

***Power interplay between actors in
climate change adaptation
policy-making in South Asia***

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policy-making in South Asia**

Sumit Vij

Thesis

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dedicated to my father

Abstract

To address the impacts of climate change, countries in South Asia are increasingly making efforts to design climate change adaptation (CCA) policies. Such policies are prepared in a complex power-loaded environment, where different policy actors struggle with one another to meet their personal or collective interests. Current CCA policy research highlights the importance of power in policy-making, but few studies have looked into this systematically. This dissertation therefore aims to study the role of power in CCA policy-making in South Asia and to recommend ways to deal with the negative effects of power.

The research adopts an abductive research design, using qualitative case studies in Nepal, India and Bangladesh. Case studies at local, national and transboundary level are conducted to study how actors' power interplay influences CCA policy-making processes and policies.

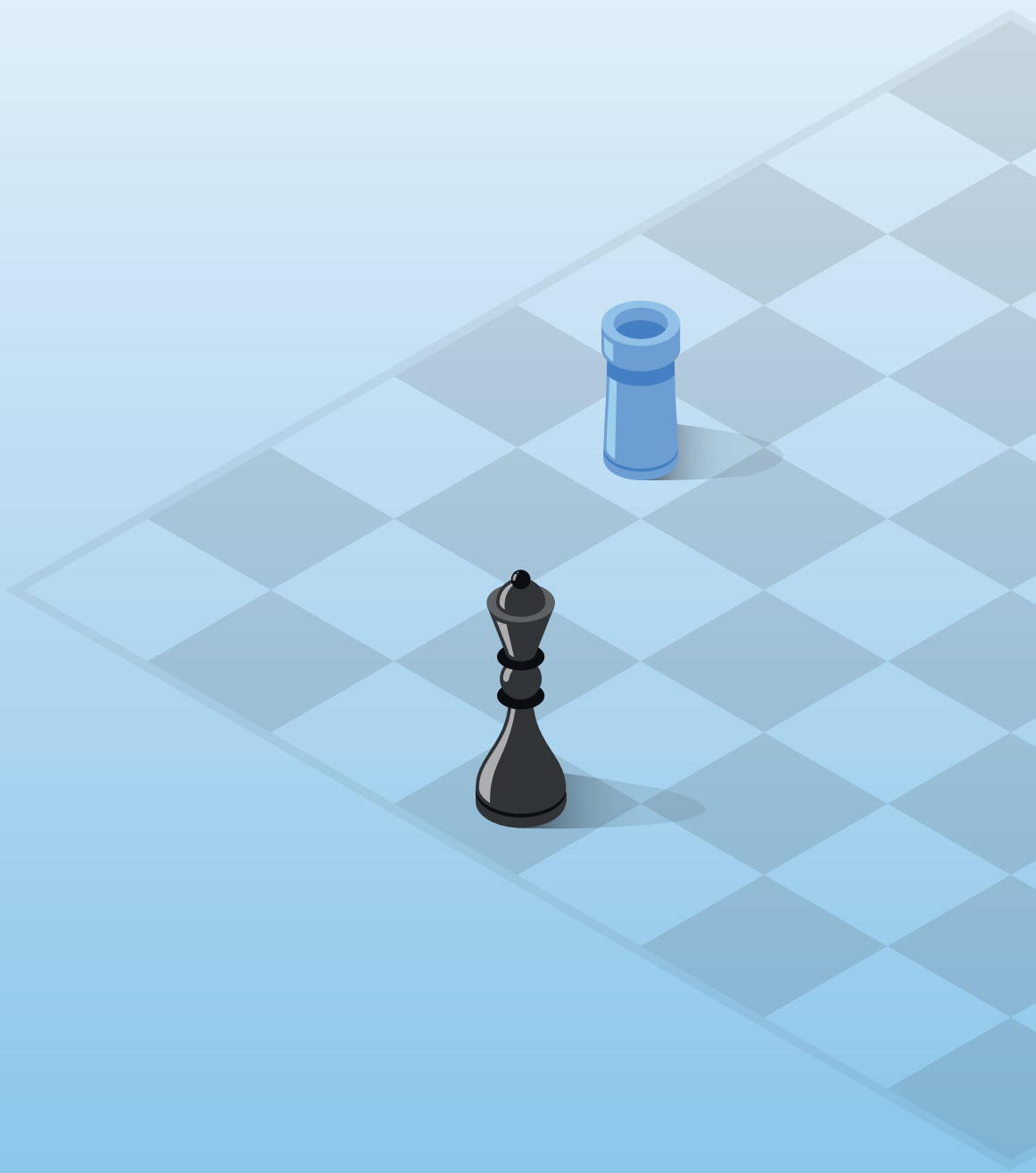
This dissertation proposes a power interplay framework that describes interactions between policy actors and how actors deploy material and ideational resources to influence one another. It presents evidence of how policy actors use these resources at local and regional level to exclude local policy actors and push for short-termism in local adaptation plans and in the planning process for the transboundary Brahmaputra River basin. It shows that multiple climate policy paradigms shape the way in which adaptation is framed and approached by policy actors and that these paradigms have an important influence on how power interplay evolves.

To reduce the negative effects of power – for example, the exclusion of actors – I distilled four power-sensitive design principles (PDPs) from other social science disciplines for application in the CCA context. The results of this dissertation offer theoretical contributions to the study of CCA policy-making in South Asia, and concrete and practically relevant PDPs are proposed to improve long-term CCA planning.

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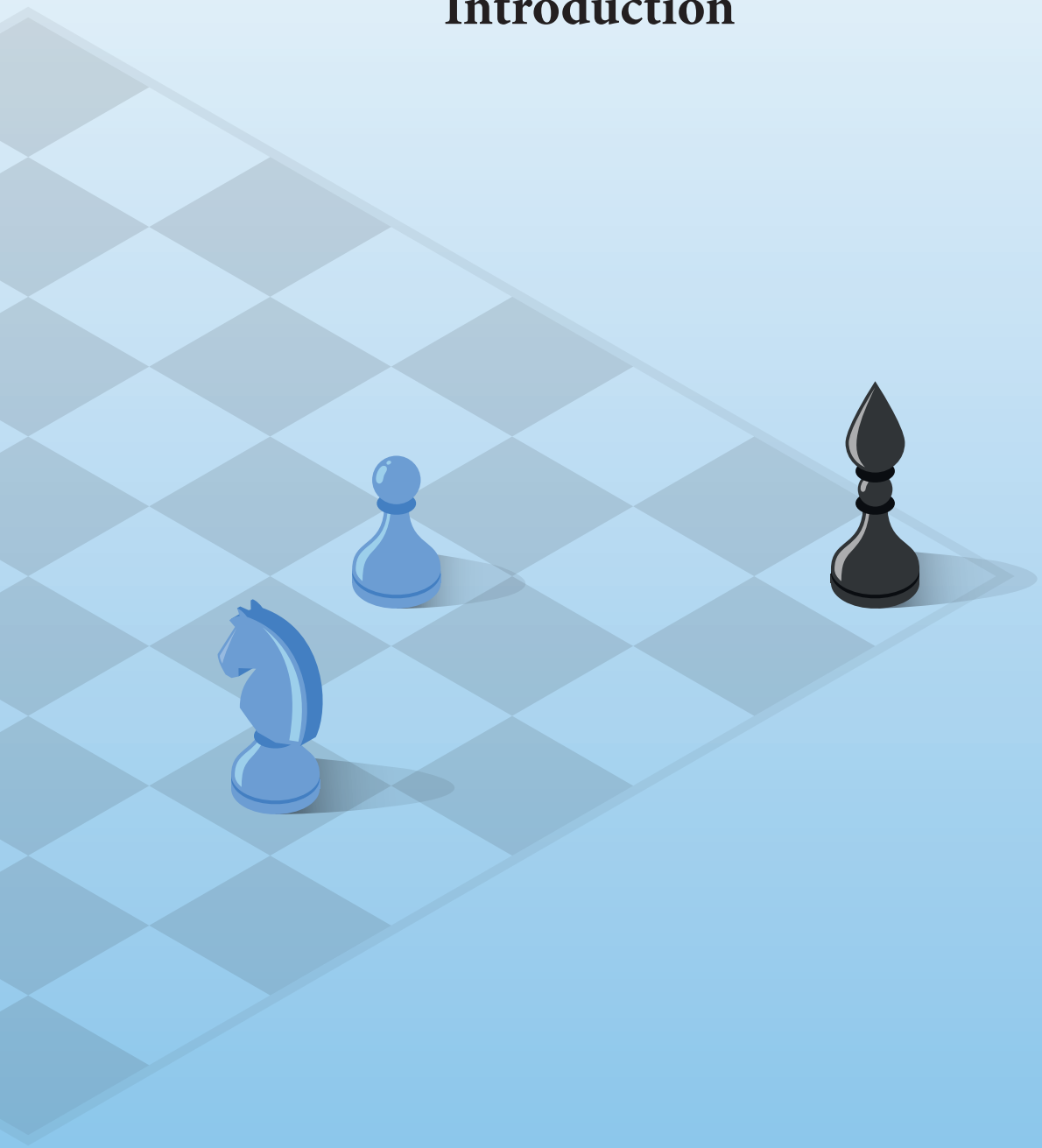
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1

Introduction



“In the current climate change context, there is domination of certain powerful players and policies are influenced or formulated by them. This is the way climate policies are made here. Frankly, I do not know how to address power issues and therefore don’t want to think or discuss it.” (Interview respondent, Bangladesh, 2016)

This statement was made by an influential civil society actor in Bangladesh when he was asked to reflect on his experiences in climate change adaptation (CCA) policy processes. It illustrates that power plays an important role in shaping CCA policy processes; actors experience power – particularly the negative effects – but do not know how to deal with it. For decades, the role of power in policy-making has been studied in the fields of political science, sociology, international relations, organisational studies and human geography (Haugaard and Clegg, 2013), but it remains under-researched in the CCA context (Eriksen et al., 2015; Manuel-Navarrete, 2010). This is perhaps because adapting to climate change impacts has emerged as a relatively new societal challenge, while other – ostensibly more pressing – issues such as poverty, lack of basic services and political stability are of political importance. This dissertation aims to present a detailed portrayal of such power dynamics in CCA policy-making in South Asia in order to advance our theoretical understanding and support policy actors.

1.1 Climate change adaptation and the role of power

1.1.1 CCA policy-making: an emerging policy challenge in South Asia

Climate change is now accepted as being a global threat. Global greenhouse gas emissions have been increasing (Behera et al., 2017; Burck et al., 2016), leading to increasing global temperatures, changing precipitation trends and rising sea-levels (IPCC, 2014). According to the SR 1.5 report (Hoegh-Guldberg et al., 2018), it is projected that Asia and Africa will experience 85–95% of global exposure, with 91–98% of the vulnerable population, approximately half of which is in South Asia; and the region's current population of 1.8 billion people is projected to increase by 800 million by 2050 (Mall et al., 2019).

With the changing climate, the frequency and intensity of climate-induced disasters such as flash floods, sea-level rise, heat waves and droughts are increasing in South Asia (IPCC, 2014). Byers et al. (2018) show that the region will have moderate and large multi-sector impacts at 1.5°C. The cumulative climate change impacts are affecting the health, livelihood and other developmental aspects of the vulnerable population (Portier et al., 2013; Costello et al., 2009). For instance, local yields are projected to decrease in the region (Schleussner et al., 2016). The situation in South Asia is further complicated by unprecedented population growth, low institutional capacities, social vulnerabilities, high dependence on natural resources and unsustainable economic growth in the region (Bhave et al., 2016; Rasul, 2016; Brown et al., 2010; Haines et al., 2006).

Although communities in South Asia have been coping and autonomously adapting, there is a necessity for planned adaptation to lessen the climate impacts and increase communities' resilience. The Intergovernmental Panel on Climate Change (IPCC) defines climate change adaptation as “the process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects” (IPCC, 2014, p. 5). Adaptation can be realised from the local to the global level and be focused on short-term actions or on long-term system transformations (Tàbara et al., 2018; IPCC, 2014; Pelling, 2010). With the impacts of climate change already being felt in South Asia and expected to intensify in the future, national governments in the region are continuously planning systematic efforts to prepare and implement dedicated CCA policies (Mishra et al., 2019; Im et al., 2017; Vij et al., 2017). In the last two decades, countries such as Bangladesh, Nepal and India have formulated various CCA policies, including National

Adaptation Programmes of Action (NAPA), National Climate Policies, Sub-national Climate Strategy documents and (intended) National Determined Contributions.

These CCA policies arise out of an inherently complex and iterative process, where various actors with different ideas and interests continuously interact with one another, deliberating the problem and searching for solutions (Head, 2018; Giddens, 2015). Although the state plays a critical role in these processes, the model of state-centred policy-making has shifted to more deliberative and interactive policy-making, with the inclusion of various state and non-state policy actors (Mathur, 2008; Hajer and Wagenaar, 2003). Even in such interactive policy-making processes however, certain actors are excluded, and certain ideas and interests are (over)powered. Ojha et al. (2016) and Nightingale (2017), for instance, highlight the exclusion of community actors and the overpowering of their knowledge and ideas by powerful national and local politicians, external consultants and technocrats during CCA policy-making processes. The domination and influence of such powerful policy actors not only results in the exclusion of certain actors but also shapes the CCA policies.

As the quote at the beginning of this chapter suggests, various policy actors (serving and retired bureaucrats, influential academics, civil society actors and representatives of donor agencies) are aware of such underlying and adverse effects of power but are often clueless about how to address them. Hence, it is important to understand and explain the role of power in CCA policy-making processes and to determine ways to address its negative effects.

1.1.2 Power in CCA policy-making processes: research gaps

The concept of power is intensely studied and debated in the social sciences discipline, but to date it has not received much attention in the climate change adaptation governance and policy literature (Haugaard, 2017; Vink et al., 2013; Termeer et al. 2013). Eriksen et al. (2015) and Manuel-Navarrete (2010) argue that power is inherently present in CCA policy processes, but neglected by most policy researchers. There are three main research gaps in the CCA literature on power and policy-making.

First, most studies take an institutional perspective on policy-making and the role of power therein. Although there has been a rise in research on how civil society, business and state actors can implement CCA, it rarely includes elements that focus on the power-related interactions and struggles between actors during CCA policy-making processes. Adaptation studies emphasise the importance of interactions between actors at different levels, but there is little emphasis on how the power struggle between actors influences the choices made in

designing and implementing CCA policies. Moreover, the few studies that do emphasise power struggles have focused largely on institutional dimensions of power, rather than on the behaviour, interests and priorities of actors. The substantive CCA literature focuses on international politics, emphasising the power of international organisations, think-tanks and donor agencies to influence the interactions between developed and developing countries. Examples include how international donors create conditions for the recipient (mostly developing and least developed) countries to receive climate change adaptation finance and thereby shape the framing of ideas underlying CCA policies (Vink and Schouten, 2018; Ciplet, Roberts and Khan, 2013; Tanner and Allouche, 2011; Ayers, 2009).

CCA studies emphasising the role of power in South Asia mostly explain one-way interactions, where actors use institutions and organisations to overpower other actors (Nightingale, 2017; Tschakert et al., 2016; Eriksen et al., 2015; Nightingale, 2016; Ojha et al., 2016). CCA research has paid little attention to the process of dynamic interactions (dialectic in nature) between actors, resulting in power interplay and influencing CCA policies in line with their interests and priorities. Existing studies have provided valuable insights into the political barriers to CCA but provide a limited understanding of the power interplay between actors that underlies CCA policy-making processes (Vink, 2015; Biesbroek et al., 2014; van der Brugge et al., 2005). Particularly in South Asia, CCA policy-making is fundamentally relational in nature, where multiple actors from different backgrounds with diverse interests have to negotiate about climate actions (Bulkeley and Newell, 2015; Ojha et al., 2015; Erasmus and Gilson, 2008). To gain an in-depth understanding of how power interplay influences CCA policy-making processes, it is critical to understand the dialectical relation between the institutional and the agency-centric perspective on power.

The second research gap revolves around the issue of long-term thinking and power dynamics in CCA policies. Many scholars show that the current CCA policies in South Asia are generally not designed to deal with uncertain distant futures (Wise et al., 2014; Bhawe et al., 2016; Buurman and Babovic, 2016). There have been increasing calls to integrate long-term thinking about future impacts of climate change and to avoid short-term maladaptive practices (Colloff et al., 2017; Hodgkinson et al., 2014; Hovi et al., 2009). However, the CCA literature provides very few insights on the political nature of long-term planning and the influence of power in shaping the temporal dimension in CCA policies in South Asia. Long-term planning is politically challenging because of the uncertainty involved in climate science and some countries' lack of political stability (Nagoda, 2015; Feng, 2001; Bartlett et al., 2010).

Moreover, power-related factors such as policy actors' short-term preference to show tangible results to their electorates and actors' desire to remain in powerful political positions also guide short-termism and the status quo in CCA policies (Huiteima et al., 2016; Howlett, 2014; Turnpenny, Lorenzoni and Jones 2009). With such challenges posed, policy actors are tempted to maintain the status quo in CCA policies instead of implementing systemic transformations (Dow et al., 2013). The status quo in CCA policies is found to reduce sunk costs and also to help to meet policy actors' short-term interests and priorities (Gifford, 2011).

The third and final research gap relates to the fact that many social science scholars have diagnosed power as an important underlying reason for short-termism and the exclusion of actors from CCA policy-making, but the existing CCA literature focusing on South Asia does not necessarily lead to ways to deal with the negative effects of power. The quote at the beginning of this chapter suggests that CCA policy-making takes place in a power-loaded environment, and so it is useful to study and present some comprehensive and overarching ways to deal with the negative effects of power. To address the negative effects, it is important to focus on the design of CCA policy-making. Design elements include aspects such as roles and responsibilities of policy actors and ways of decision making. Such a focus will help to elucidate how different actors can possibly collaborate or disagree during CCA policy-making processes and possibly design inclusive and equitable processes for CCA policy-making (Klijn and Koppenjan, 2016). Apart from designing robust CCA policies, such research will support in strengthening the implementation of CCA policies in the near future.

This dissertation aims to address the abovementioned three research gaps by analysing how relational power shapes and reshapes CCA policy processes. In the remainder of this chapter, I discuss the core concepts used in this dissertation (section 1.2) and present my research questions and their societal and scientific relevance (section 1.3). Section 1.4 presents the overarching research approach and the methodology used in this dissertation, followed by an outline of the thesis in section 1.5.

1.2 Conceptualising policy-making processes and power interplay

1.2.1 CCA policy-making as an interactive process

The CCA policy-making process is politically complex, particularly because it lacks a well-structured policy domain, knowledge about climate change is uncertain and contested, and a variety of actors are involved in bringing different perspectives to make sense of climate

change impacts (Termeer et al., 2013; Few et al., 2007; Hulme, 2009). Policy theories have identified many factors that influence the policy-making process, including institutions, actors and combinations of both, and have focused on key policy aspects such as the role of institutional rules (Ostrom, 1999), advocacy coalitions and learning (Sabbatier and Wiele, 2007) or extreme events (Sabbatier and Jenkins-Smith, 1993). In the context of this thesis, I am particularly interested in studying the relational power interplay; in other words, how certain actors influence others and in return are influenced by other actors (Loomers, 1976). The policy actors engage in an interactive environment, trying to influence one another and advance their interests through actions and inactions (Torfing et al., 2012). In a relational power interplay, the power of a policy actor increases when the connection is stronger with other policy actors, as it gives leverage by threatening to make new alliances or weaken existing ones. Such bargaining helps policy actors to control the flow of information and narratives. A relational perspective on power interplay helps to elucidate actors' differing capabilities during the policy-making process and to explore how actual interaction is shaping the CCA policies (Kriesi et al., 2006).

I argue that relational power interplay takes place in a relatively large institutional context; different framings of what the problem is and how it ought to be addressed are solidified and institutionalised, in turn shaping actors' underlying conception of climate change, the assessment of its seriousness and urgency, its risks and impacts at the geographical and political level concerned, and the normative and political questions of how to legitimately pool or allocate these risks (Termeer et al., 2013). CCA policy actors act and organise themselves in accordance with the rules, practices and positions that are socially constructed and accepted i.e. institutions. Policy actors interpret and make sense of these institutions and use these in their negotiations with other actors. In this way, these institutions shape their preferences and conceptions of a CCA policy issue in a particular direction and limit alternative conceptions from reaching the policy-making process. Through interactions, policy actors' framings might change and open up to new and alternative problem framings and solutions.

Dynamic power interplay takes place between policy actors over questions of what the problem is, what solutions are proposed and who is responsible for making decisions (Krott et al., 2014; Hayward and Lukes, 2008; Rein and Schön, 1996). For instance, continuous power interplay takes place in negotiations about, and decision making over, the kind of CCA policy measures to be adopted (Torfing et al., 2012). Certain policy actors might argue that a country's short-term socio-economic development should be prioritised over long-term adaptation to climate

change impacts (or vice versa); or certain actors might want to focus solely on CCA measures or disaster risk reduction activities, often ignoring alternative policy priorities (Saito, 2013). Power interplay effects all stages of the policy process: which issues are on the political agenda, the alternative policy options considered, the choices made, their implementation and evaluation. Understanding these power interplays is therefore critical to inform the design and implementation of policies.

1.2.2 Power and power interplay

I have briefly introduced the concept of power interplay in the above section. Power is perhaps one of the most discussed and contested concepts in the social sciences (Lukes, 2005; Baldwin, 2002). Scholars have proposed and criticised numerous definitions of power, categorised different types of power and discussed various ways in which power influences policy-making processes (Arts and Tatenhove, 2004). Some classical discussions include the work of Dahl (1957), who explains power as a relational phenomenon (i.e. actor A influencing B), Marsh and Olson (1989), who describe power in organisational (i.e. via rules, values and bargaining) and discursive (i.e. knowledge, narratives and discourses) terms, and Clegg (1989), who views power in a dispositional form (i.e. actors' possessing resources). Given the many definitions and strands of research on power, it is critical to position my work in this extensive field. To understand how actors behave in decision-making processes and to capture the relational and interactive dimension of power, I focus on power theories that are specifically orientated towards micro-level interactions between actors. In this dissertation, I combine insights from various power theories to operationalise *relational* power and power interplay.

I build on the work of Dahl (1957), who studies decision-making processes and defines power in terms of a relationship between actors. In his view, power is expressed in terms of the use of a relative degree of power: *A has power over B to the extent that he can get B to do something that B would not otherwise do*. He reiterates that there is always a sense of association or relationship between actor A and actor B for power to function. Dahl illustrates relational power with an example, a relationship between a traffic police officer and a car driver. A traffic police officer orders a car driver to move in the opposite direction on the road, which is against the traffic rules. The car driver agrees to the order and starts driving in the other direction. Then, Dahl replaces the traffic police officer with himself, saying that, if he starts ordering the car driver to move in the opposite direction, the car driver will disobey and consider him mentally ill. This example illustrates the comparative degree of power in a relationship, the dispositional form of power and the way power changes with changing actors.

I theorise power as an interactional phenomenon, because interaction between actors is a fundamental part of human relations. In this dissertation, interaction or interplay can be broadly considered as communication (written or verbal) produced between two or more actors in a given policy context (Hardy, Lawrence and Grant, 2005). In this relational perspective on power, the term ‘power interplay’ is defined here as interactions between individual policy actors to make decisions during the policy-making process. Policy actors may represent groups, offices, governments or nation-states tied in a certain relationship at a given juncture.

To study power interplay, I conceptualise the actors’ material and ideational resources that influence the policy-making processes. Material resources refer to hard resources in the form of finance, human resources, military strength or sometimes tangible resources such as a strong political position or legitimacy (Fuchs and Glaab, 2011; Orsini, 2013). Material resources are used by powerful actors to exercise relative advantage over weak actors and can provide actors with agenda-setting or decision-making power. Ideational resources refer to soft resources such as the ability to utilise ideas, knowledge and narratives to influence policy processes. Ideational resources are used to manipulate and influence the choices of action in policy processes (Carstensen and Schmidt, 2016). Policy actors use material and ideational resources in different configurations to achieve different purposes. Certain actors can use resources to achieve collective goals, whereas other actors may use them to strengthen their vested interests. Some policy actors might push for change and others for stability according to a given situation, provided they have access to these resources. In Chapters 3 and 4, I operationalise the meaning of both material and ideational resources in greater detail.

1.3 Research questions

In section 1.1, I identified three main research gaps in the study of power in climate change adaptation. The research objective of this dissertation is to understand and explain the role of power in influencing CCA policies in South Asia. Three research questions (RQs) are central to the research objective:

- **RQ1:** *How have climate change adaptation policies evolved in the last two decades in South Asia?*

To be able to understand the influence of power interplay on CCA policy-making, it is first important to gain more insights into how CCA policies have evolved in South Asia. Analysis of the evolution of CCA policies over time and across countries can identify the underlying

institutional and behavioural factors that shape CCA policies. It also allows for the identification of drivers of changes in these factors and the role of power and power interplay therein. Such analysis also helps to elucidate the institutional dimension that shapes the way actors behave and influence CCA policies in South Asia.

- **RQ2:** *How does the power interplay between actors influence climate change adaptation policies in South Asia?*

This question aims to unravel the conceptual meaning of power interplay and demonstrate its empirical manifestation. The ambition is to operationalise power building in terms of key power theories, particularly focusing on power interplay and material and ideational resources as briefly introduced in section 1.2. By answering this question, I develop a conceptual understanding of power interplay and apply this to two empirical cases in South Asia. By analysing the two cases, I also aim to gain more understanding of the way power interplay influences the temporal scale of CCA policies at local, national and transboundary levels.

- **RQ3:** *How can climate change adaptation policy actors deal with the negative effects of power interplay?*

The aim of this question is to determine possible ways to address power. Although power can have positive effects on policy processes, I focus here explicitly on the undesirable manifestations of power such as an actor's use of authority and domination on the basis of having specific knowledge that negatively influences CCA policy-making processes in South Asia. In addition to conceptualising ways of addressing power, I particularly aim to offer practical ways in which policy actors (practitioners) can reduce the negative effects of manifestations of power. Insights from this question should provide actionable knowledge to practitioners in the design of (long-term) CCA policy processes.

By answering the three research questions, this dissertation aims to make theoretical contributions to the ongoing debates on adaptation policy and decision making, particularly in the South Asia context. Further, this dissertation seeks to provide concrete policy suggestions for strengthening CCA policies and policy-making processes in the region.

1.4 Methodology

As mentioned, this dissertation aims to explain how power interplay shapes the CCA policy-making process, with the objective of inquiring about the nature of policy-making processes

and manifestations of power attached to it. To answer the research questions, I follow an iterative research design using empirical cases at different administrative scales and in different country contexts. The iterative nature of this research is visible in the sequential way in which the research questions are addressed and the movement between analysing and interpreting the data collected, using both inductive and deductive methods. The following sub-sections describe the overall research approach, research design and methods of data collection and analysis to answer the three research questions.

1.4.1 Research approach

My research follows a critical realism ontology, highlighting that reality exists independently of our knowledge and interpretation of it. It assumes reflexivity in the condition of knowing, claiming that a particular truth exists at a particular time (Hunt, 2016; Sayer, 2004). It is an alternative middle ground to scientific forms of positivism and to strong interpretivism or postmodernism. Critical realism is a form a reflexive ontology, informing social science to become a thorough empirical investigation with a particular interest in the nature of causation. Critical realism places a special emphasis on relational aspects, discussing two types of relations – necessary and contingent. Necessary relations are those where one actor cannot exist without the other (Easton, 2010; Sayer, 1992). For instance, the leader–follower relation is considered a necessary relation. A leader cannot exist without followers; a leader needs to have followers to guide and show them how to achieve any collective or personalised interest. Necessary relations are not rigid, but change in one actor will lead to change in the other. Contingent relations are independent in nature, whereby it is neither necessary nor important to stay in a relationship to achieve a particular collective or individual interest, but the relationship can still influence actors involved (Easton, 2002; Sayer, 1992) – for instance, the relationship between humans and tigers. They both have an independent existence and may or may not influence each other in a given situation. Critical realism guides my ambition to operationalise power interplay between actors using a relational approach. In CCA policy-making, actors are connected with one another in necessary or contingent relations. Such relations influence the power interplay between them, ultimately influencing CCA policies.

In critical realism, a social phenomenon can be studied and explained using different research methods. Critical realism relies on the researcher ‘puzzling’ to decide on relevant tools for collecting and analysing data that help to debate and make more objective arguments. Considering such methodological reflexivity, I follow an abductive approach (Easton, 2010; Yanow, 2007) where I use relevant methods and tools to study an empirical phenomenon that

is not yet explained. Hence, an abductive approach is useful, particularly for studying new relationships between actors or new variables that influence such relationships (Dubois and Gadde, 2002).

1.4.2 Research design: case study

Critical realism can accommodate a variety of methodological choices, but this dissertation focuses on the case study methodology as it is suited to the in-depth investigation of complex processes such as power relations and power interplay between actors (Easton 2010; Easton and Harrison 2004). Price and Martin (2018) and Hu (2018), for instance, used these methodological principles of critical realism to develop a qualitative case study research design to guide their empirical work on entrepreneurship and social capital in China.

The case study methodology is generally associated with qualitative methods of data collection and analysis and contains two elements – the subject and the object (Thomas, 2011). A case study, the subject, has a practical focus and is the analysis of an individual or interactions between individuals, events, periods, projects or institutions by one or more methods. The study subject is analysed using an object: a theoretical and conceptual frame. Both subject and object are closely connected in an infusion of empirical data and theoretical constructs (Thomas, 2011, 2015). The distinction between subject and object is based on research questions and is discussed in Chapters 2, 3, 4 and 5.

This dissertation follows a case study design. Such a research design allows for high levels of conceptual validity and for the identification and explanation of the aspects that best represent the theoretical concepts used (Alexander and Bennet, 2005). Conceptual validity is high because the case study design provides the freedom to analyse the interlinkages between empirical data and theoretical constructs over the comparability of different cases (countries), domains and time periods. For example, the use of power in one context may be experienced as having a positive effect, whereas in other contexts it is experienced as negative. Case study research designs allow researchers to carry out contextualised comparisons to explain the nuances of power.

I conduct multiple-case research and aim to detail the lived experiences of policy actors in their settings (Yanow, 2007). Through my research, I engage in participatory observations to interpret the interactions between actors in the process of influencing CCA policy-making. The cases that I selected are located in South Asia. There are three reasons for selecting cases in this region. First, short- and long-term impacts of climate change threaten to affect more than

a billion people residing in South Asia (Turner and Annamalai, 2012; Arnell and Gosling, 2016). South Asia includes eight countries, but, for the purpose of this dissertation, I purposefully selected Nepal, India and Bangladesh. These three countries are located in the most dynamic, vulnerable and complex South Asian region – the Hindu Kush Himalayan (HKH) region – sharing various river basins and mountain systems (Rasul, 2014; Brooks et al., 2006). Moreover, the countries are highly vulnerable and have low readiness for climate change (Kreft et al., 2017). Second, among all the countries in South Asia, these three are a focus of the Himalayan Adaptation, Water and Resilience (HI-AWARE) research, which provided me with access to a variety of policy actors working on CCA pilot interventions, capacity building and policy engagement on climate resilience and adaptation in the mountains and floodplains of the Indus, Ganges and Brahmaputra river basins. Access to cases was critical for the in-depth case studies that I planned to undertake. HI-AWARE is one of the four consortia of the Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA). Third, during my previous work in South Asia, I became puzzled about the issue of how power influences CCA and water policies. I am very keen to ‘solve the puzzle’ about CCA policy-making in South Asia.

For the individual chapters, selection of the cases was based on several arguments. In Chapter 2, we consider Bangladesh and Nepal national CCA policies because the two countries offer sufficient information to allow for a longitudinal analysis of policy change and both countries had different ways of governing climate change impacts between 1997 and 2016 (Saito, 2013). For Chapter 3, we selected the preparation of revised local adaptation plans of action (LAPA) in Nepal. The ongoing LAPA preparation allowed me to observe how power interplay between local actors influences local adaptation planning. For Chapter 4, we analysed the ongoing informal policy dialogue between two riparian countries to establish cooperation in a transboundary river basin (Brahmaputra River in India and Bangladesh). This again allowed me to observe power in action, particularly at the transboundary level.

1.4.3 Data collection and analysis

In this dissertation, I combine various research methods to answer the research questions. The case study methodology provides flexibility on the methods of data collection, allowing a choice to be made on the basis of the research context and questions discussed in section 1.3. Data for this dissertation were collected through semi-structured interviews in Bangladesh, Nepal and India and through participatory observations during policy-making meetings, project meeting reports and literature analysis (see Table 1.1). The literature analysis included policies,

plans and other relevant government documents, non-academic literature on climate, water, energy and agriculture policies, and implementation of projects produced by think-tanks, consultancies and (I)NGOs, and some of the historically oriented literature on climate and related topics in South Asia. In this dissertation, all the collected data are organised and analysed qualitatively. I use qualitative methods such as content analysis (Yanow, 2000) (Chapters 2 and 5), interactional framing (Dewulf et al., 2009) (Chapter 3), and the iterative method of meaning-making (Srivastava and Hopwood, 2009) (Chapter 4). The research design, data collection and analysis, and limitations are discussed in more detail within the specific chapters.

Table 1.1: Methodology and methods used in different chapters

Research question(s)	Methodology	Methods and aim	Chapters
1	Case study	Semi-structured interviews, content analysis of policy documents	2, 3
		To collect extensive data to identify various factors for macro-level policy trends in CCA policy-making	
2	Case study	Semi-structured interviews, observations, content analysis of meeting reports	3, 4
		To collect data to understand covert power and to explain complex power relations in CCA policy-making	
3	Systematic literature review	Two-layered systematic literature review	5
		To assess literature to identify manifestations of power in CCA policy-making and to develop a methodology to illustrate power-sensitive design principles	

1.5 Structure of the thesis

This dissertation is comprised of this introductory chapter, four academic articles, with three published and one submitted to a scientific journal, and a concluding chapter (Figure 1.1). The four central chapters contribute to answering the research questions presented in section 1.3. Chapter 2 describes how climate change impacts have been addressed by policies in Bangladesh and Nepal in the last two decades. In that chapter, I use the concept of policy paradigms to identify multiple and competing perspectives used to best solve the problem of

climate impacts. The chapter also discusses the underlying drivers responsible for the shift from one paradigm to another, highlighting the role of power therein. Chapter 3 explains how power interplay shapes LAPAs in Nepal so that they become short-term and reactive. It also presents the building blocks of the conceptual framework of dynamic power interplay and how actors use material and ideational resources to pursue their individual or collective interests. Chapter 4 presents the power analysis of a transboundary river dialogue between climate and water policy actors from Bangladesh and India – a dialogue that indicates the non-decision making between two countries regarding transboundary level adaptation measures. Chapter 5 reports on the results of a systematic review of how to address the negative effects of power in CCA policy-making in South Asia. The chapter illustrates key power-sensitive design principles (PDPs) from other long-standing disciplines, such as political science, international relations, development studies, sociology and behavioural science, that inform climate change adaptation scholarship. The dissertation ends with a discussion and conclusion (Chapter 6), by answering the research questions, reflecting on the key findings and contributions of the research questions, and providing policy recommendations. Chapter 6 is followed by various supplementary materials.

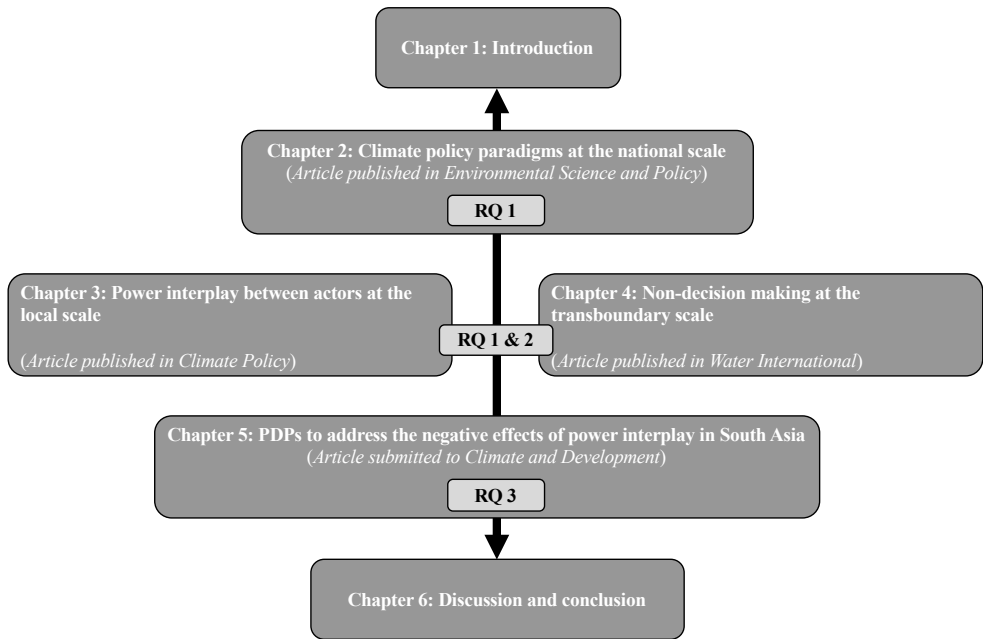
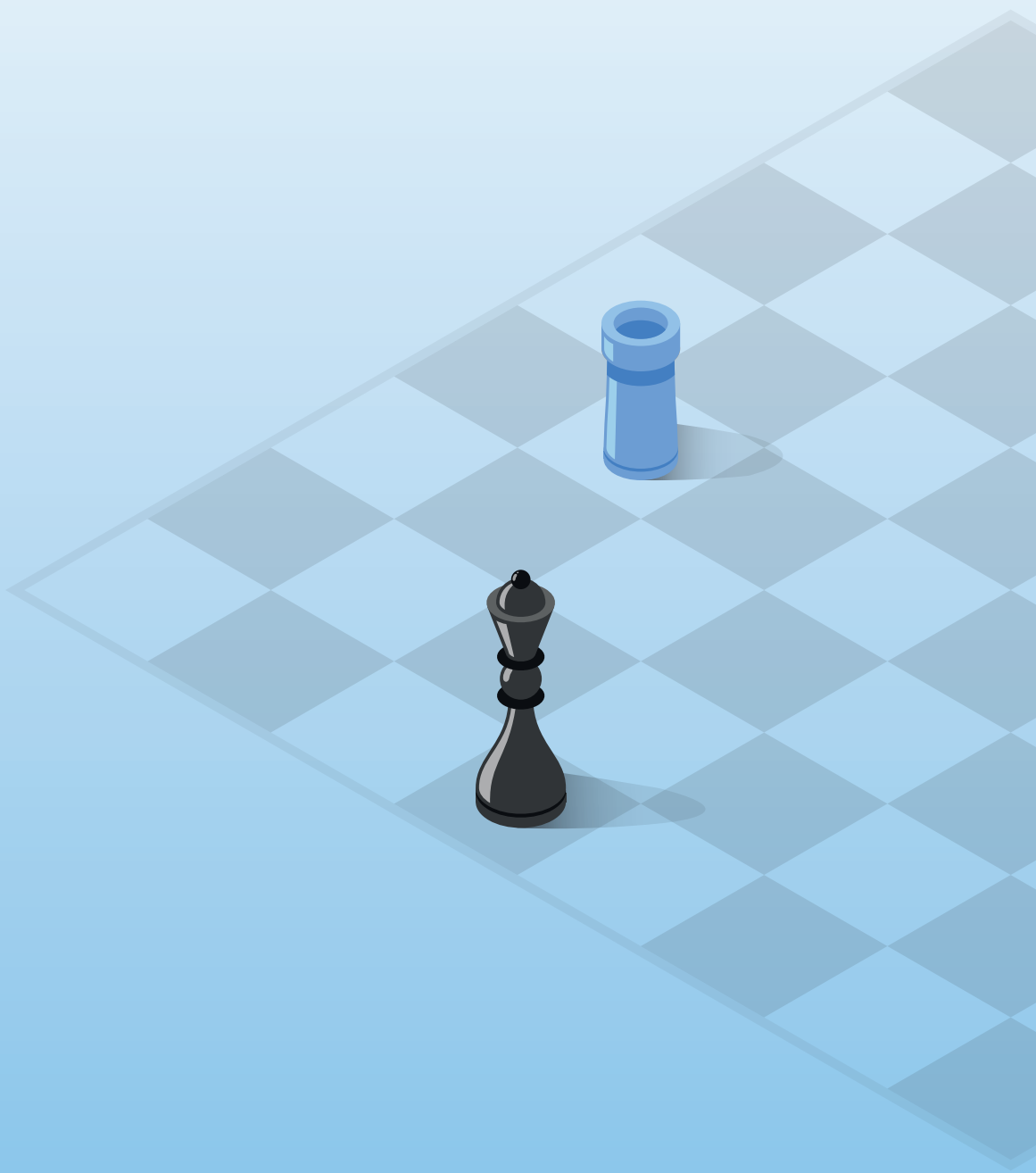


Figure 1.1: Structure of the dissertation



2

Changing climate policy paradigms in Bangladesh and Nepal



Abstract

The aim of this article is to explain and compare the changes in climate policy paradigms (CPPs) of Bangladesh and Nepal. Climate policies are shaped by the underlying CPPs that refer to a dominant set of prevailing and institutionalized ideas and strategies to reduce the impacts of climate change. We focus the analysis on the timeframe between 1997 and 2016, using policy documents (n = 46) and semi-structured interviews (n = 43) with key policy actors. We find that in both countries several CPPs have emerged: disaster risk reduction, climate change adaptation, mainstreaming, and localized action for adaptation. In Bangladesh, specific policy goals and instruments for each CPP have emerged, whereas in Nepal the government has been struggling to develop specific policy instruments to implement the paradigms. We conclude that competing CPPs currently exist which creates diversified policy responses to climate change impacts in both countries. This 'layering' of different CPPs can be attributed to drivers such as unstable political situation, lack of financial support, influence of national and international non-governmental organizations and global policy frameworks. The findings in our study are relevant to further discussions on how to design future climate policy responses to adapt to climate change.

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2.1. Introduction

Adaptation is necessary to lessen the current and future climate impacts. Particularly in highly vulnerable countries like Bangladesh and Nepal additional efforts are needed to increase adaptive capacity and reduce social vulnerability (Adger et al., 2003; Huq et al., 2004). Since 2000, the governments in these two countries have implemented various policies and plans to systematically reduce climate impacts (Vij et al., 2017). Underlying the design and implementation of these policies and plans are climate policy paradigms (CPPs), which refer to a comprehensive set of prevailing and institutionalized ideas and strategies of (policy) actors. The CPPs circumscribe the ways in which policy actors choose to frame particular policy issues, select types of instruments or allocate resources (Hall, 1993). One policy issue can be addressed by multiple paradigms, although tensions and trade-offs are then likely to emerge between competing policy paradigms (de Leon and Pittock, 2017).

The rapidly evolving debates on how to address the climate change impacts have resulted in a mushrooming of CPPs and policies in various policy arena's (Fankhauser et al., 2015). Particularly for least developed countries (LDCs), literature suggests that the CPPs are strongly influenced by the international arenas, particularly the United Nations Framework Convention on Climate Change (UNFCCC), the Inter-governmental Panel on Climate Change (IPCC), bilateral organizations, and donor agencies (Rahman and Giessen, 2017). Apart from global drivers, the interests and knowledge of national policy actors drive the emergence and shape the CPPs. For instance, vested interests of national NGOs to capture foreign funding and political leaders to meet the interests of voters further shapes the CPPs (Barr et al., 2005). National policy drivers influence CPPs as much as the CPPs influence the drivers of change. So far, we know little about the CPPs and the drivers of CPP change and what this means for Bangladesh and Nepal aiming to reduce climate change vulnerabilities. Drivers of CPP change may include financial support, technical and social knowledge, political willingness, and global policy frameworks.

