


Emergence, effectiveness and legitimacy of transnational adaptation governance

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Emergence, effectiveness and legitimacy of transnational adaptation governance

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Emergence, effectiveness and legitimacy of transnational adaptation governance

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Dedicated to my mum and dad

Preface

The first words that I ever wrote in my professional career ended up being part of this dissertation. 12 years later, as I am writing this text and closing a process that has been a constant part of my professional life, I might as well start from the beginning and show some gratitude to those who have helped me along the way. The only other artefact that has lasted this long in my life is my coffee machine. Praise be!

Having finished a Masters degree at the East Anglia University, I returned to Sweden and Lund University (living in Malmö, as any normal person) to finish a second Bachelor's degree in Economics. However, about one-third into my final semester I received an email from Johannes Stripple at the Department of Political Science. The email asked whether I would want to come and work at the department as a research assistant. Something I did without hesitation. This inspiring collaboration eventually became a paper, and subsequently the fourth chapter of this dissertation. Johannes role in this dissertation does not end here, however.

Being away for considerable time and then trying to come back to your old life makes you realise that time waits for no one. Experiencing my first life crisis related to the passing of time (i.e. not a real life crisis), I packed a car with as much as I could and left for Stockholm. Luckily for me, Johannes put me in touch with Åsa Persson at the Stockholm Environment Institute where I was lucky to get an internship. Being faux depressed, with little money, my luck did not end there. I stayed with my best friend Konstantinos Gountas for free. For seven months. I am not sure how, but we are still best friends.

Fun fact #1: During my time in Stockholm, I moved 14 times and lived in 11 different apartments. I was in-between places (i.e. homeless) at three different occasions and had to sleep at various friends' and colleagues sofas.

As an intern at the Stockholm Environment Institute, I had the pleasure to work with and learn from my mentors, colleagues and friends: Magnus Benzie, Harro van Asselt, Aaron Atteridge and Richard Klein. My internship was supposed to last 6 months. However, after it ended, I was in a situation where I did not have much else to do. With a dose of male arrogance and shamelessness, I simply continued coming to the old office at Kräftriket. This lasted for a while, until someone in the management tired and finally gave me a job. For this, I will be forever grateful to Harro, Magnus and Richard. Since then (2013) and until now, I am employed by the Stockholm Environment Institute.

Fun fact #2: My first day as an intern was also the first day of the new Centre Director Jakob Granit. Jakob, you will probably never read this. But I wish you would someday. At the 2014 party when we were celebrating our new office and you got a bottle of Moët & Chandon for your "hard" work. I drank it.

I am very aware that this kind of smooth sailing at the beginning of an academic career is very privileged. Interns that I select for my projects today have to go through an application process and compete with up to 50 other applicants, sometimes including 2 sets of interviews. To put this in an even more extreme perspective, the two colleagues that I have had the joy of recruiting, and privilege to still work with, were selected through a rigorous process in competition with ca 550 other candidates. An eye of a needle I probably never would have passed.

At the same time, luck does not prevent you from being overworked and constantly under stress. Two visits to the emergency, a well-developed muffett (look it up on Urban Dictionary), many sleepless nights and imposter syndrome are testament to that. Using young people on short term contracts

with a constant pressure to perform is not a good way to conduct research. Fortunately, from 2014 and onwards, the Stockholm Environment Institute made the wise decision to mainly offer permanent contracts.

The next crucial step for this dissertation, I have again Harro, Magnus and particularly Richard to thank for. Together, we drafted a successful proposal to the Swedish Research Council Formas. This allowed me to continue building on Chapter 4 to further delve into the world of Transnational Adaptation Governance. In parallel to securing my own funding, together with Aaron, I was also leading a large initiative on climate and development finance for five years.

With secured funding and stable employment, I again feel I have to reflect on the role of luck and privilege throughout my career. Through initiative and project funding, I got to experience some of the most exciting events of my life. I had the luck of meeting my friend and colleague Pieter Pauw, who invited me to the German Institute for Development and Sustainability (IDOS) as a guest researcher. During this stay, the idea for Chapter 5 was born. However, much, much...much more importantly, during this stay I met the love of my life. In the first week of my stay. She is now my wife. We have a child. And soon hopefully a second as well.

At the time, Pieter was a PhD student at Utrecht University and with his (and others) encouragement, I got in touch with Frank Biermann who then agreed to become my supervisor. My co-supervisor became Sander Chan, another friend and colleague of Pieter.

Obviously, there are many things that I have Pieter to thank for.

In order to start my PhD work, I agreed with Frank to spend the first six months in Utrecht as part of the PhD work. Relocating from Bonn to Utrecht had other benefits too as the love of my life was living in Köln at the time. However, as with the Malmö-Lund relation, where the normal people live

in Malmö, I chose to accommodate myself in Amsterdam. It was not really that much of choice as another of my best friends, Sam Rezai, lived there. Also with Sam, I could stay for free, continuing the tradition of shameless freeriding. Sam had a bigger apartment so I could at least get my own room here. It was also easier to find psilocybin mushrooms in Amsterdam.

Fun fact #3: Various types of substances have been instrumental for finalising this thesis, and overall for my mental health. For intensive focusing, for relaxing and sleeping, for "ontological agility" and for full-weekend partying (I live in Berlin after all).

During my time in Bonn and Utrecht, Pieter and I worked on chapter 5. Developing this chapter included multiple side-events at two different climate meetings in Paris and in Marrakech. It also included organisation of two workshops in Nairobi and Kigali in Kenya and Rwanda respectively. To get between the two cities, Pieter and I, together with Aaron Atteridge, borrowed a car from the Stockholm Environment Institute's office in Nairobi. This 1-week trip took us around Lake Victoria, driving from Nairobi to Kigali via Uganda and back via Tanzania. Luckily, the car had diplomatic license plates which made this trip significantly easier. We also got to visit Serengeti.

Also during my time in Utrecht, the idea for Chapter 6 was developed with invaluable support from Frank and Sander. Chapter 6 is a (mandatory) single-authored and desk-based paper, complemented with online interviews. Thus, the process of writing this chapter was quite boring in comparison. I am more comfortable working collaboratively, which is something of a paradox when you are an introvert. However, while working on the paper, I had the fantastic opportunity to organise a 3-day academic workshop with Åsa and Richard, and also edit a special issue, together with Åsa; both incredibly fun experiences. They taught me that you should always organise academic meetings in the Stockholm archipelago. As long as there is a sauna.

With my time in Utrecht coming to an end and the love of my life still in Köln, I returned to Stockholm with a solid plan to keep my job while moving back to Germany. And lo and behold, a few months later it somehow worked. I was allowed to relocate to Berlin. In the pre-covid time. Something akin to a miracle. Or (again) luck. For tax purposes, I can not provide exact time and date when this happened. [To German and Swedish tax authorities, please rest assured that the tax was paid somewhere.]

Fun Fact #4: Long before I seriously though of moving to Berlin, it had always been a dream. Within the institute, there was even a secretive "Friends of Berlin" group scheming about opening a new Berlin office. In fact, we got really close to succeeding, but covid put the final nail in the coffin for that specific idea. For now...

During the early time in Berlin, the idea for Chapter 7 was developed. For this work, I have much to thank my friend and (at that time) colleague Kevin Adams. Kevin has since then sold his soul and is now a climate finance negotiator for the United States. Nevertheless, it was a pleasure discussing transboundary climate risk with Kevin on our many trips around the world. The highlight of this collaboration was the field study in Brazil, interviewing coffee supply-chain experts and driving across the Brazilian Atlantic Forest landscape in the Minas Gerais ans São Paolo states. A big thanks also to Raquel Gelli who joined us in Brazil and helped out with translation of interviews and the two times that we crashed the car.

Working almost exclusively with policy processes and global climate governance (i.e. detached from reality), it was a mind-numbing experience to follow an agriculture product from consumption to production, to see the lopsided distribution of profits in the Global North and the distribution of climate risks and impacts on smallholder farmers in the Global South. If I could wish for one insight that this thesis could contribute to, it is that

policy-makers, multinational corporations and consumers of highly valued products, such as coffee, realise that improving the livelihood and resilience of smallholder farmers in the Global South would also lead to stronger adaptive capacity of countries, corporations and people in the Global North.

Fun Fact #5: Our road trip in Minas Gerais took us to the UFO-hunting capital of Brazil, Varginha. Varginha is also the coffee capital of Brazil, but this is of lesser importance. According to Wikipedia, on 20th January 1996, three local citizens spotted a creature that looked as a large headed biped (an animal that walks on two legs) with spots like veins on the skin, bumps on the head and two red balls for eyes. This so-called "ET of Varginha" was, according to Brazilian authorities, eventually explained as being an expectant couple who had dwarfism.

Another remarkable thing with the Field Trip to Brazil was its timing. Raquel, Kevin and I arrived home at the end of February 2020. It was the last thing I did before the world stopped and then changed. It was also where progress on this thesis suddenly stopped.

As someone who had strong beliefs in the power of global governance to lead to change – who witnessed the creation of the Paris Agreement (the energy in the plenary at the moment when Paris Agreement was final is something difficult to describe) – the effects of the pandemic, especially in the first few months when the international order more or less collapsed, challenged and questioned my whole world view. Losing belief in the thing that you write about and do research on does not help when you are searching for mental strength and motivation to finalise it. Writing the last 20 percent of this dissertation were by far the hardest. At times, it was left sitting for months and only looked at in moments of desperation.

