India, and Pakistan (ICIMOD, 2020b). Despite the immense geopolitical tensions between these countries, the countries are able to bring stakeholders together in order to share knowledge and experiences on transboundary adaptation initiatives related to the Indus River Basin. The forum can help facilitate coalition building on adaptation issues. Knowledge sharing platforms hereby offer a unique opportunity to increase cooperation between countries where cooperation is normally limited. Hereby, knowledge sharing networks can help increase the potential for scaling of local cross-border adaptation initiatives and cooperation. This is due to their overlapping ability to both enable the normalization process, facilitate adaptive capacity building as well as support coalition building.

5.4 Summarizing the process of scaling (CN, SA)

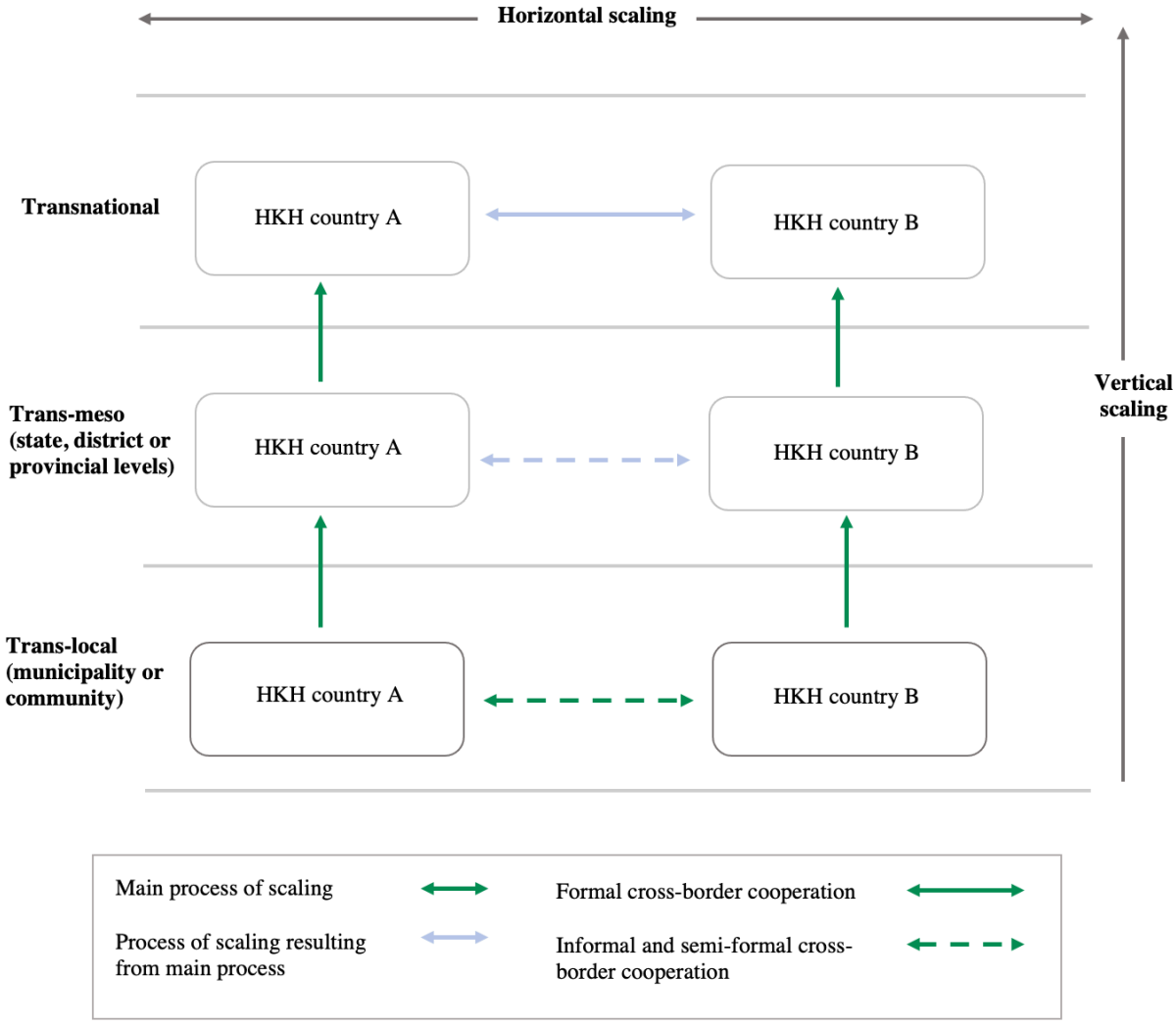
In this analysis, we have investigated normalization, adaptive capacity building, and coalition building processes to facilitate scaling of cross-border cooperation on climate change adaptation between countries in the HKH. The analysis showed a number of constraints in increasing cross-border cooperation on climate change adaptation between the HKH countries at higher levels of governance. However, it also showed how informal cooperation and engagements across borders at lower levels can provide opportunities for scaling of cross-border cooperation to happen. In a complex region where many different processes and factors constraint cross-border cooperation, utilizing existing informal networks at the local and meso levels of governance can be a way to build informal coalitions.

In the first section on normalization, we saw how different norm entrepreneurs have facilitated increasing focus on climate change adaptation. While there are still gaps between increased attention to climate change adaptation and what is happening in practice, the process of normalization provides some opportunities for scaling of cross-border cooperation on adaptation in the HKH. A key take-away from this section is that the gap between ambitions and change in practice is smaller at the local level which provides an opportunity for vertical scaling of local cross-border cooperation on adaptation.