To design and implement effective climate policies in countries like Bangladesh and Nepal, it is pertinent to understand the past and current CPPs as these inform future policy actions. The article, therefore, aims to address two related questions: 1) What are the different CPPs that have emerged in the last two decades in Bangladesh and Nepal? 2) What drives the emergence and change of CPPs in these two LDCs? Better understanding of policy paradigms and how this relates to policy actions is instrumental to future climate policies.

The remainder of the article is structured as follows. Section 2 elaborates the conceptual framework to operationalize the concept of CPPs and drivers of policy paradigm change. The methodology section introduces the selection of cases, data collection methods, and analysis. Section 4 presents the findings by demonstrating the emergence and change of different CPPs in Bangladesh and Nepal and describing the drivers that have influenced the change from one CPP to another. The discussion section compares the two cases, reflecting on the modes of CPP change and policy progress.

2.2. Policy paradigms and drivers of change

The conceptual underpinning of this article is inspired by Hall's seminal work on policy paradigms. He defines policy paradigm as "a framework of ideas and standards that specifies not only the goals of policy and the kind of instruments that can be used to attain them, but also the very nature of the problems they are meant to be addressing" (Hall, 1993). Rooted in historical institutionalism, the argument is that paradigms are the underlying forces that determine the ways in which governments address policy issues such as climate change (Béland and Cox, 2013). Building on Hall's work, Howlett (2009) argues that policy paradigms strongly influence the formulation of policy goals and objectives, selection of instruments, and set the preference for implementation by actors. The existence of policy paradigms, therefore, influences the ways in which actors respond to particular issues as it sets prevailing ideas about what is considered logical, acceptable, appropriate and desirable.

2.3. Operationalizing policy paradigms

To operationalize this conceptualization of climate policy paradigms, we deconstruct it into a (1) prevalent set of ideas that is framed to reduce climate change impacts; (2) resulting in specific policy goal(s); (3) involves certain meso-level policy areas to achieve the goal(s); and (4) is operationalized and routinized by the government through certain financial policy instrument(s) (Table 2.1). We argue that a policy paradigm is in place when all four components are present and interlinked to each other.

Table 2.1: Indicators of climate policy paradigms

Climate policy paradigm (CPP)	Indicators	Description and key question
	Framing	How is the policy issue framed in terms of policy language used in the policy documents?
	Policy goal(s)	What are the climate specific policy goal(s) mentioned in the policy documents?
	Meso-level area(s)	Which are the relevant policy sectors for the implementation of climate policy?
	Financial policy instrument(s)	What are the financial policy instruments that are introduced at the ministry level to routinize the policy?

The first indicator, framing, refers to how policy actors interpret, give meaning to the problem of climate change impacts, and which solutions are proposed (Dewulf, 2013). For example, climate change can be framed as a negative externality to the human system that can affect the health, education and other development aspects (human vulnerability-centered framing), while it can also be framed as a biophysical challenge damaging the ecosystem (climate-centered framing) (O'Brien et al., 2007). These two different frames can result in different policy goals and instruments to reduce the impacts of climate change.

The second indicator, policy goal(s), refers to the main objective of a climate policy and indicates the integration of climate change in the governance system. The policy goals are often influenced by the framing of the problem and set the scope for further implementation through the choice of instruments (Candel and Biesbroek, 2016). Different policy goals can co-exist within the same climate policy. For example, to reduce the impacts of short-term disasters, goals are designed, emphasizing on flood-resistant infrastructure and disaster relief. Also, to improve the adaptive capacity of the communities, separate goals are developed stressing education and health sectors.

Third, meso-level areas are policy sectors that have specific goals to tackle climate change impacts. Whilst there can be overarching goals in how to address climate change impacts across sectors, each sector is expected to integrate climate responses in their own policy portfolio. Identifying meso-level areas is, therefore, necessary as it helps to operationalize the policy goals and select instruments used within the sector (Howlett, 2009). Important meso-level areas for climate change include agriculture, water, forests, and energy policy sectors.

Finally, policy instruments are the resources at the disposal by government(s) to intervene and implement policy action, so as to achieve the set policy goals. Various policy instruments have been reported such as knowledge, treasure, authority, and organization (Henstra, 2016). Emphasis in this study is on financial policy instruments, as they can clearly demarcate the services rendered by climate policies in an abstract or a specific way (Howlett, 2009). The range of financial policy instruments to achieve climate policy goals may include funds, subsidies, taxation, tax benefits, grants, interest free credit, and credit waivers.

2.3.1. Drivers of change

While generally stable, policy paradigms can change, as a result of various drivers, such as institutional and political failures of the existing system or through social learning (Hall, 1993). Some scholars argue that the changes are abrupt and sudden (punctuated equilibrium theory) whereas others emphasize on gradual changes (incrementalism). Baumgartner and Jones (1991) explained policy change processes as periods of marginal changes with critical junctures. In the context of climate change, it is often attributed to external shocks, such as flooding or droughts. However, Mahoney and Thelen (2010) argue that there are internal governmental dynamics that create gradual changes of the system. In reality, it is often a combination of drivers from different sources that are responsible for change.

Various categories of possible drivers have been developed. One distinction is between endogenous and exogenous drivers of policy change. Williams (2009) suggests that exogenous drivers such as globalization and international economic crisis are responsible for bringing policy paradigm change. Carmin et al. (2012) discusses endogenous forces, such as the role of civil society actors in pushing the public servants to implement the climate mitigation plans along with adaptation strategies in the urban areas. Another categorization is based on governance levels by distinguishing between domestic and international drivers (Capano and Howlett, 2009). In this article, however, we do not constrain ourselves to such classifications, but rather empirically investigate the causal conditions to drivers of the empirically observed change that follows from changes in the indicators of Table 2.1.

2.3.2. Modes of change

The changes in paradigms can manifest in various ways, often following similar patterns. Frequently used modes to characterize changes in policy paradigms include layering, drift and conversion (Van der Heijden and Kuhlmann, 2017). Layering refers to a process of gradual

change in which new frames, goals and instruments are added to existing institutions without replacing the pre-existing one (Mahoney and Thelen, 2010). Drift refers to a process where there is a change of the existing institutions or elements due to shifts in the external environment (Hacker and Pierson, 2010). Finally, conversion is understood as redeployment of existing elements of an institution for new purposes (Hacker, 2004). Characterizing the modes of change allows to further detail the outcome of specific drivers of change. For example, studies show that ‘drift’ can be the result of how policy inaction can change policy outcomes due to the inability of policymakers to respond to underlying changes in the larger social and economic context.

2.4. Methodology

We use the above discussed conceptual framework to study the emergence and changes of policy paradigms in Bangladesh and Nepal (see Appendix A in Supplementary material, Fig. 3). These Least Developed Countries are selected because they are highly vulnerable and generally have low readiness to climate change impacts (Kreft et al., 2014). The vulnerability varies between the two countries: Bangladesh is particularly vulnerable to sea and river flooding (Huq et al., 2004) whereas floods from glacier outburst are already causing temporary displacement and disruption of livelihoods in Nepal (Kilroy, 2015). The two countries also share climate change impacts due to their common natural resources such as rivers and mountains (Hijioka et al., 2014). In addition, the two countries offer sufficient information to allow for a longitudinal analysis of policy paradigm change and both countries have different ways of governing climate change impacts between 1997 and 2016 (Saito, 2013). (For more information on two countries see Appendix A in Supplementary material, pg. 1 and 2)

2.4.1. Data collection

The article uses an interpretive approach and employs a case study method to answer the two research questions (Yanow, 2000). Figure 2.1 below highlights the three data collection strategies. Strategy A – a systematic Google search was conducted to identify relevant policy documents using the web-search strings (Austin et al., 2015; Panic and Ford, 2013). Documents were included when there was explicit reference to climate change impacts. The web-search was concluded when the results started to repeat and reached consecutive irrelevant results (see Appendix A in Supplementary material, Tables 1 and 2). The database of policy documents

was supplemented with key policy documents mentioned by the interviewees. Strategy B- 43 interviews were conducted in August-December 2016, 27 in Bangladesh and 16 in Nepal. The interview respondents were identified by google searches, from the networks of the researchers, and referral by interviewee (see Appendix A in Supplementary material, Table 3). Strategy C – we examined the national climate policy documents of Bangladesh and Nepal, Bangladesh Climate Change Strategy and Action Plan (BCCSAP) of 2009 and Climate Change Policy of 2011 to identify the relevant sectoral policies. In total, the final database of documents was composed of 30 and 16 policy documents for Bangladesh and Nepal respectively.

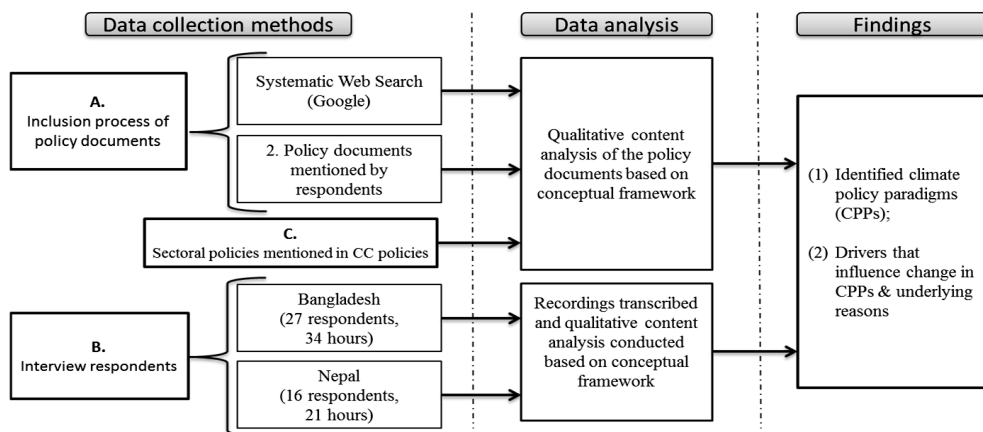


Figure 2.1: Methods of data collection and analysis

Semi-structured interview lists were used to allow for sufficient space for interviewees to narrate their experiences as well as ensure capturing the four indicators of the framework and key CPP drivers. Questions such as, when was a shift observed from disaster risk reduction to climate change adaptation in Bangladesh or Nepal? And what are the reasons for this change? were asked during the interviews. The interviewees included serving bureaucrats (SB), expert consultants (EC) directly involved in policy processes, key civil society actors (CS), representatives of development organizations (DO), NGO representatives implementing climate projects (NG), and representatives of donor agencies (DA). Interviews lasted between 30 and 250 minutes. Follow-up telephone interviews were conducted to clarify responses or inquire additional information. All the interviews and policy documents were stored and analysed using Atlas.ti (version 7).

2.4.2. Data analysis

We clustered the policy documents in four different periods between 1997 and 2016. For each time-period, the policy documents were coded based on the four indicators of a CPP (Table 2.1). To capture the framing in a policy document, we systematically analysed the language of the policy documents (England et al., 2018; Okpara et al., 2018). For instance, some policy documents described how climate change leads to increased frequency of disasters and their impacts on the ecosystem, suggesting preparedness for communities and disaster resilient infrastructure. We observed that the choice of words such as ‘frequency of disasters’ attribute to the framing of ‘vulnerability created by disasters’. We extracted these text fragments and captured them in a database. Similarly, for policy goals, we analysed the goals of the national climate policies and the sectoral policies linked to climate change. We only included policy goals that make explicit reference to climate change as this is necessary to allow for comparison across the various policy documents and to cluster them in a certain time-period. For meso-level areas, we extracted the text fragments from policy documents that specifically discuss the impacts and adaptation strategies for agriculture, energy, water, forestry and other relevant sectors. Further, for each policy document we noted the number and name of policy sectors that placed emphasis on reducing the impact of climate change. Lastly, for financial policy instruments, we searched for reference to financial incentives such as funds, subsidies, taxation, tax benefits, grants, interest free credit, and credit waivers recommended in the policy documents. We made use of the expertise of the interviewees to identify the moments of change in policy paradigm and the underlying causes of this change. We reconstructed the chain of events and drivers of change by triangulating the evidences mentioned in the policy documents and through interviews. Important events include the launch of IPCC’s Assessment Report 3, Bali Action Plan, Cyclone Sidr in Bangladesh and Nepal’s Peace Accord signed in 2006. The results of the analysis are presented in the next section.

2.5. Results: emergence and changing of climate policy paradigms in Bangladesh

The results are presented into two sections. This section discusses the CPPs emerged in Bangladesh, followed by the drivers that influence CPP change. The case of Nepal is presented in Section 5.

2.5.1. Climate policy paradigms in Bangladesh

2.5.1.1. Paradigm 1: disaster response and relief (1997-ongoing)

From 1997 onwards, the framing of national policy documents in Bangladesh, such as the Five Year Plans (FYPs, see Appendix A in Supplementary material, page 1) revolved on how natural disasters create and enhance vulnerability (Fig. 2). The FYP, for example, stated “...most of the rural people are poor and disadvantaged. They are particularly vulnerable to calamities, both natural (cyclone, flood, drought, etc.)...” (Pg. 138, FYP, Bangladesh, 1997–2002). This is illustrative for a time when emphasis is placed on reactively responding to disasters and mitigating climate risks, as was frequently mentioned by interviewees. The policy goals during this time-period focused on building infrastructure for improved weather forecasting, increasing awareness, information sharing, and rehabilitation. Considering the meso-level areas, the National Water Policy (1999) limited its activities only to the line departments of the water ministry. The FYP delineated the disaster related activities between the Ministry of Water Resources and Ministry of Food and Disaster Management. This means that relatively less sectors were involved in framing and addressing the problem. Although driven by the few governmental agencies, interviewees highlighted that civil society organizations (CSOs), such as BCAS,¹ PKSF,² CARE, and ActionAid were participating in the international conferences driven by the UNFCCC and international global research programs on climate change. Research studies focusing on climate change vulnerability were conducted by CSOs during this period, which later became the basis for government to formulate climate policies. As for financial policy instruments, investments on disaster relief remained an integral component of the government expenditure, along with donor-funded flood action plan and Bangladesh Water and Flood Management Strategy.

2.5.1.2. Paradigm 2: disaster risk reduction (DRR) (2003-ongoing)

From 2003 onwards, the government of Bangladesh started framing the impacts of climate change as an inevitable part of the DRR paradigm. Explicit consideration of medium-term exacerbation of disasters due to climate change was proclaimed, placing greater emphasis on more proactive ways of DRR. This paradigm builds upon Paradigm 1 as is illustrated by the Poverty reduction strategy plan -1 (PRSP-1) document, “*the government of Bangladesh has*

¹ Bangladesh Center for Advanced Studies

² Palli Karma-Sahayak Foundation

drawn up a Five-Year Strategic Plan for the Comprehensive Disaster Management Programme (2004–2008) ... It envisages bringing a paradigm shift in disaster management from conventional response and relief practices to a more comprehensive risk reduction culture” (pg. PRSP-1, 2007). The policy goals during this time-period as reflected in the National Adaptation Programme for Action (NAPA, 2005), PRSP-1 (2005), and coastal zone policy (2005) emphasized the shift from line ministries to comprehensive efforts of mainstreaming DRR into national policies. In contrast to paradigm 1, additional emphasis is placed on meso-level areas such as fisheries, agriculture and water in which DRR needs to be mainstreamed. With respect to financial policy instruments to implement this newly emerged paradigm, the policy documents only stress the need for donor agencies and international funding, but no allocation of financial instruments were done. Our findings suggest that paradigm 1 became layered with the DRR paradigm, and currently framing, goals, and instruments of paradigm 1 are merged with the DRR paradigm.

2.5.1.3. Paradigm 3: climate change adaptation (CCA) (2008-ongoing)

From 2008 onwards, a new parallel paradigm emerged. Three major policy documents including BCCSAP (2009), the revised NAPA (2009), and National Plan for Disaster Management (2010) were drafted to address the disasters, with a comprehensive framing to take account of all dimensions of climate impacts, including possible benefits. Increasingly these policy documents started to refer to ‘climate change adaptation’ (CCA) as a new policy paradigm, to respond to short, medium and long-term climate risks. The policy goals in the three policies emphasize the need to include adaptation in all development processes, plans, and policies. The overall number of proposed meso-level areas increased compared to the previous paradigms: adaptation strategies to be implemented in seven sectors, namely (1) agriculture; (2) water; (3) infrastructure; (4) housing; (5) health; (6) disasters; and (7) energy. However, there was a much stronger focus on disaster related issues than the mentioned sectors. The Disaster Plan (2010) made a transition from just focusing on DRR to integrating DRR into CCA, mentioning “...disaster risk reduction with climate change adaptation offers a win-win opportunity: Climate system is fundamental for both issues...75% of all disasters originate from weather-climate extremes...Disaster risk reduction offers opportunities for “bottom-up” strategies for adaptation ... In this respect, disaster risk reduction can promote early adaptation to climate risks and impacts” (pg. 25, 2010). The Poverty Reduction Strategy Programme -2 (2009) declared that the government will invest in adaptation from its own treasury, creating a

special financial policy instrument, called Bangladesh Climate Change Trust Fund (BCCTF), under the aegis of Ministry of Environment and Forests.

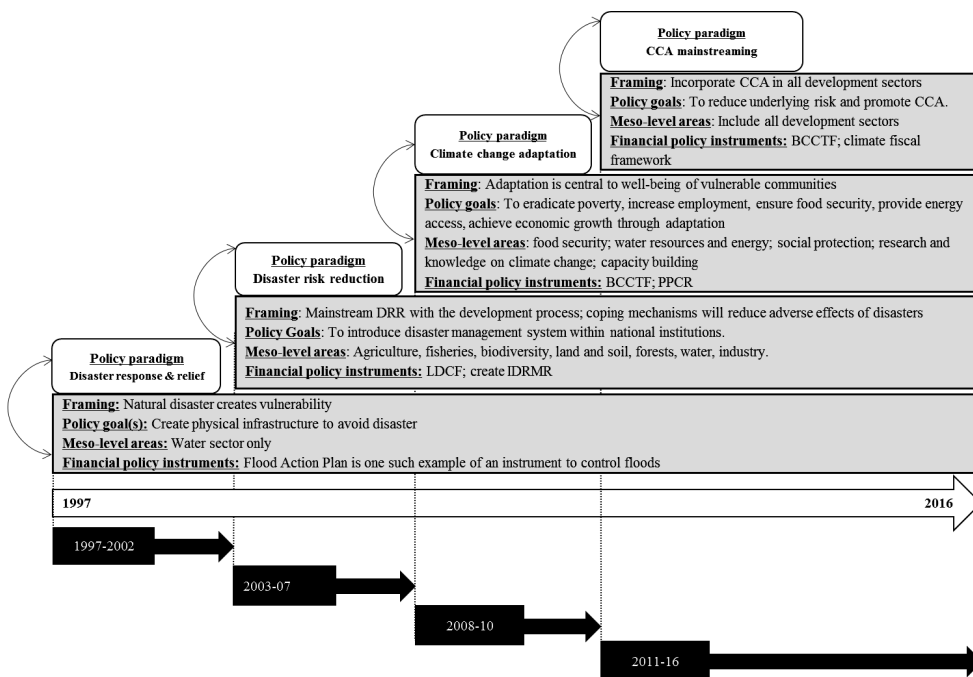


Figure 2.2: Climate policy paradigms in Bangladesh

CCNN (LDCF); Institute of Disaster Risk Management & Research (IDRM); Bangladesh climate change trust fund (BCCTF); Pilot Project on Climate Resilience (PPCR).

2.5.1.4. Paradigm 4: mainstreaming of climate change adaptation (2011-ongoing)

From 2011 onwards, a new paradigm focusing on the mainstreaming of CCA into the development process emerged. Previously, CCA was framed as a standalone initiative to reduce the impacts of extreme events; it is now reframed as an important component for development of all climate risk sectors. Policy documents such as the Bangladesh climate change gender action plan (2013), sixth FYP (2011–16), and the seventh FYP (2016–20) explicitly aimed at mainstreaming adaptation into development planning and budgetary process. In addition, the number of meso-level areas further expanded to on-the-ground issues. For instance, issue of energy shortage is linked to adaptation and low carbon development strategies (e.g., solar-based irrigation systems) are being implemented. Regarding policy

instruments, the government aims to mainstream adaptation into the annual ministerial budgets, with no further allocation to BCCTF. This most recent paradigm is the result of shift in the paradigm 3 and currently argued as the most prominent paradigm. Our findings suggest that paradigm 3 and 4 are currently implemented, with paradigm 3 to be subsequently layered with paradigm 4.

2.5.2. Drivers of paradigm change in Bangladesh

The first CPP shift from disaster response and relief to disaster risk preparedness is linked to the annual flood situation in Bangladesh and to the involvement of key INGOs in the preparedness action. In 1998, Bangladesh faced one of its worst floods with estimated deaths and economic damages accounting to 1100 people and 2.8 billion USD respectively (Govt. of Bangladesh, 2009). During this period, INGOs such as ActionAid and CARE Bangladesh along with other individual key policy actors from academia and government pushed efforts towards disaster risk preparedness. The two NGOs were also implementing programs that were displaying the results of DRR preparedness models. Subsequently, the push for DRR is also attributed to the Hyogo Framework for Action (2005) that placed pressure on governments of the disaster-prone countries created preparedness, rather than reactive measures. After the Hyogo framework, Department for International Development (DFID) made investments to improve the resilience of communities (2005–2010).

As for the second paradigm shift from disaster risk reduction to climate change adaptation, interviewees identified a large number of drivers, including global policy frameworks, political instability, and extreme weather events in Bangladesh. Two main contributing policy framework events are the launch of adaptation fund (2007) and the Fourth Assessment Report of IPCC (2007). Extreme events also drove towards alternatives, as was the case with Cyclone Sidr (November 2007), resulting in an estimated loss of \$1.7 billion USD (Govt. of Bangladesh, 2008). The interviewees mentioned that the shift to adaptation was also due to national political situation. At the end of Bangladesh National Party's 2001–2006 term, the caretaker government (a non-partisan government to hold fair elections) came to power in October 2006 and lasted for almost two years. The caretaker government in Bangladesh is formulated of non-political and non-controversial advisors from academia, civil society, journalism, and respected ex-bureaucrats. Most respondents during the interview confirmed the importance of the caretaker government as a driver for the shift from DRR to CCA, which led to the preparation of BCCSAP and formulation of BCCTF.

The inadequate adaptation funding and country's need to focus on development issues mostly drove the change from CCA to CCA mainstreaming. The CCA paradigm did not result in sufficient funding for adaptation, except a few piecemeal projects through NAPAs, BCCRF, and donor governments. This meant that strategic reframing was needed to reduce climate impacts and to implement CCA. The funding for adaptation is making use of the development funds of Bangladesh, which became the easy way for the donor agencies to divert funds in the name of adaptation and development, thereby achieving dual benefits. A number of respondents during the interview mentioned that mainstreaming came as an idea from the donor agencies and international non-governmental organizations, building on paradigms around development aid. Respondents also revealed that the commitment to fund the adaptation projects under NAPA (2005) remains unfulfilled.

2.6. Results: emergence and changing of climate policy paradigms in Nepal

2.6.1. Climate change policy paradigms in Nepal

2.6.1.1. Paradigm 1: disaster response and relief (1997-ongoing)

From 1997 onwards, the policy framing was inclined towards protecting people from natural disasters. The policy goals focus on the requirement of physical infrastructure and timely information about disasters (Fig. 3). For instance, the 9th FYP document states "...application of new information technology will be emphasized as regards to the essential, preventive, and protective measures to be adopted at the time of natural disasters such as flood..." (pg. 58, 9th FYP). Similarly, the National Water Plan (2002) and Irrigation Policy (2002–2003) have policy goals stressing on water-induced disasters. During this time-period, the meso-level areas were limited, emphasis was laid on water and flood related information broadcasting. The financial instruments, such as grants, are dedicated for developing a management information system for mapping areas prone to floods and for building technical expertise within the government to manage disasters. Department of Water Induced Disaster Management was established in 2000. Our findings suggest that paradigm 1 continue to co-exist with other climate paradigms.

2.6.1.2. Paradigm 2: disaster risk reduction (DRR) (2003- ongoing)

From 2003 onwards, Nepal explicitly framed how natural disasters increase vulnerability and risk for the poor. This is illustrated in the 10th FYP (2002), in which the government stated

that “...behind regional inequalities in Nepal is the centralized structure and vision of the State, political instability, ... environmental degradation and natural disasters” (pg. 80, 11th TYP). In 2005, the government also ratified the Kyoto Protocol, as they saw opportunities of funding through LDC fund and Clean Development Mechanism. Specific goals on DRR were formulated in the 10th and 11th TYP to promote security of life and property from floods. The meso-level areas continue to focus exclusively on the water, information and broadcasting, and science and technology sectors. After 2006, the meso-level areas expanded to forestry sector. Respondent mentioned that many DRR programs are using the community forest users-groups as planning and implementation vehicles. The financial instruments were used mainly for information sharing, increasing awareness and prevention works on landslides, river control and soil erosion through water and forestry sectors. Further, the National Strategy for Disaster Risk Management (NSDRM) and 11th FYP announced to establish a national disaster fund for relief and rehabilitation. Our findings suggest that during this period, paradigm 1 was being layered over paradigm 2.

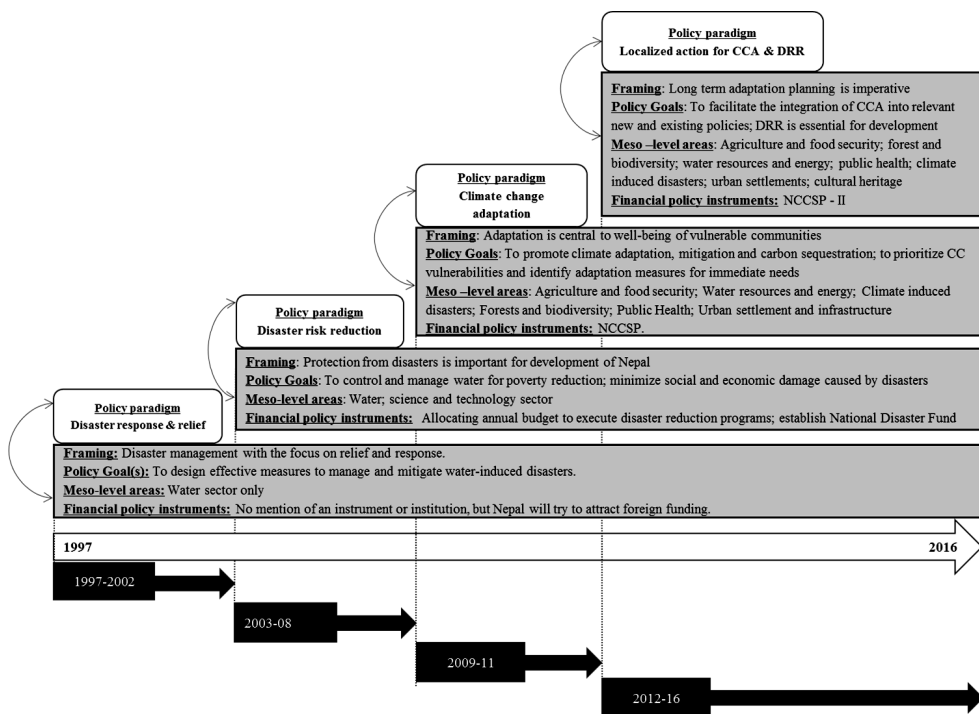


Figure 2.3: Climate policy paradigms in Nepal

Nepal climate change support programme (NCCSP); Local adaptation plans for action (LAPA)

2.6.1.3. Paradigm 3: climate change adaptation (CCA) (2009-ongoing)

During 2009, climate change adaptation emerged as a new policy paradigm in Nepal. Policy goals started to emphasize that adaptation is important for all the development sectors, and implementation of adaptation should take place at the local level. During this period, policy documents such as NAPA (2010), climate change policy (2011), and local adaptation plans for action (LAPA) framework (2011), focusing on the required adaptation strategies to reduce the climate change impacts. Further, six clear meso-level areas were defined, specifically in the NAPA (2010) document, with focus on (1) agriculture and food security, (2) water resources and energy, (3) climate induced disasters, (4) forests and biodiversity, (5) public health, and (6) urban settlements and infrastructure. In terms of financial instruments, climate policy declared to establish a climate change fund, and bring various ministries on board, which can implement adaptation projects. Our findings suggest that paradigm 1 and 2 started layering over paradigm 3. With paradigm 2 stressing to prepare communities for short-term extreme events, while paradigm 3 aims to build adaptive capacity for long-term climate risks.

2.6.1.4. Paradigm 4: localized action for CCA and DRR (2012-ongoing)

From 2012 onwards, Nepal shifted its CCP paradigm towards localized action for adaptation. Policy actors started to frame CCA and DRR as a local issue that requires emphasis to improve the adaptive capacity of the vulnerable communities. For example, the LAPA framework suggests preparing and implementing adaptation strategies considering aspects such as sector, resource availability and distribution system, community access to public services and facilities, and areas affected by climate change. New policy goals emphasize community-based local adaptation actions. For instance, one of the goals of LAPA framework is “To identify and prioritise adaptation actions in easy ways whereby local communities make the prioritisation decisions about their needs” (pg. 4, LAPA framework, 2011). In contrast to the CCA paradigm, the meso-level areas for LAPAs are decided based on the community needs, but largely continued to focus on forestry, agriculture, health, and disasters. Financial policy instruments, such as Nepal Climate Change Support Programme (NCCSP), are conceptualized and currently, 100 LAPAs are being implemented in fourteen districts (see Appendix A in Supplementary material, pg. 3). Paradigm 4 is becoming prominent, as the government is preparing for the second phase of NCCSP. Moreover, after the 2015 Gorkha earthquake, the government and the line ministries started to further re-emphasize the importance of DRR and

CCA. Respondents mentioned that after the earthquake, DRR and CCA are being discussed in almost all environment related meeting and workshops organized by the government.

2.6.2. Drivers of CPP change in Nepal

The first paradigm shift from disaster relief and response towards DRR was because the number of recorded extreme events and casualties increased. Respondents reflecting on scientific and government data suggested that between 2001 and 2005 the number of landslides increased, highest in last 80 years (Aryal, 2012; Petley et al., 2007). Respondents mentioned that the sudden increase in the number of extreme events pushed policy actors to think about preparedness. However, the progress was relatively slow in terms of on-the-ground implementation. One of the respondents mentioned that there was limited penetration of NGOs and researchers in disaster prone areas, attributing to two reasons. First, Nepal has a very recent history with CSOs (Karkee and Comfort, 2016). The number of international and national NGOs emerged only after the multi-party democratic system was established in 1990, abolishing the one-party Panchayat government (local administrative body). Second, in Nepal the Maoist insurgency and control started in 1991 and lasted until 2006. During these years, the development process of the government and non-governmental organizations remained focused on peace-building activities and activism revolved around human rights. Respondents confirmed that Maoists controlled the rural and interior areas and there was very little penetration of NGOs and researchers. This led to slow progress in the DRR policy paradigm.

The country was relatively stable after the government and communist party of Nepal (Maoist) signed a comprehensive peace accord in November 2006. A group of CSOs formed a Climate Change Network Nepal (CCNN) in 2003 (see Appendix A in Supplementary material, pg. 3). During this time-period, CCNN gradually pushed the government to start participating in the Conference of the Parties (COP) processes of UNFCCC. CCNN-member NGOs with their extended international network brought in some funding for generating knowledge on CCA and eventually became an influential driver for paradigm change in Nepal.

There was a push from international policy frameworks such as the COP 13 (2007). After the inception of the Bali Action Plan, Nepal was very motivated towards the preparation of NAPA. Respondents mentioned that after 2007, Nepal was sending larger delegation to the COPs, especially for COP 15 there were approximately 300 delegates from Nepal. One of the respondents mentioned that "...for Nepal the launch of adaptation fund was an opportunity to receive large funding for the implementation of adaptation..." (RB, Nepal). Simultaneously, a

very strong interest of government in the CCA debate was driven domestically, with the involvement of the key political actors. Respondents mentioned the then Prime Minister and his government had given a high priority to respond to climate change. His participation and the speech during the COP15 was considered an important driver for CPP change towards CCA.

During the period of 2012–2016, NCCSP implemented 100 LAPA projects, following the paradigm of ‘localized action for CCA and DRR’. The translation of adaptation to localized action was realized due to the national policy actors involved in the NAPA preparatory process. One of the respondents mentioned, “during the NAPA preparation meeting, various policy actors raised concerns about the community inclusion in the decision-making process, especially for selecting adaptation strategies” (EC, Nepal). This concern was raised because of the vulnerable situation of the communities and inadequate voice in the prioritisation process of adaptation projects during the NAPA process. Along with this, the respondents mentioned that the government had lost faith in the promises of the Annex-1 countries, of contributing large adaptation funds for LDCs. One of the respondents mentioned that “whatever little funds we get for adaptation, it is better to invest in the vulnerable areas; otherwise the money will get spent at the national level planning processes” (SB, Nepal). These drivers influenced Nepal to shift toward ‘localized action for CCA and DRR’ paradigm.

2.7. Discussion

Our findings show that the older CPP continue to co-exist with the new ones and the changes can be characterized with different modes of change (Table 2.2). We observed rapid processes of ‘layering’ of policy paradigms, with only one occasion of ‘drift’ and ‘conversion’ in Bangladesh. The DRR activities in Bangladesh continue to be implemented in parallel to climate change adaptation activities, but with different and seemingly separated policy goals and instruments. With the revised Standing Orders on Disaster (2012), a separate Ministry and Department on Disaster Management was created in Bangladesh with new institutions and financial instruments. During the same time, the Ministry of Environment and Forestry was implementing adaptation activities across Bangladesh. Although the ministry has a regulatory mandate, between 2009 and 2014 the ministry was disseminating adaptation funds, coordinating with other ministries, and implementing adaptation projects on-the-ground. This

was done without bringing any change in the existing institutional structure of the ministry. This change is characterized as policy ‘drift’ – referring to no changes in institutions, but changes in its impact, due to changing external environment (Heijden and Kuhlmann, 2016). Currently, with the depletion of BCCTF, the change from adaptation to adaptation mainstreaming has resulted in integrating the adaptation finance with annual development budgets. This can be characterized as ‘conversion’ (Hacker, 2004).

In contrast we only observed ‘layering’ in Nepal. CPPs such as disaster response and relief and DRR continue to co-exist with the ‘localized action for CCA and DRR’ (Van der Heijden, 2011). Various disaster response and relief projects by government and non-governmental organizations continue to be implemented. DRR activities continue to be implemented parallel to adaptation with new policy goals, institutions and instruments – characterizing this change as ‘layering’. The Ministry of Home Affairs is responsible for relief and response activities. However, other ministries, such as Ministry of Water Resources and Ministry of Science and Technology, are implementing DRR and response and relief activities.

Layering is advantageous because it provides time for the new CPP to build upon the experience of the older ones, based on the emerging policy challenges and on-the-ground limitations (Laird, 2016). However, the layering process eventually can create fragmentation of policy efforts. There is always the possibility of overlapping efforts, confusion, and competition within various paradigms as layering adds more actors and instruments to address a policy issue. Such competition and confusion can percolate down at the ministerial and sub-national levels, resulting in inter-institutional conflict of interests (Zelli, 2011). Design of new adaptation policies can therefore benefit from more coordination between different policy paradigms, recognizing that full harmonization into a comprehensive paradigm is unlikely to materialize anytime soon.

Table 2.2: Comparison between Bangladesh and Nepal

<u>Aspects for Comparison</u>	<u>Bangladesh</u>	<u>Nepal</u>
Climate Policy Paradigms	Disaster response and relief (1997-2002) → DRR (2003-07) → CCA (2008-10) → CCA mainstreaming (2011-16)	Disaster response and relief (1997-2002) → DRR (2003-08) → CCA (2009-11) → localized action for CCA and DRR (2012-16)
Modes of Change	Layering; drift; conversion	Layering
Differentiated policy progress	Policies – NAPA (2005; 2009); BCCSAP; other detailed sectoral policies. Detailed annual development plans Instruments - BCCTF; Created the Ministry for Disaster with fiscal budgets;	Policies – NAPA (2010); CCP (2011) Instruments – only mention of climate change fund; Implementation of NCCSP in a project mode.

We observed a differentiated CPP progress in Bangladesh and Nepal. In Bangladesh, each CPP is supported with specific and elaborate policy goals, instruments and meso-level areas. For example, the BCCSAP demarcated clear policy instruments, institutions and meso-level areas to implement adaptation. This process was further strengthened when the CPP changed from adaptation to adaptation mainstreaming. In seventh FYP, Bangladesh linked on-the-ground challenges such as energy shortage for irrigation with adaptation. This is contrasting to Nepal that followed a similar trajectory of CPPs in the last two decades. Policies were much weaker in design and implementation. Various policies aimed at DRR and CCA, but lacked substantive policy instruments and institutions. According to the national capacity self-assessment report (2008) there is a lack of capacity for climate risk management in Nepal which explains the weak policy design. The political situation in Nepal is still very unstable. Between 2011 and 2016, six different governments came in power, some lasting for only a few months.

Moreover, the article shows that underlying drivers of CPP change are largely political in nature (Giddens, 2009; Howlett and Ramesh, 1998). The political nuances played an important role in changing CPPs. For instance, the unstable political regimes in Bangladesh and Nepal resulted in different policy outcomes. The political instability during 2006–2008 in Bangladesh brought a strong focus on climate policy, due to the involvement of academic and civil society actors. While in Nepal, due to prolonged political turmoil, climate policy institutions remained weak. The political nature of drivers also reflects upon the nexus between the national civil society and donor agencies. The strong presence of CSOs in both LDCs can be attributed to the progress of climate policies (Rai et al., 2014). CSOs are influenced by the deliberation at the conferences of UNFCCC, IPCC, bilateral organizations, and donor agencies. Further, donor agencies support different ministries and CSOs in both LDCs. These politically nuanced and

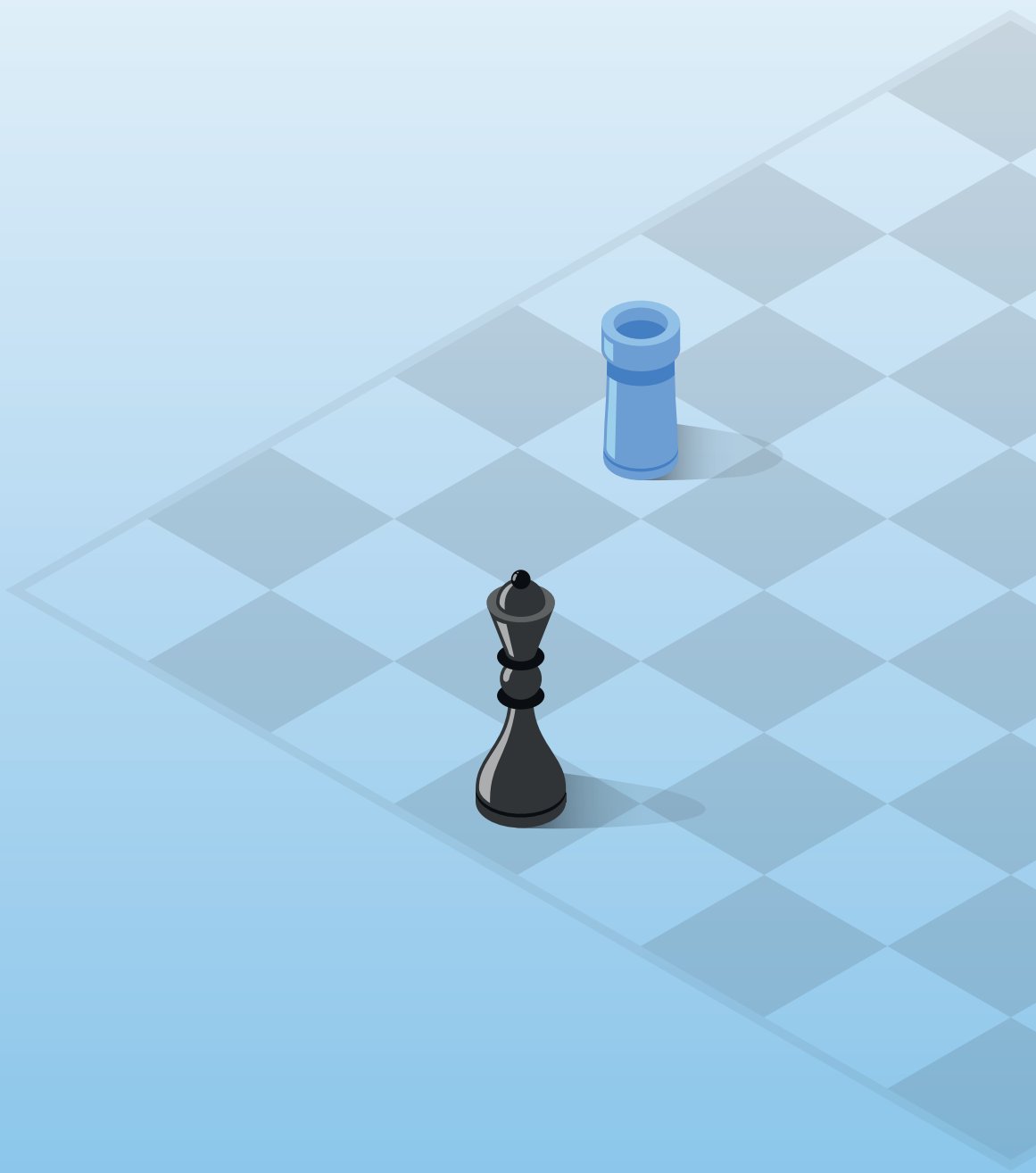
fragmented efforts may create competition among various nodal ministries in the future (Gough and Shackley, 2001).

2.8. Conclusion

In this article, we respond to two questions: 1) What are the different CPPs that have emerged in the last two decades in Bangladesh and Nepal? 2) What are the drivers and how do they influence the CPP change? Based on our analysis, we conclude that the CPPs in the two countries have graduated in the last two decades (Figs. 2 & 3). Both countries follow a similar pattern of CPPs but have recently diverted. Bangladesh is currently following the ‘CCA mainstreaming’ paradigm, while Nepal is following a ‘localized action for CCA and DRR’ (Table 2.2). The two LDCs have graduated from one paradigm to other due to the drivers of CPP change, such as an unstable political situation, lack of financial support, influence of national NGOs, and global policy frameworks. In both the LDCs, we observe policy ‘layering’ as the most dominant mode of CPP change. With the layering of CPPs, there is always the possibility of overlapping efforts, confusion, contradiction over strategies and competition over resources between ministries involved. In the near future, both LDCs will develop a number of climate policy documents (revised BCCSAP, National Adaptation Plan, Delta Plan 2100 for Bangladesh and National Adaptation Plan and revised LAPA framework for Nepal) based on new or existing CPPs. Policy actors in the two LDCs must think carefully to come up with an overarching strategy to integrate or at least recognize the existence of multiple CPPs and respective policies. Designing such a strategy will support policy actors to shape, coordinate and implement future climate policies effectively.

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3

**Power interplay between actors:
using material and ideational
resources to shape local adaptation
plans of action (LAPAs) in Nepal**



Abstract

Deliberation over how to adapt to short or long-term impacts of climate change takes place in a complex political setting, where actors' interests and priorities shape the temporal dimension of adaptation plans, policies and actions. As actors interact to pursue their individual or collective interests, these struggles turn into dynamic power interplay. In this article, we aim to show how power interplay shapes local adaptation plans of action (LAPAs) in Nepal to be short-term and reactive. We use an interactional framing approach through interaction analyses and observations to analyse how actors use material and ideational resources to pursue their interests. Material and ideational resources that an actor deploys include political authority, knowledge of adaptation science and national/local policy-making processes, financial resources and strong relations with international non-governmental organizations and donor agencies. We find that facilitators and local politicians have a very prominent role in meetings relating to LAPAs, resulting in short-termism of LAPAs. Findings suggest that there is also a lack of female participation contributing to short-term orientated plans. We conclude that such power interplay analysis can help to investigate how decision making on the temporal aspects of climate adaptation policy takes place at the local level.