Without the support from Frank and Sander it would probably still be in the same state. And while I found my strength to finish, the same cannot be said about the potential for global processes, such as the Paris Agreement

and the 2030 Agenda. Or even global security more broadly. A decline of globalisation also means a decline of truly global solutions to our common problems, of which the increasing inequality between and within countries is probably the biggest one, albeit one that receives the least attention. A ticking time bomb.

My own research has also adapted to new realities. Today, most my work focuses on the role of policy coherence between the climate change and sustainable development regimes. Most of this work focuses on national implementation and looks at how incoherence can be overcome outside of global governance.

Here, I am extremely lucky to get to work with the brilliant Katherine Browne and Zoha Shawoo. Those two from earlier who had to pass through the eye of a needle to work with someone sliding around on a shrimp sandwich.

This whole reflection can be read as a Voltarian voyage of someone slowly coming to the realisation that 'il faut cultiver notre jardin'. However, deep within I will always be a young Candide, searching for hope in most unlikely places. What other choice can you have when putting two small children to this world.

Now that this is soon over, I might replace my aging coffee machine.

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Abbreviations

AAP	Africa Adaptation Programme
ACTS	African Centre for Technology Studies
AF	Adaptation Fund
AR4	IPCC's Fourth Assessment Report
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung
CIC	Climate Innovation Centre
CIF	Climate Investment Funds
COP	Conference of the Parties
CSA	Climate-Smart Agriculture
CSO	Civil Society Organisation
CSR	Corporate Social Responsibility
DANIDA	Danish International Development Agency
DFIC	United Kingdom Department for International Development
EIA	Environmental Impact Assessment
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FDI	Foreign Direct Investment
FONERWA	The Rwanda Green Fund
FTE	Full Time Equivalent
GACSA	Global Alliance for Climate Smart Agriculture
GAFCA	Global Aggregator for Climate Actions
GCAA	Global Climate Action Agenda
GACP	Global Climate Action Platform
GCF	Green Climate Fund

GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse gas emissions
GIZ	Gesellschaft für Internationale Zusammenarbeit
GPSC	Global Platform for Sustainable Cities
ICO	International Coffee Organisation
IISD	International Institute for Sustainable Development
IO	International Organisation
IOSCO	International Organisation of Securities Commissions
IPCC	Intergovernmental Panel on Climate Change
IR	International Relations
IUCN	International Union for Conservation of Nature
KEPSA	Kenya Private Sector Alliance
KfW	Kreditanstalt für Wiederaufbau
LDCF	Least Developed Countries Fund
LPAA	Lima Paris Action Agenda
M&E	Monitoring and evaluation
MINIRENA	Ministry of Environment
MoU	Memorandum of Understanding
MSME	Micro, Small, and Medium-sized enterprise
NAP	National adaptation plan
NAPA	National Adaptation Programme of Action
NAZCA	Non-State Actor Zone for Climate Action
NDC	Nationally determined contribution
NGO	Non-Governmental Organisation
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
PPP	Public-private Partnership
PSF	Private Sector Federation
PSI	Private Sector Initiative

RDB	Rwanda Development Board
REMA	Rwanda Environmental Management Agency
SAN	Sustainable Agriculture Network
SCCF	Special Climate Change Fund
SCF	Standing Committee on Finance
SDG	Sustainable Development Goals
SEI	Stockholm Environment Institute
SIDA	Swedish International Development Agency
SIDS	Small island developing States
SME	Small, and Medium-sized enterprise
SNV	Netherlands Development Organisation
SPA	Strategic Priority for Adaptation
TAG	Transnational Adaptation Governance
TCR	Transboundary Climate Risk
UN-DESA	UN-Department of Economic and Social Affairs
UNCBD	United Nations Convention on Biological Diversity
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	US Agency for International Development
WFP	World Food Programme
WMO	World Meteorological Organisation
WTO	World Trade Organisation

1/ Introduction

1.1 Climate change adaptation as a global challenge

Over the past three decades, interest in climate change adaptation has increased substantially – from a minor policy field to one that is considered on par with climate change mitigation – leading to the emergence of a new field of policy and research, aimed at understanding, informing and governing adaptation to climate risks and impacts. This development has been primarily progressed under the guise of the United Nations Framework Convention on Climate Change (UNFCCC). However, despite this shift in discourse we are nowhere near being ready for dealing with current and emerging climate change risks and impacts. Despite countries agreeing the 2015 Paris Agreement to limit the temperature increase to 1,5°C above pre-industrial levels in order to avoid adverse climate risks and impacts, the Intergovernmental Panel on Climate Change

(IPCC) emphasises that global warming is likely to reach this level in 10-20 years (IPCC 2018). Furthermore, in its most recent climate risk assessment the IPCC makes the case that adaptation to climate change should now be acknowl-edged as vital for generational wellbeing, and that the window of opportunity to adapt is closing fast (IPCC 2022).

Meanwhile, the world we live in is increasingly becoming interdependent across borders. Over the past few decades, global flows of finance, trade and people have increased substantially. Consequently, risks and impacts of climate change are transmitted from one place to another, meaning that their responses will need to be coordinated in a way that connects places and people, geographically and socially, across actors, scales and boundaries (Carter et al. 2021; Challinor et al. 2017; Hedlund et al. 2018). This is also raised in the latest IPCC report, which states the need to consider transboundary climate impacts and compounding risks, which can generate snowball effects and increase the magnitude and lifespan and geographical spreading of individual risks across sectors, systems, areas and communities (O'Neill et al. 2022). In an interconnected world, a central challenge for adaptation governance then becomes to assign authority for affairs which have transboundary ramifications.

A particular socio-economic dimension of climate change is that a number of industrialised economies have harnessed wealth through the burning of fossil fuels, while many developing countries are exposed to increasing vulnerability as a consequence (Roberts and Parks 2006; Sultana 2022). The impacts of climate change hit the most vulnerable people the hardest. As extreme weather events hit more often and become more severe, accounts of them are strikingly similar in that the poorest and most vulnerable people and communities are the ones most affected by the impacts. Climate change exacerbates existing inequalities, including those related to gender, income, age and ethnicity (IPCC 2022). Consequently, how can a policy regime be constructed to address the transboundary effects of climate change while accounting for differences between countries needs and capacities as well as those between public and private actors?

In political science, transnational governance, emphasising the role of non-state actors in international relations, aims to apprehend how transboundary issues can be best captured in public policy and decision-making (Bulkeley et al. 2014). In the field of climate change, transnational governance studies have sought to establish a broader conception of politics that captures the richness and complexity of climate governance beyond the United Nations (UN) processes (Hale and Roger 2014; Okereke et al. 2009; Bulkeley et al. 2012, 2014; Chan et al. 2016; Roger et al. 2017). The broad assumption is that, when confronted with transboundary problems, sharing responsibilities with non-state actors to jointly foster or shape existing transnational rules can offer benefits that complement more traditional mechanisms, such as formal and informal intergovernmental agreements (Roger and Dauvergne 2016).

The governance of climate change now takes a wide array of transnational forms: carbon markets, certification standards, voluntary workplace schemes, emissions registries, carbon labelling, urban planning codes etc. (Bulkeley et al. 2014; Hale et al. 2021). From a research perspective, attention has turned towards the multiple ways through which actors and networks, such as international organisations, non-governmental organisations (NGOs), corporations, academia and municipal networks, contribute effectively and legitimately to public rule-setting and steering, implementation and enforcement of measures that lead to low-carbon and climate-resilient societies (Andonova et al. 2009; Bäckstrand and Lövbrand 2015; Biermann et al. 2009; Hoffmann 2011; Pattberg and Stripple 2008). However, two significant traits about transnational climate governance are that most initiatives tend to focus on climate change mitigation, i.e. actions that aim at reducing greenhouse gas emissions (GHG), and that they are mainly located in the Global North (Chan et al. 2018; Roger et al. 2017).

By contrast, adaptation to climate change has previously been seen as an exclusively national and local, or even private matter — mainly concerning the directly exposed subjects (Persson 2011). The scalar framing of adaptation in both scientific and grey literature has typically been that it is a local or

national issue that requires local or national responses and governance. Barrett (2008), for example, describe it as a local public good, i.e. benefitting communities within a limited geographical area. Recently, however, a broad set of actors are increasingly seeing the need for adaptation governance at levels beyond the local and national. For example, shared water resources under stress or supply chains affected by extreme weather events generate transboundary risks and opportunities, calling for novel approaches to adaptation (Hedlund et al. 2018). Furthermore, the norm of adaptation as a global challenge and a global goal has been recognised in the Paris Agreement. In sum, new situations are arising where adaptation has clear global public good properties and will need coordinated responses at all levels (Khan and Munira 2021; Magnan and Ribera 2016; Persson and Dzebo 2019).

A multiplicity of actors – including governments, international organisations and a variety of non-state actors (i.e. cities, state and regional governments, businesses, the financial sector, civil society groups, academia among others) – have plausible claims to be engaged in, or responsible for, the governance of climate change adaptation at various levels. The mantra that mitigation is global and adaptation local is increasingly being questioned in academic and policy literature. For example, Ayers (2010) introduced the concept of the 'adaptation paradox', where climate change is a global risk, but where vulnerability is locally experienced. Furthermore, Nalau et al. (2015) argues that while adaptation is practiced at local levels, it does not necessarily follow that it is best governed locally. Researchers have increasingly focused on studying the overarching institutional architecture of global adaptation (Biermann and Boas 2010; Khan and Roberts 2013; Magnan and Ribera 2016; Persson 2019). But while adaptation governance seems increasingly to involve new types of non-state actors, including the private sector (Biagini and Miller 2013; Isoaho and Surminski 2015; Pauw 2015), the transnational dimension of adaptation governance has received scant attention.