This opportunity is further underlined in the insights from the section on political adaptive capacity building highlighting that informal engagements and cooperation across borders are stronger at the local and meso levels than at higher levels of governance. In this section it, however, became evident that centralized and semi-centralized political decision making and planning structures in many HKH countries create a constraint for the informal cooperation at the local level to become formalized and institutionalized. The centralized decision-making structures furthermore create obstacles for ensuring funding for local cross-border adaptation initiatives as decisions on cross-border cooperation often have to come from the central governments who give less priority to adaptation in mountainous regions. A central obstacle for material adaptive capacity building is that investments from HKH countries are being invested in their own territory and funding of cross-border activities as such remains highly dependent on outside actors.

When it comes to institutional adaptive capacity, formal institutions to facilitate cross-border cooperation on adaptation are lacking and are often ineffective due to factors such as mistrust and geopolitical tensions between HKH countries. At the local and meso levels there are, however, some informal and semi-formal institutions facilitating cross-border cooperation. These provide an opportunity to generate vertical scaling of cross-border cooperation from the local to higher levels of governance through vertical processes of engagements investigated in the section on political adaptive capacity building. Furthermore, these different institutions can create new cross-border coalitions between representatives at different levels in the HKH countries as shown in the section on coalition building. This also underlines how the concepts of normalization, adaptive capacity building, and coalition building are all deeply connected.

Figure 8: Summarized processes of scaling cross-border cooperation on adaptation



In the figure above, we have summarized the processes investigated throughout the analysis using the analytical framework presented in the beginning of the thesis.
Starting our analysis at the local level of cross-border adaptation initiatives, the figure illustrates the main process of horizontal scaling at the local level which is driven by informal and semi-formal cooperation. The horizontal scaling at the local level facilitates vertical scaling in the individual HKH countries by local actors and governments bringing experiences from local cross-border adaptation initiatives to higher levels of governance.
As a result of this main process, an informal or semi-formal process of horizontal scaling is, in some cases, also facilitated between HKH countries at meso levels of governance through e.g., regular interactions between meso-level governments in different countries. This underlines how the processes of vertical and horizontal scaling are not separate and independent processes but are highly complex and potentially affecting each other. Hereby, the process of vertical scaling facilitated by local cross-border initiatives is predominantly happening within HKH countries and not across borders while the process of horizontal scaling is predominantly informal and semi-formal. At the highest central government level, the horizontal scaling facilitated by cross-border initiatives at the local level can again become more formalized as the central government level is where the prerogative of decision making on cross-border issues is placed in most HKH countries. In the next chapter, we will discuss the implications of these processes by presenting policy recommendations to increase the potential of scaling cross-border cooperation on climate change adaptation.

CHAPTER 4
Policy recommendations and discussion

6.0 Policy recommendations (CN, SA)

The purpose of this section is to present a number of key policy recommendations to strengthen cross-border cooperation on climate change adaptation in the HKH drawing on the insights obtained throughout the analysis. In the analysis, we found some gaps and challenges in the process of scaling. Hereby, we present four policy recommendations to increase the potential of local cross-border adaptation initiatives to scale cooperation on adaptation in the HKH. These recommendations are meant for both policy makers as well as actors working on adaptation in the HKH in general.

6.1 Recommendation 1: Funding and implementation of local cross-border adaptation initiatives should be based on long-term perspectives and continuity (SA).

The first recommendation focuses on the importance of incorporating a long-term perspective in both the funding and implementation of cross-border adaptation initiatives. As shown in the analysis, the process of normalization has implied a move from focusing on short-term adaptation to a focus on the need for long-term adaptation initiatives. However, several of the interviewees stressed how the funding of adaptation initiatives often have too short a timeframe and that the amount of funding often varies throughout the different cycles of the adaptation initiative. As a consequence, this can impair the different adaptation efforts. As expressed by one of the programme coordinators:

"But then if it is not a long-term project, as I said, it is not going to work. A project that is just for three years, four years or even five years, right…and then you if you cannot continue these kinds of efforts, if you just leave halfway, then you have to start from the scratch, you know, again, so this long-term perspective is important." (IP3, 26/10/2021).

The importance of having a long-term perspective is both due to the complexity of working in the mountainous regions in general as well as the long process of building trust and cooperation across borders. Incorporating a long-term perspective can both establish sustaining initiatives, stronger institutions for cooperation and hereby possibly increase the potential for scaling.

In general, continuity is an important aspect of ensuring sufficient and long-term solutions for adaptation initiatives. In the analysis, this became clear through the challenges occurring when new politicians are elected. The interviews also showed that ICIMOD is incorporating a long-term perspective and working in different cycles. However, the funding often varies between the different cycles which potentially affect the possibility of implementing sufficient adaptation initiatives. Hereby, it is important that climate change adaptation initiatives are both long-term and based on predictable financing. By incorporating this long-term approach, it allows the initiatives to mature and transcend political cycles (Kull et al., 2016, p. 266). This is especially important when working in mountainous communities due to the more unpredictable nature of the climate change effects in these regions (Reilly & Schimmelpfennig, 2000, p. 253). Therefore, actors working in the HKH as well as donors should aim to incorporate long-term and predictable adaptation initiatives. This can, for example, be done by engaging levels of governance directly in funding adaptation initiatives as we saw in the case of the early warning systems where Nepali rural municipalities became involved in funding the systems. This can increase the long-term sustainability of adaptation initiatives.