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3.1 Introduction

The frequency of climate-induced extreme events such as floods, droughts and landslides has increased in Nepal (Aryal, 2012; Aksha, Juran and Resler, 2017). To reduce the impacts of these climate-induced events, the government of Nepal has been continuously preparing a set of progressive and forward-looking climate plans and policies (Vij et al., 2018). Policy efforts include a national adaptation programme of action (NAPA), national adaptation plans (NAPs), and local adaptation plans of action (LAPAs³) that are designed to respond to community adaptation needs. LAPAs in Nepal are considered to provide a unique model for implementing adaptation strategies on-the-ground and bridging the gap between autonomous and planned adaptation⁴ to reduce long-term climate risks (Regmi and Bhandari, 2012; Watts, 2012).

However, studies of local adaptation activities show that LAPAs are short-term in nature (Jones et al., 2017; Ziervogel, G., & Zermoglio, 2009). There are three main arguments in the literature why this is the case in Nepal. First, there is a lack of data at the sub-district level due to Nepal's topographic complexities, which make it difficult to project future climate scenarios at the local level (Tiwari, Kara and Bhatla, 2018; Mainali and Pricope, 2017). Adaptation measures are therefore planned based on community knowledge, perceptions and expert engagement, without including reliable future climate scenarios and extreme event forecasting. Second, the LAPA framework has a large emphasis on implementing development activities and building low-cost infrastructure, such as small water storage tanks and gabion walls⁵, to reduce the impacts of extreme events (NCCSP, 2016). Such initiatives may not necessarily contribute to long-term adaptation needs and reducing future risks. Third, LAPAs in Nepal are funded through international donor agencies in a project mode for a short period of 2-3 years (Regmi,

³ LAPAs were prepared to provide the effective delivery of adaptation services to the most climate vulnerable areas and people of Nepal. It is expected that LAPAs will integrate climate adaptation and resilience aspects in local and national plans, through a bottom-up approach. The concept of LAPAs emerged during the NAPA preparatory process in Nepal, as various stakeholders emphasized local adaptation measures and priorities. NAPA and NAPs are prepared at the national level under the UNFCCC guidelines.

⁴ Autonomous adaptation measures are considered to be those actions that are undertaken by affected communities without the direct intervention of a public agency; planned adaptation consist of deliberate policy strategies and actions on the part of public agencies to reduce the impact of climate change (IPCC, 2007; Forsyth and Evans, 2013).

⁵ The gabion wall is made of stacked stones (small or big) tied together with wire to reduce/control erosion and water flow. Gabion walls are usually angled back towards the slope, rather than staked vertically. For more details please see (https://web.mst.edu/~rogersda/umrcourses/ge441/online_lectures/retention_structures/GE441-Lecture6-3.pdf).

Star and Filho, 2016). Financial limitations and shorter time duration of projects do not support long-term transformations (Burch et al., 2009).

Apart from these arguments, the literature suggests there are underlying interests and priorities of actors that shape the short-term nature of LAPAs (Funder, Mweemba and Nyambe, 2018; Chaudhury et al., 2016). During the process of designing LAPAs, actors interact with each other to pursue individual or collective interests creating dynamic power games, where certain interests are heard, and others are neglected (Dewulf et al., 2011). For instance, political actors attempt to prioritize tangible development activities as measures for short-term political gains by using authority, knowledge and financial resources (Morrison et al., 2017; Nawab and Nyborg, 2017). Such continuous power interplay influences how temporal issues are discussed and implemented on-the-ground. These debates add to the existing discussions about how national level adaptation policies focus on long-term adaptation, and LAPAs on short-term adaptation measures.

In the adaptation literature there is, however, a lack of empirical evidence of how such a dynamic power interplay takes place. There are a number of adaptation studies in least developed countries using a power perspective to study adaptation. For instance, Nightingale (2017), Nagoda and Nightingale (2017), Ojha et al. (2016) and Eriksen et al. (2015) emphasize that institutions and organizations struggle over authority and recognition but overlook the process of human interactions between actors for shaping or reshaping adaptation policy efforts such as LAPAs. These studies provide limited insights into how actors use resources interchangeably and how their usage of resources can change with varying situations and over time. In this article, we want to address this gap and focus on dynamic power interplay, particularly how actors interact and deliberate to actually influence the design of LAPAs.

This article therefore aims to answer the following question: *how does power interplay among actors influence the design of LAPAs towards short-term (reactive) adaptation planning in Nepal?* The question is answered through interaction analyses and observations made during the ongoing policy design process to revise the LAPAs (see supplementary material, sub-section 2).

The remainder of this article is divided into three sections. The next section operationalizes the power interplay between actors, explaining material and ideational resources as key concepts. The methodology section introduces the Nepal case, data collection methods and analysis.

Section 4 presents the results, discussing the role of different actors and resources used or not used during power interplay. Lastly, in the discussion section, we further interpret our key findings and propose concrete suggestions to support adaptation policy design processes and how to study these processes.

3.2 Operationalizing ‘power interplay’: deploying material and ideational resources

In this article we focus on what is happening during an interaction between actors, thereby theorizing power as an interactional phenomenon that forms a fundamental part of human relations (Rollins and Bahr, 1976). We take a relational construct to argue that power relations between actors are relations of struggle and competing frames (Rein and Schön, 1996). Power is instituted dynamically in an interaction by the responses of other actors (Thornborrow, 2002). Throughout the article, we use the term ‘power interplay’ to grasp and explain relational and dynamic power. We define ‘power interplay’ as a dynamic interaction between individual policy actors who may represent groups, offices, governments, nation-states or other human aggregates tied in a certain relationship at a given moment (influenced by Dahl, 1957; Hayward and Lukes, 2008; Krott et al., 2014).

Power interplay can be studied by analysing the material and ideational resources actors have at their disposal and use in decision making (Avelino and Rotmans, 2011; Van Hulst and Yanow, 2016). For instance, subject expertise and authority used by an actor can shape the outcomes of a meeting (Purdy, 2012). Assigning roles to an actor can steer the process of the meeting in a certain direction. Similarly, some actors or groups are not able or allowed to participate in the interplay, as organizers or facilitators have the power to open up and close down policy processes (Torfing et al., 2012). Participation in policy processes is often governed by certain actors and may exclude participants who do not conform to their norms (Young, 2000).

More specifically, material resources refer to financial capacity and human resources. Material resources are used by actors to influence policy processes through the availability of staff and finances, and by creating authority of certain actors over others (Orsini, 2013). Material resources can be of a structural nature (Fuchs and Lederer, 2007), but are used in interaction with other actors. Importantly, material resources can provide actors with agenda-setting and

decision-making power during an interaction, along with power to exclude or include actors or ideas (Fuchs and Glaab, 2011).

Ideational resources refer to the ability to master, adapt and utilize ideas, knowledge and information, which enables actors to influence the policy design process (Orsini, 2013). Ideational resources consist of cognitive and normative dimensions (Carstensen and Schmidt, 2016). We refer to cognitive resources as technical aspects of the issue at stake. For example, a climatologist might use rainfall and temperature patterns to make a convincing argument that the climate is changing. Normative resources are the underlying values of knowledge used by an actor (Schmidt, 2002). For instance, to make cognitive knowledge accepted in society, actors might use a more relatable narrative, appealing to values and norms that resonate with the general public. Material and ideational resources are interdependent and are used simultaneously during interactions between actors.

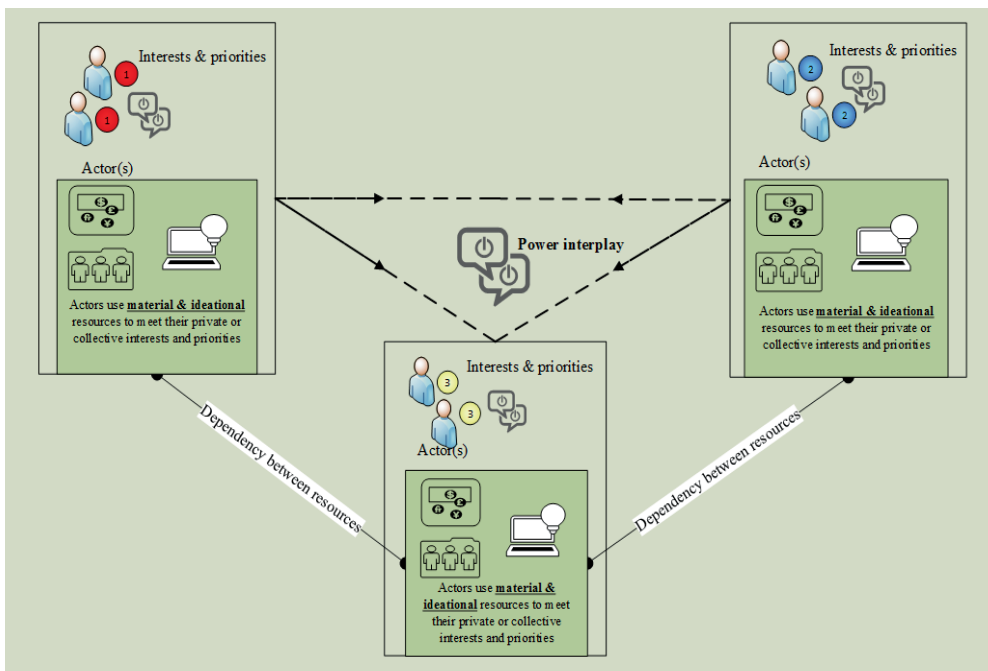


Figure 3.1: Power interplay between actors to discuss the temporal dimension in LAPAs

In Figure 3.1, the green box represents the dynamic power interplay between actors with different interests and priorities in a policy arena. During the interactions, actors use material and ideational resources to influence each other's point of view, for example about focussing

on long-term or short-term adaptation. In this article, we define *long-term* considerations as the ones that are intentionally planned, are for a period of more than 10 years, and include future challenges and needs (Pot et al., 2018; Vij et al., 2017). For example, climate policy integration with energy policy is a long-term consideration (Dupont and Oberthur, 2012). We define *short-term* considerations as those that are autonomous, generally for only 1-5 years and are project oriented. These are referred to as coping strategies (Smit et al., 2000).

In the process of interaction, actors can make use of both material and ideational resources in different configurations. For instance, an actor who wants access to material resources might cultivate specialized knowledge (an ideational resource) that other actors do not possess. With such an ideational resource, the actor gains more visibility and authority (material resources). Actors often exert more power with the coupling of material and ideational resources (Dare and Daniell, 2017). Clearly, material and ideational resources can strengthen or possibly weaken the power of an actor. For example, the success of a political campaign can be manipulated by using material and ideational resources, such as frequency of messages sent, media publicity and other costly public relations strategies. Whilst if the public has a general distrust for the political actor, investing material resources can negatively damage his/her reputation (Fuchs, 2005).

We selected Nepal, a least developed and climate vulnerable country, as a case region where efforts are ongoing to design and implement local adaptation measures. The following section will elaborate the context, rationale for case selection, data collection methods and analysis.

3.3 Methodology

3.3.1 Context

Nepal lies between India and China, accounting for 20% of the Himalayan area (Mittermeier et al., 2004). Analysis of historical disaster data shows that the frequency and intensity of disaster events are increasing in Nepal (Aryal, 2012). There are various climate-related hazards that impact Nepal such as cloudbursts, floods, droughts, landslides and wildfires (Pathak, Gajurel, & Mool, 2010). In response to these climate-related hazards, Nepal has prepared its National Adaptation Programme of Action (NAPA, 2010) and National Climate Change Policy (CCP, 2011). CCP (2011) and NAPA (2010) set the overarching frameworks that guide implementation of adaptation through LAPAs.

Apart from experiencing changes in the climate, Nepal is going through drastic political fluctuations. Nepal is a new democracy with rapidly changing administrative structures and an evolving constitution. With these changes, local level governance has been allocated more financial and administrative decision-making power (Payne & Basnyet, 2017). The previous focus of integrating local adaptation needs into national plans and vice-versa has to change under the new administration, as more emphasis is placed on local level decision-making and budgetary allocations. Consequently, Nepal's climate change support programme (NCCSP) has decided to change the design of LAPAs.

As part of this process, policy design meetings were conducted at both rural and urban municipality level, including in Dailekh district (Figure 3.2). This is one of 77 districts, located in the mid-western region of Nepal. According to climate change vulnerability mapping (NAPA vulnerability mapping, 2010), Dailekh district falls under the high vulnerability category (Figure 2), continuously facing the increasing impacts of floods, landslides and drought. Dailekh was selected due to a prior implementation of LAPAs and is the only government supported (NCCSP) LAPA pilot district (for socio-economic and cultural information on the case region see supplementary material). As the findings of these meetings will directly influence implementation of the national adaptation policy of Nepal, it is a logical choice for us to study the meetings in Dailekh district.

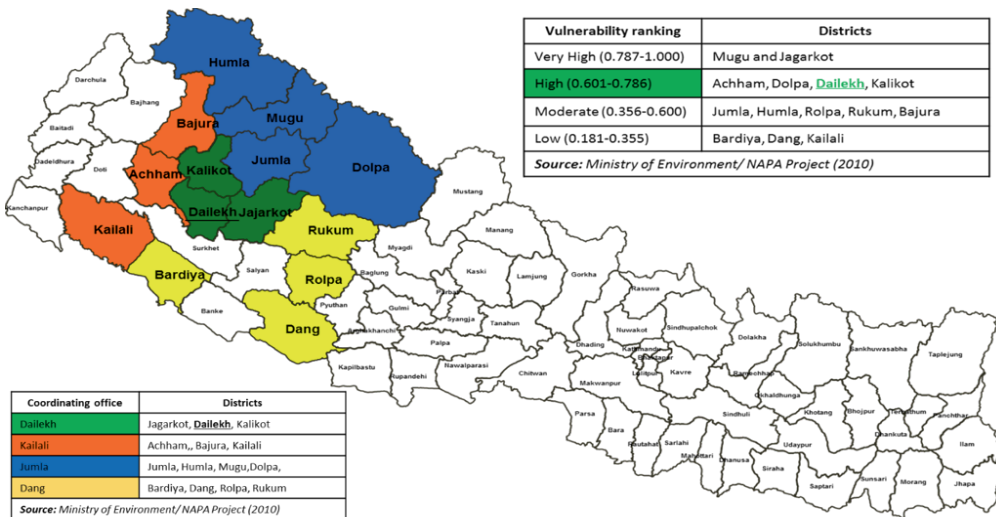


Figure 3.2: Climate vulnerability map of Nepal (Dailekh district underlined)

Source: National Adaptation Programme of Action (NAPA, September 2010)

3.3.2 Data collection

To study the local level power interplay, we participated in a community meeting at the rural municipality level ($n=1$), ward level meetings within the urban municipality ($n=2$), a municipality level meeting ($n=1$) and national level meetings ($n=2$). These meetings were held in September 2017 (see Table 3.1). For the purpose of this article, we recorded discussions of the meetings, with almost 60 hours of data. While making observations, detailed notes were taken during the meetings about agreements, conflicts or conflict of interests on the issues of adaptation, disaster risk reduction, and temporal aspects (short or long term). Interactions based on the temporal aspects of LAPAs, type of adaptation activities to be implemented through LAPAs, and future risk reduction scenarios were noted. Key adaptation measures were focused on the agriculture and water sectors. Drought and flood resistant seeds, change in cropping patterns, and construction of check-dams and storage structures to reduce the negative impacts of climate change were considered as adaptation measures. We used the data to identify key moments that could help us to unpack the power interplay. These moments are based on excerpts that were extracted from the transcripts to highlight power interplay between actors.

The excerpts presented in the findings section were chosen based on at least two out of three criteria. First, the excerpts should relate to the temporal dimension of climate change adaptation or disaster risk reduction. Second, they should represent the interplay between the actors based

on their ideational and material resources. Third, they should be a part of continuous conversations (minimum three responses), where actors deploy their ideational and material resources to contradict or consensually agree. Based on the criteria, we analysed the six meetings.

3.3.3 Data analysis

We analysed meetings using the interactional framing approach or interactional co-constructions approach, where we try to capture how different actors negotiate meanings or influence each other during an interaction (Dewulf et al., 2009). The interactional framing approach considers framing to be the dynamic enactment and shaping of meaning in ongoing interactions. Actors often have competing frames and they use material and ideational resources to influence other actors' frames and subsequently actions. The analysis is based on the transcripts of the discussions and the observations made during the meetings. The analysis was conducted in two steps. First, we identified agreeable or disagreeable interactions related to the temporal dimension of LAPAs. Second, we selected excerpts of such interactions to show how actors arrived at the (dis)agreement over short-term adaptation planning, by analysing the use of material and ideational resources in deliberations. For example, we analysed how certain actors were dominating the discussion using their position or on the basis of who gets to speak first in the meetings (based on authority), gender, the setting of the meeting, and language used. Along with the analysis, observations are used to interpret the power interplay between the actors.

Table 3.1: Meeting details, purpose and participants

Sr. No.	Meeting details (date and place)	Mentioned purpose	Types and number of participants*
1	National level LAPA design meeting – 20 November 2016 – Kathmandu, Nepal	To share lessons from experience of LAPA implementation so far	LAPA design team ⁶ (including facilitators); INGO participants; national level government officials; observers; intergovernmental bodies such as ICIMOD; Donor agency members. Total participants = 32
2	Urban ward level meeting – 5 September 2017 – Dailekh district, Nepal	Disaster risk assessment; inform participants about NCCSP –II and LAPAs	LAPA design team (including facilitators and community mobilizers); community members; local bureaucrats; local politicians; observers. Total participants = 26
3	Urban ward level meeting – 6 September 2017 – Dailekh district, Nepal	Disaster risk assessment; inform participants about NCCSP –II and LAPAs; future adaptation needs; adaptation prioritization	LAPA design team (including facilitators); community members; local bureaucrats; local politicians; observers; LAPA design team (community mobilizers). Total participants = 17
4	Rural ward level meeting – 7 September 2017 – Naumule rural municipality, Dailekh district, Nepal	Disaster risk assessment; inform participants about NCCSP –II and LAPAs; future adaptation needs; adaptation prioritization	LAPA design team (including facilitators); community members; local bureaucrats; local politicians; observers; LAPA design team (community mobilizers). Total participants = 26
5	District level meeting – 8 September 2017 – Dailekh, Dailekh district, Nepal	To share lessons of the pilot of LAPA process in Dailekh; future adaptation needs; adaptation prioritization	LAPA design team (including facilitators); community members; local bureaucrats; local politicians; observers; district level elected bureaucrats and politicians; LAPA design team (community mobilizers). Total participants = 30
6	National level LAPA design meeting – 21 September 2017 – Kathmandu, Nepal	To share lessons of the pilot of LAPA process in Dailekh	LAPA design team (including facilitators); INGO participants; national level government officials; observers; Donor agency members LAPA design team (community mobilizers). Total participants = 40

* no of participants are based on the registered participants at the beginning of each meeting

⁶ Design team includes facilitators, representatives from international non-governmental organization, local consultant, consultants hired by donor agencies and community mobilizers.

3.4 Results

In this section, we present key results of our analysis from the above-mentioned meetings (Table 3.1). Each sub-section is structured as follows. First, we set the context of each meeting, followed by the excerpt of the interaction between the actors. Tables 3.2, 3.3 and 3.4 below highlight material and ideational resources deployed during the interplay in each interaction. Lastly, we interpret the interplay based on the excerpts using our conceptual framework.

3.4.1 Different interests and priorities of actors

At the beginning of meeting 2, a facilitator presented a general description of past adaptation efforts in Nepal. The setting of the meeting was formal, chaired by a ward level politician, with allocated speaking time for all the invited key actors. After setting the context, the meeting proceeded with risk assessment exercises. During the discussion on LAPAs, two competing frames emerged that led to the formation of two groups. The first group (Group 1) outlined the debate around the importance of LAPAs and how they can support the communities in reducing the impacts of climate-induced landslides and floods in the district. Climate adaptation measures discussed aim to return the community to the same or higher level of well-being as they would have if the climate or environmental impacts had not happened. The first group included facilitators, consultants, representatives of international non-governmental organizations (INGOs) and some local politicians. The second group (Group 2) was inclined towards development activities required in the ward. Development activities refer to strategies that are pre-requisite for human well-being, without considering the impacts of climate change and disasters (Wiggins & Wiggins, 2009). This group included local politicians, retired local bureaucrats and community members.

Excerpt 1:

Facilitator⁷ (Group 1) --> ... We here specifically want to discuss about climate change-induced disasters. As previously mentioned by you all, there are three major disasters – landslide, flood and drought. Through your input, it looks like that these disasters have affected agriculture,

⁷ We translated the excerpts as literally as possible. Ellipsis (...) is used to bring clarity, as excerpts are part of conversations.

livestock and water availability in the ward. Most affected groups are Dalit [lower caste people], poor, single women and people whose houses are on the hill slopes. Is this correct?

Facilitator aims to confirm from the participants.

Local politician (Group 2) --> Yes that is correct, but we can solve this problem. There are barren lands in our area, I saw in Ilam district, there were no barren lands. We have plenty of empty land in the schools, can we not plant trees there? It can create better studying environment in school for students and teachers.

In response to the local politician's (group 2) answer, the facilitator said:

Facilitator (Group 1) --> Since, the government/ donor agency is giving the money to spend on climate-related disaster activities; we have to focus on climate change issues, rather than on development activities such as planting trees in schools...

The two groups used different material and ideational resources to influence each other about different framings of adaptation and the purpose attached to LAPAs. The facilitator uses his specialised knowledge on climate change and disasters management (ideational resource - cognitive), the formal setting of the meeting (material resource), preparation of the meeting and the questions to influence the other actor to keep the discussion focused on disaster management (ideational resource - cognitive). The local politician uses his political authority (material resource) to influence other actors to agree with his proposed solution, oriented towards development activities, as he inherently wants to show tangible results by using adaptation funds for planting trees in the school. The above excerpt shows that the local politician opts for development-oriented strategies, while the facilitator is focusing on disaster management. However, neither is focusing on long-term adaptation planning nor discussing the future impacts of planting trees. Further, it can be argued that planting of trees can increase the adaptive capacity of the local community, but there was no discussion of this. Instead the explanation by the local politician was to create a better environment for students and teachers to study and the facilitator in his question was specifically concerned about the more vulnerable groups in the ward.

Table 3.2: Material and ideational resources deployed for power interplay

Actors	Material Resources	Ideational Resources	Dynamic power interplay
Meeting facilitator	(1) Formal setting of the meeting	(1) Knowledge of climate change induced disasters (cognitive); (2) Prior preparation of the questions to keep the other actor and the discussion on disaster reduction (cognitive); (3) Knowledge of the requirement of funding agencies and government agencies (cognitive)	<ul style="list-style-type: none"> • Interplay is between two framings of adaptation – development vs. disaster risk reduction. • Simultaneous use of material and ideational resources by facilitator shows the dynamic interplay.
Local Politicians (Group 2)	(1) Authority	--	

In excerpt 1, the facilitator immediately shifted the onus onto the government and donor agency. With his response, the facilitator overpowered the local politician by using the knowledge of funds and policies (ideational resource - cognitive). The facilitator brought back the focus of the meeting to LAPAs but showed disapproval of the intentions and framing of development activities pushed by the local politician. The facilitator did not use this opportunity to shift the discussion from long-term development to long-term adaptation. The interaction between the two groups of actors demonstrates how material and ideational resources are used simultaneously. The facilitator is using both ideational (adaptation knowledge and norms of LAPAs) and material resources (formal setting of the meeting) to overpower the argument of the local politician, who is only using the material resource (positional authority).

As the actors in the two groups use material and ideational resources to influence each other, we could observe power interplay between the two groups and how it influences the discussions around LAPAs.

3.4.2 Is the LAPA preparation process just window-dressing?

Meeting 3 was organized at the urban ward level, focusing on risk assessment and to understand the adaptation priorities of the community. During the meeting, communities indicated that they are affected by multiple disasters including floods, landslides and droughts. During the

exercise, participants prioritized landslides as the most important. As there were few local community members present, facilitators discussed government planning processes and expectations of the community with local politicians.

Excerpt 2:

Facilitator --> Sometimes community doesn't understand our theme. Our focus is to identify soft measures that can be used for adaptation and disaster risk reduction. Adaptation planning is lacking within the community. We have to go on at urgency basis rather than long-term and short-term plans, as long-term cannot be planned by community. Local people have existing knowledge, so we can mobilize them for immediate or short-term. It is a bit different from developmental works and focus is more on climate change. We take climate-induced disasters such as flood and landslides and we try to focus on the activities which may help reduce the risks from climate-induced disasters. First, let us divide the households into four risk categories.

The participants started to categorize the households.

Local politician, ward 6⁸ --> We have finished the categorization, the results suggest that 80% of the community members are vulnerable to landslides, for which there is a need of large investment for slope stabilization and repairs. (Figure 3, see supplementary material – Appendix A)

Facilitator --> Can you all re-check the categories, as most of the people are in the high risk? Please do a similar categorization based on economic status and assets.

Local politician, ward 6 --> We have categorized the households into four risk categories – low risk, medium risk, high risk, very high risk. But we cannot do it again, we are leaving the workshop, as we have more important things to do during the day” (Figure 4, see supplementary material – Appendix A)

Facilitator --> We will continue the categorization of the households. Let us finish it quickly.

⁸ The politicians participating in this meeting are different from those mentioned in the meeting 2.

The facilitators acknowledge the importance of participants' local knowledge, but do not agree that they can be part of the long-term adaptation planning process. Facilitators argue that the local communities do not recognize complex government policy processes and intricate donor agency norms. Facilitators consider their knowledge and experience (ideational resource - cognitive) of working with donor agencies and government to be notable as compared to communities' experience of adapting to a changing climate. The facilitators conclude that knowledge on climate change adaptation and future planning is low among participants. With such a strong opinion, the facilitators fail to engage with the participants in long-term adaptation discussions. The interaction shows that the claim (ideational resource - normative) of the politician to bring large infrastructural investment is valued and supported by the community members. As soon as the politician leaves the meeting, the community members followed him. However, the facilitators continued to complete the exercise with a couple of participants (Figure 5, see supplementary material – Appendix A).

The facilitators during meeting 3 wanted to assess the risk among households and capture tangible adaptation strategies, which can be implemented through LAPAs to reduce the impacts of floods and landslides. However, with 80 percent of households falling under the high-risk category, the LAPAs will have to invest in large protective infrastructure. This seems to fall outside the scope of LAPAs, as these aim to provide support to only soft and small interventions to improve the resilience of the communities. The difference between what people expect and what is anticipated by facilitators represents a conflict of interests.

Facilitators requested the participants to redo the categorization, keeping in mind each household's socio-economic status. This was done in order to complete the set tasks and to achieve pre-defined results of risk categorization. The facilitators are using a defined process (material resource) to steer the meeting, even if the majority of the participants disagree or do not participate in the process. The facilitators are using their authority (material resource) and knowledge about policy processes (ideational resource) to design the LAPAs for Nepal.

Table 3.3: Material and ideational resources deployed for power interplay

Actors	Material Resources	Ideational Resources	Dynamic power interplay
Meeting facilitator	(1) Control over the process of the meeting	(1) Knowledge of LAPA design process (2) Knowledge about adaptation policy-making process (cognitive)	<ul style="list-style-type: none"> • Interplay between actors for (dis) agreement of different implementation strategies to reduce the risk of climate-change induced disasters • Actors using different material and ideational resources in the same meeting
Local Politician	(1) Authority to decline the request of the facilitators to continue participating in the meeting	(1) Claim for large infrastructure investment agreed by the public (normative)	
Community	(2) Ability to decline participation in the meeting	(2) Knowledge on disaster risk in ward 6 (cognitive)	

On the contrary, when the local politician felt that his claim of bringing large infrastructural investment was not given importance, he left the meeting and other community members followed (material resource). It seems that such meetings with only a few powerful participants cannot be successful. LAPA meetings should be conducted with multiple stakeholders, especially with strong community representation to discuss both short and long-term adaptation strategies.

Overall, it became clear that the design team including the facilitators had already decided that LAPAs are for short-term and small investment adaptation measures. During the interplay the facilitators overpowered the local politician and local community, using both material and ideational resources.

3.4.3 Participation by women in long-term adaptation planning

In the below excerpt, we show the design team's structural power over the policy design process. This demonstrates how the design of LAPA meetings can shape power interplay, and conversely helps to explain the inclusion and exclusion of certain actors and their ideas in the meeting. Inclusion or exclusion of actors is either influenced by (non) usage of material and

ideational resources, or due to the organizers' intention of including and excluding actors using material and ideational resources.

Meeting 5 was inaugurated by the municipal chairperson of Dailekh. Municipal level politicians and bureaucrats were present at the meeting. In the opening speech, the municipal chairperson emphasized the importance of focussing on climate change and the role of communities in reducing its impacts. The chairperson also specifically mentioned that bringing in women's perspective is very important for adaptation planning. Women are highly dependent on the land, water and forest resources for everyday household chores and also have rich experience in planning of these resources.

After the opening speech, the local consultant (also a facilitator) presented the municipal officials with preliminary findings about the LAPA design study. During the presentation, the municipal chairperson interrupted with a question on female participation in the LAPA design meetings. A presentation slide indicated that there was low female participation in the ward level meetings.

Excerpt 3:

Chairperson, Municipality --> It looks like you have not included tribal women of ward 11 in your designing process.

Consultant --> We could not find them in ward 11.

Chairperson, Municipality --> But it seems that you all did not even go to tribal habitation, there are some tribal women in ward 11. It is important to include them in the planning as they are one of the most vulnerable and are highly dependent on the forest, water and agriculture. Men have migrated from villages; therefore, women need to participate and can plan for the future...

Consultant --> But we have the say of the local representatives of ward 11 in our discussions.

The participation of women was never brought out as a concern in LAPA design meetings. It was discussed because the municipal chairperson could clearly see the unequal participation and he could use his authority (material resource) to make this point. The design team was always steering the meetings (material resources) and the issue of participation by women was

never discussed. During the district level meeting, the design team was overpowered by the authority of the chairperson.

Low participation by women can be related to two factors. First, not enough time was spent on mobilization and awareness about the planning meetings before the workshops, which might have raised women's participation. During a national level meeting, participation constraints were discussed, highlighting that there was not enough time and money for community mobilization. It was also observed that there were only two male community mobilizers for the pilot period. Second, as men have migrated from rural areas, there is an increase in household workload on women that does not allow women to participate in the workshop for long hours. In a few workshops where women participated, they could not stay for the entire duration of the meeting, because of household responsibilities. This represents low material resources at the household level for women, resulting in low participation.

It was also observed that women barely interacted during the discussions. Men, using their position in society (material resource) could easily overpower women, not providing enough chances to speak during the meetings, and limiting the discussion towards their ideas of development needs and short-term adaptation planning (See Figure 4, see supplementary material). The participants list shows that female participation in the meetings was low, and from lower caste as compared to the men, further making it difficult for women to be part of the interplay.

Table 3.4: Material and ideational resources deployed for power interplay

Actors	Material Resources	Ideational Resources	Dynamic power interplay
Consultant (facilitator)	(1) Control over the process of the meeting	--	(1) Interplay between consultant and municipality chairperson regarding the issue of weak women participation (2) Facilitator changes his resource usage as compared to previous excerpts (3) Lack of material resources among women to participate in policy processes
Municipality Chairperson	(1) Political authority (position)	--	
Male participants	(1) Position in the society (2) Higher caste	--	
Female participants	(1) Lack of material resources at the household level to participate	--	

With limited participation by women, the male representatives from the community were able to participate and pursue their interests. The interests of women were not discussed, nor were they part of the power interactions. Lack of material resources for women have led to no power interplay between the female participants and other actors. Based on this premise, it can be anticipated that men with interests in short-term political gains were mostly dominating the interplay (including the facilitators), leaving behind women who could plan for both short and long-term adaptation needs.

3.5 Discussion

We started this article by stating that there is a lack of evidence on how dynamic power interplay can influence the designing of LAPAs. We argued that actors use different material and ideational resources in their power interplay, resulting in the short-term nature of LAPAs. In this section, we further interpret our key findings.

We observed that facilitators play a very crucial role in LAPA design meetings and thus adaptation planning at the local level (Purdy, 2012). Facilitators' authority in the meetings (material resource), knowledge on adaptation, the pre-defined facilitation process (ideational

resources) and ability to question and direct the meetings influence the policy design, as their role is socially acknowledged and legitimized (Thornborrow, 2002). Van Lieshout et al. (2017) show that actors in a position of asking questions can control the conversations in a meeting. Aspects such as the choice of meeting location, who participates and who does not also play an important role in shaping the interplay between the actors, putting facilitators in a powerful position as compared to the participants. Similarly, Hajer (2005) discusses how the setting of a meeting influences participation in a policy-making process. In all cases, the setting of the LAPA meetings created two groups of competing frames, as demonstrated in excerpt 1. Further, manipulation of the setting of the policy deliberation is referred to as ‘staging’, as highlighted in excerpt 2. In this case, the facilitator manipulated the results of risk categorization based on the setting of the policy process.

We observed that local politicians in meetings 2 and 3 used their political authority to overpower the discussion on the temporal aspects of adaptation, pushing for short-term actions. The examples highlight that authority (material resource) can influence the process of adaptation planning (see also Nightingale, 2017). The authority among these actors represents their strength to gain control over other material and ideational resources (Table 3.2, 3.3 and 3.4). In a politically charged and disaster-prone environment, adoption of long-term planning becomes a challenge not only because of insufficient resources, but the power interplay around those scarce resources. It binds the local politicians to behave and respond in a certain way which is ensuring short-term political gains and keeping themselves in a position of control and authority.

Another point that emerges is the process of selecting the design team. The local communities were not involved in the selection of the design team nor were they represented in it. In this case, it becomes difficult to claim ownership and political citizenship over these policy processes, which are targeting community level actions. These processes clearly indicate that adaptation is currently under the realm of nation-state, INGO and development actors. As suggested in the literature, building capacity (e.g. climate change knowledge and strategies) of local actors (including local bureaucrats, politicians and farmers) involved in policy design is crucial, as is increasing time and financial resources for local planning processes (Khanal et al., 2017). Discussion about adaptation strategies with no explicit consideration of long-term consequences can lead to maladaptation or weak adaptive capacity of the community.

However, integrating adaptation with the development paradigm in Nepal can build adaptive capacity and avoid maladaptation (McGray et al., 2007; Lutz et al., 2014).

Weak female participation was observed in the LAPA design workshops. Inclusion of women in LAPA design meetings is important for both moral and pragmatic reasons. This is supported by the literature. Women are not only marginalized and worst affected by extreme weather events, but they also possess local ecological, social and political knowledge which can inform and contribute significantly to adaptation planning (Nelson et al., 2002). Moreover, Fisher (2005) argues that due to certain roles and responsibilities in society, women have evolved as better long-term planners as compared to men. Using Herbert Simon's work, Fisher further illustrates that, due to women's collaborative abilities, empathetic behaviour and higher social skills, they can assess multiple, complex scenarios and plot a long-term course. For example, having closer ties with family and children can help women to envisage long-term planning better than men (Musinguzi et al., 2017). Improved participation and capacity building of women on the issues of climate change adaptation should therefore benefit communities to focus on long-term thinking in preparing local adaptation plans. Christoff et al., (2017) also argue that climate change adaptation programmes focusing on technology and innovation, practical skills enhancement, and connections with local NGOs can further improve women's social standing and political participation.

Lastly, our results show how power and politics play out in policy processes. Considering the power interplay between actors, we argue that actors give different meanings to a problem, based on their individual and collective interests and priorities. Such an analysis of dynamic power interplay can enhance the applicability of policy processes that are power-sensitive, which is particularly the case when a complex concept such as adaptation is operationalised and implemented locally. Analysis of power interplay can also help in investigating climate change adaptation controversies that are marked by uncertainties and ambiguities. Currently, the literature argues that barriers to adaptation in the least developed countries are mostly because of lack of resources and capacity (Phuong et al., 2018). However, in this article, we show that it is also because of the power interplay between different actors. Analysis of power interplay is rather complex in nature but surely can help in clarifying issues and challenges around designing local adaptation policy processes.

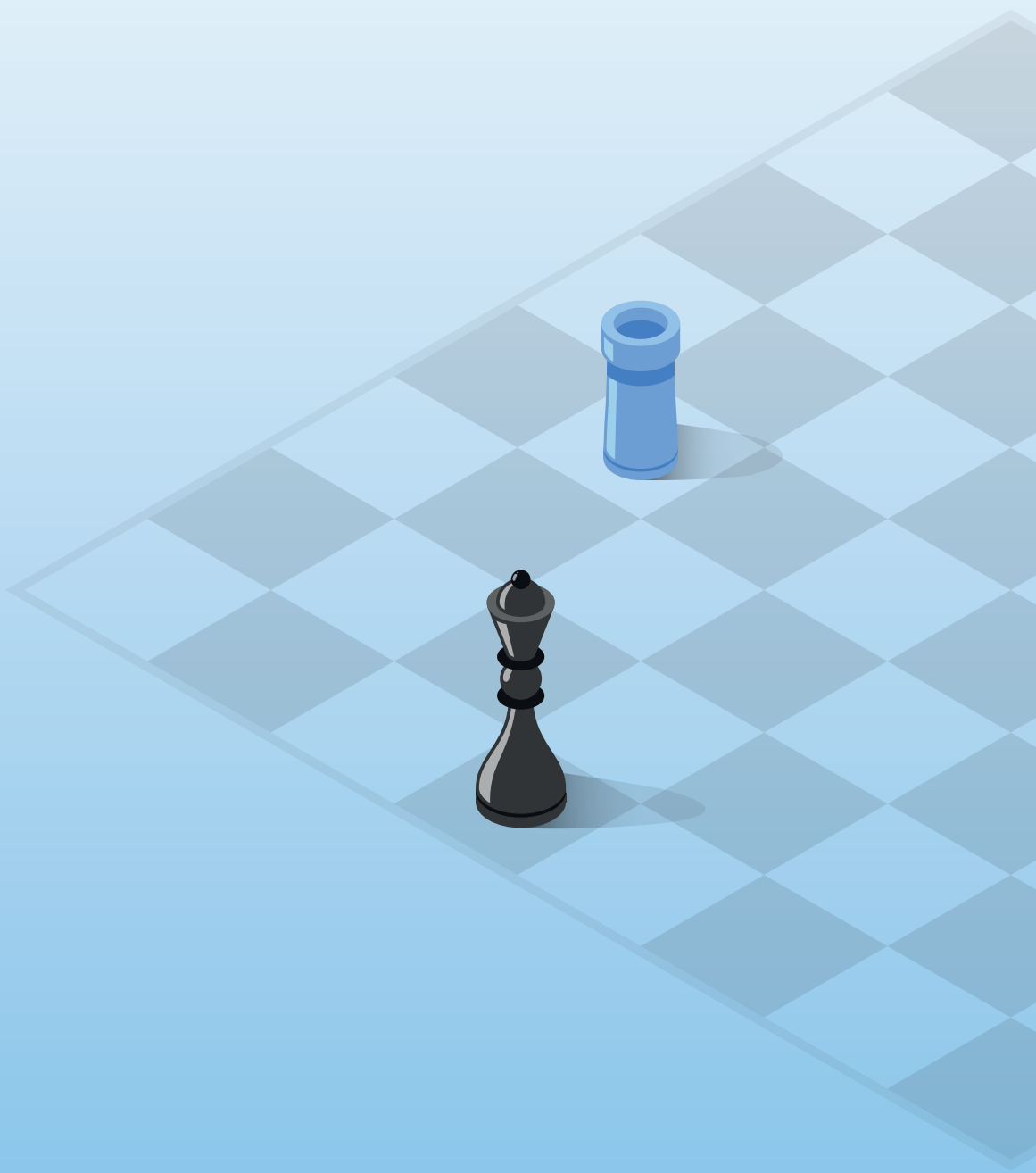
3.6 Conclusion

In this article, we addressed the question of how actors' power interplay influences the LAPA design towards short-term (reactive) adaptation planning in Nepal. We demonstrated that the actors' interplay is directed by the use of material and ideational resources such as political authority, knowledge of adaptation and climate science, financial resources to conduct adaptation plan meeting, and relations with INGOs and donor agencies.

Analysis of power interplay also shows that actors ascribe different meanings to LAPAs. Different actors in meetings deploy material and ideational resources to adjust or counter other actors to realign the adaptation framing or policy design (Avelino and Rotmans, 2011). For example, the facilitators aim to create short-term and immediate adaptation plans, while the local political actors aimed for more development-oriented action plans. Material and ideational resources are interdependent and are used simultaneously during the interaction, between the actors in a group or between the two groups of actors. For such scenarios, it becomes pertinent to analyse policy processes, considering dynamic power interplay as a central feature of the policy process (Van Hulst and Yanow, 2014). Such an analysis can help in designing power sensitive decision-making processes that support long-term adaptation planning. Understanding the power dynamics in adaptation decision making will support integrating short and long-term adaptation actions.

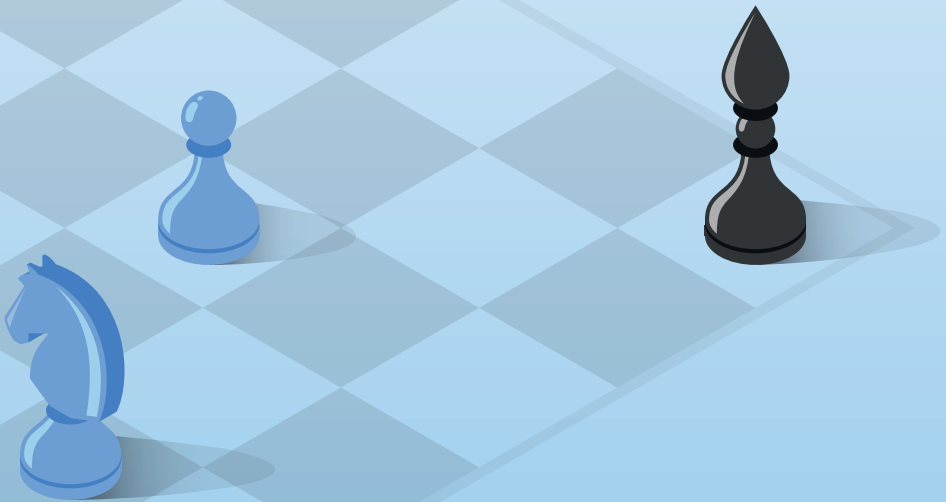
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4

**Non-decisions are also decisions:
power interplay between Bangladesh
and India over the Brahmaputra River**



Abstract

This article shows how Bangladesh and India intentionally maintain the status quo for the Brahmaputra River at the transboundary level, using material and ideational resources. Results show that India wants to reduce its hegemonic vulnerabilities and Bangladesh aims to maintain its control over the Brahmaputra river, simultaneously building its technical and negotiation skills. We conclude that the underlying processes of maintaining the status quo can be comprehended as ‘non-decision making’. The analysis presented will help policy actors to push towards a forward-looking climate change adaptation planning for the Brahmaputra River.

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4.1 Introduction

Transboundary watercourses in South Asia such as the Brahmaputra River are experiencing significant challenges from climate change (Eriksson et al., 2009; Wijngaard et al., 2017). Climate change is having an adverse effect on the community livelihoods and the natural ecology of the Brahmaputra (Fischer, Pietroń, Bring, Thorslund, & Jarsjö, 2017; Mosselman, 2006). Communities in the floodplains of the lower Brahmaputra basin continue to face extensive flooding due to increased river flows and extended droughts as a result of changes in monsoon rainfall (Immerzeel, 2008; Lutz, Immerzeel, Shrestha, & Bierkens, 2014; Wijngaard et al., 2017). Moreover, there are increasing socio-economic pressures on the river in both Bangladesh and India, such as increasing population and energy demand (Rasul, 2014).