There is a need to distinguish these novel initiatives to better understand and shape the future of adaptation governance. Particularly interesting is the

relationship between state and non-state actors in transnational adaptation governance and how it complements 'territorial' approaches to adaptation. This doctoral dissertation aims to fill this gap. It is reasonable to assume that i) stakes in adaptation governance will increase alongside the emerging adverse effects of climate risks and impacts and the increasing awareness that they cannot be contained within national borders (Benzie and Persson 2019; Carter et al. 2021); and that ii) a new form of adaptation governance is emerging where traditional territorial approaches to governing adaptation are complemented with global and transnational ones (Persson 2019). To achieve its aim, this doctoral dissertation stipulates that adaptation is not purely local but has a global component, which in essence makes adaptation also a global issue. Furthermore, it builds on the notion that adaptation governance should go beyond the public realm, involve non-state actors, either in collaboration with states or as sole actors, and be governed across borders when necessary. In other words, adaptation governance is transnational.

With this in mind, analysing transnational adaptation governance needs to go beyond empirical observation and conduct work that explores the relationship between governance and outcomes (Pierre and Peters 2000). Specifically, studies on transnational adaptation governance need to explore the causal relationship between emerging governance interventions and their effectiveness and legitimacy (Jordan 2008). Consequently, the underlying assumption of this dissertation is that effective and legitimate transnational adaptation governance delivers benefits beyond national borders.

For the purpose of this dissertation, a broader focus on adaptation to climate change – focusing on governance efforts aimed at reducing vulnerability human and natural systems from current and expected impacts of climate change – will be applied in terms of the role and purpose of both state and non-state actors and how they seek to position themselves in the climate regime. Operationally, to distinguish its transnational component, this dissertation approaches adaptation in three ways. First, it looks at formalised adaptation, where states and international organisations are setting the

agenda and implementing adaptation activities together with non-state actors under the guise of the UNFCCC. Second, it broadens the scope of adaptation in order to explore arrangements that are led by the private sector and other non-state actors where governance activities are at risk of not being captured in the formal structure of the UNFCCC. Finally, it takes a transboundary approach to climate risk management in supply-chains by exploring supply-chain actors and their roles and responsibilities towards adapting to climate risks and impacts.

This introductory chapter provides a broad introduction to the dissertation. Section 1.2 introduces the climate change adaptation concept and elaborates on its historical and policy implications. Section 1.3 introduces the two concepts of global and transnational governance and section 1.4 operationalises transnational adaptation governance. Section 1.5 outlines the problem definition and introduces the dissertation's research questions. Section 1.6 introduces three specific cases of transnational adaptation governance and motivates their selection. Lastly, section 1.7 presents the structure and outline of this dissertation.

1.2 A historical overview of adaptation in policy and practice

Adaptation measures are those that enable natural or human systems to cope with a changing climate and anticipate its adverse effects and opportunities through increased resilience. The most common definition of adaptation comes from the IPCC, which defines adaptation as a "process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities" (IPCC 2014: 5). Adaptation measures may be planned or put in place spontaneously in response to a risk or a pressure. They include large-scale infrastructure changes, such as adapting building codes to future climate conditions and extreme weather events, building flood defences and raising the levels of dykes, or developing drought-tolerant crops, among other examples (Noble et al. 2014). They also include

behavioural and cognitive shifts including awareness-raising and capacity building and can, for example, include individuals using less water, farmers planting more resistant crops and more households and businesses buying flood insurance (ibid.).

Adaptation has been a contested topic on the international agenda, both in science and politics, for more than thirty years. The first assessment of the IPCC in 1990 warned against climate change and its potential effects (IPCC 1990). Three years later, in 1992, the creation of the UNFCCC became a first step toward institutionalising climate governance as a measure towards avoiding dangerous anthropogenic interference with the climate system (UNFCCC 1992). However, adaptation was not defined in the convention text. The main reason for this was the political polarisation between countries and a concern that discussing adaptation could detract from the international focus on reducing greenhouse gas emissions (Burton 1996). For example, developed countries feared that an explicit focus on adaptation to climate impacts could be seen as an admission of responsibility to causing the climate problem (Verheyen 2002). On this latter point, issues around climate justice have been an essential ingredient in the climate negotiations. Early in the process, justice was mostly seen as an issue involving two groups of countries: those bearing the responsibility for climate change and those most affected by its consequences. The UNFCCC includes the principle of countries taking climate action according to their 'common but differentiated responsibilities and respective capabilities' (UNFCCC 1992).

Over time, the discourse on adaptation began to take more space in the climate negotiations due to a lack of progress on mitigation and the increased awareness that countries would face adverse impacts from climate change. This was driven by a persistent diplomatic pressure from developing countries as well as the increasing evidence of the impacts of climate change, especially in the Least Developed Countries (LDCs) (Huq and Toulmin 2006). The first significant change came in 2001, when IPCC's Third Assessment Report was released, and at the seventh UNFCCC Climate change

conference in Marrakech, the so-called Conference of the Parties (COP 7). In both these contexts, climate change was recognised as a development problem, in contrast to a global environmental issue that would influence all countries equally (Klein et al. 2017). In other words, developing countries would suffer the most from climate change, and the least developed countries were particularly vulnerable (Adger et al. 2003). In the same year, the UNFCCC also introduced three multilateral funds[1] to provide finance for adaptation and mitigation to vulnerable countries (see also Chapter 4). Nevertheless, despite new funding and political recognition, adaptation remained a lower priority issue in comparison with mitigation, both in the climate negotiations and in the IPCC (Huq and Toulmin 2006).

It was not until the IPCC's Fourth Assessment report was published in 2007 – which stated that the warming of the climate is unequivocal, and that climate change impacts are already taking place – that adaptation needs were identified in different sectors and regions (IPCC 2007). Adaptation to climate change was deemed as unavoidable. The Nairobi Work Programme, introduced in 2006, made impacts, vulnerability and adaptation key priorities. This programme also established the Adaptation Knowledge Portal, where public and private actors could share knowledge and lessons learned around adaptation. This process also saw the first involvement of private sector actors in adaptation through the Private Sector Initiative, a database set up by the UNFCCC with the intention to present how businesses are contributing to adaptation efforts (for an analysis of these early initiatives see Pauw et al. 2016).

The climate negotiations in Bali in 2007 raised the political status of adaptation by including it as a key 'pillar' of climate action, alongside mitigation, technology transfer, and finance. The so called 'Bali Action Plan' demarcates a pivotal moment for adaptation, for the first time recognising its crucial importance beyond adaptation finance, and connects adaptation with questions about poverty, political disenfranchisement, social marginalisation, and other social factors (Klein et al. 2017). The following year, at the climate

1. The Special Climate Change Fund, the Least Developed Countries Fund and the Adaptation Fund.

negotiations in Cancún, countries translated these political commitments to a creation of new institutions and involvement of new actors in adaptation governance. Here, countries i) established the Green Climate Fund (GCF), ii) agreed on mechanisms to promote the transfer of finance and technologies for mitigation and adaptation in developing countries, iii) established a process for preparing National Adaptation Plans (NAPs) to integrate adaptation into national policy-making; iv) put in place an Adaptation Committee to offer technical support and share information; and v) agreed on a work programme on 'loss and damage' associated with climate impacts in particularly vulnerable countries (Klein et al. 2017). The ambition of the resulting Cancún Adaptation Framework was to promote adaptation action with the same level of priority as mitigation.

A few years later, the IPCC indicated in their Fifth Assessment Report in 2014 that anthropogenic greenhouse gas emissions are higher than ever before. The report also stated that the human influence on the climate system is clear: warming of the climate system is unequivocal and climate impacts are leading to adverse consequences to some of the most vulnerable people on earth. The atmosphere and oceans have warmed, the amounts of snow and ice have diminished, and sea level rise has accelerated (IPCC 2014). As a political response to these findings, at the climate negotiations in Paris in 2015, the parties agreed the Paris Agreement, which sets the target to limit the global temperature increase 2°C and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels (UNFCCC 2015). In Paris, the UNFCCC also instructed the IPCC to create a Special Report on Global Warming of 1.5°C. This report stated that the limits to adaptive capacity are identified already at 1.5°C warming and become more pronounced with higher levels of warming. Overall, the report emphasises, adaptation efforts worldwide need to accelerate and deepen, and international cooperation is found to be a "critical enabler" for effective adaptation (IPCC 2018: 25).

For this dissertation, the adaptation-related outcomes from the 2015 climate negotiations (COP 15) and the resulting Paris Agreement are key milestones

for several reasons. First, at the meeting, countries articulated a more 'global' approach to adaptation. In addition to the global temperature goal, the Paris Agreement explicitly defined adaptation as 'a global challenge faced by all with local, subnational, national, regional and international dimensions' (Art. 7.2). Second, the Paris Agreement also established the 'global goal on adaptation' with the intention "of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate adaptation response in the context of the temperature goal" (Art. 7.1). Third, countries also reaffirmed their ambition to deliver US$100 bn in climate finance, for adaptation and mitigation, per year as a minimum and set out a plan to revise the figure in 2025. Lastly, countries committed to increase efforts towards planning and implementing adaptation actions, to submit adaptation communications, to provide enhanced international support to developing countries, and to use the global stocktake (Art 7.14) to review adequacy and effectiveness of adaptation and its support and to review progress on the global goal (UNFCCC 2015). The global stocktake is defined in Article 14 of the Paris Agreement. It is a five-year cyclical mechanism intended to review progress and enhance action and support to collectively steer the world towards low-emission and resilient development pathways.