In case of resistance from investors and donors to apply this long-term funding approach, it is important to compare the costs and benefits of inaction or short-term approach with the costs and benefits of this long-term approach (Timmerman et al., 2017, p. 1025). In the long term, the costs of inaction are often more severe than the current costs of applying a long-term approach. Furthermore, when measuring the costs and benefits of climate change adaptation, the non-monetary benefits are often overlooked (Timmerman et al., 2017, p. 1025). The benefits for the individual household living in the HKH might be immense, but these benefits are often not as visible as economic units of measurements.

6.2 Recommendation 2: The implementation of local cross-border adaptation should take local and mountainous perspectives into account (CN).

The second policy recommendation is the importance of local and mountainous perspectives being taken into account throughout the process of establishing, implementing, and sustaining the different cross-border adaptation initiatives. Overall, the analysis showed that both

international actors as well as national actors have a big awareness of the need for climate change adaptation initiatives. Additionally, we saw that cross-border cooperation is, despite its more informal character, stronger at the local level due to social and traditional networks between communities across borders. However, there is a gap between the acknowledgement of adaptation needs in general and the adaptation needs of people living in the mountainous regions of the HKH. This needs to be addressed in order to ensure sufficient, inclusive and sustainable solutions. It is important that adaptation initiatives do not lose sight of the people who they are established to protect (Kull et. al., 2016, p. 268). The inclusion of local perspectives can bring several benefits.

First, taking local perspectives into account will help facilitate more efficient solutions (Aryal et al. 2021, p. 85). Since local actors are often "the experts" of living with the challenges of climate change in the HKH, their perspectives should be heard in order to ensure sufficient solutions where all aspects are taken into account. Adaptation initiatives are often measured and observed best by local people at the local level (OECD, 2009). By including perspectives of local people, it is possible to get a shared understanding of the risks, issues and outcomes (Cloutier et al., 2015, p. 461). By having this shared understanding, it can increase the success of the adaptation initiative (Cloutier et al., 2015, p. 461). In this regard, several of the interviewees also mentioned the need to be context-specific when implementing different adaptation initiatives, "*So, adaptation should be very site specific, and it should understand the local threats, threats and issues.*" (IP9, 12/11/2021). As the analysis also showed, vulnerability and adaptive capacity are determined by the conditions and capabilities of the people at the local level. Therefore, the lack of context-awareness and the use of an "one-size-fits-all" approach might lead to failure of adaptation initiatives and even maladaptation (Mishra et al., 2019, p. 477).

Secondly, by the time the different adaptation initiatives are turned into action on the ground, the initiatives might lose sight of their most important aspects – to diminish the risk of vulnerable mountain communities and help increase adaptation capacity (Kull et. al., 2016, p. 268). This aspect is important to be aware of. Therefore, it is important that the inclusion of local perspectives should be throughout the whole process of establishing the local cross-border adaptations initiatives. This is also important in terms of scaling. As investigated in the analysis, one aspect is to increase the potential for scaling, but it is also relevant to look at the specific initiatives where the scaling potential is to be increased. If the given adaptation

initiative does not take local perspectives into account, inefficient solutions might just be replicated to other areas of the HKH.

The last aspect to be aware of is *how* these local and mountainous perspectives are taken into account. Local institutions are often better at empowering marginalized groups and taking their perspectives into account (Ojha et al., 2019, p. 571). However, the representation of local perspectives can sometimes be tokenistic at best (Cooke and Kothari, 2001). Hereby, in reality the mountainous perspectives are not properly taken into account. As the analysis showed, it is important that the central governments connect and understand the dynamics of the issues of adaptation in the mountainous communities. One example of a way to include local perspectives can be by facilitating dialogues between central governments and the different local actors in need of climate change adaptation initiatives. This can both be a way to avoid local actors becoming tokenistic, but also a way to increase cooperation in general which might increase the potential to scale different cross-border adaptation initiatives.

6.3 Recommendation 3: Adaptation efforts should build on the already existing cooperation at lower levels and focus on enabling these levels to 'lobby' with higher policy levels in their respective countries (SA).

The analysis revealed that informal cross-border cooperation is particularly strong at lower levels in the HKH for a number of reasons such as the fact that cross-border cooperation on adaptation is a higher priority and necessity at these levels than at higher levels of governance. Firstly, there are a number of informal relations and exchanges between both communities and local and semi-local authorities across borders which can facilitate cooperation on adaptation. Secondly, there are examples of informal and semi-formal institutional structures in place to facilitate cross-border dialogue between authorities at the local, provincial, and district level. This generates potential for horizontal scaling of adaptation initiatives. We also saw how there are some processes in place to facilitate vertical scaling of cross-border cooperation on adaptation from the local levels to higher levels of governance, for example, through political capacities of lower levels to impact higher levels of governance.

This provides an opportunity to build on already existing forms of cross-border cooperation by focusing on the informal and semi-formal cooperation in the HKH at local, district, or provincial levels. Hereby, stakeholders can take advantage of existing cross-border cooperation, such as the yak-networks or regular informal exchanges between communities or local authorities across borders and try to build on the positive relationships established in these networks to generate scaling of cross-border cooperation on adaptation.