Perhaps unsurprising, then, are the increasing calls for design and implementation of climate change adaptation measures at the transboundary level to reduce the current and future climate impacts in the basin (Tilleard & Ford, 2016). However, limited progress has been made in Bangladesh and India in this regard (Vij et al., 2017). Throughout South Asia, adaptation measures are still mostly designed and implemented at the country level (Ford et al., 2015; Lwasa, 2015). This is because the implementation of adaptation measures depends on cooperation between the riparian countries (Tilleard & Ford, 2016; Zeitoun, Goulden, & Tickner, 2013). Transboundary water cooperation between riparian countries can influence the coordination of adaptation measures and reduce the possible negative impacts of unilateral adaptation measures (Milman, Bunclark, Conway, & Adger, 2013). But transboundary-level adaptation and water cooperation between Bangladesh and India are limited (Barua, Vij, & Zulfiquar Rahman, 2018; Hill, 2013).

There are persistent conflicts between India and Bangladesh with regard to the specific ways of controlling floods and tapping the potential of the Brahmaputra River. For instance, to reduce the impacts of flooding, the national government of India follows a technocratic approach (Bassett & Fogelman, 2013). To elaborate, India considers building tangible adaptation measures for large infrastructure development (e.g., storage structures and hydropower development) to meet the growing energy demand and reduce climate change impacts. But if the upstream Brahmaputra is controlled and dammed as a result of adaptation measures in India, it will impact the livelihoods of millions in downstream India and Bangladesh (Fischer et al., 2017). Historical practices of water negotiation also matter to Bangladesh, as it has experienced power asymmetry in bilateral negotiations with India over

the Ganges and Teesta Rivers (Biswas, 2011; Ho, 2016)⁹. Such experiences do not offer a good start for negotiating issues related to other transboundary rivers.

In recent decades, Bangladesh and India have engaged in a continuous power interplay for transboundary waters, using material and ideational resources to negotiate for their own interests, undermining the benefits of cooperation. Material resources may include finance, popularity, military power, political skills, scientific knowledge, control over data and information, and networks. Ideational resources include knowledge constructs, narratives, ideas, rules, social values, international pressure, and experience (Cascão, 2009; Zeitoun & Warner, 2006). However, there is limited explanation in the literature about the use of material and ideational resources by the two countries and what it means for the Brahmaputra River.

In this article, we aim to answer the question, *how does the power interplay between Bangladesh and India result in intentionally maintaining the status quo for the Brahmaputra River?* We use the framework of power interplay to analyse and answer this question and argue that Bangladesh and India use material and ideational resources to maintain the status quo. In such a scenario, climate change adaptation planning and development at the transboundary level looks unlikely, implying the possibility of continued climate-induced disasters and socio-economic pressures.

The remainder of this article is structured as follows. The next section elaborates the conceptual framework to operationalize the concepts of power interplay and material and ideational resources. The third section provides the political and climate context of the Brahmaputra River, focusing on the river basin in Bangladesh and India. The fourth describes the methodology and discusses the data collection methods and analysis. The fifth presents the key findings, demonstrating how Bangladesh and India use material and ideational resources intentionally to pursue the status quo. The discussion section elaborates how the use of material and ideational results in ‘non-decision making’ and key policy-relevant insights of this study, followed by the conclusion.

⁹ The Ganges and Teesta are other transboundary rivers between Bangladesh and India.

4.2 Theoretical approach

The concept of power has various connotations, with different meanings and interpretations (Berenskoetter & Williams, 2007; Lukes, 2005). Power and power asymmetry have been discussed in several strands of international relations literature, including in the realist and neo-institutionalist schools of thought. Realists accentuate material resources, while neo-institutionalists emphasize both the material and the ideational resources (or ‘power’) used by actors in high-level negotiations on transboundary issues (Daoudy, 2009; Turton & Ashton, 2008).

Lukes (2005) brought together three ‘faces of power’ in a coherent framework. The first face, deriving from Robert Dahl’s (1957) work, explained power as a relation among actors and defined it as the ability of actor A to get actor B to do something that actor B would not otherwise do. Expanding on Dahl’s work, Bachrach and Baratz (1963) explained the second face of power, relating to non-decision making and keeping conflicts from being discussed in political fora. Lukes (2005) added the third face of power: the ideological power shaping the perceptions of the actors involved in the power interplay.

Material resources relate to economic growth, military, stability, capacity for hydro- power development, access to external political and financial support, and especially in hydro-politics, the country’s geographical position – upstream or downstream (Menga, 2016b; Cascão, 2009). States use material resources to legitimize their actions and to strive for relative advantage against other (often weaker) states (Luttwak, 1990). For example, India is undertaking a massive river interlinking programme, with little consideration of the upstream and downstream Nepal and Bangladesh, respectively. Realists argue that material resources can also provide a state with decision-making power during and before the interplay by excluding or including certain actors (Fuchs & Glaab, 2011).

Although often referring to the same material resources, neo-institutionalist scholars question the central role of the state in transboundary issues, claiming institutional complexities and interdependencies between intra-state actors (Warner et al., 2017). In addition to material resources, states can use ideational resources, which refers to knowledge constructs, narratives, ideas and rules used during or before the negotiations to influence transboundary decisions (Cascão, 2009; Cascão & Zeitoun, 2010; Nye, 2009). A state uses ideational resources to shape social norms, values and choices in favour of their interests at the transboundary level. Ideational resources can act as sources of power to prevent certain actions. For example, in the

Nile basin Egypt has delayed negotiations on the 1959 treaty by being present in the negotiations and maintaining its hegemonic position.

In transboundary river basins, a state that can influence other riparian states by means of material and ideational resources to achieve desired outcomes is called a hegemon, and the other riparian states, which use material and ideational resources to comply (or implicitly comply) with the hegemon can be referred to as non-hegemons (Evans & Newnham, 1998; Zeitoun, Mirumachi, & Warner, 2011; Zeitoun & Warner, 2006). In this article, the interaction between a hegemon and a non-hegemon using various material and ideational resources is what we shall call power interplay. Examples where a hegemon and a non-hegemon are enmeshed in power interplay include issues of water sharing, water resources development, joint research, data sharing, and flood and erosion management (Mirumachi & Allan, 2007).

Such power interplay can result in zero-sum or non-zero-sum outcomes, but there is also a possibility of partial or complete status quo (Hanasz, 2017). Status quo is a situation where no concrete decisions are made between the hegemon and non-hegemon on issues such as water sharing, water resources development, flood and erosion management, navigation routes, construction of storage structures and dams, and joint research. In this article, power interplay exemplifies a specific variety of the ‘second phase of power’ – where the hegemonized party seems to condone the lack of decision-making stemming from the hegemon’s (non-)agenda setting.

The literature on transboundary waters has a limited focus on domestic power interplay, with some notable exceptions, such as Warner and Zawahri (2012), Menga (2016a), and Petersen-Perlman and Fischhendler (2018). Clearly, such power interplay takes place in a nested governance system, where both internal and external forces shape the power interplay and influence transboundary negotiations (Putnam, 1988). In decentralized states such as India, where national and sub-national tiers of government have substantial authority in decision making over certain topics, domestic challenges such as institutional complexities, citizens’ preferences, state politics and interdependencies create internal tensions that despite the hegemon’s power weaken their role in negotiations. These domestic challenges which can limit a hegemon are referred to as ‘hegemonic vulnerabilities’ (Petersen-Perlman & Fischhendler, 2018). In these circumstances, a non-hegemon can make strategic use of these vulnerabilities to create a more level playing field by using their own material and ideational resources to negotiate or pursue certain outcomes, including the status quo.

In analysing the case, we emphasize not only the material and ideational resources used by both countries but also (in case of India) the interplay between national and state governments, as this has a strong influence on the transboundary outcomes. For instance, a hegemon may prioritize resolving domestic water conflicts over transboundary issues, to gain the trust of the citizens and take short-term political advantage. We specifically elaborate on how domestic politics influences transboundary water relations and the way the hegemon uses domestic interactions as an ideational resource to pursue the status quo.

4.3 Methodology

We use an interpretive approach (Angen, 2000; Islam, 2017) to systematically analyse the transboundary relationship between Bangladesh and India. Such an approach informs the way transboundary interaction is made sense of by policy actors and other relevant actor groups involved in the interaction processes (Yanow, 1999). The interpretive approach helps in explaining how different material and ideational resources are used to pursue a partial or complete status quo, instead of the obvious zero-sum and non-zero-sum outcomes.

For the purpose of this research, we study the Brahmaputra Dialogue (BD) meetings and interviews with the transboundary actors. The BD project was initiated by the South Asian Consortium for Interdisciplinary Water Studies (SaciWATeRS) to work towards a basin-level institutional framework for cooperation on the Brahmaputra. The BD project started as a bilateral dialogue platform between Bangladesh and India and eventually became a multilateral platform including all the riparian countries (Figure 4.1). BD is the only continuous Track 1.5 dialogue initiative sharing various insights on the complexities of the Brahmaputra River.¹⁰ The BD meetings were conducted at two levels: national and regional.¹¹ National-level meetings were focused on discussing the country's internal issues related to flooding, erosion,

¹⁰ Diplomatic efforts by the concerned governments are called Track 1 diplomacy (Nishat & Faisal, 2000). Track II diplomacy refers 'to a broad range of unofficial contacts and interaction aimed at resolving conflicts, both internationally and within states' (Montville, 1991). Track 1.5 is senior bureaucrats of the concerned governments interacting to deliberate on an issue of concern.

¹¹ The BD project is in its third phase and is coordinated by four different academic institutions from riparian countries. For more details on the structure of the BD, see Barua and Vij (2018).

hydropower development and institutional mechanisms for conflict resolution. The regional meetings emphasized issues such as hydrological data sharing, joint research at the basin level, technical discussions on inland navigation, basin- level erosion and flood control.

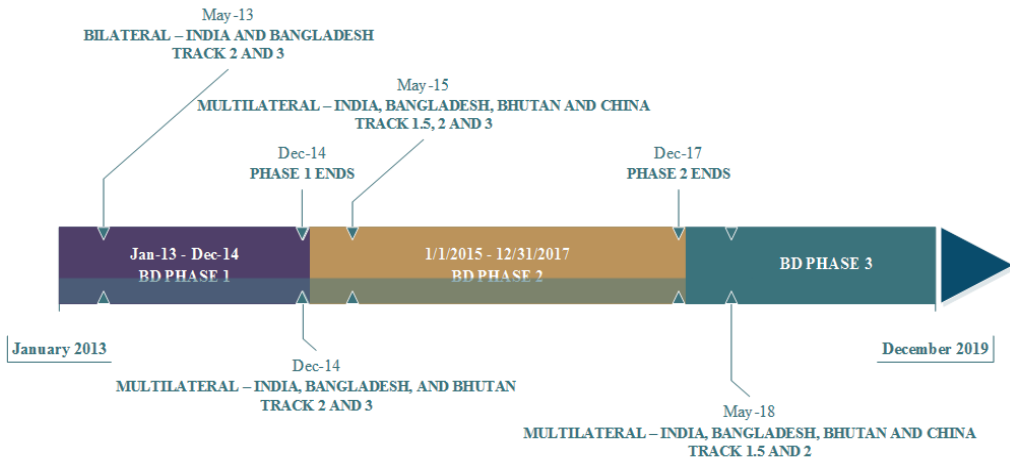


Figure 4.1: Brahmaputra Dialogue meetings timeline

We have included only the lower Brahmaputra (India and Bangladesh) in this study for two reasons. First, climate change is intensifying the impacts of floods and droughts, in conjunction with land-use changes and population explosion in the lower Brahmaputra region (Bangladesh and India). Climate change adaptation measures are urgently needed in this part of the Brahmaputra basin. Second, the BD included China only after 2015, and only Chinese academia (Track 3) is represented in the second phase of the dialogue meetings. However, in the third phase of the BD project, Chinese Track 2 participation is expected.

4.3.1 Data collection

Two data-collection strategies were used. First, meeting reports of the BD project were collected. Fourteen meetings were held between 2013 and 2017 in India (New Delhi, Guwahati and Itanagar), Bangladesh (Dhaka) and Singapore (see Table A1 in supplementary material C). These meetings included Bangladeshi and Indian participants from Track 3 to Track 1.5. Audio recordings of 14 meetings (approximately 80 hours) were also used for the analysis. Notes from three separate closed-door meetings were also collected. Second, 18 interviews were conducted between August 2017 and February 2018 in Bangladesh and India with key people involved.

Interview respondents were selected during the informal interaction with participants of BD meetings and through their referral. The interviews also helped in triangulating the data of the BD meeting reports. The respondents included Brahmaputra river experts (BE), influential academicians working on the Brahmaputra River (AB), retired foreign service officials and retired water bureaucrats (RB), serving bureaucrats in the water ministries of Bangladesh and India (BW), serving bureaucrats of the Joint Rivers Commission in Bangladesh and India (BJ) and representatives of think tanks working on transboundary issues in Bangladesh and India (TT).

The interviews were conducted in English and lasted between 45 and 180 minutes. During each interview, broad questions were asked, including: What level of communication exists between Bangladesh and India for the Brahmaputra River relating to issues of water sharing, climate change and disaster risk reduction? How do Bangladesh and India discuss flood management and adaptation measures at the transboundary level for the Brahmaputra River? What are the internal and external challenges relating to the Brahmaputra River within India and Bangladesh? How do India and Bangladesh influence each other (or not) during their interactions? Such questions allowed the interviewee to talk freely. Follow-up telephone and Skype interviews were conducted to clarify responses and to solicit additional information in February and March 2018.

4.3.2 Data analysis

An iterative process of data analysis was followed to make meaning out of the data collected. A process of continuous meaning-making was developed by using both inductive and deductive ways of finding patterns and themes in the data (Srivastava & Hopwood, 2009). The iterative method was created using two fundamental questions. First, what is the data telling us? – engaging with interviews and meeting documents. Second, what is it we want to know? – based on the research question of the study. We used these two questions to create a dialectical relationship between the data and the research question of the study. Data were analysed in two steps. First, we read each meeting document in detail, marking keywords, phrases and sections, and identified the use of different material and ideational resources. For example, who participates in BD meeting, who should participate, and who influences were points of discussion in certain meetings. Based on that, participation emerged as a theme. We used participation as a keyword (code) for the rest of the data. The sections with marked keywords and phrases were separated. Second, the separate sections of the meeting documents

and interviews were interpreted for dialectical connection. For instance, from our data we found that power can be characterized by who participates and who prevails in decision making. Schattschneider (1975) mentions that powerful actors not only make decisions (or prevent decisions from being made) but also decide who participates. Then we interpret it in terms of our research question, to answer how Bangladesh and India use material and ideational resources. In this way, we completed the two steps of data analysis to derive key empirical themes and narratives.

4.4 Climate and political context of the Brahmaputra River

Bangladesh and India share 57 transboundary rivers, including the Brahmaputra (Joint Rivers Commission, 2018). It is the fourth-largest river in the world in terms of average discharge, at approximately 20,000 m³/s (Ray et al., 2015). Originating in Tibet (China), the Brahmaputra flows through India and ends in Bangladesh (Figure 4.2), covering a distance of 2840 km (Wang et al., 2017). The Brahmaputra can be divided into three different physiographic zones: the Tibetan Plateau (China), the Himalayan belt (China and India), and the floodplains (India and Bangladesh). Approximately 66 million people depend on the Brahmaputra River for their livelihood, with the most in the floodplains, and thus any change in the river's discharge may hurt the dependent basin communities (Islam, 2017).

Warming climate impacting the snow and glacier melt processes can affect the precipitation in the Himalayan belt of the Brahmaputra, changing the discharge in the floodplains. Immerzeel, Van Beek, & Bierkens (2010) and Gain and Wada (2014) expect an increase in intensity and frequency of seasonal water scarcity due to the hydrological impact of climate change and increasing population and development pressures.¹² Hydrological impacts of climate change in the floodplains are expected to be strong due to the combined effects of snow melt, variability in monsoon, and sea- level rise.

¹² Gain and Wada (2014) do not consider annual water scarcity (see Falkenmark, Lundqvist, & Widstrand, 1989 and Vörösmarty, Douglas, Green, & Revenga, 2005). Their analysis is based on seasonal water scarcity considering other socio-economic, land-use and development pressures.

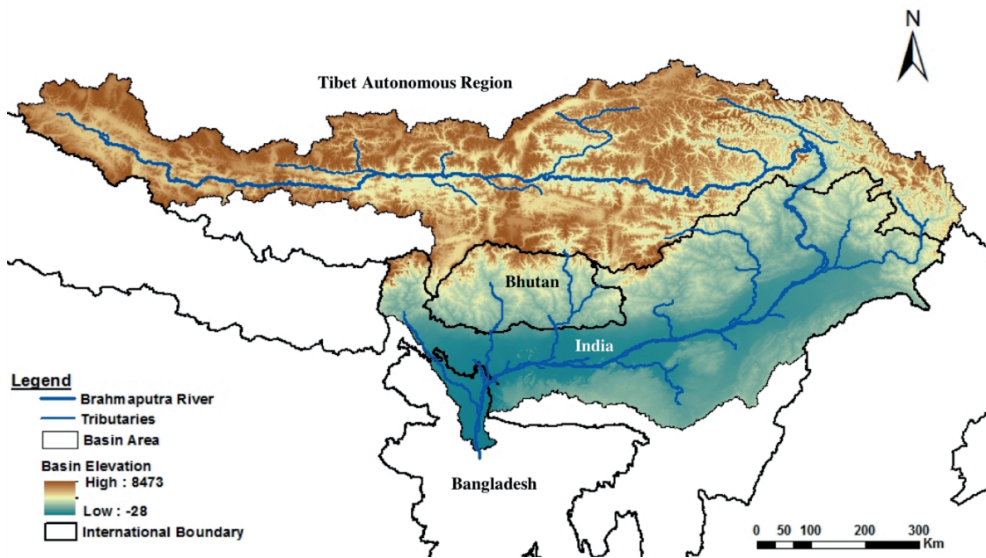


Figure 4.2: Map of River Brahmaputra Basin

Source: Indian Institute of Technology, Guwahati, India

The Brahmaputra basin is rich in biodiversity and has a huge potential for infra-structure-related operations such as irrigation, navigation and hydropower development (Barua et al., 2018). Within the Brahmaputra basin, there are the stereotypic conflicting interests between Bangladesh and India, related to water resources development and the water-diversion plans of the upstream authorities, including around the massive hydropower potential of the river (Liu, 2015). Bangladesh and India have different interests with regard to the river. The Brahmaputra provides 67% of the total annual river discharge of Bangladesh in the dry season and supports farming and fishing communities (Thakkar, 2003). India wants to tap the hydropower potential of the river to meet the growing demand for energy and to develop the north-east region of the country. Of the total hydropower potential of India, 44.4% lies in the Brahmaputra basin (Rahaman & Varis, 2009).

The Brahmaputra River flows through a historically contested geography between China, India and Bangladesh (Gleason & Hamdan, 2017). The contestation between the countries is mostly related to border disputes and security issues, making the river securitized. Securitization is a process in which an actor declares a particular issue or an interplay to be an 'existential threat' to a state (McDonald, 2008). The Brahmaputra River flowing through contested geography has

become an issue of existential threat to India and hence securitized. Due to the securitization of the river, hydrological data sharing is limited between the countries. In fact, India shares data in limited domains with Bangladesh, making it an instrument of power interplay (Barua et al., 2018). Inadequate data-sharing mechanisms and the securitization of the data does not promote basin-level research into flooding and erosion issues (Jung et al., 2010; Ray et al., 2015). The only memorandum of understanding between India and Bangladesh is an agreement to share hydrological data on the monsoon season via annual Joint Rivers Commission meetings (Barua et al., 2018). There is no ongoing formal negotiation on the Brahmaputra River on issues of water sharing, water resources development, joint research, impacts and benefits of hydropower development, or flood management.

In India, the Brahmaputra River is shared by two federal states, Arunachal Pradesh (upstream) and Assam (downstream). The river enters India through Arunachal Pradesh from the Tibet Autonomous Region of China. The two states have different interests in the Brahmaputra. Assam is dependent on agriculture, fisheries, and hydro- power benefits for rapidly agglomerating cities such as Guwahati (Joy et al., 2017). Arunachal Pradesh, with a smaller population, sees the potential to produce and sell hydropower to other states. Of the 63 hydroelectric schemes in the Brahmaputra basin, 42 are in Arunachal Pradesh (Rahaman & Varis, 2009). However, many Indian academics, environmentalists and civil society groups oppose the ongoing hydropower projects for issues such as submergence of large tracts of forest and agricultural lands, destruction of the river, and massive demographic changes. Baghel and Nusser (2010) argue that numerous hydropower projects in India defy major recommendations of the World Commission of Dams.

4.5 Results

The results are presented in three subsections. The first discusses the material and ideational resources used by India, followed by a subsection explaining India's hegemonic vulnerabilities. The last subsection presents Bangladesh's use of material and ideational resources.

4.5.1 The status quo begins with non-participation – India's use of material and ideational resources

BD meetings give riparians opportunities to openly share interests and challenges with each other, but India is reluctant to participate and indulge in such deliberations. Respondents (BW,

Bangladesh; RB & TT, India) mentioned that Track 1.5 participation from India has remained weak in the BD regional meetings. India is unilaterally deciding where, when and who should participate, without being questioned by weaker riparian countries. A respondent (BW, Bangladesh) said, ‘India uses its geographic position, military might and trade agreements to make decisions and influence us [Bangladesh] in water-related discussions and has always shown a Big Brother attitude.’

In India, there has been no discussion or consent between state governments (Assam and Arunachal Pradesh) and the central government (Ministry of Foreign Affairs and Ministry of Water Resources, River Development and Ganga Rejuvenation) to participate in any formal or informal dialogue with Bangladesh over the Brahmaputra River. The lack of deliberation between the state and central governments has created an unclear directive on the Brahmaputra River for transboundary negotiations. One of the respondents (RB, India) mentioned that if Track 1.5 actors were to participate in BD meetings, it would reflect that they are committing to a dialogue with another riparian country. Due to internal lack of clarity, India avoids active participation in the BD meetings leading to the status quo, but successfully exercises its material resources, such as trade agreements and geographic position, to make unilateral decisions on non- participation in the BD meetings.

Further, India is an upper riparian with strong material resources and does not relish open confrontation with lower and weaker riparians. Bangladesh has been confronting India during BD meetings on two issues. First, during a BD bilateral meeting (May 2015), a Bangladesh bureaucrat clearly stated that India is not very cooperative in flood management and hydrological data sharing. Second, a respondent from Bangladesh (RB, Bangladesh) mentioned that India is responsible for delaying the signing of the Teesta treaty. Negotiations for Teesta water sharing have been going on since 1983, with an interim treaty to be signed in 2011. But due to disagreements between India’s state (West Bengal) and central governments on water sharing, the interim treaty has not been inked until now (Huda, 2017). As India is not able to find a solution to her internal political struggle, India is delaying the Teesta negotiations. A respondent (RB, India) emphasized that if high-ranking officials from India participate in BD regional meetings, there is a likelihood of heated discussion around the Teesta River treaty. Indian participants were discontented with confrontations on the two issues and therefore avoid participation in regional BD meetings. India uses the narrative of open confrontations and loss of dignity as an ideational resource to avoid participation in the BD regional meetings.

In cases of participation of India, such as during the regional dialogue meeting (New Delhi), India was mostly represented by lower-ranking bureaucrats and retired bureaucrats, compared to Bangladesh. This does not lead to fruitful discussions, as they are not in a position to make any decisions, nor do they represent India's interests and challenges. Their only purpose in being present appears to be for them to share the concerns of other riparians with the senior officials in India. In fact, Indian bureaucrats have declined participation on the grounds of delay in getting permission to travel abroad to attend regional dialogue meetings. The narrative of challenges of denying permissions through complex bureaucratic channels is used by India as an ideational resource to not allow actors to participate in the BD meetings.

These instances show that India has been using material and ideational resources to maintain the status quo through non-participation (Table 4.1). A combination of material and ideational resources has allowed India to develop hydro-hegemonic status and to decide when to participate and who should participate in the BD meetings. India realizes that its position is so pervasive and secure that they can be unaware of Bangladesh's challenges. Further, the non-participation of India in the BD meetings can be associated with tokenism and manipulation. India's tactics of participation fall under the categories of 'placation' and 'manipulation' in Arnstein's (1969) 'ladder of participation'. Placation is a higher level of tokenism; it allows the hegemon (power holders) to continue to decide and maintain the status quo. With manipulation, India informs itself of what others are thinking about the river, but not to enable active participation in the policy process.

Table 4.1: India's use of material and ideational resources for non-participation

	Material resources	Ideational resources
India's Non-participation leading to the status-quo	India uses its geographic position, economic growth and military strength to make unilateral decisions on participation in the BD meetings.	<p>India uses the narrative of confrontations and loss of dignity to a weaker riparian to avoid discussions on the Brahmaputra River</p> <p>India uses the narrative of complex bureaucratic channels and permissions to decline participation in regional BD meetings</p>

4.5.2 Hegemonic vulnerabilities drive the status quo

Material resources becoming ideational resources – hydropower development in India. The state governments of Assam and Arunachal Pradesh disagree with each other, and both states disagree with the central government. The domestic conflicts between the actors' limit India's use of material and ideational resources. The following paragraphs elaborate why these disagreements emerged and how India is using these internal conflicts as an ideational resource to maintain the status quo at the transboundary level.

A respondent (RB, India) explained that hydropower development in the Brahmaputra River is a material resource to India. India wants to construct hydropower projects to have control over water, to become energy-secure, and to gain a stronger position in the negotiation process over water sharing with Bangladesh. The Farakka Barrage was constructed before the treaty on the Ganges River was signed. The case of Teesta River negotiations is similar. However, India has not been successful in constructing hydropower infrastructure on the Brahmaputra due to the internal conflicts between the state and central governments. A respondent (RB, India) explained that the central and the state governments asked the National Hydroelectric Power Corporation and private corporations to tap the hydropower potential of the Brahmaputra to cope with increasing energy demand. Large private corporations such as Jindal and Reliance have proposed 167 small hydroelectric projects in Arunachal Pradesh and showed the potential of huge profits from power generation (Rajshekhar, 2013). Considering the large number of hydropower projects proposed for Arunachal Pradesh, environmental activists in the lower-riparian state of Assam started agitation against the private companies and the government of Arunachal Pradesh with the narrative that these small hydroelectric projects will make the river run dry, impacting the livelihoods of the downstream people as well as the ecology of the river. Further, our respondents confirmed that during the planning and dam construction of the Subansiri Lower Hydroelectric Project, flood management strategies were not incorporated, and there was lack of transparency in conducting environmental and social impact assessments and public consultations.

Mistrust between the government and civil society organizations has made communication between the state and citizens difficult, leading to a situation of conflict and status quo over the hydropower development in India's part of the Brahmaputra River. The situation reflects the neo-institutionalist understanding of the state failing to uphold hegemonic control. Hence, all

political actors are currently waiting for the right alignment of actors and conditions to restart the discussion over hydropower development.

In one of the national-level BD meetings in India (Guwahati in 2016), an actor (BJ, India) emphasized the importance of reducing the conflicts between Assam and Arunachal Pradesh. In the same meeting, BJ presented measures to improve the relationship between the government and civil society and to reduce the conflicts around hydropower development. A respondent (BJ, India) said,

China has three dams planned in Yarlung-Tsangpo (upper Brahmaputra). Unless India has some storage in Siang, we will not be able to go to the international court and claim our right to water during the time of the dispute. The importance of these dams is in the lean- period flow. If this lean-period flow stops because of the dams in China, the proposed projects in India may not remain viable. We will have no right of first use on Siang water, and we won't have a legal argument if China wants to pursue the building of the dams.

The bureaucrat urged holding on to the transboundary negotiations and working towards improving interstate relations within India. BJ used two narratives to keep the focus on resolving domestic conflicts (an ideational resource). First, the bureaucrat explained how hydropower projects in Siang and Subansiri could reduce the annual devastation from the floods in Assam and Bangladesh. Second, the respondent mentioned that India has to build these dams to claim rights over the water before China starts building dams in the upper Brahmaputra River. Use of the two narratives supports India's strategy to intentionally pursue the status quo on transboundary negotiations and focus on domestic challenges on the Brahmaputra River. Currently, India is unable to use hydropower dams as a material resource to gain control of Brahmaputra water but is using hydropower conflicts as an ideational resource to avoid transboundary dialogue with the riparians.

4.5.3 Internal security challenges

Apart from the hydropower-related controversy among the states, a respondent (RB, India) mentioned that the protests against hydropower development are supported by a violent anti-government group, the Naxalites (people's struggle is known as Naxalism).¹³ In India,

¹³ Naxalism is a particular kind of militant and violent armed struggle by peasants and tribes who accept Marxist-Leninist ideology. Naxalism is attributed to social problems like unemployment, poverty and other forms of

Naxalites operate in the interstate border areas to make an easy escape from the state armed forces. The Assam–Arunachal Pradesh border also includes the construction site of the controversial Subansiri Lower Hydroelectric Project and is considered to be under the influence of the ‘Red Corridor’. Since the 1970s, the southern and central states of India have been infested by Naxalism due to poverty, failure in agriculture, and youth unemployment. But the north-eastern states were never under the realm of Naxalism, and a respondent (RB, India) stated that ‘the possibility of Naxalite infiltration in the north-eastern states, especially linked to hydropower in Brahmaputra, raises concerns.’ The rise of Naxalism in the two states is connected to India–China land disputes, and the possibility of China plotting to weaken India in the region makes the situation even more complex (Baruah, 2017; Hussain, 2014). The central government in India is prioritizing internal security and using the narrative of internal security as an ideational resource to avoid committing itself to transboundary negotiations. India is reluctant to show its weaknesses to lower and weaker riparians and therefore wants to intentionally maintain the status quo to get more time to resolve domestic conflicts. In the last five years no conflicts around Naxalism have been reported in the two north-eastern states; still, the narrative of securitization of the Brahmaputra River is very prominent.

Table 4.2: Hegemonic vulnerabilities and use of material and ideational resources

	Material resources	Ideational resources
Hegemonic vulnerabilities leading to the status-quo	--	<p>India uses the narrative of domestic hydropower conflicts to avoid transboundary negotiations</p> <p>India uses internal security and securitization narrative to not discuss the Brahmaputra River at transboundary level</p>

socio-economic injustice. The Naxalite movement first came to the forefront in the late 1960s, when Naxalbari became famous for the left-wing revolt that took place in West Bengal. Since then, it is perceived as the greatest threat to law and order within India.

These arguments show the hegemonic vulnerabilities of India (Table 4.2). India considers hydropower development a material resource, but it turned into a vulnerability due to sloppy planning and lack of transparency. The state has lost the trust of the public and civil society due to lack of transparency and poor public hearing mechanisms during hydropower development (Alley, 2016). Focusing on domestic conflicts, India wants to maintain the status quo for negotiations with riparian countries. By maintaining the status quo, it takes time to reduce its hegemonic vulnerabilities and simultaneously amplify hegemonic capacities.

4.5.4 The Bangladesh story – use of material and ideational resources

Respondents in Bangladesh (AB, RB, BE) mentioned that they do not want the Ganges or Teesta experience to repeat. They emphasized that for the people of Bangladesh the Brahmaputra is a lifeline, and they do not want an inequitable institutional arrangement on water sharing. One of the respondents (RB, Bangladesh) said, *‘It is better that Jamuna¹⁴ brings floods than drought. Bangladesh has a large population to feed, and in the lean season if the Brahmaputra River dries it will have a cumulative challenge.’* Bangladesh is very sceptical about coming forward, and it is not advantageous for the government to push India into negotiations over the Brahmaputra River. Bangladesh is aware of the domestic conflicts in India, and conflicts between the two Indian states do not allow the damming of the river, which allows Bangladesh to maintain its control over the Brahmaputra water. A respondent (BJ, Bangladesh) mentioned that Bangladesh’s interests are aligned with the lower-riparian state of Assam in India. Assam also wants the flow of the river to be maintained to protect the livelihood of the people and ecology of the river. Bangladesh uses the conflicts between the two states in India as an ideational resource and aligns its interests with Assam to pursue the status quo.

A respondent (BW, Bangladesh) mentioned that the political situation of Bangladesh has been stable since 2009. The respondent elaborated that the national government has increased its bargaining power by virtue of weak opposition parties and strong public support. Political stability helps Bangladesh in understanding neighbours and developing a consistent strategy to pursue the country’s interests. Bangladesh uses its political stability as a material resource in

¹⁴ The Brahmaputra is called the Jamuna in Bangladesh.

the way it negotiates with the riparian countries on issues of water. Bangladesh is aware that India's current right-wing government may negotiate aggressively and use its material resources against Bangladesh when the issues around the Brahmaputra are discussed. Hence, Bangladesh would like to maintain the status quo, and once it has liberal counterparts, in the near future, to negotiate a more equitable arrangement for the Brahmaputra River.

Most Bangladeshi and Indian respondents emphasized that the knowledge on the Brahmaputra River is securitized. India considers the Brahmaputra of strategic importance, and related data are classified. This securitization of data does not allow basin-wide research, and most studies are conducted in parts, either in India or in Bangladesh. There are no conclusive studies on the impacts of storage structures and hydropower projects in the lower basin areas. A respondent (BW, Bangladesh) mentioned, 'We are not sure of how to manage this river at the basin level or what will happen to water, sediments or erosion if India constructs a dam. In fact, many of our water experts have not seen the river in India or China. It is just too difficult to conduct research for the Brahmaputra basin.' With such knowledge gaps, Bangladesh is keen to cooperate on basin-wide research but does not want to push for an immediate water-sharing arrangement. Bangladesh uses the lack of research and knowledge as an ideational resource to not push for negotiations on the Brahmaputra River.

4.5.5 India's bilateralism and past negotiations

A respondent (RB, Bangladesh) mentioned that India always follows the bilateralism principle to negotiate with Bangladesh to maintain its control over the shared water resources. Although bilateralism has not been praised by international scholars and agencies, India continues to use it to limit contestations and prevent the possible coalition of other weaker riparians. This bilateralism has created scepticism and lack of trust among Bangladeshi actors. Bangladesh uses the narrative of experience of bilateral negotiations with India as an ideational resource to pursue the status quo. Bangladesh argues that issues related to water sharing and flood management are to be discussed multilaterally, while more country-specific issues related to trade and navigation can be debated bilaterally. Bangladesh realizes that bilateralism has supported India to gain strategic autonomy and secure substantial relative gains (Saran, 2017). It gives India enough space to design its responses to particular situations and to reduce the transaction costs associated with multilateral arrangements.

Table 4.3: Use of material and ideational resources by Bangladesh

	Material resources	Ideational resources
Bangladesh using material and ideational resources	Bangladesh's stable political situation helps to develop a consistent strategy to negotiate with India in the near future	Bangladesh uses the narrative of lack of research and knowledge on the Brahmaputra to pursue proactive discussions and negotiations Bangladesh is against the use of bilateralism principle in flood management and water sharing issues

With these challenges in place (Table 4.3), Bangladesh has been taking a thoughtful and patient approach in maintaining the status quo and strategically pushing India for more basin-wide research and knowledge sharing. During the BD meetings, Bangladesh has asked India to share hydrological data for the dry season and open up classified data.

4.6 Discussion

Throughout this article, we have argued that Bangladesh and India have been maintaining the status quo for the Brahmaputra river by using material and ideational resources. India uses material resources such as geographical position, military might and economic growth to make unilateral decisions on participation. India uses ideational resources such as the narrative of confrontations and loss of dignity to lower and weaker riparians, complex bureaucratic channels and permissions, and hegemonic vulnerabilities to prioritize domestic issues on the Brahmaputra and to pursue the status quo. Similarly, Bangladesh uses its stable political situation as material resources to develop a consistent strategy of negotiation, and the narrative of lack of research and knowledge and use of bilateralism as ideational resources.

In the following paragraphs, we reflect on the conceptual and policy contributions of this article.

In theory, power interplay in transboundary waters can have two kinds of outcomes: zero-sum and non-zero-sum (Susskind & Islam, 2012). But in certain cases, with the use of material and

ideational resources, a partial or complete status quo can be maintained by riparian countries. In this article, we have explained status quo as the third possible outcome of power interplay. There are various underlying processes that prevent the process from reaching a zero-sum or non-zero-sum outcome. Our research shows that Bangladesh and India deploy resources such as non-participation, use of hegemonic vulnerabilities, the narrative of lack of research and knowledge, unsuitable political conditions, and negative experience of past bilateralism to maintain the status quo. Over the years, the Brahmaputra River has become a conflictual and controversial issue, and both riparian countries are unable to achieve their domestic interests and therefore pursue the status quo in transboundary negotiations. Consequently, the Brahmaputra River issue has been shielded from the highest level of political deliberation by these material and ideational resources, with no suitable alternatives existing. Preventing the politicization of the BD and steering towards the status quo can be explained through the process of ‘non-decision making’.

Non-decision making is a practice of purposefully limiting the scope of decision making by manipulating the ideas and rules of interaction, power relations and instruments of force during the power interplay (Bachrach & Baratz, 1963, p. 632; Robertson & Beresford, 1996). The point of non-decision making is to not let certain choices materialize that are not aligned with the current interests of the hegemons and non-hegemons. Rose and Davies (1994, p. 57) define non-decision making as the ‘exclusion of some alternatives from the agenda of collective choices because dominant values make them politically impossible for the moment’. Non-decision making is operationalized by ‘mobilization of bias’ (Schattschneider, 1975, p. 71), which refers to institutional characteristics and knowledge frameworks that give importance to a certain issue and exclude others. McCalla-Chen (2000) operationalizes non-decision making as hiding information and tabooing a topic. Although popular in the 1970s and 1980s, theoretical debates on non-decision making are very limited, particularly due to the inherently covert nature of the concept (Bachrach & Baratz, 1975, pp. 902–903). However, if not studied empirically, non-decision making will leave a void in the understanding of power interplay in decision-making processes.

In this article, we argue that the use of material and ideational resources is a novel way to operationalize and better understand non-decision-making processes. This operationalization keeps the unit of analysis (power interplay) intact and robust. It allows us to uncover those actors and groups influencing political institutions and values through their use of material and

ideational resources and their effect in limiting the scope of decision making. As Bachrach and Baratz (1975) note, in the political system, power is mainly exercised neither by those who make decisions nor by those who decide the agenda, but by individuals who use material and ideational resources to shape and reinforce the norms, values, institutions and procedures that characterize the larger political process. Put simply, it addresses who uses material and ideational resources, how they use them, and what the outcome is. Developing this research agenda will be an important next step to uncover the politics of transboundary river basin management, especially in light of pressing societal issues such as climate change impacts and sustainable development. Moreover, the framework used in this article can be used to analyse and empirically understand the non-decision-making outcomes in other sectors and situations. For example, non-decision making may serve as an interesting framework to analyse cases such as the weak effort of the United Nations Framework Convention on Climate Change to bind countries in a robust framework to cut down carbon emissions and why global wildlife protection programmes have not been able to reduce poaching and trade of endangered wildlife species.

Considering the case of the Brahmaputra River, the concept of non-decision making can provide an important insight on which actors are to be pursued to change the status quo. It further opens the door to analysing the covert power interplay between actors on sensitive issues such as securitization of data and transboundary adaptation measures related to the Brahmaputra River and other river basins of the world. Based on the empirical findings from the BD, two policy insights have emerged that are important to consider regarding breaking the status quo.

First, water policies and practices in India focus on bilateralism, which does not allow strategic manoeuvring to respond to evolving transboundary water issues. The Water Policy of India (2012) and the new draft National Water Framework Bill (2016) do not refer to issues of water sharing, water resources development or joint basin-level research for transboundary rivers. The Water Policy explicitly mentions bilateral data sharing, with the Brahmaputra River being an exception, as it is 'securitized'. Similarly, the National Water Mission (2011) under the National Adaptation Plan for Climate Change (2008) discusses the intersectoral and basin-level measures to improve water efficiency but does not refer to design and implementation of adaptation measures in transboundary river basins. Consequently, bilateralism is overshadowing the water policy approach in India. Including such a narrow and inflexible

directive can impede India's influence in South Asia with changing geopolitics. Reformulating its approach to multilateralism on the diverse aspects of flood risk management and joint research could help transboundary actors resolve current and future conflicts, keeping the instrumental position of India intact.

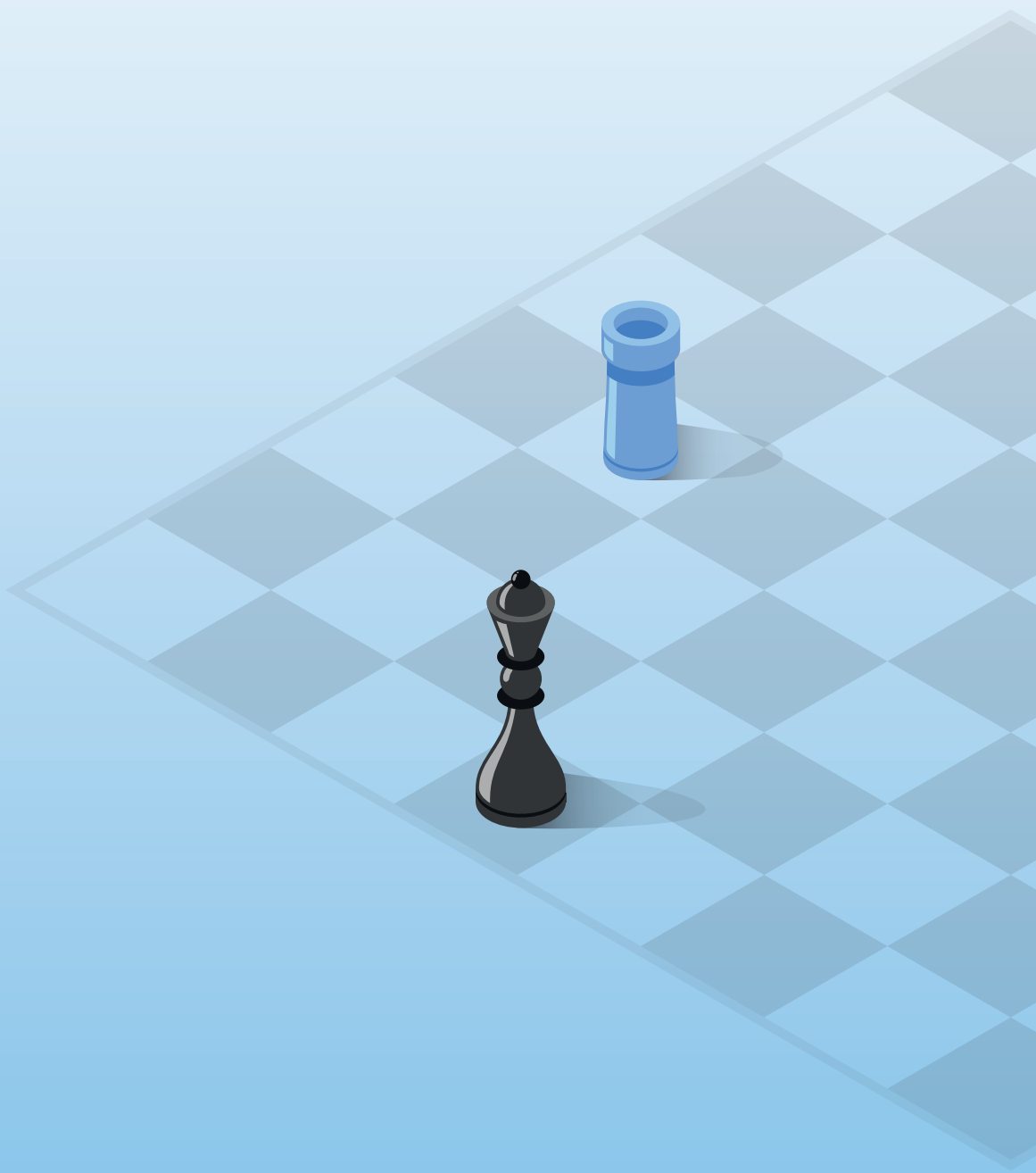
Second, during the dialogue meetings and interviews, respondents from both Bangladesh and India mentioned that there are some points of cooperation where both India and Bangladesh would like to make positive decisions. These points of cooperation include navigation and improving trade routes in the Brahmaputra River. In the last couple of years India has been determinedly planning to improve trade routes and make north-east India transport-friendly (Barua & Vij, 2018). For these navigation and trade routes there is no comprehensive research showcasing the benefits of navigation and optimization of routes. Transboundary water policy has to be informed by joint research on such topics for equitable benefits. Joint basin-wide research on the Brahmaputra River can create momentum to build trust, and such small steps of cooperation could gradually transform the relationship between Bangladesh and India. Such transformative steps could create opportunities to discuss thornier issues, such as climate change, in a productive way.