The Paris Agreement is a significant step towards framing adaptation as not only a national or sub-national, but a global issue. Lesnikowski et al. (2017) argue that the Paris Agreement has strengthened and broadened the normative framing of adaptation as well as strengthened the mechanisms for enhanced transparency on assessing progress on adaptation. However, a novel global framing, as well as the global goal on adaptation's broad application, which incorporates adaptive capacity, resilience and vulnerability, also makes the concept open to many, and potentially, diverging interpretations when it comes to translating it into operational goals and governance approaches (Persson 2019). Despite the historical attempts from IPCC and others, there is a lack of a politically agreed definition of adaptation under the

UNFCCC (Schipper 2006). Ford et al. (2015:967) observe that "there is much debate about what actually counts as 'adaptation', arising from the indistinctiveness of the concept, lack of clarity in its usage and continuous rebranding of policies as 'adaptation'". Persson and Dzebo (2019) note that while the Paris Agreement has set in place a structure for recognising adaptation as a global challenge, it is yet to be filled with meaningful functions and purpose. Despite the conceptual development, Magnan and Ribera (2016) conclude that we are still not on track to answer the question whether we as humankind are on track to adapt to climate change. Consequently, a broadening of adaptation can allow for new and emerging initiatives, but questions around legitimacy and effectiveness remain.

In addition to the policy-related challenges of adaptation, there are also practical questions around the implementation of adaptation efforts. A recently published paper found evidence that rather than reducing vulnerability to climate change, current efforts tend to increase it. The authors found that most interventions tend to either reinforce existing vulnerabilities, redistributing them or create new sources of vulnerability. In addition, failed adaptation efforts tend to reinforce pre-existing inequalities where adverse consequences follow typical patterns such as gender, race, disability and class (Eriksen et al. 2021).

Drawing from these challenges, adaptation in this dissertation emphasises governance efforts aimed at reducing vulnerability in human and natural systems from current and expected impacts of climate change. This includes both the aspect of climate risks, i.e. possible outcomes or consequences of climate-related hazards and change; and the responses to avoid adverse impacts derived from climate risks. This approach also takes into account how misguided adaptation efforts can reinforce, redistribute or create new vulnerabilities (Atteridge and Remling 2018; Eriksen et al. 2021).

1.3 Global and transnational governance

In light of the climate change negotiations, in the past three decades, the state-centric 'ideal' of governing has shifted to allow for a more eclectic set of actors with decision-making power (Bäckstrand et al. 2017). This process can be related to a broader shift in world politics from 'government' to 'governance' (van Kersbergen et al. 2009). The static view of national sovereignty and demarcated borders was deemed as insufficient by scholars to capture the broader political and economic shifts in international relations. Governance as a theoretical concept aims to capture the various ways in which actors and institutions exert power and gain legitimacy. Instead of focusing on only the powers of the state, governance admits a range of types of power and modalities through which it can be exercised (Rosenau and Czempiel 1992). This has encouraged scholars to look for agency among, for example, social movements, multinational corporations and academic networks (Czempiel 1992).

The added value of the governance concept comes from its potential to take the increasing participation of non-state actors in international governance of collective affairs into account (Biermann 2006; Okereke et al. 2009). The concept of global governance emerged as a reference to "collective efforts to identify, understand, or address worldwide problems and processes that went beyond the capacities of individual states" (Weiss and Wilkinson 2014: 208). Biermann et al. (2009: 15) define global governance as "the overarching system of public and private institutions that are valid or active in a given issue area of world politics." Global governance recognises new actors as sources of authority alongside states in a non-hierarchical manner, such as international organisations, civil society, multinational corporations and academia. It assumes that a wide variety of forms of governance coexist, in a non-hierarchical way (Dingwerth and Pattberg 2006). Global governance is particularly concerned with organisations with rule-making power beyond the state. Most of these organisations are international organisations, formally created and operated bodies with multiple state members and a permanent secretariat, such as the UN, the World Trade Organisation (WTO)

and the European Union (EU). Other type of organisations include transgovernmental networks, which are informal networks of states that make rules outside of traditional international law, such as the G20 and the International Organisation of Securities Commissions (IOSCO) (Djelic and Sahlin-Andersson 2006).

Much of the early work on global governance aimed at demonstrating how non-state actors could directly influence state behaviour through non-violent campaigning, framing and 'naming and shaming' (Keohane 1984). However, with time research widened the discipline to focus on governance beyond the state. Examples include studies on how civil society organisations (CSOs) could exert influence on individuals and corporations (Wapner 1995), or how Similarly, emerging research on the European Union explored the role of non-state actors in multi-level governance (Hooghe and Marks 2001).

In terms of global governance studies related to adaptation, Persson (2019), discusses how research has sought to nuance the claim of a broad shift towards non-state actors leading global adaptation governance efforts. She emphasises how literature has looked at the interrelationship between actors by examining how states and international organisations 'orchestrate' transnational initiatives (see also Hale and Roger 2014) and how there is in fact a dynamic relationship between transnational initiatives and national-level government policy (Andonova et al. 2017). Persson (2019) distinguishes the role of states as key actors in adaptation governance with a more prominent presence than in much of the literature on transnational climate governance. Similarly, Dellmuth and Gustafsson (2021) discuss how large international organisations' mainstreaming of adaptation into other focus areas is another example of global adaptation governance (see also Dellmuth et al. 2020).

A similar, but distinct, theory on the emergence of non-state actors in world politics comes from the field of transnational governance. Drawing on insights from transnational environmental actors in the 1970s, Keohane and

Nye (1973) theorised on the 'complex interdependence' between states and other actors, capturing a world where transnational activity affects states' capacity to act. Transnationalism is here defined as "regular interactions across national boundaries when at least one actor is a non-state agent or does not operate on behalf of a national government or an international organization" (Risse-Kappen 1995: 9). Transnational governance implies blurred boundaries and entanglement between actors, rendering old lines of demarcations obsolete and making it difficult to separate what takes place within national boundaries and what takes place across and beyond nation-states (Djelic and Sahlin-Andersson 2006; Hale and Held 2011).

The emergence of transnationalism is often attributed as a policy response to issues that cut across national boundaries and require resolution, and which manifest in the presence of governance vacuums or poorly implemented international agreements (Bäckstrand 2008; Kolk and Pinkse 2008; Visser-en-Hamakers and Glasbergen 2007). In the context of globalisation and increasing interdependencies across borders, Strange (1996) argued that it was no longer only the states and international organisations, but also local governments and, above all, market actors, particularly large multinational corporations with large and complex global supply-chains, which now had the power to set the rules governing the world economy. Studying private sector actors specifically, Green (2013) argues that innovations in governance arrangements need a demand for such authority as well as actors willing and capable of supplying it. Transnational governance in that sense stems from the anticipated benefits of non-state authority, which include reduced transaction costs, credible commitments, first-mover advantages, and improved reputation (Roger and Dauvergne 2016). Criticism of transnational governance have emphasised its contribution to a redefinition of sovereignty where the increased influence of non-state actors, such as multinational corporations, non-governmental organisations and international financial institutions, can influence national decision-making, potentially creating a democracy deficit (Duffy 2006).

In the context of transnational climate governance, Biermann et al. (2009) have raised concerns about fragmentation within the climate regime and possible conflicts between various regimes. Fragmentation implies that policy domains are marked by a disjointed system of public and private institutions that differ in their character, constituencies, spatial scope, subject matter, and objectives (Zelli 2011). Another similar concept, 'hybrid multilateralism' focuses on how non-state actors not only are developing new transnational governance initiatives, but also overseeing and implementing state commitments (Bäckstrand et al. 2017). Consequently, transnational climate governance studies often emphasise institutional initiatives, networked partnerships (Widerberg and Pattberg 2015) or non-state climate actions (Chan et al. 2018). The governance initiatives can vary in their organisational form, have a global or regional geographical foci and can have a general or specific issue area purpose. They can also vary in level of authority and institutionalisation as well as in their provision of different types of governance functions (Liese and Beisheim 2014). Theorisation on transnational climate governance often tends to omit the role of the state and broader social structures as important variables (Andonova et al. 2017; Bartley 2011). As Roger and Dauvergne (2016) note, many studies tend to depict a world in which the private sector and civil society seem to act almost entirely independently of governments.

Regarding transnational governance in the field of adaptation, Chapter 4 of this dissertation (see also Dzebo and Stripple 2015) discusses how adaptation is transnational and introduces transnational adaptation governance as a fourth era of adaptation. The chapter shows how non-state actors over time become increasingly involved in the implementation of adaptation projects. As another example, Setzer et al. (2020) and Papin (2019) discuss how regional and municipal governments increasingly engage in transnational networks to effectively govern and coordinate adaptation efforts. These studies confirm Persson's (2019) finding that public actors continue to play a major role in global and transnational adaptation governance. Other studies of transnational adaptation note that it continues to be underrepresented in

global non-state climate action (Chan and Amling 2019). The next section builds on existing work on global and transnational adaptation and makes a proposal to define and operationalise transnational adaptation governance.