The analysis revealed a number of constraints in formalizing structures of cross-border cooperation at local and meso-levels such as differentiated political decision making and planning structures in the individual HKH countries. In order to be able to build on existing cross-border cooperation at the local level, this cooperation must become more capacitated, formalized, and institutionalized. While processes of vertically scaling cross-border cooperation on adaptation do happen, they remain relatively informal, for example, due to centralized decision making and planning processes in some HKH countries. As mentioned in the analysis, most HKH countries are characterized by weak linkages between lower and higher levels of governance. To increase the potential for upscaling cross-border cooperation in the region it is therefore necessary to strengthen the capacities of lower levels of governance to cooperate across borders without having to go through the central government. Formalizing and institutionalizing local and meso-level cross-border cooperation is hence an opportunity to increase the potential for scaling of cooperation between HKH countries. This may, however, prove to be a challenge in countries like China or, to a degree, India with highly centralized governing systems. Here, an option is for stakeholders to direct efforts at strengthening the already existing structures of cross-border cooperation at the local and semi-local level by investing in them and in their capacities to bottom-up push higher levels of governance to increase cross-border cooperation on adaptation.

In addition to efforts directed at the local and semi-local level, stakeholders could also ‘advocate’ with higher levels of governance pushing them to delegate some degree of decision making and planning power on climate change adaptation, at least on specific transboundary issues such as water management, to lower levels of governance. This is an opportunity to strengthen the weak linkages between lower and higher levels of governance in HKH countries and subsequently increase the potential for vertical scaling of cross-border cooperation on adaptation.

6.4 Recommendation 4: Formal institutions to facilitate cooperation on adaptation between the HKH countries should be established and improved in order to strengthen cooperation between countries at higher levels of governance (CN).

In the analysis, it became evident that there is a lack of formal institutions focusing on cross-border cooperation on climate change adaptation in the HKH. As these formal institutions can be a great way to enhance institutional capacity, facilitate cooperation on adaptation and thereby increase the potential for scaling of local adaptation initiatives, this is an important factor that needs to be addressed. The questions of institutions in facilitating climate change responses are often seen as the most important – yet most difficult – question to address (Kull et al., 2016, p. 260). Enhancing the institutional capacity in the HKH can address several of the challenges found throughout the analysis. As highlighted in recommendation three, the centralized decision making and planning structures in many HKH countries pose a challenge for vertical scaling of cross-border cooperation from lower levels to happen. On top of capacitating, institutionalizing, and formalizing local and semi-local cross-border cooperation on adaptation, it is therefore important that formal institutions to facilitate cross-border cooperation at higher levels of governance can absorb the bottom-up push for increased cross-border cooperation from lower levels.

Establishing strong institutions at higher levels of governance can create platforms to facilitate stronger cooperation and transboundary learning (Kull et al., 2016, p. 268). As shown throughout the analysis, the HKH countries have made use of sharing their experiences obtained through working with climate change adaptation. This process happens, as mentioned in the analysis, to a certain degree at all levels of governance. By establishing strong formal institutions at higher levels of governance, this sharing of knowledge and experiences can become systematized, formalized, and monitored. Hereby, strong regional institutions can help this process of knowledge sharing. This can help bring new perspectives on adaptation issues specific to the HKH region. Furthermore, we highlighted earlier how the majority of existing institutions to facilitate regional cooperation in the HKH only has climate change as part of a larger agenda which can cause climate change cooperation to be down prioritized. Strengthening formal institutions at higher levels of governance focused specifically on regional cooperation on adaptation can therefore result in stronger linkages

between levels of cross-border cooperation on climate change. Furthermore, these institutions can possibly create possibilities for mountainous and local perspectives on climate change being taken more into account.

As shown in the analysis, there are already some existing institutions between the different countries at the highest level of governance such as ASEAN, the ICIMOD platform, BBIN, or SAARC. However, there are, as investigated in the analysis, a number of challenges to the effectiveness of these institutions such as lack of legal mandate, and geopolitical tensions and mistrust. These challenges could be addressed in different manners. First, organizations and other stakeholders working on cross-border climate change adaptation in the HKH can utilize the increasing attention to and priority of climate change investigated in the analysis. By utilizing the increasing normalization of the importance of climate change, it could be possible to push HKH countries to increase cross-border cooperation on climate change and adaptation even if regional cooperation on other issues remains limited due to the challenges mentioned above.

As we saw in the analysis, cross-border cooperation on specific issues, such as tourism, water management, or trade, is generally stronger than on other issues. Hence, stakeholders working on cross-border adaptation could take advantage of the trust and relationship between the HKH countries on one specific topic and attempt to broaden existing cooperation on specific areas to other areas related to climate change adaptation. This could, for example, be by advocating for the need to include climate change risks into trade policies since extreme weather events can affect trade negatively due to the destruction of infrastructure or the reduction in agricultural production (World Bank, 2021). By focusing on existing formal initiatives on, for example, trade, policy makers and other stakeholders can try to facilitate cooperation on other areas relevant to the adaptation agenda which can eventually scale cross-border cooperation on issues related to climate change adaptation.

7.0 Discussion of analytical approach

In this section we discuss some of the methodological implications of our thesis. This is important to pinpoint some areas where further research could be beneficial. Additionally, we want to further discuss and challenge some of the methodological choices the thesis stands on. We do this by, firstly, discussing the implications of our selection of interviewees. Secondly, we discuss and assess the analytical framework employed in the thesis. Lastly, we discuss the potential for analytical generalization of insights obtained throughout the analysis.