4.7 Concluding remarks

In this article, we addressed the question of how Bangladesh and India use material and ideational resources to intentionally maintain the status quo for the Brahmaputra River at the transboundary level. We conclude that India is maintaining the status quo due to its hegemonic vulnerabilities and unclear directives on the Brahmaputra River. Bangladesh is patiently waiting to pursue negotiations with India, and simultaneously strengthening its technical and negotiation skills through more research and dialogue. This results in a status quo where discussions are not moving forward, and the basin communities continue to face the impacts of climate change-induced disasters. The status quo prevents developing and implementing basin-level adaptation plans, which means that in the long term the impacts of climate change will be exacerbated. Currently, in the absence of a transboundary agreement, individual countries manage the Brahmaputra River. An important first step is to bring all riparians together and build trust to recognize the benefits of transboundary-level climate change adaptation.

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5

‘Power-sensitive design principles’ for climate change adaptation in South Asia



Abstract

Despite the proliferation of power approaches to study climate change, there is little focus on how to deal with the negative effects of power in climate change adaptation (CCA) policy-making. CCA literature provides little insight into understandings of manifestations of power that can create negative effects. Further, literature provides even fewer strategies to address manifestations of power in the context of South Asia. This review answers the question: *How can CCA policy actors deal with the negative effects of power during the policy-making process?* We used a two-layered systematic literature review to identify various manifestations of power that are responsible for negative effects in CCA policy-making in South Asia and to determine power-sensitive design principles' (PDPs) to address these manifestations of power. We conclude that the four PDPs are not the panacea for dealing with manifestations of power but are useful considerations when engaged in long-term CCA policy processes.

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5.1 Introduction

Climate change impacts in South Asia are becoming more frequent and destructive to human and natural systems (Wijngaard et al., 2019; Ahmed et al., 2019). Climate change adaptation (CCA) is, therefore, increasingly necessary. CCA can be characterised as the process of adjustments in human and natural systems to avoid observed and projected impacts of climate change and can be realized at different scales (IPCC, 2014). Recent discussions emphasise the importance of planning, long-term systemic transformations in the most vulnerable regions in the world, including South Asia (Tàbara et al., 2018; IPCC, 2014; Pelling, 2010). National governments in the region are continuously deliberating about preparing and implementing dedicated CCA policies to prepare for long-term impacts (Vij et al., 2017). However, various power-related challenges impede the design and implementation of such CCA policies (Morrison et al., 2017; Jones and Boyd, 2011; Manuel-Navarrete, 2010).

Several case studies show that power-related issues can create negative effects on the policy-making process at different levels (Morrison et al., 2017; Fazey et al., 2016; Pelling et al., 2015; Yamin et al., 2005). For example, at the national level, certain policy actors such as politicians, representatives from donor agencies and non-governmental organizations prioritize tangible development activities for short-term political gains by using their discursive capacities such as authority, knowledge and financial support, rather than investing in long term transformative adaptation (Morrison et al., 2017; Nawab and Nyborg, 2017). Vij et al. (2018), Ojha et al. (2016) and Nightingale (2017) highlight the exclusion of community actors (such as lower caste, class and women) and the overpowering of their knowledge and ideas by powerful politicians and external consultants during CCA policy-making processes. The CCA literature has reported other negative effects of power in South Asia, including a strong influence of technocrats during national level policy making, top-down government-driven approaches to implement CCA strategies at the local level, a lack of community participation in prioritizing CCA measures, elite control over resources, and domination of certain higher-class and caste groups at the local level during policy-making processes (Sovacool, 2018; Rao et al., 2017; Sultana and Thompson, 2017; Burch et al., 2014; Sultana, 2014).

Although such examples are found throughout the CCA scholarship, a systematic understanding of the causes and effects of power are limited, and even fewer studies have proposed possible ways of dealing with these (Manuel-Navarrete, 2010). This is perhaps because the process of designing and implementing CCA policies is relatively new, offering limited empirical cases to study power in practice. Moreover, power is a complex phenomenon

to study, with critical conceptual and methodological challenges. However, given the importance of power as a barrier to climate change adaptation, it becomes critical to systematically understand the challenges related to power in CCA policy-making.

This article, therefore, aims to answer the following research question: *How can policy actors deal with the manifestations of power that create negative effects during the climate change adaptation policy-making process?* To answer this question, we make use of a systematic review methodology. Systematic reviews allow us to capture the current state of the literature on climate change adaptation and power and identify key lessons learned in how to deal with the manifestations of power.

In doing so, we aim to distil 'Power-sensitive Design Principles' (PDPs) from the literature that can possibly address the manifestations of power and reduce the negative effects. PDPs can be seen as a collection of key lessons learnt and best practices from multiple case studies and practices to deal with power-related issues. PDPs target the design of policy-making processes in an attempt to reduce negative effects (Hajer et al., 2003; Edelenbos, 1999; Windhoff-Héritier and Héritier, 1999). For instance, based on key lessons from different works of literature, a PDP may suggest the design of who participates and what roles and responsibilities actors may have during CCA policy-making process in South Asia. Given the limited scope of the adaptation literature, we broaden the systematic review to include key lessons learned from other social sciences to construct the PDPs for climate change adaptation policy-making.

The remainder of this article is divided into three sections. The next section introduces the methodology used, explaining the systematic review methodology, data collection methods and analysis. Section 3 presents the results, discussing the identified manifestations of power and the PDPs created. In the discussion section, we reflect on the state of CCA literature in dealing with power, discuss the limitations and benefits of PDPs, and reflect on the method used.

5.2 Methodology

Systematic literature review approaches are used across disciplines in social sciences, predominantly helping to conduct a formal, transparent, standardized synthesis of the literature to answer specific research questions or address a knowledge gap (Gough et al. 2012). We developed a two-step systematic review methodology: Systematic Review 1 (SR 1) to identify

manifestations of power in climate change adaptation policy-making and, Systematic Review 2 (SR 2) to create PDPs based on a broader search of key lessons learned across the social sciences to deal with the manifestations of power. SR2 is based on the outcomes of SR1.

Table 5.1: Steps involved in two-layered systematic literature review – SR 1 and SR 2

Steps	Systematic Review 1 (SR 1)	Systematic Review 2 (SR 2)	
		SR 2(a)	SR 2(b)
Step 1	<u>Search based on keywords</u> (SCOPUS) – CCA ‘Climatic change adaptation’, ‘power’, ‘long-term planning’, ‘country/region’*. <i>Result – 388 articles</i>	<u>Search based on keywords</u> (SCOPUS) – Others – CCA ‘Knowledge’, ‘domination’, ‘country/region’*. <i>Result – 716 articles</i>	<u>Search based on keywords</u> (SCOPUS) – Others – CCA ‘Authority’, ‘funding’, ‘aid’ and ‘assistance’, ‘country/region’*. <i>Result – 1789 articles</i>
Step 2	<u>Screening (inclusion/exclusion)</u> Based on abstract, keywords and title of the articles <i>Articles – 58 articles</i>	<u>Screening (inclusion/exclusion)</u> Based on abstract, keywords and title of the articles <i>Articles – 95 articles</i>	<u>Screening (inclusion/exclusion)</u> Based on abstract, keywords and title of the articles <i>Articles – 611 articles</i>
Step 3	<u>Screening (inclusion/exclusion)</u> Based on the full text <i>Articles – 42 articles</i>	<u>Screening (inclusion/exclusion)</u> Based on the full text <i>Articles – 65 articles</i>	<u>Screening (inclusion/exclusion)</u> Based on the full text <i>Articles – 63 articles</i>
Step 4	<u>Screening – critical appraisal</u> Based on the robust use of methodology and sufficient explanation of the concepts – power and CCA <i>Articles – 38 articles</i>	<u>Screening – critical appraisal</u> Based on the robust use of methodology and sufficient explanation of the concepts – knowledge <i>Articles – 29 articles</i>	<u>Screening – critical appraisal</u> Based on the robust use of methodology and sufficient explanation of the concepts – authority <i>Articles – 36 articles</i>
Step 5	<u>Analysis</u> Inductive analysis to identify manifestations of power in each article.	<u>Analysis</u> Inductive analysis to identify practices to deal with the issue of domination by knowledge	<u>Analysis</u> Inductive analysis to identify practices to deal with the issue of authority of certain actors

To maintain a greater level of transparency in data collection and analysis, the systematic review followed the ROSES Protocol (Haddaway et al., 2018). Web search engine SCOPUS was used for identifying the scientific articles. We used SCOPUS because it is one of the most comprehensive databases of social and environmental sciences articles (Landauer et al., 2015). Our systematic reviews followed five steps to reduce possible biases and limitations, documenting all the activities during the review process. Table 5.1 provides an overview of the

main steps taken. More details on the methodology used can be found in S1 (electronic supplementary material).

5.2.1 Systematic review 1: climate change adaptation and manifestations of power

The first step was to run initial search queries to identify synonyms and explore the literature. Based on this, we created a codebook to ensure a transparent and rigorous selection of review articles. The database was searched in the title, abstract and/or keywords of published articles for different Boolean configurations of *power* (and related terms such as authority, control, domination and supremacy), *climate change adaptation* (and related terms such as climate and/or climatic change, long-term planning, future planning, reflexivity, adaptive), and *South Asia* (with country/region specific terms such as Bangladesh or Afghanistan). The results yielded 388 articles, of which 58 were selected after using the exclusion and inclusion criteria on the title, abstract and keywords, followed by reading the full text (see Table S1, electronic supplementary material). Exclusion and inclusion criteria included peer-reviewed English language articles between the period 2000-2018, as well as an exclusive focus of articles on the concepts of power and climate change adaptation. In the second round of review, we read the complete article. We selected 42 articles for the next step of the review. Using forward and backwards reference checking, we identified and included 5 more articles. In the critical appraisal step, we excluded articles with unclear or lacking methodological sections and a conceptual explanation of power and climate change adaptation. The final number of articles for review was 38. We inductively coded the articles using the codebook, abstracting each argument the authors made to explain the level of research, sectoral focus, conceptual and empirical interpretation of power, the negative/positive influence of power and the underlying reason for these negative/positive influences. We extracted all relevant excerpts from the article. Using inductive clustering, we thematically grouped the different manifestations of power in three themes (see Table 5.2).

5.2.2 Systematic review 2: PDPs for knowledge and authority

Thematic clustering in step 1 resulted in 24 articles (60% of reviewed articles) that discussed the use of material and ideational resources during the CCA policy-making process, with domination by knowledge and authority as most frequently used. Both knowledge and authority have been considered critical in climate change adaptation processes. We, therefore, focused systematic review 2 to determine 'power-sensitive design principles' (PDPs) for

knowledge and authority in South Asia. For this step, we conducted two separate systematic reviews.

The first systematic review was focused on domination by knowledge. Search queries were used with various synonyms of *knowledge* (such as data, information, expertise, and discourses) with the country/region specific terms. By removing ‘adaptation’ from the search query, a broader set of literature was considered in the review. A set of similar exclusion and inclusion criteria as for step 1 were used to screen the articles based on the title, abstract and/or keywords of published articles. After full-text screening, 65 articles were selected. The critical appraisal step reduced the final set of articles to 29. The articles were inductively coded for arguments made in relation to possible ways to reduce the effects of domination by knowledge in policy-making. For instance, a few articles suggested ways to reduce the domination of engineers who use technical or scientific knowledge to overpower indigenous or local knowledge of farmers to manage the irrigation system. Like step 1, relevant meta-information and relevant excerpts were collected and analysed inductively to create PDPs.

We used similar steps for **authority**; we used search queries based on synonymous terms such as *domination, control, position, funding, aid* and *assistance* with country/region specific terms. For the first round of review, we screened 1789 articles based on the article’s title, abstract and keywords, using similar exclusion and inclusion criteria for the other review. For the second round of review, we selected 611 articles. After going through the articles, we selected 63 articles for the systematic review. A critical appraisal of selected articles was conducted resulting in 37 articles. For these articles too the meta-information was collected, excerpts stored and analyse to inductively create PDP’s. For both reviews, the PDPs are the result of discussions among the authors of this article.

5.2.3 Limitations

There are three main limitations to the methodology used in this study. First, we used systematic review methodology to explore broad themes such as power, authority and knowledge. Whilst we carefully designed the search query and synonyms and added cross-referencing as an intermediate step to ensure comprehensiveness in our search, there is a possibility that we might have missed certain literature that has used different terminology than we have used in this study. Second, for our data collection, we focused on SCOPUS. Whilst this is the most comprehensive database for social and environmental sciences, there might be more domain specific databases that could yield additional results. However, here too we used

reference checking to ensure we captured the main articles. We also did not consider databases that included non-English articles, although recognizing that some literature could have been published in local languages. Third and finally, we have not included unpublished and grey literature such as theses, governmental reports, and project evaluations. Whilst this could be considered a limitation to our search strategy, particularly for the PDPs identified in the second step, we are confident that the current review provides a sufficiently comprehensive overview to distil key PDPs. Future research could expand the search to other databases and languages using the methodology developed in this article.

5.3 Results

5.3.1 Manifestations of power influencing CCA policies of South Asia

The 38 articles included in SR 1 showed a wide range of focus, with the majority of studies in India ($n=13$), Bangladesh ($n=9$) and Nepal ($n=7$), covering both the national level ($n=13$) and local level ($n=16$) cases. All studies focussed on current climatic impacts experienced; we found no articles that had an explicit focus on the link between power and long-term climate impacts and planned adaptation. This is surprising given the strong call for transformative adaptation in the region. Although all articles identified in this review explicitly refer to power in climate change adaptation, we found no articles that explicitly addressed strategies to deal with power-related issues in South Asia. This too is a critical gap in the literature.

The articles demonstrated a variety of manifestations of power. Using inductive classification, we categorized these into three overarching themes: 1) use of the material and ideational resources by policy actors; 2) contextual, social and historical differences (i.e. class, caste, gender); and 3) design of the CCA policy processes itself reinforces power imbalances among policy actors. These are discussed below, see also Table 5.2.

5.3.2 Use of material and ideational resources by policy actors.

In total 24 articles discussed the use of material and ideational resources used by different actors during CCA policy processes as key manifestations of power. First, material resources are used by actors to influence CCA policies through the availability of staff, technology and finances, and by asserting the authority of certain actors over others (Rahman, Sarker and Giessen, 2016). For instance, several studies show how in Nepal and Bangladesh material resources are used by actors for setting the political agenda and to include or exclude other actors in the planning process (Vij et al., 2018; Rahman and Giessen, 2017). Second, ideational

resources were frequently reported, referring to the use of ideas, knowledge and policy narratives that enable certain actors to influence others (Rahman and Giessen, 2017; Rahman, Sarker and Giessen, 2018; Fuchs and Glaab, 2011). For example, actors use ideational resources such as legitimacy and knowledge to shape current and future choices and values in agri-food governance in India (Fuchs and Glaab, 2011). These actors use narratives to steer short-termism, push for tangible results in the short-term, and connect future investments to uncertainty.

The material and ideational resources often work in tandem; during the process formulating CCA policies, certain actors' ideas and interests are considered, and others are ignored. Nagoda and Nightingale (2017) identify that in Nepal actors' use material resources such as authority and socio-political positions to defend their interests, shaping current adaptation outcomes. Policy actors in Bangladesh, India and Nepal use ideational resources such as knowledge of adaptation and India's bilateralism principle to push for short-term development measures through adaptation plans and policies (Vij et al., 2019; Vij et al., 2018). Further, Nightingale (2017) and Nagoda and Eriksen (2015) emphasise that powerful actors struggle over authority and recognition, resulting in the exclusion of long-term perspective of marginalized actors such as women in a patriarchal rural context.

5.3.3 Contextual, social and historical conditions in South Asia.

The second theme of manifestations of power are the social differences, especially along the axes of gender, caste and class which influences CCA policy processes. Several studies noted that community adaptation strategies are deeply rooted in class and ethnic hierarchies that trap the poor, powerless and consequently increase human insecurity (Sovacool, 2018; Stock et al., 2019). In these cases, higher-class and caste groups use their existing authority and position to further strengthen their control in society by implementing tangible development measures that prevail short-term benefits over long term transformational changes. Similar patterns emerge across gender groups; Sultana (2011) and Molden et al. (2014) argue that climate change is not affecting the poor uniformly in South Asia, but it is further complicated by gendered power relations that are intersecting with other social differences such as class, caste and ethnicity. Further, it is argued that although gender relations play an important role in CCA, women tend to be systematically disadvantaged in terms of access to resources, participation in policy planning exercises and decision-making (Rao et al., 2017). Such contextual, social and historical conditions in South Asia have an immense influence on CCA policy processes.

Table 5.2: Manifestations of power responsible for negative effects in CCA policy-making

No.	Themes	Manifestations of power	Key literature – SR 1
1	Use of material and ideational resources (60 % of SR 1 articles)	<ul style="list-style-type: none"> Knowledge is used to exert power; 	Nagoda and Nightingale (2017); Nagoda and Eriksen (2015); Azhoni et al (2017)
		<ul style="list-style-type: none"> Domination of ideologies/ framing and elite control; 	Vij et al., (2018); Rahman, Sarker and Giessen (2016); Sultana and Thompson (2017)
		<ul style="list-style-type: none"> Access and control over natural, physical and financial resources; 	Rahman and Giessen (2017)
		<ul style="list-style-type: none"> Authority to influence other actors; 	Nightingale (2017); Vij et al., (2018);
		<ul style="list-style-type: none"> Influence of technocracy; 	Ojha et al., (2015); Vij et al., (2019); Paprocki and Huq (2018)
2	Contextual, social and historical conditions (15 % of SR 1 articles)	<ul style="list-style-type: none"> CCA policies and projects disempower women by lack of participation; 	Rao et al., (2017); Molden et al., (2014)
		<ul style="list-style-type: none"> Gender, class, caste, race and ethnicity are used to shape power relations and then actors use these manifestations to influence the CCA policies. 	Sultana (2014); Stock et al, (2019); Singh (2018)
3	CCA policy processes reinforce power imbalances (25 % of the SR 1 articles)	<ul style="list-style-type: none"> Policy institutions shape power relations; 	Sovacool (2018); Taylor (2013)
		<ul style="list-style-type: none"> Policy networks empower certain actors; 	Sultana and Thompson (2017);
		<ul style="list-style-type: none"> Institutions disempower certain communities. 	Tschakert et al (2016); Rahman and Giessen (2017); Sovacool et al., (2017)

5.3.4 CCA policy processes reinforce power imbalances.

The final theme revolves around the observation that many existing CCA policy processes reinforce power imbalances or in cases create new power struggles. For instance, Nightingale (2015) argues that certain civil society actors want to implement long-term CCA measures in Nepal, but the myopic vision of local adaptation planning processes and project timelines restricts their actions. Such design of CCA policy processes pushes for producing quick and

measurable results in short time-periods, instead of aiming for long-term policy measures for transformational change. Moreover, the literature highlights political economy attributes to adaptation policies, stressing that CCA policies are inherently limiting access and marginalizing certain actors in the decision-making process (Sovacool et al., 2017; Sovacool, 2018).

5.4 PDPs for long-term climate change adaptation in South Asia

The various manifestations of power identified in SR1, see also table 5.3, can be dealt with in a variety of ways. SR1 showed that there were few if any strategies to deal with the manifestations reported in the adaptation literature. We, therefore, focused on the two main manifestations reported in the climate change adaptation literature – domination by knowledge and authority – to design PDPs, four in total.

5.4.1 Domination by knowledge

Domination by knowledge is referred to by the capacity of a policy actor to influence others by means of certain expertise (technical or social) or knowledge resonating with values or norms in society (Vij et al., 2018; Rahman, Sarker and Giessen, 2018). We systematically reviewed the social science literature (see section 2.2) for key lessons learned to deal with this manifestation of power and identified two main PDPs: 1) shift in policy actors' thinking from 'transfer of scientific knowledge' to 'co-creation of knowledge', 2) creation of safe spaces for continuous dialogue, interaction and raising concerns for future planning.

Shift in 'transfer of knowledge' to 'co-creation of knowledge' (PDP 1): We found 23 articles suggesting that there is a tension between users of local and scientific knowledge systems in South Asia. Literature suggests that having access to expert scientific knowledge is no guarantee of reducing current vulnerability and building long-term community resilience (Birkenholtz, 2008; Evers, Kaiser, and Muller, 2009). Lack of trust and conflicting views on the value of scientific knowledge are frequently reported challenges to consider long term climate impact knowledge. Rather than pushing for scientific knowledge and ignoring local knowledge systems, these works of literature emphasise the value of creating a balanced mix of the two knowledge systems to create context-specific CCA policies. For addressing the domination of a particular knowledge system, the literature suggests a shift in the acting of policy actors from 'transfer of (scientific) knowledge' to 'co-creation of knowledge'. Such a shift can be organized by intensifying the collaboration and making actors realize the mutual

dependency between them. Climate change demands immediate and system-wide action and therefore, CCA policy-making process is time-bound and resource intensive (Robinson and Shine, 2018). Aggressive, top-down enforcement of scientific knowledge does not mobilize relevant actors to start to adapt to climate change impacts (Veld, 2010; Rist et al., 2007). (Re)designing processes to increase the feedback on the knowledge shared by actors will also increase trust and tolerance. Such knowledge co-creation will provide an opportunity for actors following different knowledge systems to generate empathy for each other, enhancing trust and confidence among actors (Wang, Bryan-Kinns and Ji, 2016). Trust and confidence can create long-term relations between actors, which can support the process of designing policies that rise above vested interests.

Birkenholtz (2008) discusses an example where civil society, community members and state actors are collectively governing an irrigation canal. The author highlights the contestation and power relations between the state actors (engineers and development practitioners) and farmers based on their different knowledge systems. To resolve such a contestation, knowledge exchange between different actors based on co-creation had improved the process of generating attractive options of governing the irrigation system, inclusion and ownership of community actors, motivation to maintain the system for long-term, and reducing the transactions costs in the future. Sufficient responsibilities to govern the canal should be bestowed upon the communities to drive the process of co-creation, giving freedom to raise a voice in deciding whose knowledge is considered for making decisions.

Table 5.3: Power-sensitive design principles for the two manifestations of power

Manifestations of power	Discipline(s)	PDPs	Example(s)
Domination by Knowledge	Development practice; development studies; human geography	Shift in policy actors' thinking from 'transfer of knowledge' to 'co-creation of knowledge' to minimise the power of certain actors.	Combining local and technical expertise for irrigation management
	International relations; human geography; sociology	Creation of safe spaces for continuous sharing of knowledge to allow the inclusion of powerless actors and their voices.	Continuous multi-stakeholder & multi-level dialogues for transboundary cooperation
Authority	Political science; public administration	Democratic devolution in a multi-cultural and multi-ethnic environment to support.	Communities reviewing the actions and policies prepared by authorities and community leaders
	Development practice; behavioural science; organizational behaviour	Create mechanisms to build communication competence and confidence to encourage empowerment among weak actors.	Capacity building of communities on CCA; long-term thinking in CCA; developing negotiation and communication skills

Creation of safe spaces for continuous dialogue, interaction and raising concerns for future planning (PDP 2): To improve sharing of different types of knowledge between a variety of actors, there is a need for the creation of safe space that provides equal opportunities for actors to present their ideas, opinions, and beliefs (Pereira et al., 2015). Safe space can create long-term reflexive dialogues, opportunities to co-create knowledge, nurture innovation, build trust, gain respect and address power asymmetries (Pereira et al., 2015). For instance, safe spaces can enable inclusion of actors usually excluded from policy processes in South Asia (i.e. illiterate, women and lower caste), who usually have a good knowledge of governing resources such as irrigation systems, community-managed forests, and groundwater (Galliard et al., 2013). Safe space can provide an opportunity for co-creation of knowledge (see PDP 1), with

weak actors freely expressing their idea and powerful actors with open-minds listen and value different knowledge and ideas. Examples in the literature refer to street theatres performed by local communities in front of government buildings and private actors can give an opportunity to the community to present their choice of narratives and share their present and future concerns. Safe spaces allow voices that are overlooked to be included, and missing stories get told (Mattingly, 2001). Collectively, such a safe space can balance the influence of powerful and powerless actors.

Another example of safe space is discussed by Barua et al. (2017), in the form of a continuous informal multi-actor and multi-level dialogue for transboundary river cooperation. Here informal dialogues help in building trust between actors and promote an exchange of challenges and opportunities of governing transboundary resource through social learning or by addressing the power interplay between actors (Rasul, 2014; Dore, Lebel and Molle, 2012). Such dialogue processes are often discarded for policy processes due to lack of time by actors and inadequate resources. However, studies suggest that the creation of safe spaces can improve the continuous sharing of knowledge and increases the quality of interactions between actors, allowing for more reflexivity and adaptiveness necessary to design long term CCA policies (Termeer et al., 2015).

5.4.2 Authority

The second manifestation of power is authority, which refers to a relational exercise of power by policy actors through the legitimacy of institutions and positions to influence other actors to exert certain interests and set the agenda (Sikor and Lund, 2009). To address authority, we identified two more PDPs: 3) democratic devolution in a multi-cultural and multi-ethnic environment to support long-term policy-making and implementation; and 4) create mechanisms to build capacity, communication and negotiation skills for empowerment.

Democratic devolution in a multi-cultural and multi-ethnic environment to support long-term policy-making and implementation (PDP 3). Devolution process can bring communities and civil society organization closer to the state and policy-making process (Brugere, 2006). To reduce the authority and control of state and private actors on the flow of information and monopoly in policy-making, it is important that communities have the opportunity to participate in policy processes, and periodically review and change the policies prepared by governments. In general, devolution is achieved by public administration reforms, civil service reforms, and strengthening of local institutions by reducing the focus on the state and

legitimizing community strategies (Sikor and Lund, 2009). For adaptation, devolution could entail placing tasks and responsibilities to the local level, and in doing so it can improve the inclusivity of local state and non-state actors and set clear and legally recognized geographical and administrative responsibilities (Lachapelle et al., 2004).

We found seven articles which showed that devolution of power in the multi-cultural and multi-ethnic environment of South Asia requires a careful interaction with the local socio-political structure. For example, local public servants can be given administrative and financial powers to design forest management strategies for their own regions (Nygren, 2005) or devolved to municipalities that consult with local communities for policy actions (Nygren, 2005). In doing so, it is important to identify realistic strategies that recognize the needs and goals of multiple actors, especially for the ones who are less powerful (Nygren, 2000). Literature suggests that the challenge of devolution is to ensure that the federal state is not abandoning their responsibilities, but focuses on embedding these responsibilities in legislative reforms, improving conflict management mechanisms, assuring participatory policy formulation and building long-term trust with communities. It is also important that the central government is working towards improved coordination between different local governments (Agarwal and Ribot, 1999; Singh and Khare, 1993).

Create mechanisms to build capacity, communication and negotiation skills for empowerment (PDP 4). SR1 showed that actors may dominate other actors not only by material and ideational resources they hold but particularly because of their communication skills and confidence. Communication skills and confidence enable self-empowerment and improve socio-political status for community members both as individuals and as a collective. We found 8 articles explicitly referring to the need for increasing such skills and abilities among participating actors as these will support creating a level playing field (Brewer, McBride, and Yearley, 1991).

Such mechanisms should be focussed on improving communication skills, building capacity on policy topics, and increasing their skills to negotiate with powerful actors. For instance, capacity building of communities on the challenges and benefits of climate change adaptation and future climate change scenarios can help in balancing the influence of state and private actor's knowledge influence on how plans and policies of CCA should be designed. Such capacity building efforts can help communities to challenge other policy actors and appropriately prioritize CCA measures. Moreover, increasing their communication skills and capacity will enable communities to not fall for immediate, short-term coping mechanisms or

development measures proposed by the state or private actors. Literature suggests that vulnerable groups and powerless actors could learn to negotiate, get trained in raising voices effectively and making constructive arguments about their local knowledge, practices and institutions (Gautam and Shivakoti, 2004).

5.5 Discussion

In this article, we critically assessed the climate change adaptation literature for manifestations of power and aimed to create PDPs for navigating the negative effects of power on climate change adaptation policy-making in South Asia. These PDPs are key lessons learned from multiple practical cases in how to address the negative effects of power to support long-term thinking in the CCA policy-making process in South Asia. Based on our findings, we share four key insights.

First, our systematic review showed that whilst power is a critical dimension discussed in the literature, as is noted by others (Vink et al., 2013; Manuel-Navarrete, 2010), and an often mentioned barrier to adaptation (Shackleton et al., 2015; Biesbroek et al., 2013), there is very limited, if any, literature that explicitly analyses the relationships between long-term thinking and power in CCA policy-making in South Asia. This is surprising given that long-term thinking is an important element of CCA policies (Suckall et al., 2018; Hallegatte, 2009; Reilly and Schimmelpfennig, 2000) and critical in the context of transforming societal systems to be better adapted to future climate impacts. A deeper understanding of how power influences long term planning is critically important for the future development of South Asia and adaptation plans to improve the adaptive capacity of the vulnerable communities (Blythe et al., 2018).

Second, whilst power is noted as a key issue, we found very few examples of concrete ways to deal with the various manifestations of power. This is surprising given that most of the adaptation literature is practice-oriented and expected to explicitly reference intervention strategies. However, it also showed the relative newness of power-related research on adaptation, and the limited lesson drawing from other fields in the social sciences to inform adaptation scholarship (Preston, Mustelin and Maloney, 2015). Although both issues might be resolved when research on adaptation further matures, we argue that a more proactive approach such as taken in this study could be a useful step to bring in knowledge and expertise from other social science disciplines where power-related research has been well established, including development studies and international relations. Combining multiple systematic

reviews can be useful in bridging the observed gap in this article between power manifestations observed empirically and ways to deal with them. Although our SR 2 focuses on two main manifestations of power only due to time and resource constraints, it does demonstrate that systematic reviews allow for bringing in knowledge and expertise from other domains in a transparent manner and by doing so, can assist in advancing research on adaptation and provide policy-relevant recommendations.

Third, among various power-related situations during the CCA policy process discussed in this article, the PDPs proposed are particularly useful for two situations: ‘power over’ and ‘power in’. ‘Power over’ refers to a situation where certain actors directly influence the policy-making process (Torfing et al., 2012). For instance, certain actors have the power to close down or start the policy-making process due to the social legitimacy of their roles to decide and take action (Purdy, 2012). In such cases, the policy actors have the power to include or exclude other actors and their ideas or can set the agenda (Vij et al., 2018). PDPs such as the creation of safe space and democratic devolution can reduce the overpowering ability of some actors (or ‘power over’) during the policy-making process. ‘Power in’, on the other hand, refers to a situation where certain policy actors use discursive capacities such as material and ideational resources to influence the interactions during the policy-making process (Carstensen and Schmidt, 2015; Purdy, 2012). PDPs such as knowledge co-creation and mechanisms to build capacity and negotiation skills can help reduce the influence of the discursive power of policy actors (or ‘power in’) during the policy-making process. Clearly, the proposed PDPs are conditional and dependent on the policy actors involved in the policy-making processes. If a policy actor is using authority or knowledge to overpower other actors to meet his/her vested interests and priorities, then the same actor will likely not be interested in using PDPs to (re)design policy processes. In cases where policy actors do implement PDPs, powerful actors might still find ways to counter the positive effects of these PDPs. In other words, the PDPs are bounded by actors’ willingness and behaviour, along with the institutional strengths and weaknesses in which they are implemented. PDPs therefore only work if they are not used in an overly rational or structuralist way (Van Hecken, Bastiaensen and Windey, 2015).

Fourth, the proposed PDPs are inter-dependent and work in tandem. This is particularly because of the way we have defined the concept of PDPs. For instance, PDP 1 on knowledge co-creation is a process to prevent overpowering by (scientific) knowledge, but it also creates trust, empathy and confidence among policy actors to build a long-term relationship. This helps them not to think about their individual priorities and interests only and hopefully keep long-

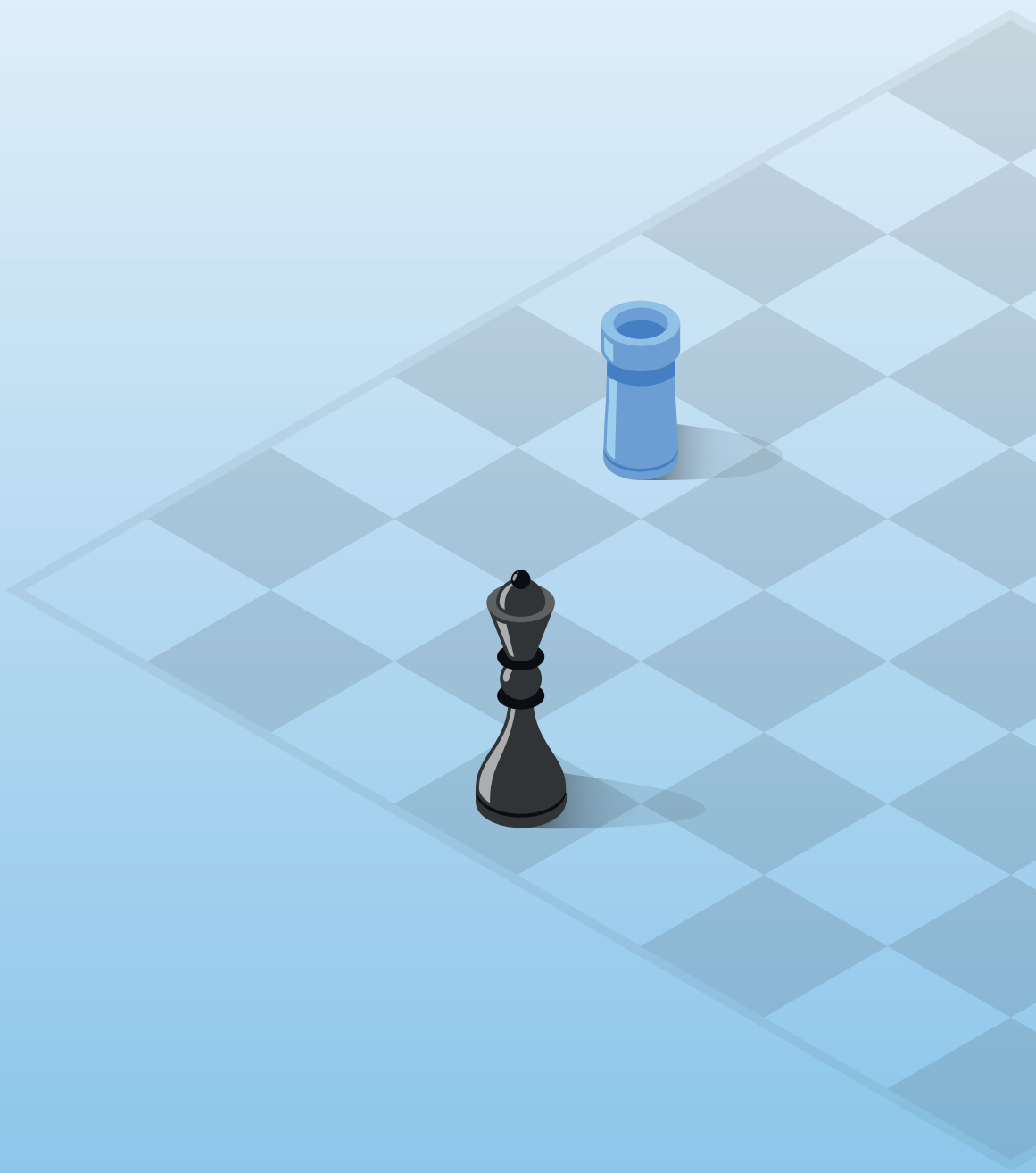
term benefits at the centre of the adaptation policy-making process. But knowledge co-creation works in tandem with PDP 2, the creation of safe spaces. Ideally, knowledge co-creation needs a safe environment where different policy actors feel comfortable and are not overpowering each other during the process, therefore the PDPs work in tandem and are inter-dependent on each other.

5.6 Conclusion

In this article, we aimed to gain a better understanding of the power-related challenges adaptation policy processes face and design PDPs to deal with the manifestations of power. We synthesized three themes from the current adaptation scholarship representing various manifestations of power that influence CCA policy-making in South Asia. Based on two other systematic reviews, we identified four PDPs for two specific manifestations of power – domination by knowledge and authority. We argue that the proposed PDPs are a first step towards addressing the manifestations of power during CCA policy-making that are observed in the literature. PDPs can be implemented by (policy) actors to increase the inclusivity of actors and ideas, gain reflexivity from other knowledge disciplines, empowerment of weak actors through skill development and the creation of safe spaces at different levels. PDPs provides guidance for actors to design or improve the CCA policy-making process. Together the four PDPs presented here capture structural, agency and design elements of CCA policy-making. Further testing and refinement of these PDPs are necessary to gain a more substantive overview of relevant power-sensitive design principles that can inform policy practices. As climate change is accelerating in South Asia, particularly affecting marginalized and vulnerable populations in South Asia, PDPs can inform policy processes that facilitate equitable adaptation to climate change.

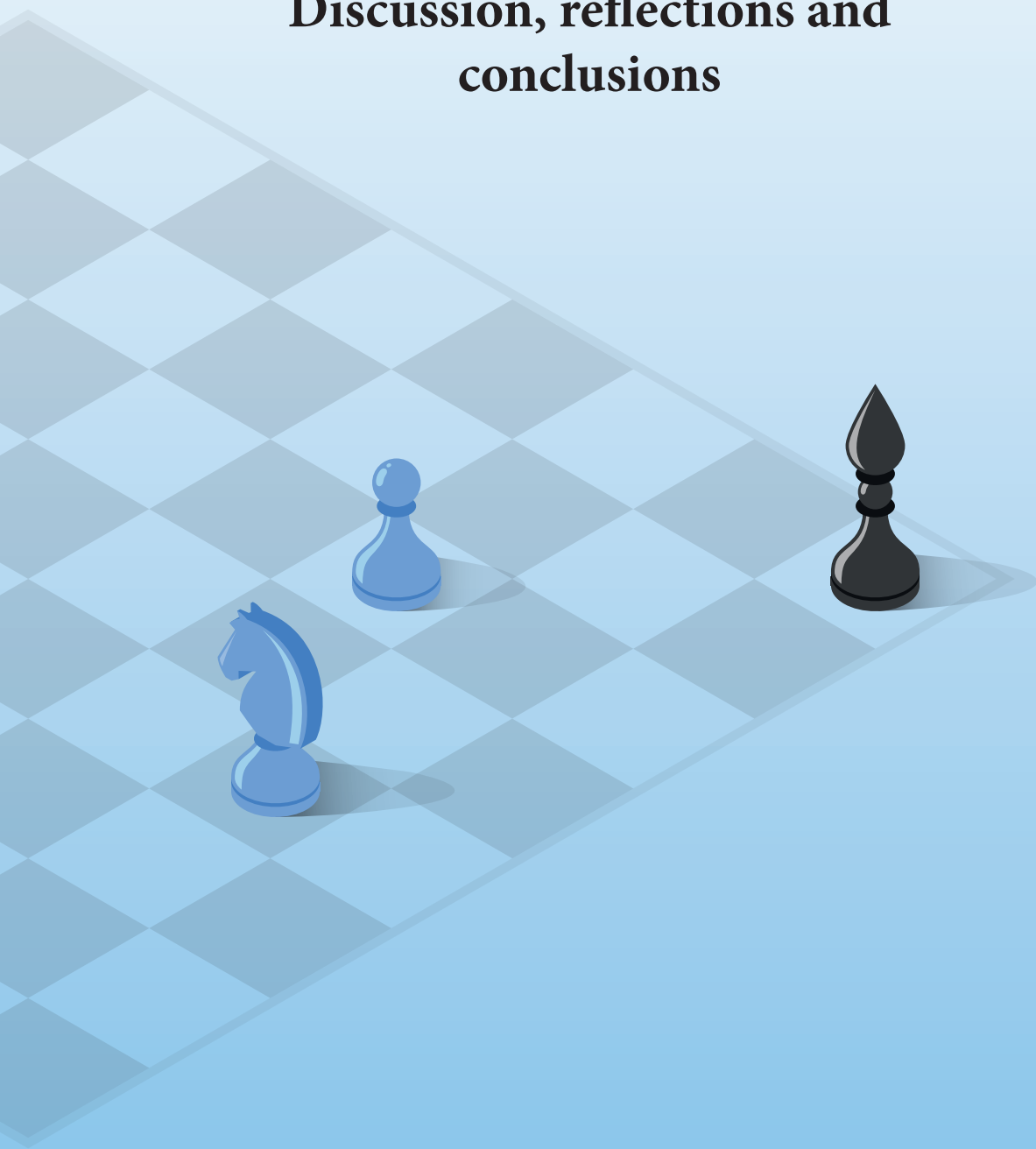
Acknowledgment

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6

Discussion, reflections and conclusions



This dissertation commenced with the puzzle that policy actors in South Asia experience regarding the negative effects of power in climate change adaptation (CCA) policy-making but are uncertain about how to address. I found that the current adaptation literature has neither sufficiently explained the role of power in CCA policy-making nor provided concrete recommendations to address the negative effects of power in the context of South Asia. As discussed in Chapter 1, I theorise power as an interactional phenomenon and operationalise the term ‘power interplay’ as an interaction between policy actors who may represent groups, offices, governments or nation-states tied in a certain relationship at a given juncture and deploy material and ideational resources to pursue their own ideas, interests and priorities during policy-making processes (influenced by Dahl, 1957; Hayward and Lukes, 2008; Dewulf et al., 2009; Rein and Schön, 1996).

Power interplay can exert several negative influences on CCA policy-making processes at different levels (Morrison et al., 2017; Huitema et al., 2016; Howlett, 2015; Burch et al., 2014; Sultana, 2014; Manuel-Navarrete, 2010). The scholarly literature has prominently deliberated the exclusion of communities and community representatives during CCA policy-making processes (Sovacool, 2018; Rao et al., 2017; Rahman and Giessen, 2017; Nagoda and Nightingale, 2017; Sultana and Thompson 2017). Ojha et al. (2016) and Nightingale (2017), for instance, show that powerful national and local politicians, external consultants and technocrats overpower local communities and their ideas. Further, the literature has discussed the influence of policy actors at national and international level. For example, decision making influenced by technocrats at national level and policy actors representing international climate change bodies such as the UNFCCC, research organisations and donor agencies shape the framing of ideas in CCA policies at national, regional and international level (Ojha et al., 2016; Hickmann, 2015; Tanner and Allouche, 2011).

These negative effects of power raised my interest in understanding the role of power in CCA policy-making and in determining ways to address the negative effects. To answer this puzzle, I formulated and addressed three research questions: (RQ 1) *How have climate change adaptation policies evolved in the last two decades in South Asia?* (RQ 2) *How does the power interplay between actors influence climate change adaptation policies in South Asia?* (RQ 3) *How can climate change adaptation policy actors deal with the negative effects of power?* Cases in Bangladesh, India and Nepal are analysed to understand the power interplay between policy actors within and across different levels.