1.4 Conceptualising transnational adaptation governance

As the previous sections have argued, adaptation is simultaneously a global, a national and a sub-national issue. While most adaptation measures are implemented locally, they depend not only on agency within the local area, but on many factors beyond and above this scale (Patterson and Huitema 2019). According to Scoville-Simonds et al. (2020), many of the shortcomings of current adaptation efforts to reduce vulnerability relate to spatial restrictions and fail to take into account global contexts and multi-level processes that drive or reinforce vulnerability. This includes, for example, the lack of accountability of international organisations and multi-lateral and bi-lateral development agencies in how they are implementing adaptation projects, or national governments ignoring the needs of the most vulnerable groups or communities (ibid.).

Hall and Persson (2018) elaborate that, at the global level, adaptation is characterised by low degree of legalisation because of its characterisation as a contested public good, meaning that is marked by low publicness in utility but high publicness in either consumption, provision, or both, with the implication that international coordination is not necessary[2]. For this reason, the institutionalisation of adaptation has mainly taken place at the national and sub-national levels. With this in mind, Persson (2019) claims that additional theorisation from the fields of political science and climate governance are needed to offer models of when adaptation might be a public goal and when a private goal, to advance agreement and reduce contestation.

The increased notion that adaptation is a global challenge has led to shifts in the perception of territorial approaches to adaptation. Most notably, that

2. One exception to this might be found in the discussions on adaptation finance (see e.g. Pauw et al. 2016).

risks and impacts of climate change are not confined or experienced only locally or nationally but can cascade across borders. This happens for example through trade, global supply chains, international capital flows, human mobility and shared ecosystems, such as transboundary waters (Hedlund et al. 2018). Consequently, it has been argued that adaptation efforts that respond to these risks and impacts need to transcend national boundaries and involve multilateral responses across national borders. These so called 'Transboundary Climate Risks' (TCRs) do not only link different geographical areas to the same risks and impacts, but also reconceptualise vulnerability as something that cascades along specific pathways (Benzie and Persson 2019; Carter et al. 2021). Some countries have started to explicitly acknowledge or recognise that climate risks and impacts can be transboundary, linking the implications of climate change and connecting adaptation efforts to issues such as security, trade, agriculture supply-chains and food security and migration (Carter et al. 2021). However, few have translated these into specific priorities or measures to address these risks (Benzie and Harris 2020).

Furthermore, adaptation efforts that respond to transboundary climate risks can also themselves have transboundary implications. A misguided adaptation effort, by a country or a corporation, can lead to outcomes that increase risk or vulnerability for other groups or ecosystems (Atteridge and Remling 2018). A lack of concern for how adaptation can redistribute vulnerability, through for example global supply-chains, (see Chapter 7), risks increasing maladaptive practices that leave most communities worse-off, as well as raise the risk exposure of other countries or groups (Eriksen et al. 2021; Juhola et al. 2016).

Incorporating transboundary climate risks in adaptation planning and governance would frame adaptation as a global public good in the sense that countries as well as transnational actors are in a position to gain from enhanced stability, predictability and reliability of global governance, directly as well as indirectly (Benzie and Harris 2020; Khan and Munira 2021). For example Magnan and Ribera (2016) argue that climate change has

potential to displace peoples or bring in new global public health challenges, and these can only be addressed through international cooperation. A similar argument is laid out by Banda (2018) who states that adaptation, beyond being a domestic public good, also has global public good characteristics that need effective international governance mechanisms to control for transboundary externalities. This stipulates that a global perspective for adaptation is needed to understand risk exposure to climate impacts and actors' interdependencies between adaptation efforts across the globe. Furthermore, evidence suggests that vulnerability to transboundary climate risk may well be high in places that are also vulnerable to direct and local climate impacts (Hedlund et al. 2018), which could mean increased inequality in how costs and benefits of climate change are distributed.

This does not, however, mean that an adaptation problem that is global in scale necessarily has to be governed at the global level or by actors that operate transnationally (Persson 2019); and that all adaptation-related problems demand a global response (Persson and Dzebo 2019). Internationally or transnationally coordinated cooperation on adaptation is not essential for all levels and scales, but can be part of a robust, multi-level arrangement (Persson 2019). A global response can also be useful in ensuring that all actors cooperate to provide the public good and avoid free-riding or sub-optimal outcomes. Adaptation as a global response can benefit from the mutual interest in learning from others through information sharing, capacity building or insights around shared responsibility, which, in turn, could become part of successful implementation of national policy and local adaptation efforts.

In order to operationalise transnational adaptation governance, this dissertation builds on work on global adaptation governance, which is defined by Persson (2019: 3) as occurring "when state and non-state actors in the global (including transnational) sphere authoritatively and intentionally shape the actions of constituents toward climate change adaptation as a public goal." Furthermore, in order to provide criteria for how transnational adaptation governance can be observed, the approach by Bulkeley et al. (2014), who's

work on transnational climate governance has been essential for this dissertation, has been slightly adapted to an adaptation context. Transnational adaptation governance can be observed if three specific criteria are fulfilled: i) explicitly shape climate change adaptation efforts in terms of seeking to reduce vulnerability to climate change risks and impacts; ii) operate transnationally, in the traditional sense of working across at least one national border and involving at least one non-state actor; and iii) seek explicitly to govern a constituency, whether that be participating members or a wider audience, in terms of seeking to steer or conduct adaptation activities.

This operationalisation captures formal explicit adaptation initiatives and other measures orchestrated by the UNFCCC and/or other international organisations. It also captures efforts outside the formal climate regime, which include private sector initiatives and initiatives by civil society organisations. The latter are particularly important because many non-state and private sector activities are not disclosed or even seen as adaptation and might therefore fall under the radar (Isoaho and Surminski 2015). It also allows for an examination on the role of public actors, such as international organisations and nation-states, in supporting and scaling-up adaptation transnationally.

1.5 Problem definition and research questions

For the reasons stated above – problem urgency, uncertain and novel transboundary risks, and emerging global and transnational responses – as well as the inherent conceptual ambiguity and the difficulties in drawing distinct boundaries around the adaptation domain, the global and transnational aspects of adaptation need to complement traditional conceptualisations of adaptation, both in terms of the scale of the problem and the scale of the response. Given the lack of strong mitigation action at the international level and the increasing challenges of staying below 1,5°C of global warming, there is an urgent need to understand how to enable successful adaptation (IPCC 2022). Coherent governance at all levels is key here, and this

dissertation seeks to foster a better understanding of transnational adaptation governance and how it can support national and sub-national adaptation efforts.

This dissertation aims to understand how state and non-state actors govern climate-related risk across borders and explore the implications of transnational adaptation governance in enhancing the success of adaptation activities. Such insights will be critical for providing policy advice to decision-makers at all levels. It will address three gaps in knowledge. First, to date, the theorisation of transnational climate governance has mainly focused on accounting the impacts of transnational initiatives, particularly with regards to the potential for emission reductions, and discussing their effects on the behaviour of states in the international arena (Bulkeley et al. 2014). With regards to transnational adaptation governance, much less focus has been put on the emergence of these measures and initiatives. A second knowledge gap concerns the ability of transnational adaptation governance to deliver effective governance outcomes as well as to have an impact on the global efforts to decrease the vulnerability of social and natural systems from climate change (Young 2011). Third, transnational adaptation governance is a novel and emerging issue area of global governance. While many policymakers and experts agree that non-state actors ought to take on a bigger role in governing adaptation, the underlying motivations of these actors are not well-understood, particularly when interactions cross borders, i.e. are transnational. As such, research has not sufficiently raised issues around its legitimacy, for example in terms of the power and authority of transnational actors in influencing domestic policy processes (Suchman 1995). To summarise, the interaction between state and non-state actors across national borders and the effectiveness, normative impact, and distributional consequences (Abbott 2012) of this interaction on adaptation governance are insufficiently explored by empirical research. These knowledge gaps are further elaborated upon in Chapter 3.

The objective of the dissertation is to explain the emergence and analyse the legitimacy and effectiveness of transnational governance mechanisms in

the context of climate change adaptation. To do so, in Chapter 3, it devises a theoretical approach that will: i) position adaptation in the broader climate regime and explain how transnational adaptation governance emerged as a new concept and complemented, rather than replaced, an existing regime; ii) explore how a stable institutional environment, such as adaptation within the UNFCCC changed to facilitate the emergence of transnational adaptation governance actors and institutions; and iii) analyse and explore uneven geographies in the emergence of transnational adaptation governance and how this stimulates conflicts and opportunities in the Global North and the Global South. The theoretical approach aims at understanding the multiple inter-linkages and relationships in which transnational actors are simultaneously involved, and how a mutual understanding of shared risk and shared responsibilities across borders can lead to more effective and legitimate adaptation governance.

Adaptation, due to its cross-sectoral nature and close connection to trade, finance, tourism and security, offers an ample empirical field for furthering the academic field of transnational governance. This dissertation will build on previous studies in the field of transnational climate governance by focusing on adaptation and extend them to include transnational climate governance arrangements both within, facilitated by and outside of the UNFCCC. By doing so, it will cover the breadth of transnational governance related to adaptation. Overall, the dissertation aims to answer following research questions:

1. *Why is transnational adaptation governance emerging and how can its emergence be explained?*

In order to explain a new observation, it is first important to describe it and establish it in the broader research field (Patton 1990). Therefore, focus will be first on establishing a novel and emerging phenomenon in both adaptation and transnational governance research by describing and explaining its emergence and discussing the role of state and non-state actors in this process.