7.1 Interview strategy and elite bias (SA)

The first aspect we want to address is the characteristics of our interviewees. In order to understand some of the complexities in managing cross-border adaptation initiatives, we chose to interview relevant stakeholders from both ICIMOD, as an intergovernmental organization working on climate change and adaptation, as well as non-governmental organizations as Oxfam Nepal and WWF. By interviewing stakeholders from within and outside ICIMOD, we were able to get more nuanced perspectives on the facilitation of cross-border adaptation initiatives and the engagements with different stakeholders in this process.

All of our interviewees are in some way working with local cross-border adaptation initiatives. However, they are also all working at the same institutional level. Therefore, it could have been beneficial to also interview people living in the areas involved in the examined cross-border adaptation initiatives. By including perspectives of people from cross-border communities in the HKH, it would be possible to understand some of the dynamics and issues of living in these areas. It could shed light on topics such as the role of informal networks (institutional adaptive capacity) or whether local people feel heard by the central governments (political adaptive capacity). Secondly, it would potentially bring some more critical perspectives to the work of organizations such as ICIMOD, Oxfam Nepal or WWF. Hereby, it could minimize the potential bias of interviewing actors at the same level. As written in our methodological section, the initial interviewees at ICIMOD acted as gatekeepers in order for us to reach other relevant stakeholders, both within and outside ICIMOD, working on cross-border adaptation. Interviewing actors at the same institutional level as well as using actors within ICIMOD as gatekeepers can, as mentioned in the methodological section of the thesis, cause an elite-bias (Miles & Huberman, 1994, p. 266).

However, due to the scope of our thesis, it was relevant to talk to these elites who are working on cross-border adaptation initiatives as they are, unlike local communities, involved in engagements with several different levels of governance.

Obtaining perspectives from local communities would require a lot of resources due to the need of traveling to remote cross-border areas as well as the potential need of an interpreter to support us in interviewing people living in the identified cross-border areas. Due to our limited time-schedule and the general scope of our research question, it would not be feasible for this thesis. Despite the existing elite bias in our research, we attempted to address this potential bias by traveling to Nepal to conduct interviews in person. This, firstly, gave us access to additional stakeholders which we had not been able to coordinate interviews with remotely. Additionally, it provided us an opportunity to engage with interviewees more informally which opened up additional topics including details on the interviewees' own engagements with local communities in border-areas and their perception of local communities' role in cross-border cooperation on adaptation. With more resources, examining the perspectives of people from local communities in the HKH through interviews could bring new relevant angles to the field of managing transboundary adaptation. The inclusion of local perspectives could hereby be a case for further research on bottom-up scaling of cross-border cooperation on adaptation.

7.2 Assessing the analytical framework (CN)

In this section, we assess the analytical framework applied in the thesis discussing limitations of the framework as well as how the framework can be applied to other cases than the HKH. A main takeaway from our research relates to the interconnectedness of the processes of normalization, capacity building, and coalition building. As the analysis showed, the process of coalition building is closely interlinked with especially processes of adaptive capacity building of cross-border cooperation in the HKH. Hence, institutional formal and informal processes facilitating this cooperation facilitates coalition building and vice versa. Similarly, processes of normalization can be a product of coalition building as coalition building can generate processes of normalization. Hereby, coalition building can act as a mechanism for facilitating both normalization and capacity building. As Bernstein & Hoffmann argue, the division of the three mechanisms is an "*analytic convenience"* (Bernstein & Hoffmann, 2018, p. 201). The analysis also underlined that dividing our analytical framework into these three components is a way to analytically simplify, in reality, highly interconnected processes

which happen simultaneously and facilitate each other. Bernstein and Hoffmann also stress that these three mechanisms "*[...] do not function in a vacuum.*" (Bernstein & Hoffmann, 2018, p. 201). Hereby, other factors might affect the potential for scaling. This underlines how the three mechanisms, despite their broad scope, only capture one part of reality. Therefore, the analytical framework applied here provides us with a tool to analytically investigate scaling of cross-border cooperation in the HKH, but it should be kept in mind that processes of facilitating cross-border cooperation are, in reality, highly interlinked and complex.

During the analysis of this thesis, it became evident that the analytical framework we initially developed and employed had some constraints when it came to examining cross-border processes as opposed to processes in individual countries. Normalization, adaptive capacity building, and coalition building provided well-suited theoretical lenses to investigate the scaling potential of action on climate change adaptation in individual HKH countries across levels of governance. However, when it came to scaling of cross-border cooperation, the framework had certain limitations as the processes facilitating cross-border scaling revealed themselves to be highly informal. Hence, our initial expectations that scaling is facilitated via linear vertical scaling processes within countries and horizontal scaling processes at the same levels of governance between countries, were, in reality, not as simple.

As the conclusion of the analysis shows, the process of horizontal and vertical scaling are not separate and independent processes. The processes of horizontal scaling turned out to happen across different levels of governance and the process of vertical scaling was not always linear. For example, cross-border cooperation at lower levels of governance turned out to, at least formally, be restricted by differentiated political decision-making structures in the HKH. Hence, while to a degree being able to engage directly with lower levels of governance in Nepal on questions of climate change adaptation, engagements with China, for example, have to go through the central government. Hereby, the differentiated political structures might limit the vertical scaling in some countries and facilitate it in others, which affects the potential for horizontal scaling of cooperation at all levels. This underlines how the distinction between horizontal and vertical scaling often is more blurred in reality than our analytical framework indicates. The theoretical framework of Hoffmann and Bernstein does not differ between horizontal and vertical scaling as is the case of our analytical framework.