In this final chapter, I present, reflect on and conclude my overall findings. Sections 6.1, 6.2 and 6.3 provide answers to the three research questions. In each of the three sections, I first answer the relevant research question and reflect on the key empirical findings, followed by theoretical contributions. In section 6.4, I reflect on the overall methodology and key limitations of this dissertation. In section 6.5, I discuss the future research directions on power in CCA, and section 6.6 shares the key policy recommendations for CCA policy actors in South Asia. Section 6.7 closes this dissertation with an overarching epilogue.

6.1 Evolving climate change adaptation policies in South Asia

Research question 1: *How have climate change adaptation policies evolved in the last two decades in South Asia?*

6.1.1 Answer

To formulate and implement CCA policies successfully, it is pertinent to understand how these policies have evolved. Understanding policy evolution can help in explaining the patterns and trends in policy-making in South Asia and how policy actors influence CCA policy-making processes. To answer how CCA policies have evolved in South Asia, I operationalised the concept of climate policy paradigms (CPPs) and underlying drivers that are responsible for changing CPPs over time. CPP refers to a comprehensive set of prevailing and institutionalized ideas and strategies of policy actors to respond to the impacts of climate change across levels and scales. With theoretical insights from public policy literature and historical institutionalism (Béland and Cox, 2013; Howlett, 2009; Hall, 1993), the concept of CPP was operationalised and applied to Bangladesh and Nepal.

Chapter 2 shows that CCA policies in Bangladesh have evolved from the policy paradigm of (i) Disaster Relief and Response, to (ii) Disaster Management, to (iii) CCA, to (iv) CCA mainstreaming. In the case of Nepal, the policy paradigms have shifted from (i) Disaster Relief and Response, to (ii) Disaster Management, to (iii) CCA, to (iv) Localised CCA and Disaster Risk Reduction (DRR). Chapter 2 concludes that the evolution of CPPs in Nepal and Bangladesh is similar to that of other countries of South Asia (Vij et al., 2017; Lwasa, 2015; Sud et al., 2015; Saito, 2013; Huq et al., 2004).

The analysis in Chapter 2 shows that Bangladesh has been making significant progress in terms of designing and implementing CCA policies, whereas Nepal can be considered a laggard in

the region. In Bangladesh, each CPP is supported with specific policy goals and financial instruments for on-the-ground implementation. The CPPs in Nepal are generally weaker in design (e.g. no clearly defined policy goals) and implementation (e.g. insufficient or no funds allocated to achieve policy goals). In both countries however, multiple CPPs co-exist and actors with a specific CPP compete with one another for resources to achieve their respective interests and priorities. For instance, in Bangladesh, policy actors espousing the DRR paradigm (Ministry of Food and Disaster Management) and the CCA paradigm (Ministry of Environment and Forests) compete for financial resources to fulfil their mandate and to implement their programmes and schemes. Similarly, in Nepal, policy actors such as local politicians (DRR paradigm) and representatives of international donor agencies (CCA paradigm) compete with one another.

The analysis in Chapter 2 also reports four key exogenous and endogenous drivers responsible for shifting CPPs: unstable political situation, lack of financial support, the influence of national and international non-governmental organisations and changing global climate policy frameworks. My research shows that these underlying drivers and processes of policy change are largely political in nature (Vij et al., 2018). In Bangladesh, the heavy involvement of academic and civil society actors during the political instability period (2006–2008) brought a strong focus on climate change, particularly towards CCA. The political actors involved in governing the country were sensitive to climate issues in Bangladesh and saw this as an opportunity to make Bangladesh a pioneer in CCA, whereas in Nepal, due to prolonged political turmoil (1995–2006), climate policy institutions remained weak. With the ongoing democratisation process of Nepal, politicians and civil society actors are emphasising issues such as protecting human rights, deliberating on constitution writing and maintaining peace rather than climate action and environmental activism.

6.1.2 Theoretical contribution(s)

This sub-section discusses the theoretical contribution of the CPP framework to the adaptation literature, especially the policy change element of the framework. Public policy scholars such as Béland and Cox (2013), Mahoney and Thelen (2010), Howlett (2009) and Hall (1993) have introduced and developed the concept of policy paradigms in detail, showing how policy change occurs in the context of developed countries. More recent studies like Kern et al. (2014), Daigneault (2014), Hogan and Howlett (2015) and Skogstad (2011) have discussed the concept of policy paradigms in the context of climate change. For example, Kern et al. (2014) measure

and explain changes in energy policies in the UK between 2000 and 2011. However, few studies have looked at CPP change in South Asia systematically, or studies have used incomplete theoretical frameworks to explain changes in climate policies (Bodansky and Rajamani, 2015; Dubash, 2013; Saito, 2012). For instance, Mayrhofer and Gupta (2016) and Dubash (2013) use only framing to explain the shift from an equity to a co-benefit's paradigm in India, whereas I argue that this is merely one of several dimensions to be considered. Moreover, in the case of Bangladesh and Nepal, no such analysis has been conducted to explain the evolution of climate policies in the last two decades. CCA scholars have only elaborated the evolution of specific paradigms to highlight the policy and on-the-ground implementation gaps (Pistorius, 2012; Ayers and Dodman, 2010). Neither have these studies explained the drivers responsible for the observed policy changes.

In this dissertation, CPPs have proved to be a useful theoretical framework with which to explain policy change and understand the evolution of policy actors' underlying ideas and interests. Building on institutional and political agency theories of policy change, I developed a framework that allows the identification of policy changes by looking at four indicators: (1) framing, (2) policy goals, (3) meso-level areas and (4) financial policy instruments, see Chapter 2. Changes in these four indicators imply a shift in CPP between two time periods and are indications of a CPP shift. The operationalised CPP framework is a useful analytical tool to capture policy change patterns and associated underlying drivers in the domain of climate change adaptation in South Asia. The framework accounts for how ideas and strategies become embedded in an institutionally complex environment for CCA policy-making and how they can be replicated in other contexts and sectors to understand and explain policy change.

6.2 Power interplay between policy actors at different levels

Research question 2: *How does the power interplay between actors influence climate change adaptation policies in South Asia?*

6.2.1 Answer

CCA policies in South Asia are a result of power interplay between policy actors. CCA policy-making research has a strong focus on the outputs of policy-making, neglecting to capture the interactions of power interplay between actors. To explain interactions and struggles between policy actors, I developed a power interplay framework and applied it in two ongoing policy-

making cases. The framework in Chapters 3 and 4 is theorised as an interactional and relational phenomenon, where policy actors interact and struggle with one another to achieve their individual or collective interests and priorities. How actors engage in power interplay is influenced by their climate policy paradigm, see Chapter 2. Policy actors deploy material and ideational resources to influence one another to implement their choice of CPP. Material resources refer to tangible resources in the form of finance, human resources, military strength or sometimes intangible resources such as a strong political position or legitimacy (Orsini, 2013; Fuchs and Glaab, 2011; Arts, 2000). Material resources are used by powerful actors for agenda-setting or directly influencing the decision-making process. Ideational resources refer to soft resources such as the ability to utilise ideas, knowledge and narratives to influence policy processes. Ideational resources are used to manipulate and influence the choices of action in policy-making processes (Carstensen and Schmidt, 2016). In Chapters 3 and 4, I show empirically how policy actors deploy different material and ideational resources to pursue their own or sometimes shared interests.

The power interplay framework identified various policy actors involved in the policy-making process and their role in influencing CCA policies by the way in which they deploy material and ideational resources. Chapter 3 reports that the interactions between process facilitators (representing donor agencies and international non-governmental organisations) and local politicians created a power interplay, eventually influencing the local adaptation plans in Nepal. Facilitators used authority (material resource), knowledge on adaptation (ideational resource) and the prior preparation of the facilitation process (ideational resource) to influence local politicians during policy meetings. In response, the local politicians used authority (material resource) and local and contextual knowledge (ideational resource) to influence the facilitators. Chapter 3 shows that overpowering by facilitators resulted in short-termism in local adaptation plans. As the role of facilitators is socially acknowledged and legitimate (material resource), they are relatively more powerful and can convincingly overpower local politicians during CCA policy-making processes. Lieshout et al. (2017) and Hajer (2005) have noted that facilitators or other policy actors in a position to control and regulate the interactions during the policy-making process can influence the nature of the policy.

Similarly, Chapter 4 shows that policy actors (serving and retired bureaucrats, academics and civil society actors) in India use geographical location, economic growth and military strength (material resources) against actors in Bangladesh to delay the decision making for water sharing in the Brahmaputra River basin. In response, policy actors in Bangladesh use India's

bilateralism principle, past negative hegemonic negotiation experiences and lack of research and knowledge on the basin (ideational resources) to delay the decision making. The analysis in Chapter 4 shows that both countries deploy material and ideational resources to purposefully maintain the status quo and delay decision making during policy-making processes.

In answering RQ2, the analysis in Chapters 3 and 4 resulted in three important lessons on the role of power in CCA policy-making in South Asia.

First, local policy actors, such as local politicians, community-based organisations, women and the elderly, have fewer material and ideational resources and thus are in a weaker position during power interplay. The analysis in Chapter 3 reports that, during the interactions in policy meetings, local policy actors' ideas were overpowered by facilitators representing donor agencies, think-tanks and international non-governmental organisations. Facilitators used authority (material resource) and knowledge on local adaptation plans of action (LAPA) design processes (ideational resource) in different situations to overpower other policy actors. Further, Chapter 3 shows that facilitators used different material and ideational resources to purposively neglect local communities, particularly women, in the selection of the design team that was to be involved in preparing local adaptation plans (see section 3.4).

Second, CCA policies aim to influence the governance and redistribution of resources among weak policy actors in South Asia, but policy-making processes can reinforce power imbalances. For instance, Chapter 3 shows that the short-term vision of local adaptation planning processes and the short duration of projects funded by international donor agencies render it more difficult to influence the governance and distribution of resources. Similarly, Staddon et al. (2015) noted that civil society actors and communities want to implement long-term CCA measures in Nepal, but the short duration of local adaptation projects restricts their actions. Such CCA policy designs favour the production of quick and measurable results, instead of aiming for long-term policy measures for transformational change. The choice of short-term rather than long-term measures is also reflected in the competition between actors from different CPPs. For instance, in Chapter 4, I show that certain policy actors support DRR and development measures, which are generally short-term and tangible in nature, rather than CCA measures such as capacity building, which are generally intangible and whose benefits are not immediately visible.

Third, serving bureaucrats and other policy actors in Bangladesh and India use material and ideational resources to depoliticise the Brahmaputra basin discussions. The policy actors shield

the Brahmaputra River from the highest level of political deliberation and avoid consultation on topics such as joint research on CCA and joint flood management, see Chapter 4. For instance, during the Joint Rivers Commission (JRC) meetings, policy actors only share data and do not discuss issues on water sharing and flood management. Since 2013, no ministerial or secretarial level JRC meetings have been held between the two countries. The tactic of not conducting ministerial or secretarial level meetings is deployed in an effort to depoliticise the Brahmaputra basin, reduce the political transaction costs, and avoid conflicts between riparian states (Burnham, 2001). India and Bangladesh have taken a few measures such as inland water navigation and improved trade routes on the Brahmaputra River. However, these measures remain depoliticised, postponing controversial issues such as water sharing, joint flood management and joint research on suitable adaptation measures at basin level (Menga and Swyngedouw, 2018; Barua et al., 2018).

6.2.2 Theoretical contribution(s)

Two main theoretical contributions relate to the second research question: (1) theorising the dynamic interactions between actors and their influence on CCA policy-making and (2) explaining decision making in CCA governance and the underlying challenges.

First, I argue that the existing CCA literature lacks a conceptual and empirical grounding regarding how dynamic power interplay influences adaptation policy-making. Various CCA studies in South Asia emphasise that institutions and organisations struggle over authority and control (Nightingale, 2017; Ojha et al., 2016; Rahman et al., 2016). However, these studies do not sufficiently explain the process of actors' dynamic interactions and influence on CCA policy-making. The CCA literature is missing a framework that can provide insights into how actors use different types of resources in different situations to influence policy-making processes. Given this theoretical gap, I have developed a power interplay framework to explain how actors interact and show empirically the influence of their interplay on CCA policies.

In Chapters 3 and 4, the power interplay framework is operationalised using material resources and ideational resources. In the framework, resources are linked to actors in a given situation and at a particular juncture, offering more detailed insights into the nuances of their interactions. Resources are the building blocks of the interplay, and analysis of their use provides a way to assess how an actor deploys a specific resource or resources to influence others (or not). For instance, an actor can use positional authority (material resource) to exclude certain actors from the policy-making process, eventually influencing the outcomes of a policy-

making event (Purdy, 2012; Torfing et al., 2012). The developed framework demonstrates the flexibility to identify material and ideational resources in different empirical contexts and on different scales, see Chapters 3 and 4.

Second, the power interplay framework can contribute to the literature on CCA decision making, particularly explaining the nuances of policy-related challenges to CCA governance (Biesbroek et al., 2015). Recent scholarship has identified numerous challenges that emerge during the process of planning, implementation and monitoring CCA projects and programmes, often referred to as barriers to CCA (Moser and Ekstrom, 2010; Jones and Boyd, 2011; Eisenack et al., 2014). Such studies have drawn up an inventory of barriers at play, occasionally making suggestions on how to overcome them (Biesbroek et al., 2014). Recent critiques have argued that such studies are a useful starting point, but they do not explain why and how these barriers emerge (Biesbroek et al., 2014; Biesbroek et al., 2015; Wellstead et al., 2018). Without an understanding of such underlying processes, it is difficult to comprehend the complex and dynamic decision-making process in CCA policy-making. Moreover, unless what causes these barriers is understood, it is difficult to address the barriers and make correct decisions.

The power interplay framework developed in this dissertation allows for opening up the black box of adaptation decision making and emphasises the importance of power in decision making. In Chapter 4, I specifically operationalise the concept of non-decision making through the power interplay framework to explain underlying processes that create political barriers in CCA policy-making. The framework helps to explain how policy actors deploy material and ideational resources to shape and reinforce the institutions and procedures that characterise decision making and non-decision making (Dahl, 1957; Bachrach and Baratz, 1975). Chapter 4 characterises purposefully maintaining the status quo as non-decision making. Although the concept of non-decision making was developed in the 1960s, its theoretical and empirical advancement has remained limited because of the inherently covert nature of the concept (Bachrach and Baratz, 1975, pp. 902–903). The power interplay framework has the potential to revitalise and advance the debate by including the use of material and ideational resources. For example, resources can be linked to specific actors and to the way in which they use them in different situations (covertly or openly). The framework could be useful for explaining the dynamics and tactics deployed by powerful policy actors to marginalise other actors' interests and purposefully maintain the status quo. Such an understanding could be used to remove policy deadlocks or barriers to CCA governance in power-loaded contexts.

6.3 Considerations and practices to deal with the negative effects of power interplay

Research question 3: *How can climate change adaptation policy actors deal with the negative effects of power?*

6.3.1 Answer

To design and implement CCA policies effectively, it is important to deal with the negative effects of power. The literature has shown that the negative effects of power influence CCA policy-making at different scales of governance (Sovacool, 2018; Sultana and Thompson 2017; Ojha et al., 2016). This dissertation shows that there is limited systematic knowledge and understanding of the manifestations of power that create such negative effects and, more importantly, how policy actors can deal with them. In recent decades however, other disciplines in social science have analysed and explored various ways to address power. To integrate this knowledge, I adopted a systematic review methodology and determined power-sensitive design principles (PDPs) from other social science disciplines. PDPs are sets of collected lessons learnt that can be used by policy actors to address the negative effects of power during the policy-making process.

The four PDPs are as follows. (1) The creation of safe spaces for continuous dialogue, interaction and raising concerns about future planning; safe space can be utilised by policy actors to improve the inclusion of less powerful actors, such as community members and women, and will allow weak policy actors to raise their voices. (2) A shift from knowledge transfer to knowledge co-creation; policy actors can adopt co-creation to reduce the domination of (scientific) knowledge over (local) knowledge in order to allow weaker policy actors to raise their concerns. Policy actors may utilise a safe space for the co-creation of knowledge. (3) Democratic devolution in a multi-cultural and multi-ethnic environment to support long-term policy-making and implementation; devolution will allow local policy actors to become involved in the policy-making process and have more say in administrative and financial reforms. (4) Mechanisms to build capacity, communication and negotiation skills can help to reduce the influence of state and private actors' knowledge and authority.

The proposed four PDPs are specifically focused on reducing two negative effects – exclusion of marginalised policy actors and short-term thinking in the CCA policy-making process (discussed in Chapters 3 and 4). The two negative effects of power are also explained using the power interplay framework, elaborating how certain powerful actors deploy various material and ideational resources to exclude other actors and how policy actors influence participation

and decision making in policy-making processes. The four PDPs are interdependent, and policy actors can employ them collectively to influence the design of CCA policy-making processes. Policy actors can use PDPs to change the policy-making rules, influence policy actors' roles and responsibilities, alter the ways in which actors interact during the policy-making process and amend the ways in which decisions are made. PDPs can thus help to improve the quality of participation during the process and intensify the discussion between the different policy actors involved (Edelenbos, 1999).

6.3.2 Theoretical contribution(s)

My findings contribute to the existing design principle literature and the emerging CCA policy-making literature. Taking an institutional perspective, Elinor Ostrom determined eight design principles to address common pool resource governance challenges in South Asia (especially in Nepal and India). Singleton (2017) and Wall (2014) argue that her work was too institutionally focused and that power as a concept remains underdeveloped, presenting an apolitical way of solving complex problems. Over the years, Ostrom's work has been criticised for neglecting the behaviour, interests and power struggles between actors (Wall, 2014; Cox et al., 2010), although she recognised the importance of polycentric governance (Singleton, 2017; Harvey, 2012).

In Chapter 5, I argue that the PDPs presented in this dissertation are power-sensitive, as they do consider the power imbalances and the struggles of ideas, interests and priorities among actors that create negative effects in policy-making. Policy actors can use the PDPs to influence the design of the policy-making process, overcoming the authority and domination of certain actors. The PDPs are based on two assumptions. First, power interplay between policy actors results from the deployment of a variety of material and ideational resources in different situations and contexts (in this case, South Asia). Second, the proposed PDPs are determined on the conjecture that cooperation between actors is not always voluntary and can be achieved by creating relevant opportunities and pressure to overpower individual interests and priorities. Therefore, the proposed PDPs make an important contribution to the emerging CCA policy-making literature, particularly in the context of South Asia, where certain policy actors are seeking to reduce the negative effects of power.

6.4 Methodology and limitations

6.4.1 Reflections on research design and methods

In this dissertation, I have studied the power interplay in CCA policy-making in South Asia. In this section, I reflect critically on the research design and methods used. This is followed by a discussion on limitations identified during the research trajectory.

For the purpose of this dissertation, I chose a case study design to study power interplay comprehensively. The case study design provides the flexibility to analyse the interlinkages between empirical data and theoretical constructs, comparing different cases, domains and time periods (Dubois and Gadde, 2002). The complex policy processes and the need for a detailed understanding of the cases to analyse power interplay made me choose a case study method (Thomas, 2011; Gerring, 2004). For example, Chapter 2 elaborates on various drivers that influence policy-making processes and how political variables and actor-centric power is key to CCA policy-making in South Asia. Similarly, Chapters 3 and 4 present a detailed portrayal of power interplay, where different policy actors deploy material and ideational resources at different levels and in different cases (countries).

Using multiples theories and methods to understand and explain the CCA policy-making process and power interplay has been a thoughtful choice. Although epistemological pluralism might give an impression of a lack of consistency and specificity to a certain discipline, it has helped to bring more focus, richness and inclusiveness to exploring the phenomenon of power interplay (Suri, 2013; Miller et al., 2008; Healy, 2003). Every theory is fallible, and I feel strongly that there is no single best framework that can explain a complex phenomenon such as power interplay. Therefore, and to improve the validity of my findings, I have combined different ontological and epistemological assumptions while operationalising the power interplay framework for CCA policy-making. Combining knowledge from different disciplines, including political science, public policy, public administration and international relations, allowed me to carefully select certain aspects, theorisations and definitions from them to answer my puzzle of unpacking the power interplay in CCA policy-making in South Asia.

The choice of a multi-methods approach increases the validity of this research. This dissertation adopts various qualitative methods to analyse power interplay in the case studies described in Chapters 2, 3, 4 and 5. In each chapter, I have given importance to the way in which methods of data collection, analysis and limitations are explained and systematically presented. Methods are elaborately discussed in the chapters and, whenever required, supplementary materials are

introduced to provide further details. Further, the use of multi-methods helped in the triangulation of the findings. For example, the material and ideational resources presented in Chapter 3 are identified by the interactional framing approach, allowing me to capture how policy actors negotiate meanings, to analyse the dynamic interactions between policy actors when they are preparing local adaptation plans and to explain how diverse actors understand CCA in distinct ways, enhancing my knowledge about alternative framing and underlying processes (Dewulf et al., 2009). Subsequently, these material and ideational resources are also identified by the interpretive approach and systematic literature review in Chapters 4 and 5. I adopted the interpretive epistemology to make sense of how climate policy paradigms emerged in the policy documents (Chapter 2) and of the way in which policy actors purposively maintained the status quo in the transboundary dialogue process (Chapter 4).

The interpretive approach helped me to comprehend the complex phenomenon of policy change and power interplay at national and regional level. An interpretive approach was useful as it allowed me to study complex issues such as power interplay in greater detail in a specific context (Hunt, 2009). The approach helped to capture behavioural aspects of policy actors by conducting in-depth interviews to describe how and why power interplay influences policy-making processes and policies in South Asia.

6.4.2 Limitations

In the empirical chapters, various methodological limitations have already been discussed. This section elaborates on two overarching limitations and how I dealt with them.

First, this dissertation aimed to explain power interplay between policy actors. As a practical limitation, I could not include interviews with actors from the political arena, i.e. serving ministers or influential political party members. The inclusion of such interviews would have made the power interplay analysis richer by reflecting on the way in which political actors at the highest level understand and prioritise CCA. My attempts to interview certain influential political actors either were declined or very limited time was allotted to conduct in-depth interviews. The analysis in this research includes interviews with policy actors representing the highest level of bureaucracy and influential members of civil society and academia directly involved in CCA policy-making. I also increased the number of interviews (n=63) and the variety of policy actors to make the analysis robust. In fact, for Chapter 4, I also included the dialogue meeting reports (n=14) to validate and increase the reliability of my interviews.

Second, the research questions are framed around South Asia, a region comprising eight countries. However, I considered cases from only three countries, for two reasons. First, power being a sensitive topic to research, obtaining research permits and access to ongoing policy-making cases and actors in South Asian countries is extremely time-consuming and administratively challenging. I exploited my prior professional network to gain access to ongoing policy-making cases in India, Nepal and Bangladesh. Moreover, this dissertation is supported by HI-AWARE¹⁵, where influential CCA researchers and policy actors from the three countries are working at different levels. As I wanted to capture the dynamic power interplay during policy-making processes, HI-AWARE supported me in gaining access to LAPA meetings in Nepal. With such support in the region, my research findings came closer to reality and improved the overall quality of the analysis. Second, the three countries are experiencing shared climate change impacts because of their shared transboundary landscape such as rivers (Ganges, Brahmaputra and others) and mountains (Hindu-Kush Himalayas). The choice of these three countries allowed me to select a transboundary case and conduct analysis on how power influences CCA policies at regional level. However, the implication of this choice is that the findings of this dissertation cannot easily be upscaled to South Asia as my research has demonstrated that contextual conditions are of critical importance for studying power interplay. Nonetheless, the answers to my research questions imply that there are some similarities with other countries in South Asia. For instance, policy paradigms reported in Bangladesh and Nepal are similar to those in India and Pakistan.

6.5 Reflections on future research

Climate change adaptation has made its mark as a distinct research field in the social sciences (Clayton, 2015). The increased deliberation on adaptation can be explained by the rising number of scientific publications on CCA policy and practice, various conferences and workshops organised at different levels in developed and developing countries and allocation of finance to implement CCA plans and policies. However, the topic of power and CCA

¹⁵ Himalayan Adaptation, Water and Resilience (HI-AWARE) Research on Glacier and Snowpack Dependent River Basins for Improving Livelihoods is one of the four consortia of the Collaborative Adaptation Research Initiative in Africa and Asia (CARIAS). It conducts research and pilot interventions, capacity building and policy engagement on climate resilience and adaptation in the mountains and flood plains of the Indus, Ganges and Brahmaputra river basins. Its overall goal is to contribute to increasing the climate resilience and adaptive capacities of the poor and vulnerable women, men and children living in these river basins, by using the findings from research and pilot intervention outcomes to influence policy and practice that will improve their livelihoods.

interlinkages is still under-researched and requires special emphasis. In each research chapter of this dissertation, several specific suggestions are made for future research. This section reflects on three overarching directions of further research: (1) extend the framework to study power interplay with a focus on institutions in CCA policy-making processes; (2) explain the role of power in CCA implementation in South Asia; (3) determine PDPs for manifestations of power such as social and historical intersectionalities and power imbalances created by policy processes.

First, in this dissertation, I have studied power interplay between actors in two specific policy cases. For this, I developed a power interplay framework, which relies on analysing dynamic interactions between actors and their use of material and ideational resources to influence policy-making processes. However, the framework cannot sufficiently capture hidden institutional and structural norms and practices that also influence policy-making processes (but see Chapter 2 on the role of CPPs), particularly because of the actor-centric nature of the framework and the emphasis on making sense of what happens between actors during policy-making processes. Future work could further strengthen the role of institutionalised norms and practices, for example using Gaventa's work on 'hidden and invisible power' (see Hathaway, 2016). Gaventa's (2006) *Powercube* reconceptualises the three dimensions of power, based on the original work of Lukes (1975, 2005) – visible, hidden and invisible power. The hidden and invisible power dimensions can help to capture both covert institutional practices or norms in the power interplay framework and the institutionalised manipulations that occur behind the scenes, potentially strengthening and enriching the power interplay framework.

Second, researchers argue that CCA policy-making is influenced by existing power relations and socio-political hierarchies, rather than essentially challenging existing hierarchies and negative power relations. My research has shown that certain policy actors (local political actors, civil society actors, farmers and women) find the policy-making process a waste of time, as they are unable to influence either the process or the decisions made at meetings. Although this is already captured in this dissertation, it is worth mentioning that power has a negative influence on the CCA implementation process too. On-the-ground CCA programmes and projects are often designed to challenge existing governance arrangements, socio-political nuances and power relations and to improve the adaptive capacity of vulnerable communities. However, the politics in implementation processes often render these on-the-ground projects unsuccessful. Hence, I argue that we need more dedicated research to investigate how existing

power relations and socio-political hierarchies influence the on-the-ground implementation of CCA programmes.

Third and last, it is worth extending the work on PDPs. The study in Chapter 5, in which I define four PDPs, was inspired by Elinor Ostrom's seminal work. However, although I have looked at only two manifestations of power, I recognise that there are other important ones, such as social and historical intersectionalities and power imbalances created by policy processes, that need to be investigated. I suggest determining PDPs for these two important manifestations to offer relevant solutions for power-loaded CCA policy-making and implementation. As explained in Chapter 5, the two suggested manifestations of power influence policy-making processes at local level, where communities with different cultural and societal backgrounds interact with one another during such processes. Community adaptation strategies are deeply rooted in class and ethnic hierarchies that trap the poor and the powerless and consequently increase human insecurity (Stock et al., 2019). Determining more PDPs offers a larger portfolio of options for policy actors to deal with the negative effects of power.

6.6 Key policy recommendations

Based on the research in this dissertation, several policy recommendations are made in individual chapters. In this section, I discuss three overarching recommendations that can be adopted as guiding principles for preparing future and currently prepared CCA policies.

First, from my research, I argue that actors such as donor agencies and international non-governmental organisations should recognise that short-term thinking in CCA policies is influenced by actors' power interplay. South Asian CCA policies are short-term in nature, and strategies are designed to achieve tangible results, generally overlooking the entirety and future impacts of climate change (Vij et al., 2017). The preparation of CCA policies and the implementation of adaptation projects in South Asia are largely funded and implemented by donors, international non-governmental organisations and consultant organisations. During the preparation of CCA policies, powerful policy actors deploy material and ideational resources to exclude others and their interests and ideas, and they tend to exclude ideas on long-term thinking in order to achieve individual or collective – short-term – interests (Meuleman and Jaap, 2010). It is important to increase awareness of the influence of power interplay on CCA policies to ensure timely and meaningful adaptation actions.

Second, CCA policies in South Asia tend to focus on the local and national level, but, from my research, I argue that the transboundary level should receive more attention. Although countries in South Asia share various transboundary resources such as the Hindu Kush Himalayas and related river basins, there is no emphasis on transboundary level adaptation measures between countries such as Bangladesh, India and Nepal. In fact, these shared transboundary natural resources are part of the reason for deconstructive power interplay between countries in South Asia, particularly because of historical rivalries, border-related issues, colonial conflicts and countries' geographical position. Such power interplay particularly makes it difficult to bring all actors together and recognise the benefits of transboundary level adaptation. Emphasis should be placed on the positive dimensions of transboundary collaborations, including political and economic benefits. One way of achieving this is to focus on adaptation strategies that can bring common benefits to the countries sharing a common river basin. I, therefore, recommend that countries in South Asia start incorporating transboundary level research on climate change impacts and adaptation measures in CCA policies to reduce the negative effects of power and gradually start building from there.

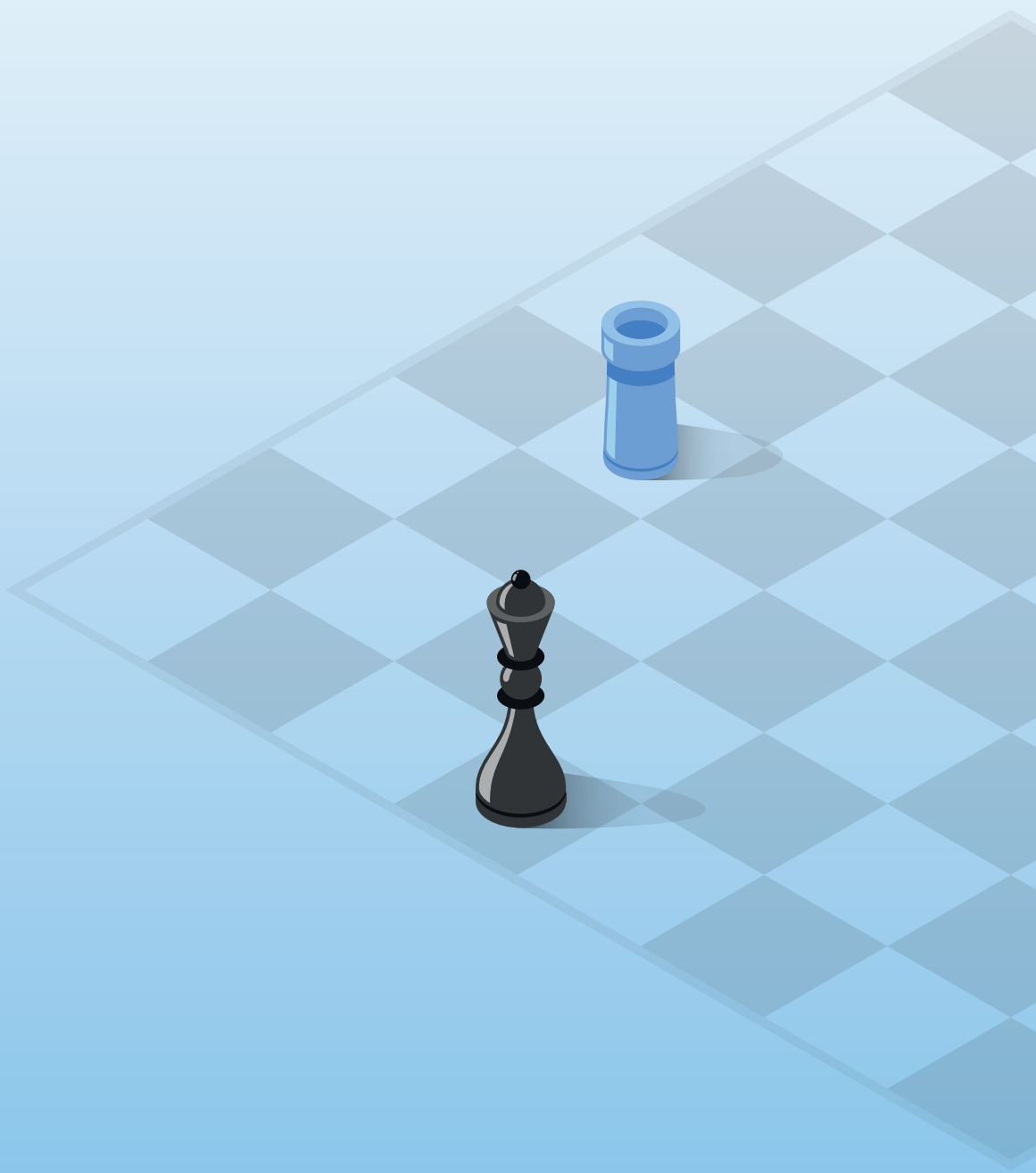
Lastly, the proposed PDPs can be used by policy actors to reduce the negative effects of power during decision making in different contexts and at different levels. They can act as guiding principles to shape decision making at different levels of policy-making. The PDPs have the potential to offer relevant context-specific strategies and resources by making each policy-making step more adaptive and reflexive, considering how actors are included/excluded or how specific knowledge is used for domination. The PDPs can also support in building the capacity of weak policy actors, particularly to enhance negotiation skills to raise their voice in decision making. Further, the proposed PDPs can be used by various community-based organisations and civil society actors interested in reducing the negative effects of power during local planning exercises. The proposed PDPs can effectively neutralise power interplay based on caste, class and gender and make decision making more inclusive.

6.7 Going back to the puzzle

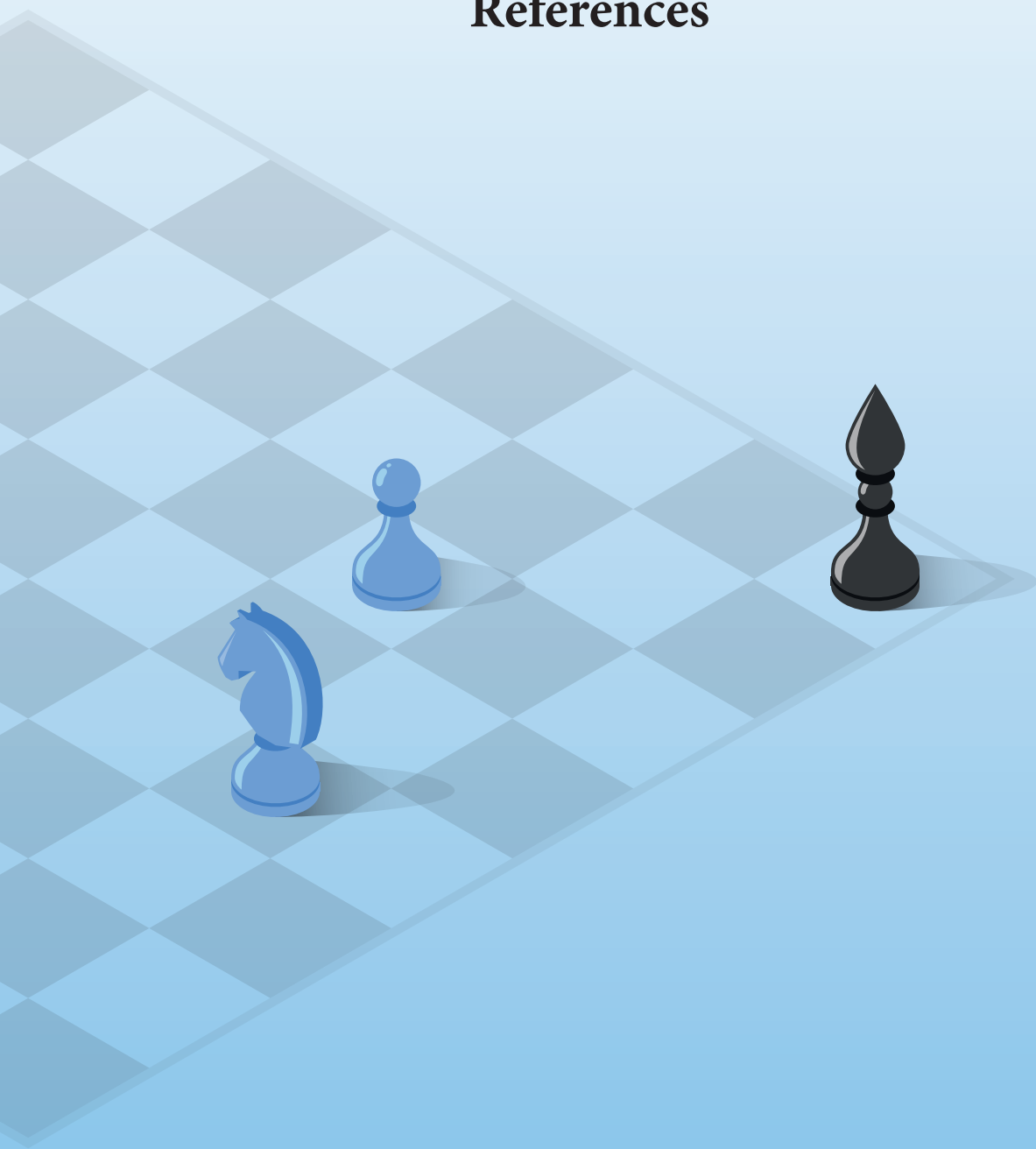
This dissertation started in Chapter 1 with the puzzle whereby policy actors in South Asia experience power-related challenges in CCA policy-making but are uncertain about how to address the negatives effects of power. This final section brings me back to the puzzle.

My dissertation has shown that power and CCA policy-making are inherently complex. Policy actors continuously interact and challenge one another in a power-loaded policy environment, particularly when the stakes are high. Even though this research has shed light on the intricacies of power and power interplay and possible directions for dealing with these, I realise that there is no panacea for all power-related challenges. Instead, I have come to realise that the best way to deal with negative effects of power is to take precautionary steps in designing policy processes, and, when negative effects emerge, policy actors can recognise, accept and deal with them in a given context. Ignoring power interplay as an inherent part of policy-making will not help policy actors to make decisions.

By showing these processes empirically and reflecting on them theoretically, I have attempted to bring a stronger focus on power issues, unravelling a large part of the puzzle in the CCA policy-making process in South Asia. Some of the theories, concepts and methods discussed in this dissertation, including the use of CPPs and the power interplay framework, can play a role in further unpacking the intricacies of CCA policy-making processes in South Asia.



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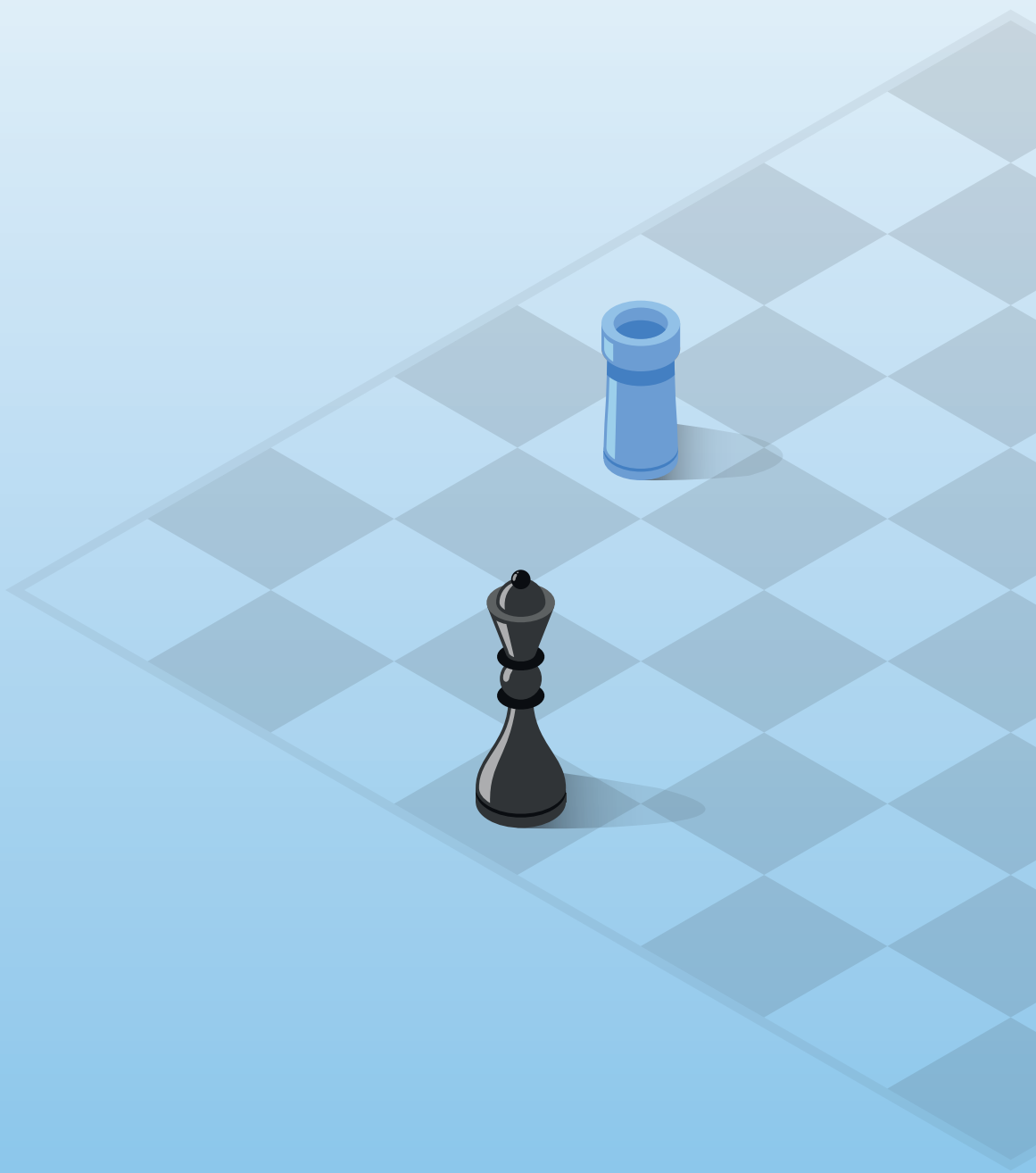
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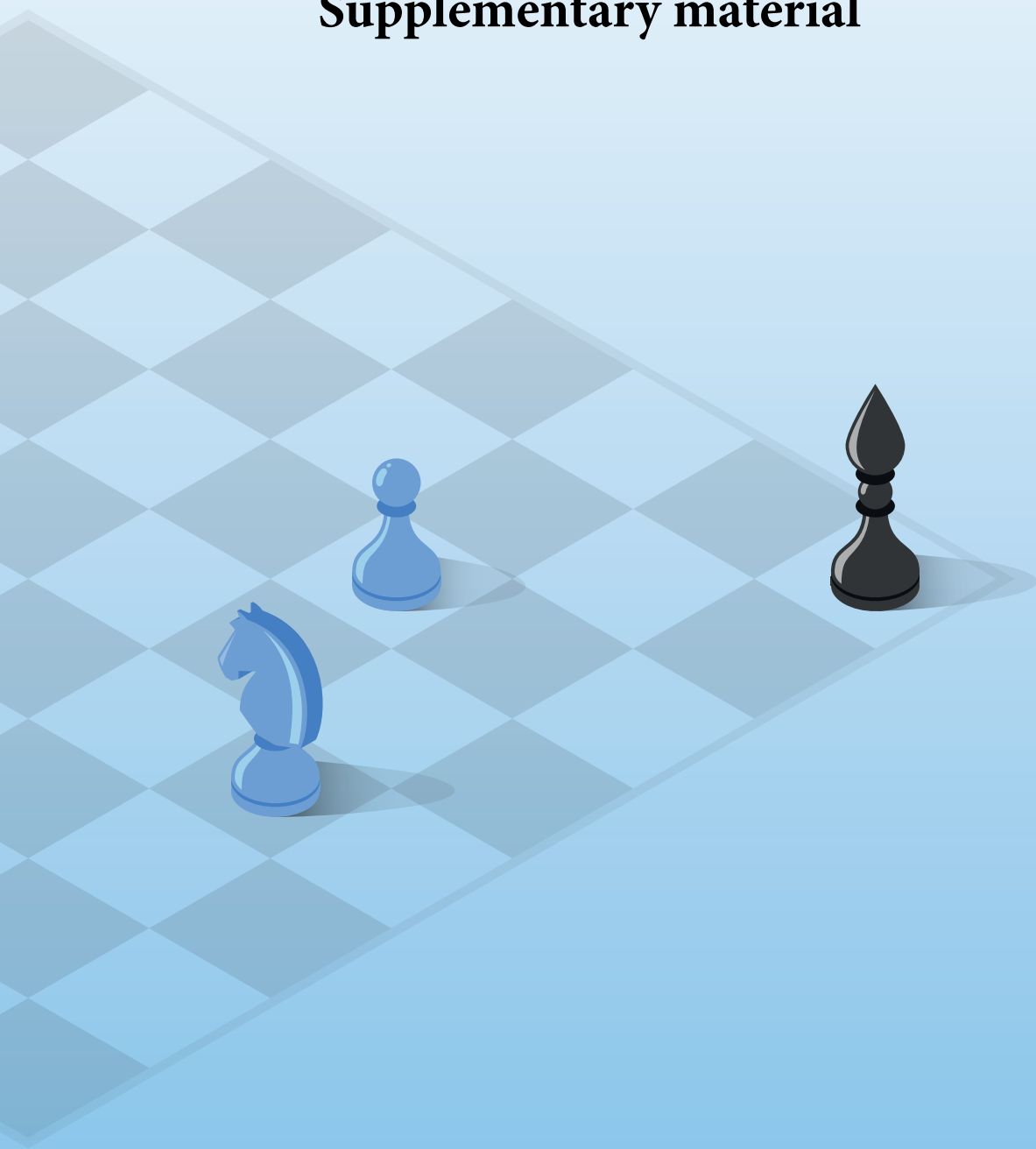
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Supplementary material



Supplementary Material - A

Belonging to chapter 2 - Changing climate policy paradigms in Bangladesh and Nepal

Bangladesh Case

1. Vulnerability to climate change

Bangladesh is regarded as one of the most vulnerable countries of the world (MoEF, 2009). The climatic vulnerability of the country can be attributed, in part, to the country's geographic position and its geomorphic conditions. The country is less than five meters above sea level, and about one-fourth of the country is flooded in an average year (MoEF, 2009). Bangladesh was struck by 154 cyclones between 1877 and 1995 – a rate of more than one cyclone per year. Moreover, Bangladesh was also subjected to 174 separate natural disasters from 1974 to 2003 (Reid, Simms, & Johnson, 2007). Bangladesh faced eight major floods between 1984 and 2017. In 1998, nearly 68% of the country was inundated, affecting 30 million people with 1100 deaths. Economic losses attributed to this flooding event were estimated to be US \$2.8 billion (MoEF, 2009). In Bangladesh, the coastal areas are considered to be a zone of multiple vulnerabilities, exposed to tropical cyclones, storm surges, and coastal flooding. Extreme weather events make coastal communities vulnerable as changes in the environment and natural resource base negatively influence their livelihoods and well-being (Momtaz and Shameem, 2015).