2. *Under what conditions is transnational adaptation governance effective?*

Having established the broader transnational adaptation governance context, the next step is to assess its effect. This allows for an analysis of which outputs are being produced under transnational adaptation governance, what outcomes they lead to and their potential to achieve a broader impact in terms of decreasing vulnerability to current and expected climate change risks and impacts.

3. *On what grounds is transnational adaptation governance understood to be legitimate?*

Finally, having established the emergence of transnational adaptation governance and assessed its effectiveness, the third research question is interested in how legitimacy is contested in an emerging issue area of global governance. It is essential to consider on what basis transnational adaptation governance is understood to be legitimate as legitimacy, in global governance, is derived from the acceptance of the audience affected by governance decisions rather than derived from a set of normative principles, such as democracy or human rights.

1.6 Selection of cases

Transnational adaptation governance is an emerging research area. As such, this chapter has introduced its components, adaptation, global and transnational governance, and elaborated how it should be conceptualised. To delimit the scope of the dissertation and to answer its research questions, this section introduces three specific cases of transnational adaptation governance and provides a motivation for their selection.

The first case focuses on adaptation finance. As section 1.2 showed, adaptation finance was one of the early areas where adaptation took a global shape as developed countries committed to mobilise and deliver finance for unavoidable impacts of climate change. The question of adaptation finance is embedded in a broader context of climate justice and has clear transboundary implications due to the fact the countries in the Global South are more vulnerable but have done much less to cause the problem in the first place. In addition, adaptation finance has both a state and a non-state actor character as countries in the Global North have committed to deliver US$ 100 bn in public and private climate finance for mitigation and adaptation (UNFCCC 2009). Chapter 4 and 5 explore how transnationalisation first emerged in adaptation finance and how its transnational component differs from climate mitigation, where states and international organisations play a larger role.

The second case emphasises the notion of transnational adaptation initiatives. These initiatives can be perceived as organisational institutions which constitute distinct forms of transnational governance at multiple levels between two or more actors, of which at least one is a non-state actor. This type of governance originally emerged from partnerships in sustainable development (Pattberg et al. 2012), but have spread to include climate change mitigation, and subsequently adaptation. Transnational governance initiatives are increasingly being seen as an important governance mechanisms for transboundary interactions as well as a complement to national and sub-national decision-making (Bulkeley et al. 2014). As transnational adaptation governance is an emerging field, Chapter 6 analyses 40 governance initiatives where adaptation is either a key objective or one of several objectives. These initiatives work across several themes, including cities and regions, agriculture and biodiversity, water management and broader cross-sectoral resilience.

In the third case, the dissertation approaches transnational adaptation governance as a response to transboundary climate risk in agriculture

supply-chains. Agricultural products, such as coffee, include large and complex supply-chains and are traded globally, often involving large multi-national corporations operating in the middle of these supply-chains. At the same time, agriculture is one of the most climate vulnerable sectors and has significant implications for both food security (IPCC 2022) and global trade (Bednar-Friedl et al. 2022). This implies that local climate impacts can cascade throughout global supply-chains (Adams et al. 2021) requiring adaptation responses that are coordinated across borders and between state and non-state actors. In Chapter 7, a specific case of the Brazilian-German coffee supply-chain is explored where the chapter analyses the legitimacy of transnational actors in governing climate risk through supply-chain governance.

1.7 Structure of the thesis

This dissertation is comprised of this introductory chapter, a methodology chapter, a theory chapter, four chapters that build on academic articles, with two published, one article that has been re-submitted to an academic journal after review, one peer-reviewed and published working paper and a final concluding chapter.

This introductory chapter elaborated the concepts of climate change adaptation and global and transnational governance and explained how they relate to each other and why they are important to bring together to study transnational adaptation governance. It has also outlined this dissertations problem formulation and research question.

Chapter 2 will elaborate on the research approach that has been selected for answering the dissertations research questions. It will also provide a thorough description of the dissertation's mix-method approach and its key components.

Chapter 3 presents the theoretical considerations of this dissertation. It introduces the dissertation's theoretical approach end elaborates how it can

be applied for an analysis of the dissertation's three key components: emergence, effectiveness and legitimacy. It draws insights from different theoretical ideas, including international regimes theory, orchestration theory, institutional theory and critical political economy. The purpose of the theoretical eclecticism is to provide new and unique perspectives on transnational adaptation governance.

Chapter 4 addresses how transnational adaptation governance emerged within the UNFCCC process and defines this as the fourth era of adaptation. It focuses on global and regional adaptation finance projects and highlights the scope, level of institutionalisation and governance function, of various non-state actors. It shows how adaptation finance was key for bringing in non-state actors to adaptation governance at the global level. However, it also shows that, in contrast to initiatives in climate change mitigation, the role of states and international organisations continues to dominate transnational adaptation governance.

Building on the findings from the previous chapter, Chapter 5 sets out to further explore the role of states in facilitating transnational adaptation governance. While the centrality in transnational governance emphasises non-state actors, this chapter shows that states matter in transnational adaptation governance. It highlights how states in developing countries can facilitate and create an enabling environment for non-state actors, such as the private sector, to mobilise and deliver additional investments in adaptation activities. The chapter develops an empirically-driven, comprehensive analytical framework consisting of three building blocks for effective policies: enabling environments, mobilisation, and delivery of finance for adaptation benefits. The framework is then tested in two countries in Sub-Saharan Africa: Kenya and Rwanda.

Having established the emergence of transnational adaptation governance and elaborated on the role of states in creating an enabling environment, Chapter 6 expands the transnational adaptation governance concept to

initiatives, both within and, outside of the immediate UNFCCC regime. It undertakes a large-n analysis of 40 transnational adaptation initiatives – that are categorised along three categories: service provision, knowledge-transfer and standard setting – and assesses their effectiveness in terms of what outputs are produced and which outcomes they lead to. The chapter assesses to what extent actors, processes, institutional design and context matter for effective outcomes.

The core focus of Chapter 7 is on legitimacy. This chapter views transnational adaptation governance through the relationship between actors with shared motives and agendas in international agriculture supply chains. Its starting point is the question of how transboundary climate risks should be governed and explores the institutional sources of legitimacy that supply-chain actors are drawing on when legitimising their preferred approaches and delegitimising other. Focusing specifically on the Brazilian-German coffee supply chain, the chapter unpacks the contested nature of legitimacy in transnational adaptation governance, in an effort to characterise primary modes of governance.

Finally, Chapter 8 concludes this dissertation by summarising the findings and revisiting the research questions. The chapter discusses the theoretical and policy implications of this dissertation and ends with research limitations and recommendations for further research.

2/ Methodology

2.1 Introduction

One of the main challenges in this doctoral dissertation is that transnational adaptation governance is a novel concept, embedded in adaptation, which, as the previous chapter showed, is itself a fuzzy and complex issue area. Transnational adaptation governance as a conceptual term was first mentioned in Dzebo and Stripple (2015) (which Chapter 4 is based on). Research and theory about its origin, evolvement and future development, as well as its effectiveness, is slowly emerging but remains so far undeveloped.

One of the main challenges in this doctoral dissertation is that transnational adaptation governance is a novel concept, embedded in adaptation, which, as the previous chapter showed, is itself a fuzzy and complex issue area. Transnational adaptation governance as a conceptual term was first

mentioned in Dzebo and Stripple (2015) (which Chapter 4 is based on). Research and theory about its origin, evolvement and future development, as well as its effectiveness, is slowly emerging but remains so far undeveloped.

With this in mind, this dissertation approaches the research questions through an interdisciplinary, problem-driven approach. It applies insights from different academic domains, including political science, international development, political geography and political economy. Drawing from these disciplines, the dissertation is based on a large body of both academic and grey literature. Whilst the academic literature ensures scientific rigour and robustness, it is complemented by grey literature which has higher reactivity and is generally better at responding to politically contentious issues emerging from the climate change negotiations. In addition, project documents, reports, policy documents, and other non-academic publications have not only complemented the literature review, but also served as primary data for some of the chapters.

Methodological approach	Chapter			
	Ch. 4	Ch. 5	Ch. 6	Ch. 7
Participant observation[3]	40			
Document analysis	60	14	120	
Database	250(26)[4]		40[5]	315[6]
Interviews (interviewees)		45(51)	31(31)	41(65)

Table 1 Summary of methodological approaches

A mixed method approach, summarised in Table 1, was used for this dissertation. Participant observation was important across all chapters, including 40 meetings, workshops and conferences. Second, analysis of policy documents includes 194 reports, briefs and other relevant material. Third, three separate databases were constructed with the purpose of analysing climate finance projects, adaptation-related transnational initiatives and legitimation claims extracted from interviews. Lastly, 117 semi-structured interviews were undertaken, with 147 interviewees in total.

3 See Annex 1 for a detailed list of international meetings, conferences, workshops and other relevant events.
4 Total number of adaptation finance projects. Of these, 26 were selected for deeper analysis.
5 Number of transnational adaptation initiatives
6 Number of legitimation claims

2.2 Research approach

2.2.1 Participant observation

In this dissertation, participant observation was used as a general overarching method. Participant observation has its roots in anthropological studies (Iacono et al. 2009) and in development studies (Chambers 1994). More lately, however, it has become an accepted method in broader social science research (Clark et al. 2009).