Although the analysis showed that the processes of vertical and horizontal scaling might overlap and the distinction might become blurred in some cases, this division is still beneficial in understanding the potential for scaling. One of the main findings of the analysis is that horizontal scaling of cross-border cooperation can often be possible where vertical scaling is not, at least informally. Therefore, the division enables us to understand the complexities of the scaling process which might not be captured by using the theoretical framework of Bernstein and Hoffmann alone. By using the broad analytical concepts of normalization, adaptive capacity building, and coalition building to structure our analysis, we were able to accommodate the fact that processes of scaling were different than initially expected and furthermore to use these concepts as tools to understand in what way the processes worked in practice.

As part of the analytical framework of this thesis, we employed the concepts of material, institutional, and political adaptive capacity building in an attempt to unfold the concept of adaptive capacity building further. While this provided us with useful analytical categories, it became evident during our research that aspects of sociality, including the levels of individuals, and the spectrum between formality and informality were more central to the analysis of potential for scaling than initially expected. In the chapter outlining the analytical framework for the thesis we, for example, chose not to include Bernstein and Hoffmann's concept of cognitive capacity building. This was based on an assumption that the level of individuals was not central to the process of scaling cooperation on adaptation across levels of governance. However, as investigated throughout the analysis of the thesis, sociality proved to be central both to processes of normalization, adaptive capacity building -especially informal institutional capacity building and political adaptive capacity building-, and coalition building. The importance of the aspect of sociality was, for example, evident in the impact of social relations and networks on informal institutional structures facilitating cross-border cooperation on climate change adaptation in the HKH. Another example was "the local champion", as a facilitator of normalization, investigated in the analysis of the thesis. The local champion is a highly social phenomenon tied to individual persons which proved to be of great importance in the process of normalization. Additionally, it became evident that informality was more central to cross-border cooperation than anticipated. The analysis showed that informal and social processes become more central to cross-border

cooperation at lower levels. Where cross-border cooperation on climate change adaptation at higher policy levels is predominantly facilitated by formal institutions and engagements, cross-border cooperation at the local level is characterized by informality highly dependent on social relations and processes. Despite not expecting sociality and informality to be of as significant importance before starting our research, we were with the broad analytical categories of the framework able to include aspects of sociality and informality where relevant throughout the analysis. If the analytical framework is to be applied to other cases of cross-border cooperation on climate change adaptation, it may therefore be relevant to integrate the analytical concepts of sociality and informality directly into the framework.

7.3 Looking beyond the Hindu Kush Himalaya (SA)

A vast range of characteristics investigated throughout the thesis relate specifically to the case of the HKH. The aim of our research was therefore not to generalize the conclusions of the analysis to other cases of cross-border cooperation on climate change adaptation in regions elsewhere in the world. Rather, our aim in terms of generalization has, as outlined in the methodological section of the thesis, been to strive towards analytical generalization (Yin, 2014, p. 15). The goal of the analytical generalization is that the analytical framework employed in this thesis can be expanded and reproduced, providing a tool which can be used to investigate other, similar cases (Polit & Beck, 2010, p. 1453).

While the processes of normalization, adaptive capacity building, and coalition building present in the HKH will most likely not be the same in other cases, we argue that the analytical framework can be used to investigate the potential for scaling of cross-border cooperation on adaptation in other cases. The analytical framework employed in this thesis can be described as a broad framework without stringent analytical categories and expectations incorporated into the framework. This can, on one hand, result in a ‘catch-all’ analytical approach which risks limiting what we can actually conclude on when using this analytical framework. However, on the other hand, employing a relatively broad analytical framework can increase the analytical generalization potential of the framework as it can be used as a tool to investigate cases with significantly different characteristics. Therefore, while the analytical framework employed in this thesis should be adjusted accordingly if applied to other cases, we argue that this case study provides a foundation for employing the analytical framework to other cases of cross-border cooperation on adaptation.

As mentioned in the previous section, it became evident through the analysis that the concepts of sociality and informality were more important for understanding the potential for scaling of cooperation on adaptation in the HKH than initially expected. This realization could provide the basis for further adjusting the analytical framework and employing it in other studies on cross-border cooperation on adaptation. We will therefore in the following present some examples of how the analytical framework could be applied to other cases incorporating the concepts of sociality and informality into the framework.

First, the analytical framework could be applied to examine the potential for scaling of local adaptation initiatives in the Andes which covers Argentina, Venezuela, Bolivia, Peru, Chile, Colombia, and Ecuador. The combination of a mountainous region, frequent natural disasters and the dire economic situation in the area makes the communities in the Andes particularly vulnerable to the consequences of climate change (Orlowsky et al., 2016, p. 43). Hereby, the Andes provides an interesting case for examining the potential for scaling of community-level cross-border adaptation initiatives. As in the case of HKH, the need for climate change adaptation is not limited by national country borders, and therefore a transboundary approach is needed. By applying the analytical framework of this thesis, it could be possible to understand some of the mechanisms that might enable or limit the potential for scaling of cross-border adaptation initiatives here. In the case of the Andes, the concept of sociality could furthermore be included in the analytical framework. As an example, pollution of water or land is a common cause of social conflicts in the Central Andes (Orlowsky et al., 2016, p. 48). Research indicates that main drivers of these social conflicts are dynamics at the local level (Orlowsky et al., 2016, p. 48). Despite initiatives to overcome social conflicts, they might inhibit the possibility of cross-border cooperation on climate change adaptation at the local level. By incorporating the concept of sociality in an examination of bottom-up scaling cross-border cooperation on adaptation in the Andes, it could become possible to better understand how these social conflicts might both affect the process of normalization, adaptive capacity building and coalition building.