Adaptation to climate change, therefore, has emerged as a necessary policy response to address the impacts of climate change on social well-being and the environment. To manage climate change, Bangladesh has made progress in terms of climate policy development, institutional change, funding mechanisms, and implementation of various interventions. However, there is little information on how the policies have evolved in the last 20 years and what are the underlying ideas and strategies that shaped the evolution of this policy. This gap in knowledge is interesting to research.

2. Development Plans - Five-year-plan (FYPs)

In Bangladesh, the Five-year-plan (FYPs) and the poverty reduction strategy plan (PRSPs) are prepared as periodic development plans for every five years and three years respectively. These

planning documents cover a wide range of issues in different sectors, relevant to a country's development and poverty reduction. Three PRSPs were prepared between 2003-2010.

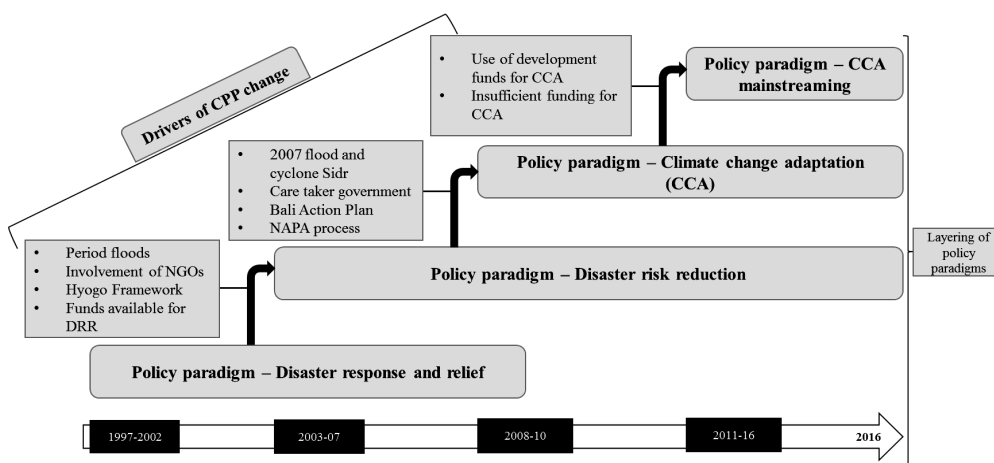


Figure A: Drivers of change and mode to characterize change

Nepal Case

1. Vulnerability to climate change

Nepal lies between India and China, accounting for 20% of the area of the Himalayan biodiversity hotspot (Mittermeier et al., 2004). The country has experienced consistent warming over the last few decades, with an annual rate of 0.04–0.06°C (Ministry of Environment, 2010). There are three general types of climate-related hazards that typically affect Nepal: 1) hydrological hazards such as storms, cloudbursts, floods, landslides, mudflows, and avalanches; 2) climatologic hazards such as droughts and related hazards such as extreme temperatures and wildfires; 3) wind and thunderstorms and related disasters like lightning (Pathak, Gajurel, & Mool, 2010). A recent analysis of historical disaster data shows that the frequency and intensity of disaster events are increasing in Nepal (Aryal, 2012). Apart from these extreme events, there is high variation in climate with a subtropical climate in the lowland Tarai and alpine climate in the High Mountain region (Marahatta et al., 2009). The average precipitation ranges from around 290 millimeters per year in the Trans-Himalayas region to more than 3200 millimeters per year in the southern slopes of the Annapurna Himalayas.

As a signatory to the UNFCCC, Kyoto Protocol and Nagoya Protocol, Nepal has identified immediate adaptation needs through the National Adaptation Program of Action (NAPA, 2010), which assesses climate-induced vulnerability. The NAPA emphasizes community-based adaptation planning, knowledge, and practices of local communities for climate change adaptation to enable the country to respond to the challenges of climate change. Formulation of LAPA is guided by the National Framework for LAPA 2011. The LAPA follows a bottom-up approach of planning with active involvement of communities and local-level actors who are potential victims of CC impacts. The NAPA framework has identified broad sectors as its priority areas for climate assessment, among which *biodiversity and ecosystem management* is one of the major components. The formulation of NAPA and LAPA should be viewed as an important footstep for Nepal to bring climate change into the policy debate and agenda.

2. Nepal Climate Change Support Programme (NCCSP)

The Nepal Climate Change Support Programme (NCCSP) started with an aim to ensure the poorest and most vulnerable communities in Nepal are able to adapt to the effects of climate change. This is the first significant intervention on climate change adaptation in Nepal, which is in line with the recommendation of the NAPA. The programme document was designed in close collaboration with the Government of Nepal and stakeholders and has been closely aligned with the NAPA and the Three Year Plan (2010/11-2013/14). NCCSP will also be guided by the Climate Change Policy (2011) and National Framework on LAPA (2011).

See

http://www.np.undp.org/content/nepal/en/home/operations/projects/environment_and_energy/nccsp/home.html

3. CCNN

A group of civil society organization who started a dialogue with the government about the benefit of being party to climate change convention and its associated protocol. The group included Clean Energy Nepal; International Centre for Integrated Mountain Development (ICIMOD); Local Initiatives for Biodiversity, Research, and Development (LI-BIRD); Oxfam; Practical Action; Winrock; and WWF Nepal.

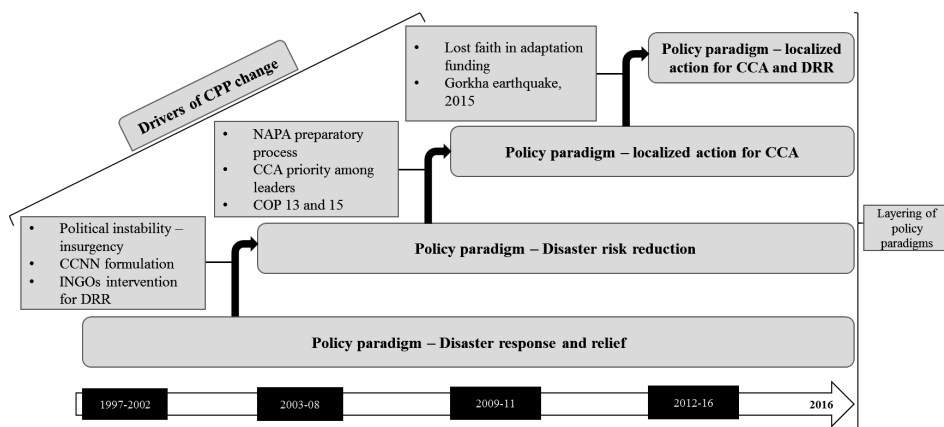


Figure B: Drivers of change and mode to characterize change

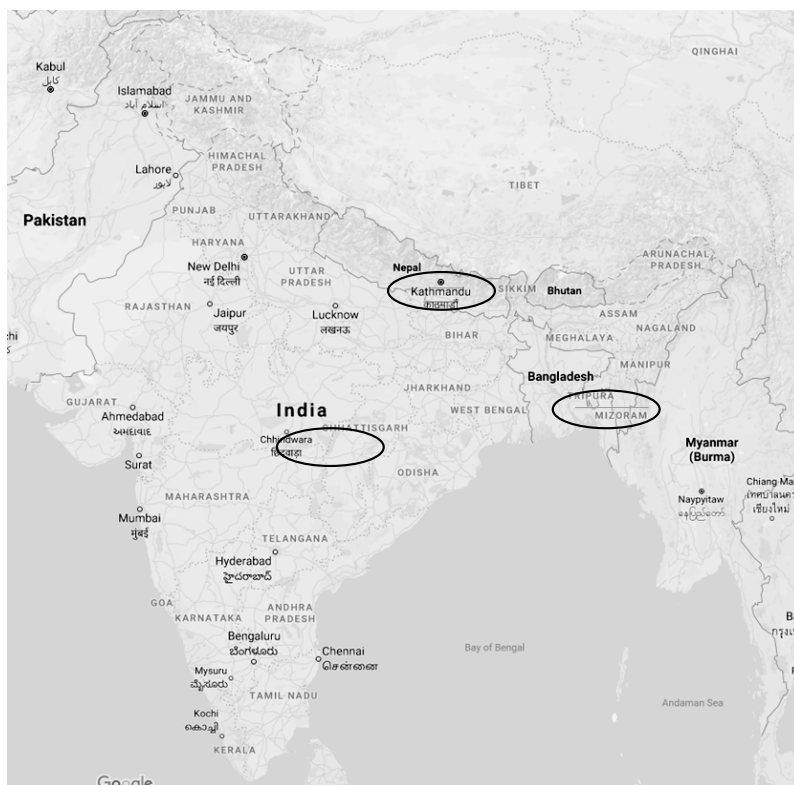


Figure 3: Location of Bangladesh and Nepal

Source: Google maps

Table 3: Different search queries used*

Sr. No.	Bangladesh	Nepal
1	("climate change" OR "global warming" OR "climate change") policy (adaptation OR adaptation OR ~adapting OR ~coping OR response OR ~responding) (Bangladesh OR Bangladesh) filetype:pdf 2000..2016	("climate change" OR "global warming" OR "climate change") policy (adaptation OR adaptation OR ~adapting OR ~coping OR response OR ~responding) (Nepal OR Nepali) "policy"
2	("climate change" OR "global warming" OR "climate change") policy (adaptation OR adaptation OR ~adapting OR ~coping OR response OR ~responding) (Bangladesh OR Bangladesh) "policy"	("climate change" OR "global warming" OR "climate change") Nepal OR Nepali (adaptation OR adaptation OR ~adapting OR ~coping OR response OR ~responding) filetype: pdf 2000..2016
3	(climate change OR global warming OR climate change) (Bangladesh OR Bangladesh) (policy) AND (adaptation OR adaptation OR ~adapting OR ~coping OR response OR ~responding) site:gov.bd	("climate change" OR "global warming" OR "climate change") Nepal OR Nepali "(adaptation OR adaptation OR ~adapting OR ~coping OR response OR ~responding) site:gov.np

*Results were compiled in excel sheets

Table 4: List of policy documents used for analysis

Sr. No.	Policy documents (Bangladesh)	Reference	Policy documents (Nepal)	Reference
1	5 th Five Year Plan, 1997-2002	http://www.plancomm.gov.bd/fifth-five-year-plan/	9 th Five Year Plan, 1997-2002	http://www.npc.gov.np/images/category/ninth_eng_2.pdf
2	National Forest Policy 1994	http://nishorgo.org/wp-content/uploads/2017/02/1-1-32-National-Forest-Policy-1994.pdf	National Forest Policy, 2000	http://www.forestnepal.org/images/Forestry_Sector_Policy_2000.pdf
3	Bangladesh Water and flood management strategy, 1995		10 th FYP, 2002-07	http://www.npc.gov.np/images/category/10th_eng.pdf
4	National Water Policy, 1999	http://extwprlegs1.fao.org/docs/pdf/bgd146075.pdf	National Water Plan, 2002	http://www.moen.gov.np/pdf_files/national_water_plan.pdf
5	Standing Orders on Disaster, 1999	http://www.ifrc.org/docs/idrl/883EN.pdf	National Agriculture Policy, 2004	https://www.ilo.org/dyn/youthpol/en/equest/files.do?handle=p_uploaded_file_id=270
6	National Water Management Plan, 2001	http://warpo.gov.bd/nwmp/nwmp_voll.pdf	National Irrigation Policy, 2004	http://www.wecs.gov.np/uploaded/irrigation-policy-2060.pdf

7	Interim PRSP, 2003	https://www.imf.org/external/pubs/ft/scr/2003/cr03177.pdf	11 th Third Year Plan, 2007	http://www.npc.gov.np/images/category/11tyip_eng.pdf
8	NAPA, 2005	https://unfccc.int/resource/docs/napa/ban01.pdf	National Strategy for Disaster Risk Management in Nepal, 2008	http://www.nrcs.org/sites/default/files/pro-doc/NSDRM%20Nepal.pdf
9	Coastal Zone Policy, 2005	http://warpo.gov.bd/strategy/coastalDevPolicy.pdf	NAPA, 2010	http://www.mope.gov.np/download/CLIMATE%20CHANGE%20VULNERABILITY%20MAPPING%20FOR%20NEPAL%20INNER.pdf f9c65a3385899194206e28d0e224f5dec
10	PRSP 1, 2005	http://www.imf.org/external/np/prsp/prsp.aspx	CCP, 2011	http://www.environmental.gov.np/upload/documents/a5802706d3Climate%20Change%20Policy%202011%20-%20English%20&%20Nepali.pdf

11	Draft Disaster Management Policy, 2008	http://pio.kushtiasadar.kushtia.gov.bd/sites/default/files/1308551375_Draft%20National%20Disaster%20Management%20Policy%20-BD.pdf	12 th Third Year Plan, 2011-13	http://www.npc.gov.np/images/category/TYP_2012.pdf
12	Bangladesh Tiger action plan, 2009	http://www.wild-team.org/sites/default/files/inline/bangladesh_Tiger_Action_Plan_2009-2017.pdf	LAPA Framework, 2011	http://www.nccsp.gov.np/publication/National%20Framework%20on%20Local%20Adaptation%20Plans%20for%20Action.pdf
13	NAPA, 2009	http://unfccc.int/resource/docs/naipa/ban02.pdf	Climate Budget Code, 2013	http://www.npc.gov.np/images/category/Climate-change-budget-code.pdf
14	BCCSAP, 2009	http://www.climatechange cell.org.bd/Documents/climate_change_strategy2009.pdf	13 th Third Year Plan, 2013-16	http://www.npc.gov.np/images/category/13th-Plan_nep.pdf
15	PRSP 2, 2009	http://www.imf.org/external/np/prsp/prsp.aspx	Nepal Disaster Management Strategy 2014/2015	http://dwidm.gov.np/wp-content/uploads/2016/06/DWIDM-Policy-2072.pdf

16	NPDM, 2010	http://extwprlegs1.fao.org/docs/pdf/bgd146945.pdf	NAP Approach Paper, 2016	Hard copy shared by the team leader (NAP)
17	6th Five Year Plan, 2011-16	http://www.plancomm.gov.bd/sixth-five-year-plan/		
18	National Agriculture Policy, 2013	http://moa.portal.gov.bd/sites/default/files/files/moa.portal.gov.bd/policies/2b1e1832_541c_492e_9764_c2b3c8db5317/policy%202013_15-03-17.pdf		
19	National Urban Health Strategy, 2014	http://www.igd.gov.bd/LGD_FILE/ES/NUHS_2011(English).pdf		
20	Perspective Plan 2021, 2012	http://bangladesh.gov.bd/sites/default/files/files/bangladesh.gov.bd/page/6dca6a2a_9857_4656_bce6_139584b7f160/Perspective-Plan-of-Bangladesh.pdf		
21	Revised Standing Orders on Disaster, 2010	http://www.preventionweb.net/files/18240_sodapprovedbyndmb.pdf		
22	Bangladesh climate change and gender action plan, 2013	http://ngof.org/wdb_new/sites/default/files/iucn_bangladesh_climate_change_gender_action_plan_1.pdf		

23	Post 2015 Development Agenda, 2013	http://www.plancomm.gov.bd/wp-content/uploads/2016/03/Final_Post-2015-Development-Agenda_Bangladesh.pdf		
24	Action Plan for Clean Cook stoves, 2013	http://www.sreda.gov.bd/joomla-tools-files/docman-files/CAPFinal.pdf		
25	INDC, 2015	http://www4.unfccc.int/ndcregistry/PublishedDocuments/Bangladesh%20First/INDC_2015_of_Bangladesh.pdf		
26	National Sustainable Development Strategy, 2013	http://www.plancomm.gov.bd/wp-content/uploads/2013/09/National-Sustainable-Development-Strategy.pdf		
27	7th Five Year Plan, 2016-20	http://www.plancomm.gov.bd/wp-content/uploads/2015/11/7FYP_after-NEC_11_11_2015.pdf		
28	Energy efficiency and conservation Master plan, 2015	http://sreda.gov.bd/files/EEC_Master_Plan_SREDA.pdf		

29	National Forest Policy, 2016	https://www.google.nl/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=0ahUKEwiewObA_vdIjRAhWBUBoKHYYdRBM04MhAWCCgwAQ&url=http%3A%2F%2Ffd.portal.gov.bd%2Fsites%2Fdefault%2Ffiles%2Ffiles%2Ffd.portal.gov.bd%2Fnotices%2F5cf41be4_0bc04f49_bc62_897053e4dc80%2FForestry%2520Policy%2520Final%2520Draft%2520(1).docx&usg=AFQjCNEWmirKMkIF0-OxYhbb5LtsvPSQfQ		
30	NDC, 2016	http://webcache.googleusercontent.com/search?q=cache:16L0K9Asv40J:moef.portal.gov.bd/sites/default/files/files/moef.portal.gov.bd/notices/e5820e3c_2cd7_4e4d_baf3_5e613b37348a/NDC%2520implementation%2520roadmap_draft_v10_clean.docx+&cd=4&hl=en&ct=clnk&gl=nl		

Table 5: Types of interview respondents

Types of respondents	Case countries	
	Bangladesh	Nepal
Serving bureaucrats (SB)	8	4
Expert consultants (EC)	5	3
Civil society actors (CS)	4	3
Representative of development organizations (DO)	3	2
Implementing NGOs representatives (NG)	3	2
Representatives of donor agencies (DA)	4	2
Sub-total	27	16
Total respondents	43	

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Supplementary Material - B

Belonging to chapter 3 - Power interplay between actors: using material and ideational resources to shape local adaptation plans of action (LAPAs) in Nepal

Socio-economic and cultural context of Dailekh

Dailekh district lies in Karnali province of Nepal. It borders with Jajarkot to the East, Achham to the West, Kalikot to the North and Surkhet district to the South. The population of Dailekh district is 261,770 (Census, 2011). Dailekh is rich in geographical and biodiversity. Large area is covered by forest (89899 ha), pasture (3698ha) and agricultural land (43497ha). As per the new federal structure in Nepal, Dailekh has 4 urban municipalities and 7 rural municipalities. Among 4 urban municipalities, Dailekh Bazar is located in Narayan Municipality which is the headquarter of Dailekh district. Dailekh lies mostly in the mid-hills and partly in the Terai. People are dependent on subsistence agriculture while some portion of population has out migrated. Dailekh is dominated by caste groups of Chhetri, Brahmin, Dalits, Thakuri, and Magar (Helvetas, 2014).

References:

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Evolving Nepal's democracy: changes in LAPAs

Nepal is currently changing to federal administrative structure and making constitutional reforms. This is with regards to the people's revolution and demands for a federal republic (2006) and the constitution writing process. With this effect, in 2017 the local level governance has been allocated with substantial financial and administrative powers. Therefore, earlier focus on bottom-up approach for LAPAs has to change. Nepal climate change support programme (NCCSP) has decided to change the design of local adaptation plans of action (LAPAs), compared to the earlier bottom-up approach where local adaptation was to be necessarily integrated with the national level policies.

Photographs



Figure 3: Participants during the risk assessment exercise.



Figure 4: After the first round of assessment exercise - (most of the participants left the meeting).



Figure 5: Women sitting alone during the discussion in the meeting.

Supplementary Material - C

Belonging to chapter 4 - Non-decisions are also decisions: power interplay between Bangladesh and India over the Brahmaputra River

Table A1: List of Workshops held between 2013-2017

Sr. No.	Workshop	Location	Month /Year	Remarks
Year 2013 – 14; Track 2 (Ex Bureaucrats, Academicians, and NGOs); Bilateral: India and Bangladesh				
1	Country Level Meeting	Dhaka, Bangladesh	August 2013	Attended by 25 Bangladeshi participants from government and non-government sectors.
2	Country Level Meeting	Guwahati, India	September 2013	Attended by 30 Indian participants representing all the seven North Eastern States of India
3	India-Bangladesh Joint Dialogue meeting	Dhaka, Bangladesh	March 2014	Attended by representatives from India and Bangladesh for mutual interaction and deliberation on issues of common interest.
Year 2014 – 2015 Track 2 (Ex Bureaucrats, Academicians, and NGOs) to Track 1.5 (Serving Bureaucrats); Moving towards multilateral dialogue (India, Bangladesh, Bhutan and China)				
4	Country Level Meeting	Delhi, India	January 2015	Attended by 35 participants from government and non-government sectors
5	Bilateral meetings with government officials in the state of Assam	Guwahati, India	March 2015	Meetings were conducted with the following departments – Flood and River Erosion Management Authority (FREMA), Brahmaputra board, Department of Water Resources and Department of environment and forest.
6	Bilateral meeting with government officials in the state of Arunachal Pradesh	Arunachal Pradesh, India	April 2015	Meetings were conducted with the following departments – Department of Water Resources, Department of Forest and Environment and the Chief Minister's office,
7	Multilateral dialogue meeting	Dhaka, Bangladesh	May 2015	The dialogue moved from bilateral to multilateral level

Sr. No.	Workshop	Location	Month /Year	Remarks
				with the inclusion of representatives (track 2 level) from Bhutan and China
8	Dissemination meeting	Guwahati, India	August 2015	Attended by government and non-government representatives from all the four countries, this meeting discussed what was achieved in the last two years and also a way forward for better continuity of the dialogue
Year 2015 – 2016; Track 1.5; Multilateral dialogue (India, Bangladesh, Bhutan and China)				
9	Country Level Meeting	Dhaka Bangladesh	June 2016	Attended by Govt and non-Govt. representatives including Senior Secretary, Ministry of Water Resources, Bangladesh
10	Bilateral meeting with government officials in Dhaka	Dhaka Bangladesh	June 2016	Meetings were conducted with officials from MoWR, Joint River Commission (JRC), WARPO, Bangladesh Water Board
11	Multilateral consultation meeting	Yunnan, China	July 2016	Meeting was held in Yunnan University to identify joint research themes and for future dialogues.
12	Country Level Meeting	Guwahati, India	August 2016	Attended by secretary MoWR, India, to discuss about ways for cooperation among the states within India
13	Regional level dialogue meeting	Singapore	October 2016	Attended by Govt. and non-Govt. representatives of four countries including the Senior Secretary, MoWR, Bangladesh.
14	International Symposium	New Delhi	October, 2017	Attended by Govt. and non-Govt. representatives of four countries including the Senior Secretary, MoWR, Bangladesh. MoWR (India) was only an observer. While Ministry of Home Affairs and Ministry of External Affairs did not participate.

Supplementary Material - D

Belonging to chapter 5 – Belonging to Determining ‘power-sensitive design principles’ for long-term climate change adaptation in South Asia

1. Key concepts used

A. Climate change adaptation

Adaptation to climate change is defined as a response from natural or human systems to seek to moderate or avoid current and expected future climatic changes and its impacts” (McCarthy et al. 2001, p982; IPCC, 2014). Adaptation includes physical measures and social alterations that can be purposefully planned or can evolve autonomously. Adaptation can be realized at different lower or higher scales and focuses on short-term changes or can result in a long-term transformation (Smit et al., 1999; Pelling, 2010, IPCC, 2014). CCA policy is a planned instrument to be used by actors that must include climate change impacts in its problem definition and both short and long-term measures (Dupuis and Knoepfel, 2013).

B. Power

Power is defined as a manifestation (interactions, discussions, negotiation and dialogue) between actors to influence the decisions and processes related to climate change adaptation problem definition and for long-term measures. During the power interplay, actors use different material and ideational resources to influence each other to choose certain types of measures. These different resources include authority, legitimacy, position, institutions, knowledge constructs, ideas and narratives to influence the nature of definition and measures (short or long-term) of climate change adaptation.

It is worth mentioning that the above definition of ‘power’ relates to both conservative (outcome based) and progressive (processual) viewpoints. It discusses how power nuances can hinder the process of CCA problematization and finding solutions, but also decisions are made based on power interplay between actors. In order to include both the perspective, we have attempted to code the articles based on the elements of power that explain both processual and outcomes of power interplay. Elements such as authority, legitimacy, knowledge, ideas and narrative can influence processes and shape outcomes.

C. Power sensitive design principle (PSDPs)

PSDPs are referred to as a set of practices and considerations to be used by policy actors to include multiple perspectives (for problem definition) and variety of measures for governance of CCA policies at different scales. PSDPs are such that they include power considerations within them to better inform policy actors and their actions to decide long-term adaptation measures for the future climate impacts. Long-term measures refer to the CCA efforts led due to the interactions between actors that result in influencing problem definition and measures climate change adaptation for more 7 years. Short-term practices refer to CCA efforts led by actors' interactions that influence problem definition and measures of climate change adaptation between 1-3 years.

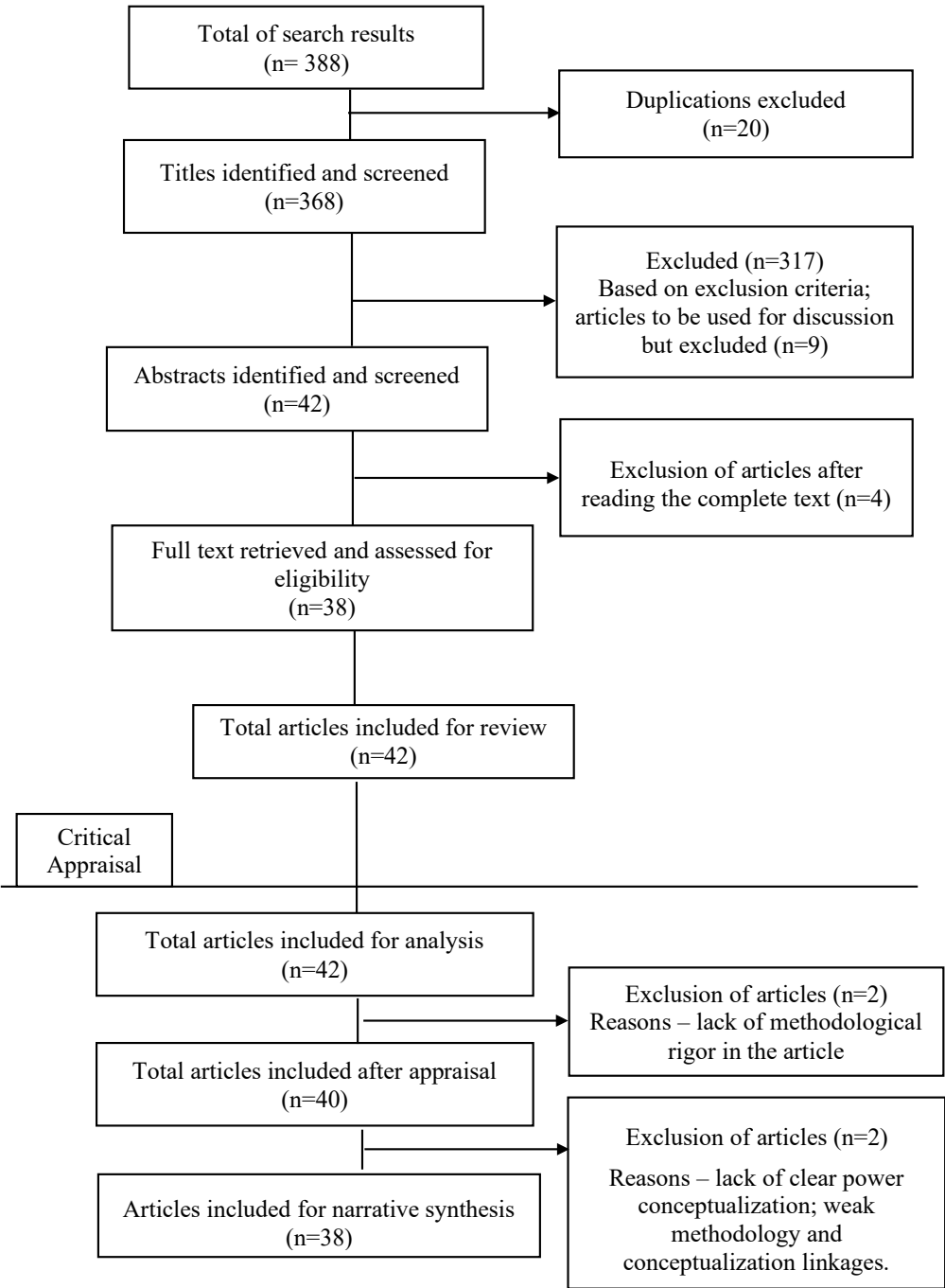
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*Exclusion and Inclusion criteria (considering the title, abstract and keywords in an article)
for SR 1*

Sr. No.	Inclusion criteria	Exclusion criteria
1	Time period between 2000-2017	Not before 2000 and after 2017
2	Focus on climate change adaptation in South Asia (India; Bangladesh; Nepal Sri-Lanka, Afghanistan; Bhutan; Maldives and Pakistan)	Excluding countries outside South Asia
3	Power is defined as an interplay (interactions, discussions, negotiation and dialogue) between actors to influence the decisions and processes involved in climate change adaptation policy designing and implementation. Please see section 1	Excluding articles not discussing power or discussing power and other natural disasters such as earthquake.
4	Focus on climate change adaptation in South Asia discussing one or more levels <ul style="list-style-type: none"> • Transnational (regional) • National (Country) • Sub-national (state, province) • Local (village, district, city, municipality) • Project (one or more) 	Focus on different levels outside South Asia
5	Only peer-reviewed articles published in English including empirical studies	Exclude book chapters and reports, not in English

Flowchart – SR 1



Articles included: (SR 1)

- Paprocki, K., & Huq, S. (2018). Shrimp and coastal adaptation: on the politics of climate justice. *Climate and Development*, 10(1), 1-3.
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2. Key concepts used:

A. Material Resources

Material resources refer to financial capacity and human resources. Material resources are used by actors to influence policy processes through the availability of staff and finances, and by creating authority of certain actors over others (Orsini, 2013). Material resources can be of structural nature (Fuchs and Lederer, 2007), but it is used in interaction with other actors. Importantly, the material resources can provide actors with agenda-setting power, decision-making power during an interaction and power to exclude or include actors or ideas (Fuchs and Glaab, 2011).

Synonymous terms are used based on the SR 1 for developing queries are –

1. Authority and other keywords

- a. Domination
- b. Control
- c. Position

2. Finances and other key words

- a. Aid
- b. Funding
- c. Assistance

B. Ideational Resources

Ideational resources refer to the ability to master, adapt and utilize ideas, knowledge and information, which enables actors to influence the policy design process (Orsini, 2013). Ideational resources consist of cognitive and normative dimensions (Carstensen and Schmidt, 2016). We refer cognitive resources as technical aspects of the issue at stake. For example, climatologist uses rainfall and temperature patterns to make a convincing argument for changing climate. Normative resources are the underlying values of knowledge used by an actor (Schmidt, 2002: 213). For instance, to make cognitive knowledge accepted in the society, actors use a more relatable narrative appealing to values and norms that resonates with the general public.

1. Knowledge and other key words

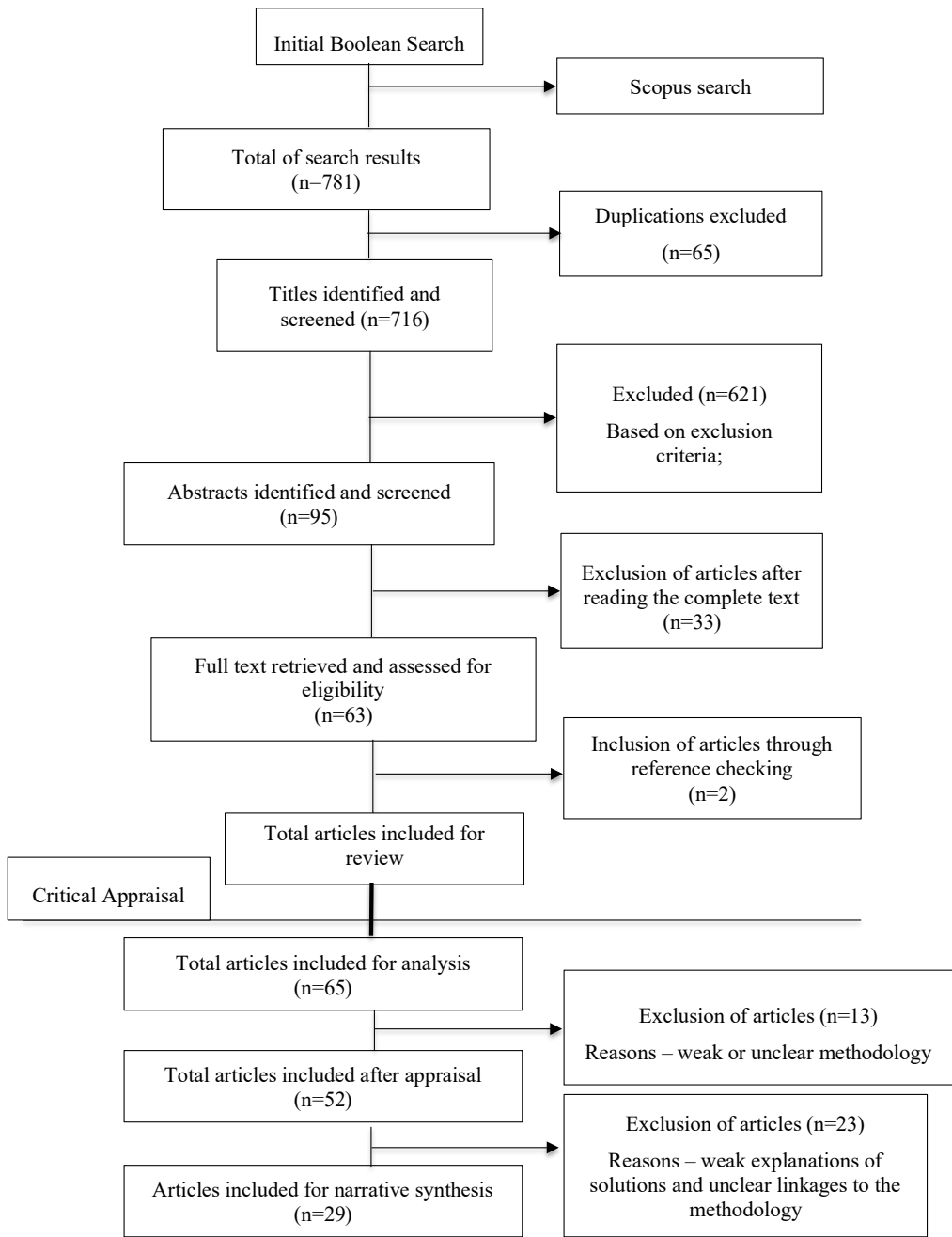
- a. Information
- b. Data
- c. Expertise
- d. Discourses

C. PSDPs are referred to as a set of practices and considerations to be used by policy actors to include multiple perspectives (for problem definition) and variety of measures for governance of CCA policies at different levels. PSDPs are such that they include power considerations within them to better inform policy actors and their actions to decide long-term adaptation measures for the future climate impacts. Long-term measures refer to the CCA efforts led due to the interactions between actors that result in influencing problem definition and measures climate change adaptation for more 7 years. Short-term practices refer to CCA efforts led by actors' interactions that influence problem definition and measures of climate change adaptation between 1-3 years.

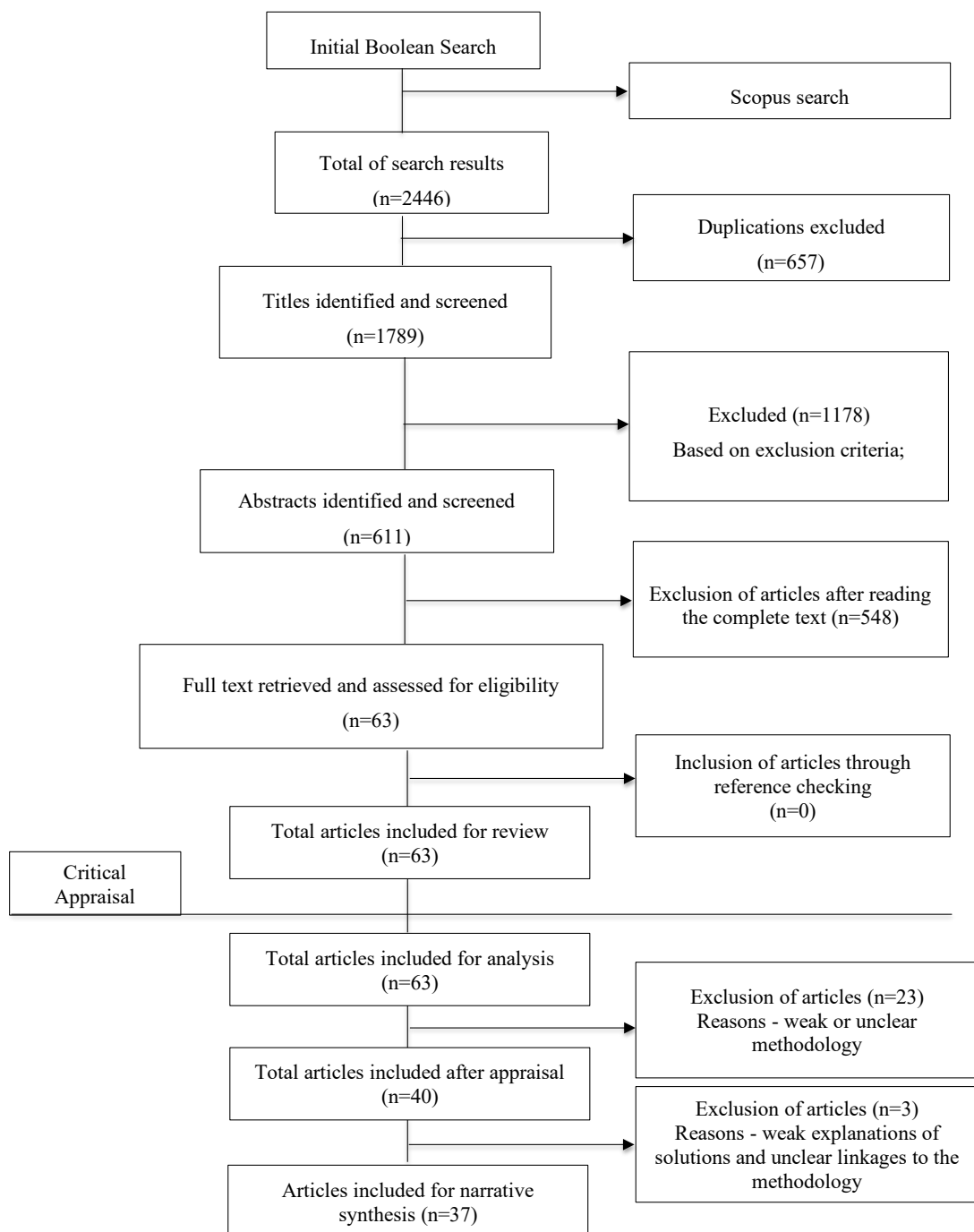
*Exclusion and Inclusion criteria (considering the title, abstract and keywords in an article)
for SR 2*

Sr. No.	Inclusion criteria	Exclusion criteria
1	Focus on resources in South Asia (India; Bangladesh; Nepal Sri-Lanka, Afghanistan; Bhutan; Maldives and Pakistan)	Excluding countries outside South Asia
2	Including the articles discussing material and ideational resources as defined above. Based on the definitions, the articles are included. Please see the above section on key concepts.	Excluding the articles not discussing material and ideational resources and synonymous terms identified
3	Only peer-reviewed articles published in English	Exclude book chapters and reports, not in English
4	Only Social Science articles are included	Exclude articles from natural science, environmental science and other fields emerging in Scopus.