The rationale for conducting qualitative analysis based on participant observation is that the object of understanding a phenomenon from the point of view of the actors is largely lost when textual data are quantified. Another reason is that it allows a researcher to better understand a given issue area and its cultural environment, which, in turn, gives greater credibility to the interpretations of a phenomenon. Participant observation involves participating in a situation while at the same time recording what is being observed (Iacono et al. 2009). It is an iterative method of enquiry which favours a more flexible process of knowledge formation (Clark et al. 2009). It is possible to observe and gather many forms of data through participation that are often inaccessible from the standpoint of a non-participating external observer (Jorgensen 2015).

The purpose of participant observation for this dissertation has been to get a better understanding of the context in which adaptation-related events and activities happen. Experience of these events enable inductive inquiry (rather than reliance on prior or indirect conceptualisation (Clark et al. 2009:348). In the context of this research, participant observation includes passive and active participation in conferences, workshops, forums, roundtables and other meetings that relate to the research topic. In total, 40 events with relation to transnational adaptation governance have contributed to this research (for more details see Annex 1). Participant observation enabled identification of relevant stakeholders as well as network strengthening with other researchers, civil society and private sector actors. It has

also been beneficial to observe the negotiations in key arenas, such as the UNFCCC Conference of the Parties and intersessional meetings (SBs) in Bonn, Organisation for Economic Co-operation and Development (OECD) Climate Change Expert Group, and UN-Department of Economic and Social Affairs (UN-DESA) meetings. This has helped the researcher to identify key diplomatic and political complexities, for example between developed and developing countries, with regards to the complexity of the adaptation and adaptation-related discourses.

One significant critique regarding this methodological approach is the risk of loss of objectivity. A researcher's active participation concerning the subject of research can compromise the objectivity of the researcher and the subsequent analysis. Evered and Louis (1981) emphasise that analysis and reporting of findings must be managed carefully. This can be done through, for example, complementing with other sources of information or applying additional research methods (Evered and Louis 1981). It is therefore important to emphasise that participant observation has not been the main methodological approach for any of the chapters in this dissertation. Its main purpose has been to identify research needs, discuss tentative results, expand existing networks and understand complex global and transnational context under which adaptation operates.

2.2.2 Document analysis

Document analysis, together with its 'siblings' content analysis and policy analysis (White and Marsh 2006), include a broad variety of techniques. At its core, however, document analysis is a "systematic procedure for reviewing or evaluating documents—both printed and electronic[..] material" (Bowen 2009: 27). Document analysis as a method is often used in combination with other research methods as a means of triangulation. In this process, the researcher is expected to draw upon several sources of evidence with the purpose of seeking convergence and corroboration through the use of different data sources and methodologies (Bowen 2009). This can include qualitative methodologies, such as semi-structured interviews, or participant or

non-participant observation. It can also be complemented with quantitative methods, such as database analysis and descriptive statistics (Yin 2017).

For this dissertation, analysed documents are manifold and include decisions from large events, such as the UNFCCC Conference of the Parties, project implementation documents that provide information that describe policies and the facts that underlie them, policy documents themselves, as well as documents published by transnational initiatives, such as annual reports, briefing papers, technical reports etc. In addition, document analysis was helpful with stakeholder mapping processes for Chapters 5, 6 and 7, and also contributed to the selection of transnational adaptation initiatives in Chapter 6.

As the documents that were analysed varied, the technical approach to the analysis was also different for different chapters. For Chapter 4, a long-list of over 250 climate finance project documents were screened in the first phase through keyword extraction. Of these, 26 projects were selected for deeper analysis of actor participation. These documents were individually analysed by the researcher and their content was included in a database (see below). A similar approach was applied in Chapter 6. Here, analysis of 40 transnational adaptation initiatives included screening of website content, direct publications from the initiatives, as well as indirect external publications concerning one or several of the 40 initiatives (see also Dzebo 2019). The initiatives were selected through participant observation, but also through screening of existing databases such as Lima-Paris Action Agenda, the United Nations Environment Programme (UNEP) Climate Initiatives Platform, the Global Aggregator for Climate Action (GAFCA)[7] database (Chan et al. 2018), initiatives in the area of human settlements and adaptation (UNFCCC 2017). For the purpose of triangulation, this was complemented with semi-structured interviews (see below). Chapter 5 used both national and international policy documents to map the policy landscape in Kenya and Rwanda. As a starting point, the nationally determined contributions (NDCs), key national documents under the UNFCCC Paris Agreement, were analysed as an

7 GAFCA has subsequently been renames as the 'Climate Cooperative Initiatives Database (C-CID)'

entry point to the countries climate policy landscape. This was complemented with an analysis of domestic climate policy documents. This helped create an overview of instruments for enabling environment for mobilisation of private adaptation finance by international and transnational actors. The document analysis was complemented with semi-structured interviews and both academic and policy workshops (Dzebo and Pauw 2019). Lastly, for chapter 7, a thorough mapping of the German-Brazilian supply-chain provided information on the key actors in the coffee sector. This includes coffee cooperatives, trading companies, roasters, retailers, as well as various sustainability initiatives and certification schemes and the public sector. This exercise produced several working papers, technical reports, policy briefs, as well as annual reports and external audits that were supported and complemented the interview analysis (Dzebo and Adams 2023).

As most methods, document analysis has some inherent limitations. First, it is difficult to draw statistically significant findings without a quantitative application of the method, which requires a large number of units of analysis. Second, there is a potential problem of replicability as categorisation and coding are observer-dependent, meaning that two independent researchers would most likely not choose the same approach (Krippendorf 1989). For this dissertation, as mentioned in the beginning of this section, in each chapter, document analysis is one of several complementing methodologies used for triangulating the data together with interview analysis and database analysis.

2.2.3 Database approach

A database approach allows for a better understanding of the larger phenomenon of initiatives, partnerships and projects beyond the restricted focus of single cases. Moreover, database research can reveal correlations between variables, while testing and generating hypotheses. Much of the existing work in transnational climate governance builds on database approaches (see e.g. Andonova and Levy 2003; Bulkeley et al. 2012, 2014; Chan et al. 2018; Pattberg et al. 2012; Widerberg and Stripple 2016). This has been

particularly prominent thanks to the increased availability of data over the past 10-15 years.

This dissertation builds on the previous database-driven work in the field of transnational climate governance. The purpose of the database approach was to complement the qualitative methodologies with a large-n and medium-n approach. Data was obtained through websites, publications and interviews. All databases were created in Microsoft Excel. Two (of three) databases (Chapters 4 and 6) that were constructed for the purpose of this dissertation mainly provide descriptive data (e.g. partnership name, website, number of countries of implementation, number and type of partners and lead partners, area of policy implementation, functions performed, geographical scope, duration, and resources required) of 250 climate finance projects and 40 transnational adaptation initiatives. With regards to the database in Chapter 4, the unit of analysis was climate finance projects. The database consists of 250 projects, funded by the Global Environment Facility's two climate funds, the Special Climate Change Fund (SCCF) and the Least Developed Countries Fund (LDCF). Data was collected through a thorough textual analysis of project documents. The purpose of this exercise was to categorise project information along several variables focusing on the scope of the projects, their institutionalisation and their primary governance functions. Out of a long-list of 250 projects, a subset of 26 projects were selected for further analysis. This database has been inspired by work from Bulkeley et al. (2012). For the second database (Chapter 6), the unit of analysis was transnational adaptation initiatives. Initiatives were included if they focused on climate change adaptation and worked across borders involving non-state actors. It includes 40 initiatives across several topics, including cities and regions, agriculture and biodiversity, water management and resilience. Data were collected through a review of existing databases and lists, including the Lima-Paris Action Agenda, the UNEP Climate Initiatives Platform, the Climate Cooperative Initiatives Database (Chan et al. 2018), initiatives in the area of human settlements and adaptation (UNFCCC 2017) as well as a broader literature review and web search. For each individual

initiative, policy and other documents were collected and complemented, where available, with interviews with stakeholders working with the respective initiative. The purpose of the database was to assess the effectiveness of these initiatives, based on the output, outcome, impact model of the political systems theory (Easton 1965).

With regards to the third database (Chapter 7), its purpose was to empirically explore the legitimacy contestation in the governance of transboundary climate risks. The database is based on work on institutional sources of legitimacy by Dellmuth et al. (2019) and Tallberg et al. (2018). The database was constructed from interview data and consists of 315 unique legitimation claims, where interviewees explicitly or implicitly advanced or challenged the authority of an actor/institution, group of actors/institutions or governance arrangements. These claims were then analysed based on variables such as basic information about the claim (i.e. legitimation or delegitimation), actor(s) identified as ruler and ruled, policy mechanism identified, and the institutional sources of legitimacy invoked. Each claim was validated individually by two researchers and then jointly agreed on. Legitimacy claims were then aggregated and presented in the form of primary modes of governance for the governance of transboundary climate risk.

The three databases were constructed individually and are not building on each other. The main reason for this relates to the case selection (see Chapter 1), where three very different manifestations of transnational adaptation governance are analysed. This restricts their broader utility to understand other cases of transnational adaptation governance. However, each database, as standalone, can be reproduced to similar cases.