Secondly, it is important to highlight that the potential for applying the analytical framework to other cases is not limited to mountainous areas. The main point of the framework is to understand how to increase the potential for scaling of cross-border adaptation initiatives. Hereby, the focus is on regions and communities in need of adaptation. Building on this,

another example where informality could be incorporated into the analytical framework is in research on cooperation on climate change adaptation in Sub-Saharan Africa (SSA). SSA is especially vulnerable to climate change due to its geographic location, combined with the fact that most of the communities living in the SSA are dependent on climate sensitive agricultural systems for livelihood (Saito et al., 2016, p. 1; Boko et al., 2007, p. 435). Therefore, the need for adaptation initiatives, and scaling of these initiatives, are necessary in this region as well. By incorporating the perspective of informality, it might be possible to understand the mechanisms and dynamics of informal relations between different communities across country borders in the SSA. This is especially relevant in several regions of the SSA since a number of communities and tribes are living across country borders as the current national borders are established by former colonial powers which did not take individual tribes and communities into account (Herbst, 2000, p. 25). As in the case of the HKH with yak herders' communities and migrations across borders being affected by climate change and geopolitical tensions, SSA communities affected by climate change are also in need of local cross-border adaptation solutions. This shows the strength of the analytical framework. The conclusions on scaling and cooperation on local cross-border adaptation in HKH cannot necessarily be transferred to the challenges in the Andes or SSA, but the analytical framework can be applied to these cases and thereby bring new needed perspectives on local climate change adaptation, cross-border cooperation, and scaling.

The examples outlined above could function as inspiration for employing the analytical framework in further research on scaling of cooperation on climate change adaptation in different regions of the world. It should, however, be kept in mind that these are mere examples and not exhaustive areas for further research. Furthermore, other concepts than those of sociality and informality may prove to be central to other cases of cross-border cooperation on adaptation than the HKH. The research on which this thesis is based, however, provides insights on factors relevant to scaling of cross-border cooperation on adaptation in the case of the HKH. These insights can potentially be built on in further research on scaling of cooperation on climate change adaptation in other regions of the world.

CHAPTER 5
Conclusion

8.0 Conclusion (CN, SA)

In this thesis we have examined how local cross-border climate change adaptation initiatives in the Hindu Kush Himalaya (HKH) can facilitate scaling of cooperation on adaptation between countries in the region. The need for increased efforts on climate change adaptation is particularly evident in the HKH region of South Asia, the world's 'Third Pole', as the region provides ecosystem services directly sustaining the livelihoods of billions of people. While temperatures rise as a result of climate change, temperatures in mountainous regions, such as the HKH, rise even faster resulting in catastrophic changed weather patterns and threats of food insecurity with global implications way beyond the people of the region.

As regional cooperation on climate change can, in many cases, create better outcomes, further strengthening the cross-border cooperation between HKH countries on adaptation is imperative. Even though formal cooperation between the HKH countries at the highest levels of governance is limited, research indicates that the local level can play a significant role in climate governance in most HKH countries. However, in terms of understanding how local cross-border initiatives can facilitate and strengthen cooperation at higher policy levels, there is a gap within the literature. In order to fill this gap in research, we have in this thesis investigated how local cross-border adaptation initiatives can facilitate scaling of cooperation on adaptation in the HKH across levels of governance.

Building on Bernstein & Hoffman's analytical framework on the potential for scaling adaptation initiatives, we conducted our research by examining the processes of normalization, adaptive capacity building, and coalition building to assess the potential for scaling of cross-border cooperation on climate change adaptation in the HKH. Furthermore, we employed the concepts of horizontal and vertical scaling in our analytical framework. We narrowed our analytical focus by identifying a number of local cross-border adaptation initiatives for further examination. These initiatives were all implemented by or involving the International Centre for Integrated Mountain Development (ICIMOD). Furthermore, the identified adaptation initiatives were all implemented across borders between Nepal, as a central country in the HKH region, and its bordering countries, India, China, and Bhutan.

In the initial stages of our research, we expected the processes of both vertical and horizontal scaling to happen within as well as between HKH countries simultaneously. However, we found that the processes of vertical scaling primarily happen within respective HKH countries and not across borders. When it comes to horizontal scaling, the processes are significantly more informal. This is often due to political structures in the HKH countries which limit the potential influence that lower levels of governance have on cross-border cooperation and their ability to cooperate formally across borders. Overall, the processes of horizontal scaling therefore happen through informal and semi-formal engagements between same-level governments across country borders at lower levels of governance. This can, however, impact the potential for vertical scaling as local entities can bring local cross-border adaptation issues to higher levels of governance within their respective countries as a result of the informal engagements across borders at the lower levels.