Flowchart SR 2 (a)



Flowchart SR 2 (b)



Articles included (SR 2):

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- Rist, S., Chidambaranathan, M., Escobar, C., Wiesmann, U., & Zimmermann, A. (2005). Moving from sustainable management to sustainable governance of natural resources: the role of social learning processes in rural India, Bolivia and Mali. *Journal of rural studies*, 23(1), 23-37.
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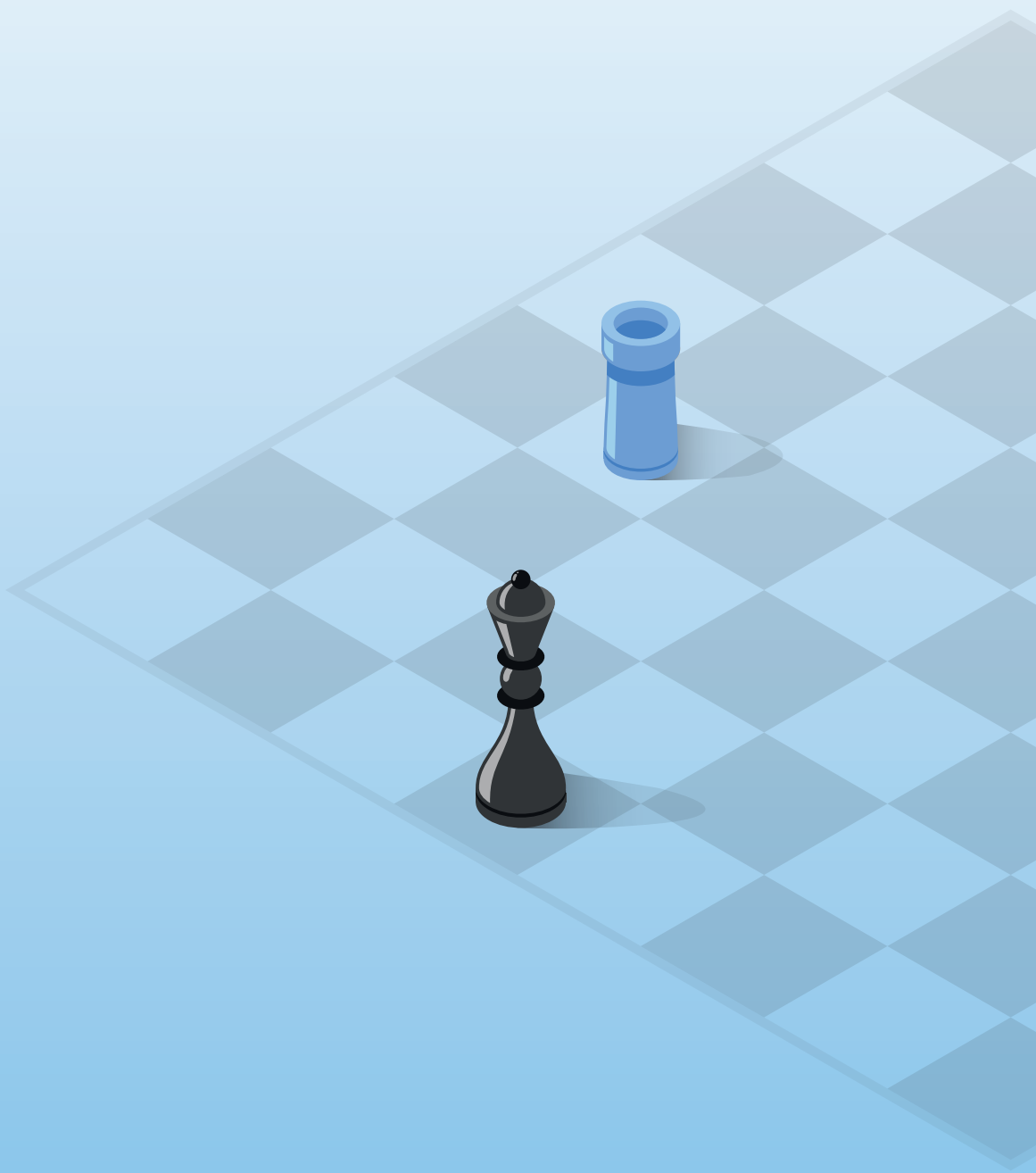
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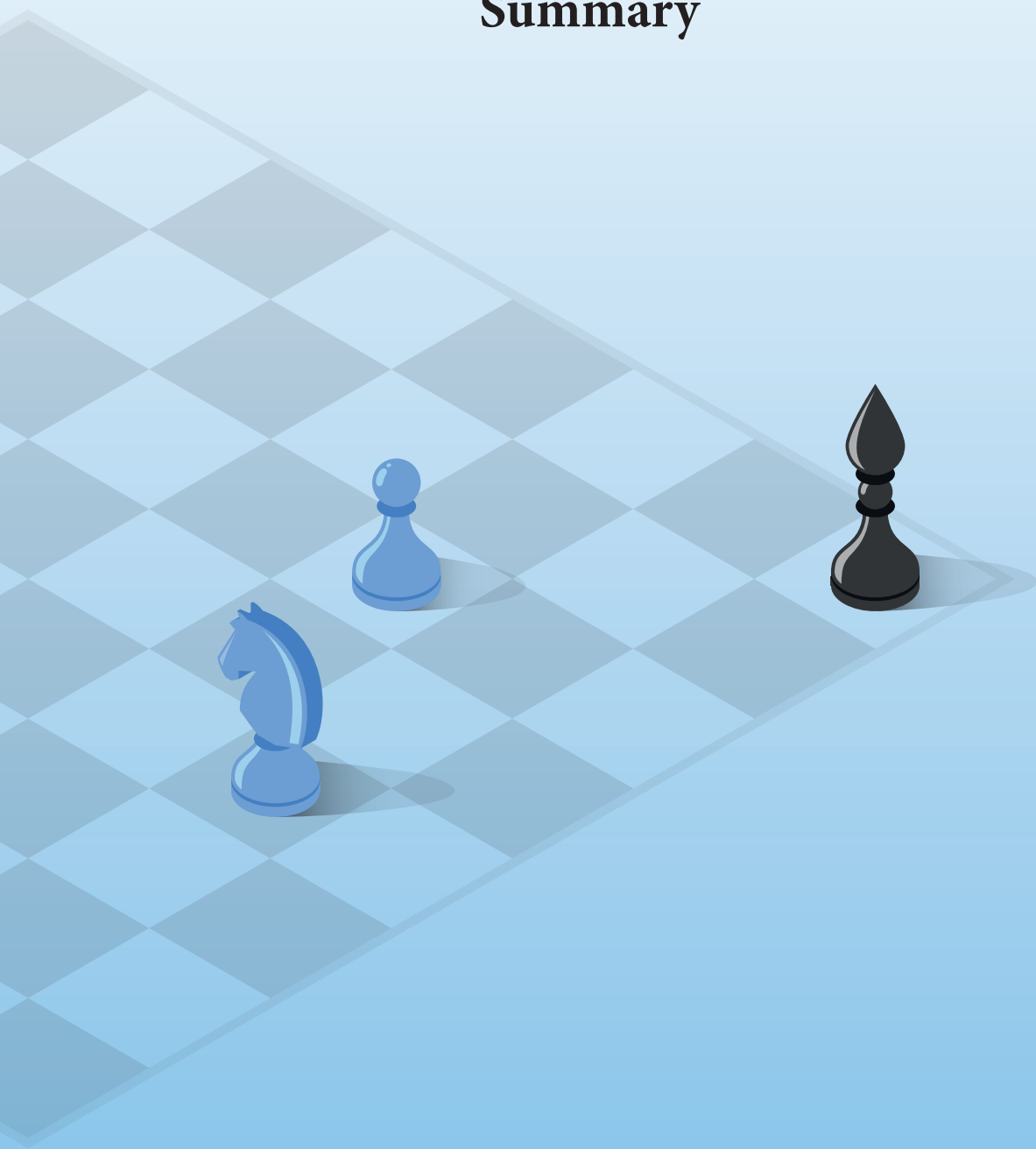
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Summary



To respond to the increasing impacts of climate change in South Asia, countries are continuously formulating and implementing climate change adaptation (CCA) policies. Such CCA policies emerge from a politically complex and iterative policy-making process, where actors interact and use power to influence one another to achieve their personal or collective interests. This dissertation aims to answer the puzzle of how policy actors in South Asia can deal with the negative effects of power in CCA policy processes. The scholarly literature on adaptation suggests that there is little focus on the role of power in CCA policy processes and even less emphasis on how to address the negative effects of power in a South Asian context. CCA studies predominantly emphasise the role of power through one-way interactions, where certain policy actors overpower others and pay little attention to understanding the dialectical relations between institutional and agency-centric perspectives on power. Furthermore, the literature argues that CCA policies should focus on reducing future, long-term impacts of climate change, but there is little understanding of the interlinkages between long-term thinking and power interplay in CCA policy processes. This dissertation therefore presents a detailed portrayal of power interplay in CCA policy-making and draws certain lessons to address the negative effects of power. I formulated three separate research questions.

1. How have climate change adaptation policies evolved in the last two decades in South Asia?
2. How does the power interplay between actors influence climate change adaptation policies in South Asia?
3. How can climate change adaptation policy actors deal with the negative effects of power interplay?

The three research questions are answered using a critical realist approach. Multiple theories are adopted to develop frameworks to study various aspects of power interplay in CCA policy-making processes in South Asia. Following a case study research design, various qualitative methods are used to collect and analyse data and to ensure the validity of findings. This dissertation is comprised of four academic articles that respond to the three research questions collectively.

Chapter 2 explains and compares the changes in climate policy paradigms (CPP) in Bangladesh and Nepal. CPP refers to a comprehensive set of prevailing and institutionalized ideas and strategies of policy actors to respond to the impacts of climate change across levels and scales.

43 semi-structured interviews with key policy actors. The results show that in Bangladesh and Nepal several CPPs have emerged: disaster risk reduction, climate change adaptation, mainstreaming and localised action for adaptation. In Bangladesh, policy goals and instruments are reported for each CPP, whereas Nepal is struggling to develop specific policy goals and instruments to implement CCA policies. In both countries, there is competition between actors supporting different CPPs for resources to achieve their interests and priorities. Chapter 2 concludes that different CPPs co-exists and have been changing in the last two decades. The unstable political situation, lack of financial support, the influence of national and international non-governmental organisations and global policy frameworks are the key political drivers of the changing CPPs in Bangladesh and Nepal.

Chapter 3 aims to analyse how power interplay shapes short-termism in local adaptation plans of action (LAPAs) in Nepal. To explain power interplay, I developed a power interplay framework and applied it to an ongoing local adaptation planning process in Nepal. The framework theorises power as an interactional and relational phenomenon, where policy actors interact and struggle with one another to achieve their interests and priorities. During these interactions, policy actors deploy material and ideational resources to influence one another's viewpoint and positions, creating a power interplay. I adopted an interactional framing approach through interaction analyses and observations to analyse how actors deploy material and ideational resources to pursue their interests and priorities. The chapter reports that policy actors deploy various material and ideational resources such as political authority, knowledge of adaptation science and national/local policy-making processes, financial resources and strong relations with international non-governmental organisations and donor agencies. The findings suggest that the role of facilitators and the lack of female participation contribute to short-termism in LAPAs. The study further demonstrates the interlinkages between temporal dimensions of CCA policies and power dynamics at local level in South Asia.

Chapter 4 studies power interplay at transboundary level, highlighting how policy actors from Bangladesh and India intentionally maintain the status quo in decision making about the future of the Brahmaputra River basin. Using the updated power interplay framework from Chapter 3, I analyse the ways in which the two countries deploy their material and ideational resources to achieve their interests and priorities. Following the interpretive approach, I analysed data on 14 closed-door meetings between India and Bangladesh and 18 interviews with key policy actors involved. The findings show that India uses material resources (such as geographical position, military strength, and economic growth) and ideational resources (the narrative of

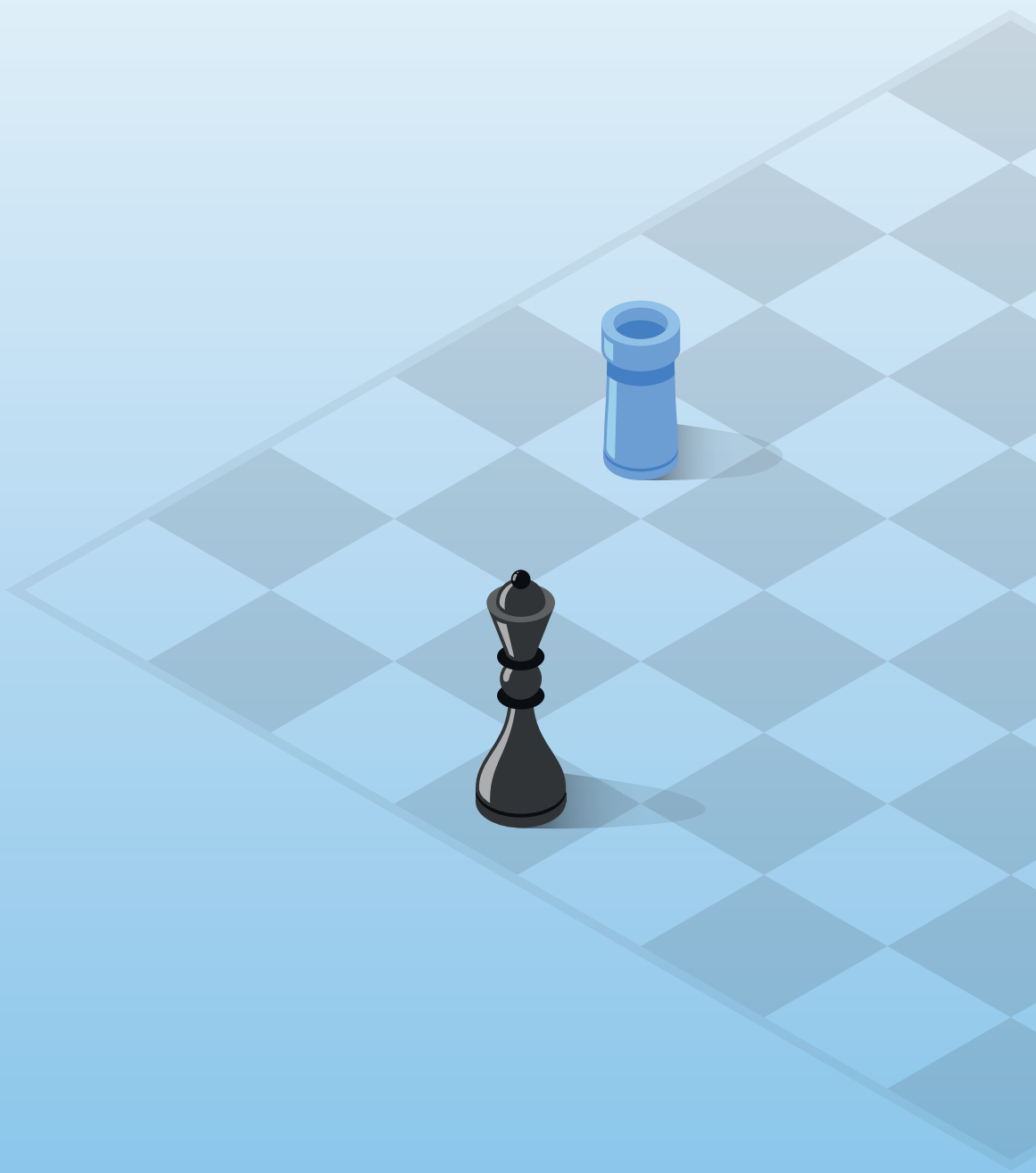
confrontations and loss of dignity to lower and weaker riparian states and hegemonic vulnerabilities) to maintain the status quo. Bangladesh, on the other hand, uses its stable political situation as a material resource to develop a consistent strategy of negotiation and, as ideational resources, the narrative of lack of research and knowledge and India's use of bilateralism. The chapter concludes that the process of maintaining the status quo can be understood as 'non-decision making' and that this prevents the development and implementation of CCA plans for the Brahmaputra River basin. This chapter contributes to the theoretical debate on non-decision making and shows that the deployment of material and ideational resources is a novel way to operationalise and better understand non-decision-making processes.

Chapter 5 answers the question of how CCA policy actors can deal with the negative effects of power. The current CCA literature provides few systematic insights into the causes of the negative effects of power and even fewer strategies to address these in the South Asian context. I have developed a two-layered systematic review methodology to identify various manifestations of power that are responsible for negative effects in CCA policy-making in South Asia and to distil power-sensitive design principles (PDPs) to address these manifestations of power. In this chapter, I focus on the two most frequently reported manifestations of power – domination by knowledge and authority – and determined four PDPs: (1) the creation of safe spaces for continuous dialogue, interaction and raising concerns for future planning; (2) a shift in 'transfer of knowledge' to 'co-creation of knowledge'; (3) democratic devolution in a multi-cultural and multi-ethnic environment to support long-term policy-making and implementation; (4) mechanisms to build capacity, communication and negotiation skills for empowerment. The chapter concludes that the four PDPs can reduce manifestations of power and that policy actors can use them to improve long-term CCA policy processes. The findings in this chapter contribute to the literature on CCA and the growing literature on design principles.

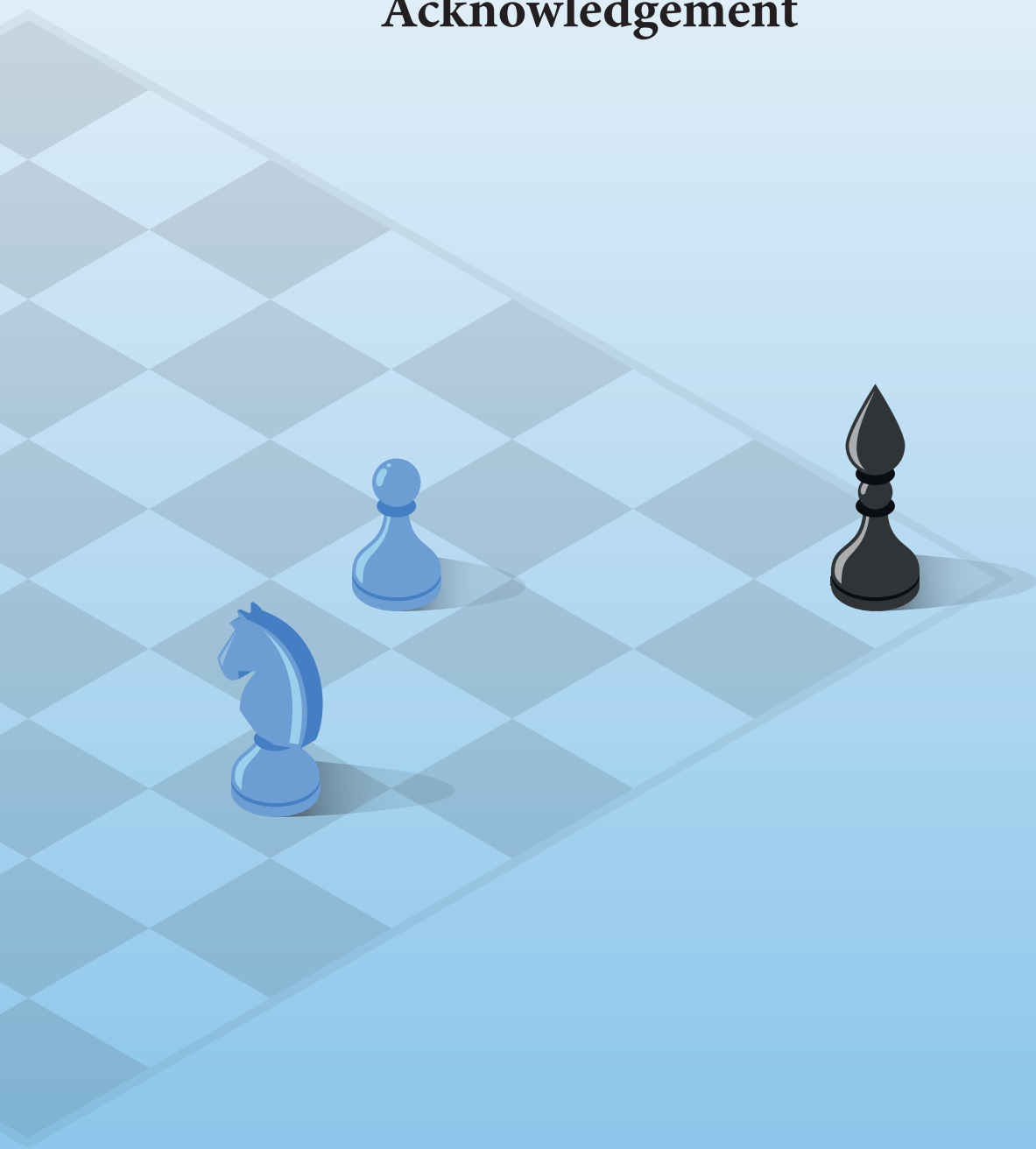
Chapter 6 is a synthesis chapter, presenting the answers to the three research questions central to this thesis, and reflects on the research as a whole. This dissertation has shown that CCA policy-making is a complex process where different (policy) actors with competing interests and climate policy paradigms compete for limited attention and resources. I have developed a power interplay framework that allows me to analyse the cause and effect of power struggles between policy actors. I show that different actors deploy a variety of material and ideational resources to influence one another to achieve their personal or collective interests and priorities.

These struggles can have a negative influence on CCA policy-making process and resulting policies.

My dissertation therefore makes a strong case for emphasising the role of power in CCA and acknowledges that there are no quick-fix solutions to address its negative effects. To deal with the negative effects of power, I have suggested PDPs that were distilled by using a systematic review methodology, integrating knowledge and expertise from other social science disciplines. Clearly, the proposed PDPs are not a panacea for power-related challenges, but they can guide policy actors to reduce the negative effects of power in CCA policy-making processes.



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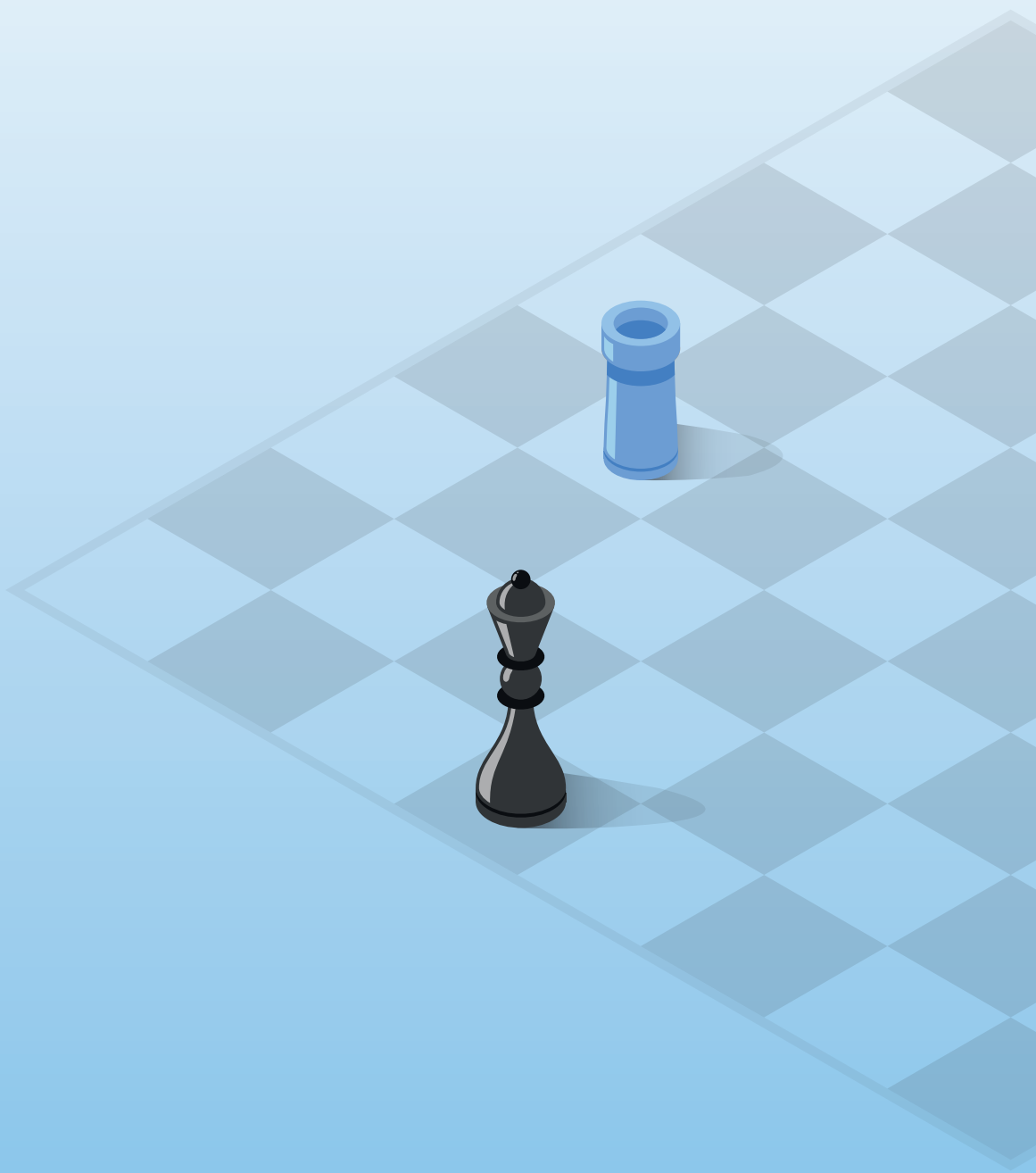
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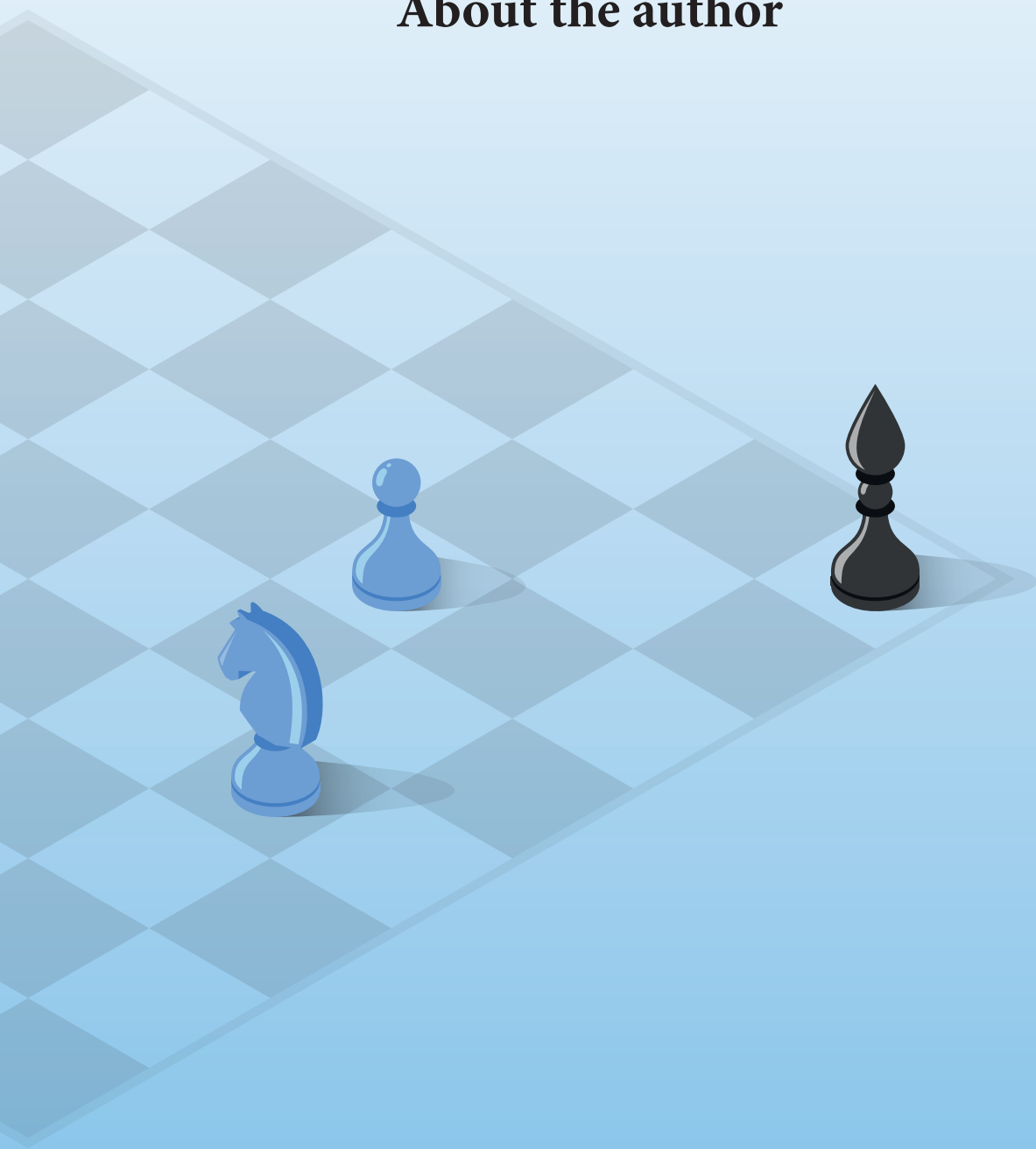
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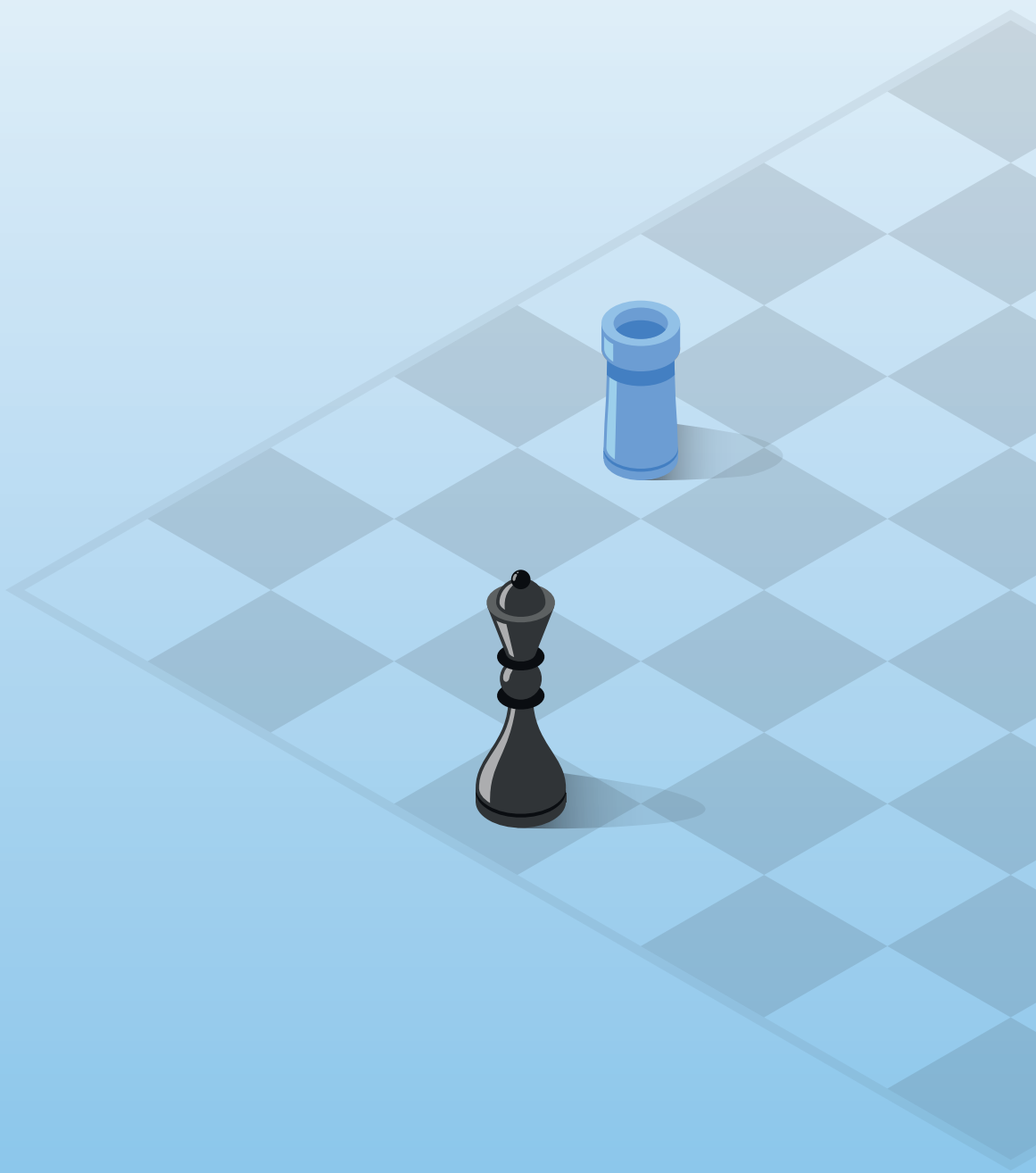


About the author

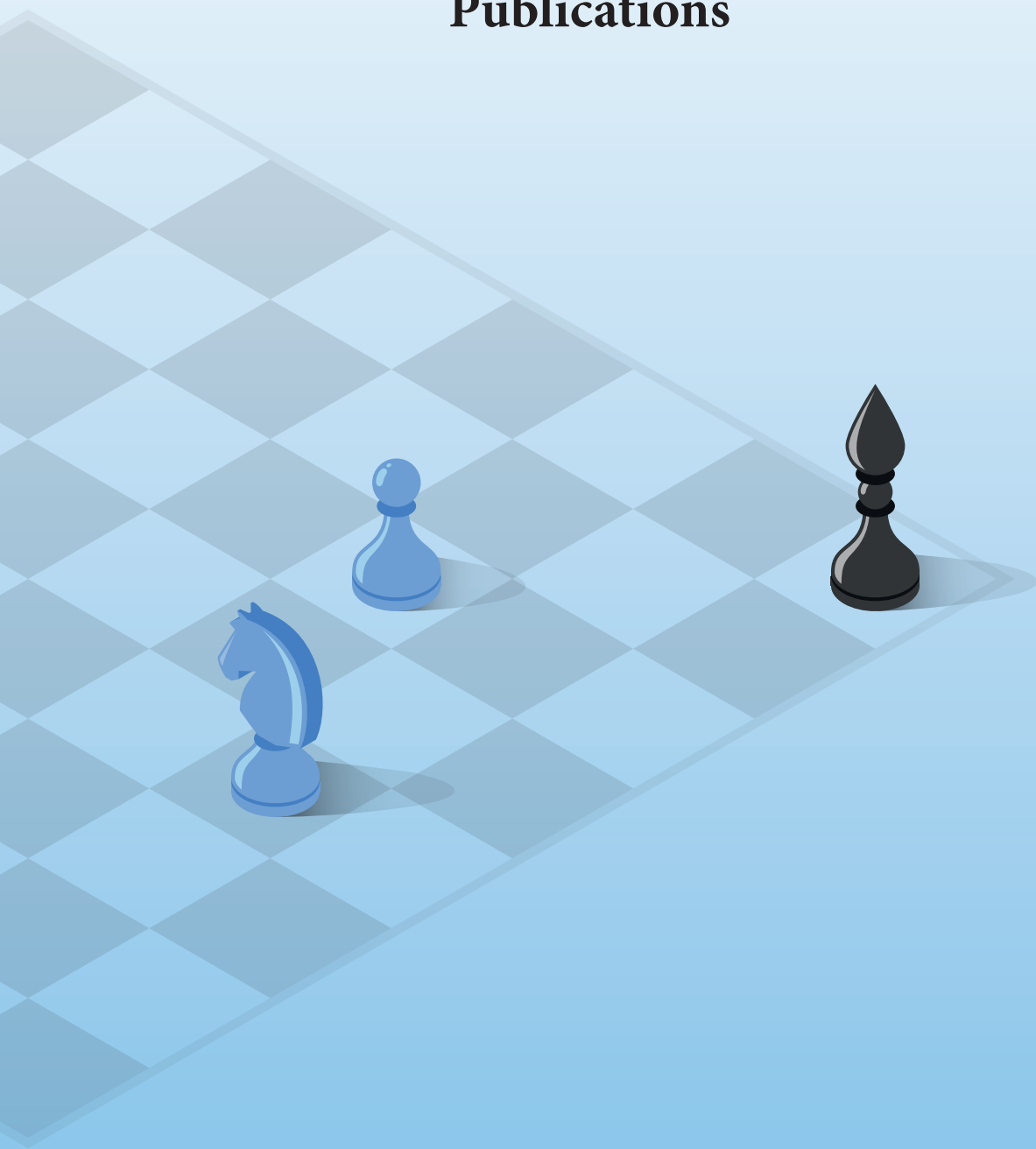


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Publications



Key journal articles

1. **Vij, S.**, Warner, J. F., Biesbroek, R., & Groot, A. (2019). Non-decisions are also decisions: power interplay between Bangladesh and India over the Brahmaputra River. *Water International*, 1-21. *
2. **Vij, S.**, Biesbroek, R., Groot, A., Termeer, K., & Parajuli, B. P. (2019). Power interplay between actors: using material and ideational resources to shape local adaptation plans of action (LAPAs) in Nepal. *Climate Policy*, 19(5), 571-584. *
3. **Vij, S.**, Biesbroek, R., Groot, A., & Termeer, K. (2018). Changing climate policy paradigms in Bangladesh and Nepal. *Environmental Science & Policy*, 81, 77-85, Elsevier. *
4. **Vij, S.**, Moors, E., Ahmad, B., Uzzaman, A., Bhadwal, S., Biesbroek, R., ... & Saeed, B. A. (2017). Climate adaptation approaches and key policy characteristics: cases from South Asia. *Environmental Science & Policy*, 78, 58-65, Elsevier.
5. Barua, A., **Vij, S.**, & Zulfiquar Rahman, M. (2017). Powering or sharing water in the Brahmaputra River basin. *International Journal of Water Resources Development*, 1-15, Taylor and Francis.
6. **Vij, S.**, Narain, V., Karpouzoglou, T., Mishra, P., (2018) From the periphery to the core: conflicts and cooperation over land and water in periurban Gurgaon, India, *Land Use Policy*, 76, 382-390. Elsevier
7. Barua, A., **Vij, S.**, (2018) 'Treaties can be a non-starter': A multi-track and multi-lateral dialogue approach in Brahmaputra River basin management, *Water Policy*, 20(5), 1027-1041. IWA
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11. Narain, V., **Vij, S.**, (2016) Where have all the commons gone? *Geoforum*, 68 (2016), 21-24, Elsevier. ¹⁶

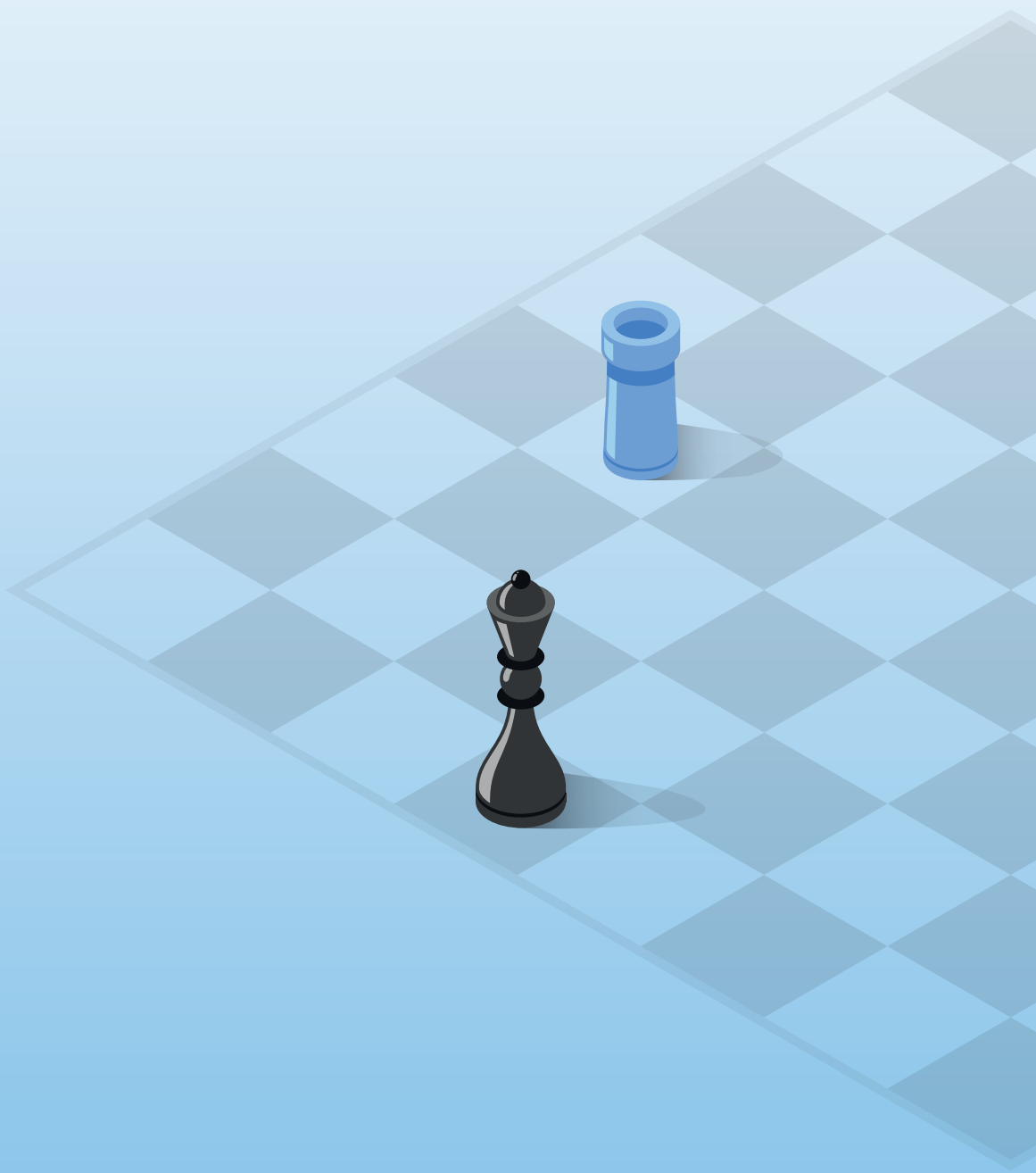
*included in this thesis

Book (Edited Volume)

1. Barua, A., Narain, V., **Vij, S.**, (September, 2018). (Eds). ***Climate Change Governance and Adaptation: Case Studies from South Asia***, CRC Press.

Book chapters

1. Barua, A., Narain, V., **Vij, S.**, (2018). Governance of Climate Change: Issues and Challenges in South Asia. In (Eds) ***Climate Change Governance and Adaptation: Case Studies from South Asia***, pg. 1-9, CRC Press.
2. Gulati, V., Deka, A., Fanaian, S., **Vij, S.**, & Barua, A. (2017). Building bridges through dialogue for the Brahmaputra River Basin. ***China and Transboundary Water Politics in Asia***. Routledge



Completed training and supervision plan



Sumit Vij

Wageningen School of Social Sciences (WASS)

Completed training and supervision plan



Wageningen School
of Social Sciences

Name of the learning activity	Department/Institute	Year	ECTS*
A) Project related competences			
Classics in Public Administration & Political Science	NIG – University of Twente	2016	4
Climate Change Adaptation and Transformations towards Sustainability	Oslo Summer School	2016	10
Case Study Method	Oslo Summer School	2016	10
Research Proposal	WUR	2016	6
Critical Perspectives on Social Theory	WASS	2016	4
Project Workshop (HI-AWARE)	ICIMOD/ HI-AWARE, Nepal	2016	1
B) General research related competences			
Research Methodology, From Topic to Proposal	WASS	2015	4
Introductory Course	WASS	2015	1
<i>‘Non-decision making in times of changing climate’</i>	Adaptation Futures conference, South Africa (Cape Town)	2018	1
<i>‘Transboundary Water Diplomacy in South Asia: A non-state actor perspective’</i> and co-organization	(Em)powering Hydro-hegemony Conference, Den Haag	2018	2
Qualitative Data Analysis with Atlas.ti: a hands-on practical	WASS	2018	1
C) Career related competences/personal development			
Essentials of Scientific Writing and Presenting	WUR	2015	1.2
Total			45.2

*One credit according to ECTS is on average equivalent to 28 hours of study load

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