The analysis of the thesis revealed that there is an ongoing process of normalization happening in the HKH pushing climate change and adaptation forward on the political agenda. While this process has predominantly been driven by external actors, such as the UN, it has also happened within the HKH countries which is underlined by the heightened focus on climate change adaptation in policy frameworks of Nepal and its bordering countries. This increases the potential for scaling of cooperation on climate change adaptation as the HKH countries prioritize adaptation higher including, in some cases, cross-border cooperation. There is, however, still a large gap between ambition and practice when it comes to normalization of action on climate change adaptation which poses a challenge for the scaling potential of cooperation. Despite this, we found that this gap is smaller at lower levels of governance. This underlined the initial expectation that lower levels of governance are more inclined to cooperate across borders as they share similar challenges as a result of climate change. The ongoing process of normalizing climate change adaptation therefore, to some degree, increases the potential for scaling of cross-border cooperation on adaptation.

To examine the process of scaling further, we investigated adaptive capacity building stemming from the identified local cross-border adaptation initiatives in the region. Analytically, we distinguished between material, institutional, and political adaptive capacity building. In terms of material adaptive capacity building, we found that lacking institutional funding mechanisms dedicated to cross-border adaptation activities in the HKH present a

significant obstacle for the potential of scaling cooperation between the countries. However, getting local authorities in the respective HKH countries involved in funding adaptation initiatives provides a key opportunity. While local authorities in the HKH countries invest in adaptation efforts on their own side of the border, processes of informal and semi-formal exchanges between local authorities across borders increase the potential for horizontal scaling to happen. Hereby, local authorities in one HKH country, who have invested in adaptation initiatives on their side of the border, 'inspire' bordering HKH countries to do the same. This informal process can increase the potential for scaling of cooperation on adaptation between countries in the region.

In terms of institutional adaptive capacity building, we found that the formal institutions in place to facilitate cross-border cooperation on climate change adaptation in the HKH are overall characterized by limited effectiveness. The formal institutional frameworks for cooperation place large emphasis on national sovereignty, and geopolitical tensions and the non-binding nature of agreements under these frameworks remain a significant obstacle for the potential of scaling cross-border cooperation on adaptation. However, the increasing numbers of bi- and trilateral agreements on specific issues related to climate change adaptation can increase the potential for scaling of cross-border cooperation on certain topics such as tourism or trade in mountain regions. Furthermore, there are certain local institutional platforms which can help address the lack of synergy between formal institutions at higher policy levels and informal institutions at lower levels. Such local institutions can hereby potentially increase the connectedness between levels of governance on adaptation which can increase the potential for scaling of cooperation on cross-border adaptation throughout the HKH.

In terms of especially political adaptive capacity building, our research revealed a number of interesting mechanisms increasing the potential for scaling of cross-border cooperation on adaptation. However, the biggest constraint for the potential for scaling of cooperation is the differences between political decision-making structures in the HKH countries. This entails that lower levels of governance in e.g., India and China are less able to make decisions on cross-border adaptation initiatives where lower levels of governance in Nepal are less restricted in this regard. These differentiated political structures are an obstacle for horizontal scaling of cross-border cooperation. Furthermore, the formal structures inhibit the lower

levels of governments' ability to impact higher levels on issues related to climate change adaptation which limits the potential for vertical scaling of cooperation. Nevertheless, our research investigated a number of informal and semi-formal processes which increase the potential for scaling - both vertically in the respective HKH countries and horizontally between the HKH countries at the same level of governance.

Lastly, constraints in terms of formal scaling of cross-border cooperation can be addressed by building onto the informal structures of engagement across borders through coalition building. Certain existing efforts on creating informal platforms for engagement can increase the potential for scaling of cooperation in a number of ways. Firstly, the platforms for coalition building investigated in this thesis attract representatives from several levels of governance in different HKH countries. Hereby, they can be a way to avoid the obstacle of insufficient formal institutional platforms to facilitate cross-border cooperation. This can increase the potential for both horizontal scaling by further strengthening the existing informal ties between same-level governments in different countries, and vertical scaling by providing a platform for representatives from different levels of governance in HKH countries to interact informally.

Our research revealed that the analytical framework employed in the thesis had certain strengths as well as limitations which we discussed in the last chapter of the thesis. We specifically discovered that the concepts of sociality and informality turned out to be central to the case of cross-border cooperation on adaptation in the HKH. While the broad analytical categories of the framework equipped us to still capture the dynamics of sociality and informality, it could be beneficial to incorporate these concepts into the analytical framework if it is to be employed in further research. The analytical framework enabled us to examine cross-border cooperation in the HKH. However, further research on cross-border cooperation on climate change adaptation in other vulnerable regions of the world is needed. Through such research, the analytical framework can be further adjusted and crucial further knowledge of the role of local and meso levels of governance in cross-border cooperation on adaptation can be produced.

Understanding the mechanisms for success of lower levels of governance to influence cross-border cooperation on adaptation is key for policy makers and other stakeholders to focus

efforts and activities on increasing integrated regional cooperation on adaptation. In an attempt to address this need, we presented four key policy recommendations to guide policy makers and stakeholders working on cross-border adaptation in increasing the potential for scaling of cooperation on adaptation in the HKH. In mountainous regions, which are both crucial to important ecosystems of the world as well as particularly affected by climate change, this knowledge is vital to ensure the adaptive capacity of countries and communities in a world where the consequences of climate change will increasingly impact us all.

9.0 References

Front page picture

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