2.2.4 Interviews

Semi-structured interviews methodology assumes that different individuals of groups of individuals construct the social world differently. The purpose of the interview, is then, to understand interviewees world view and how they differ across the selection of stakeholders. The process for semi-structured

interviews includes four stages: developing a template or an interview guide, selecting respondents, undertaking the interview and, finally, interpret the answers using a conceptual structured framework. The interview guide is intended as a starting point and needs to allow for a discussion which can go beyond the specific topics of the interview guide (Gaskell 2000). Gaskell also notes the importance of selecting respondents so that a range of opinions can be analysed (ibid.).

In total, 117 interviews were conducted with 147 experts and stakeholders for this dissertation. Sampling and mapping of interviews was executed through three different approaches. First, interviewees were approached through networking, using participant observation in various conferences, workshops, roundtables and high-level events (see Annex I). Second, interviewees were identified through stakeholder mapping, literature review and document analysis. Third, a snowballing approach was used to build on existing stakeholder mapping. Snowballing is a methodological sampling procedure where interviewees recommend additional stakeholders that are relevant to the study. Snowballing both uses and activates existing social networks to gain access to a broader pool of interviewees (Noy 2008).

All interviews were semi-structured and either conducted face-to-face or via phone or internet calls. Semi-structured interviews allow interviewees to expand on their personal experience and expertise of their own accord. The interviewees were guaranteed anonymity in order for them to speak more freely. All interviewees were fully informed about the project objectives and about the purpose of their participation. The engagement with the interviewees followed the Stockholm Environment Institute's ethical practice guidelines[8].

All interviews were summarised by the researcher and sent back to give interviewees the opportunity to correct possible mistakes. For most interviews, minimum two, and sometimes three, researchers were present taking notes separately. These were then combined to a final transcribed document.

8 See here for more information https://www.sei.org/about-sei/governance/ethical-practice-peer-review/ The main policy document for ethical practice is on SEI's intranet.

In Chapter 5 and 6, the purpose of the interviews was to supplement the other methodological approaches, to provide and confirm specific information and to shed light on more intangible issues. In Chapter 7, interviews were used as the primary source of data from which legitimacy claims were elicited and analysed through a database approach (see above). Interview templates are provided in Annex IV.

In Chapter 5, 45 interviews with 51 interviewees served as the main methodological approach, complemented with two workshops where the interviewees were invited to discuss and reflect on the results from the study. The interviews took place in Kenya and Rwanda (February-March 2016) and the two workshops were also organised in the two countries in December 2016. Interviewees included policy- and decision-makers in Kenya and Rwanda, development partners representing international organisations and international development agencies present in the two countries, civil society organisations and the private sector. The purpose of the two workshops was to present the results and consolidate the chapter's findings. The workshops were organised with the support from two organisations based in East Africa: African Centre for Technology Studies (ACTS) and the Stockholm Environment Institute Africa office.

In Chapter 6, the interviews were used to complement the information gathered through document analysis and database analysis on transnational adaptation initiatives. The purpose of the interviews was to provide descriptive information and confirm insights from the policy analysis. In this Chapter, interviews functioned as a complementary methodology to the document analysis and database approach. Here, not all initiatives were reachable and therefore the analysis of the initiatives was complemented with interviews for 31 out of 40 initiatives. All interviews were online or via telephone.

Chapter 7 is based on 41 interviews with 65 interviewees during field visits to Brazil and Germany (January 2020 and March 2019, respectively). Interviewees were selected through an extensive stakeholder mapping of

the Brazilian-German coffee supply chain, including coffee producers, co-operatives, traders, roasters, and retailers, as well as relevant sustainability initiatives, certification schemes, government ministries and agencies, associations, civil society organisations and researchers. Interview questions focused on professional responsibilities of interviewees, the relevance of climate change to their work, key partnerships with other organisations, and which actors along the supply chain were best placed to manage transboundary climate risks and why.

In undertaking the interviews, some challenges arose. Most interviews were done in English, except for a sub-set of the Brazilian interviews in Chapter 7. For these interviews, a translator was supporting the interview process. In Chapter 6, as stated above, not all initiatives were available for interview. In both cases, this can potentially skew the results. However, for Chapter 6, the interviews were used as supporting method to document and database analysis. For Chapter 7, two researchers and the interpreter developed individual transcripts, which were merged and sent back to the interviewee for final approval.

3/ Theoretical perspectives on emergence, effectiveness and legitimacy

3.1 Theorising the empirical knowledge gaps in transnational adaptation governance

As this dissertation will show, transnational adaptation governance is a phenomenon that is characterised by significant diversity. It contains multiple types of actors (state and non-state, public and private) at different scales, in different regions, with unequal power relations. Within this emerging landscape, some intriguing puzzles arise in terms of the institutional constellations around which activity is clustered as well as the potential impact of transnational adaptation governance in the climate regime. In addition, as capacity for adaptation to climate change varies within and across countries, there is an important question regarding the uneven geographies and power relations between actors in the Global North and the Global South. Each of these puzzles warrant an explanation. This chapter will incorporate three distinct, but interconnected, approaches for a comprehensive analysis

of transnational adaptation governance, as a novel issue area of global governance: emergence, effectiveness and legitimacy, and construct a theoretical foundation for analysing transnational adaptation governance. It will draw from a range of theoretical perspectives to account for the multiple forms, functions and clustering of transnational adaptation governance in order to answer this dissertation's research questions.

As Chapter 1 has shown, global environmental governance as a subject of world politics has served as a vector for the expansion of transnationalism (Hale 2020). For example, the emergence of transnational climate governance is a continuation from the Partnerships for Sustainable Development (also known as 'type II outcomes'), launched at the 2002 World Summit on Sustainable Development in Johannesburg. Its proliferation is tied to networked governance, which involves multi-sectoral cooperation between civil society, government and market actors (Andonova et al. 2009; Bäckstrand et al. 2017). More recently, an UN-report on global climate action recorded almost over 27 000 climate actions from more than 18 000 actors around the world, including cities, regions, companies and financial investors (UNFCCC 2020). While majority of the initiatives, as previously discussed, emphasise climate mitigation, adaptation-related initiatives can also be seen as emerging, albeit at a slower pace (Chan and Amling 2019; Puig and Bakhtiari 2020; Setzer et al. 2020; GCA 2021) Therefore, to explain its emergence, it is important to differentiate adaptation from mitigation in the climate regime as well as to situate transnational adaptation governance in this broader context

Analysing how and why something emerges is not enough to say something meaningful about a new phenomenon. The emergence of transnational adaptation governance can lead to several consequences. As discussed in Chapter 1, it can lead to improved knowledge sharing and increased capacity for territorial adaptation. However, it can also shift power from public to private actors and create a democracy deficit as well as increased inequality, particularly in the least developed countries. It is therefore important to

systematically assess the outputs generated from transnational adaptation governance initiatives and what outcomes does they lead to. A focus on effectiveness will put emphasis on the extent to which actors and institutions in transnational adaptation governance achieve stated objectives and govern adaptation and climate risk effectively across borders (Mitchell 2008). It is important to explore which problems transnational adaptation governance sets out to solve, and whether outcomes from adaptation efforts lead to decreased vulnerability and stronger resilience and adaptive capacity, or whether they cause distributional consequences, such as exacerbating existing inequalities, diminishing access to resources, and/or generating unintended negative outcomes or cause maladaptation (Huitema et al. 2016). Applying an effectiveness lens to transnational adaptation governance is crucial, particularly when considering the risk of redistribution of vulnerability, both across groups and communities as well as across borders and regions (Atteridge and Remling 2018; Eriksen et al. 2021).

It is important to note that effectiveness as such implies nothing about the moral quality or status of transnational governance. This is particularly important when powerful international state and non-state actors affect domestic policy processes, and raises questions around democracy, authority and national sovereignty (Bernstein and Cashore 2007). The emergence of transnational adaptation governance raises questions around the participation of new non-state actors, whom they are accountable to and how the costs and benefits of adaptation efforts are distributed in the negotiations between the ruler and ruled (Biermann and Gupta 2011). Legitimacy is a key component in brokering decisions attempting to constrain a collective's behaviour, notwithstanding whether coercion is exercised through force or through soft power and influence (Bodansky 2013). Legitimacy has two conceptual meanings, 'normative' and 'sociological'. Normative legitimacy is often an object of interest for political philosophers who use methodologies rooted in logic and reasoning, beginning from theoretical first principles to deduce a rational basis for a mode of governance or governance institution to be considered legitimate. Legitimacy stems from adherence to a particular

principle or set of principles, such as democratic decision-making processes (Beetham 2012; Grossman 2012; Keohane 2011). An alternative approach is sociological (also called political) legitimacy, which suggests that legitimacy is a social phenomenon, produced when the audience of a governance process or institution recognises the authority of that body (and by extension, their subjugation to it) as proper (Agné 2018). Groups that are subject to and affected by decisions perceive, under conditions of legitimacy, the exercise of authority to be appropriate (Suchman 1995). In other words, from a sociological legitimacy perspective, an institution is legitimate when it is widely believed to have the right to rule (Buchanan and Keohane 2006: 405). In this sense, sociological legitimacy is generally seen as a response to the democratic deficit of global governance (Moravcsik 2004).

While legitimacy primarily has attracted scholarly attention in comparative politics, it has recently been invoked to help solve problems that transcend individual countries (Sommerer and Agné 2018), and is increasingly deemed as central for the capacity of global and transnational governance to address problems such as climate change, trade protectionism and human rights abuses (Tallberg et al. 2018a). Researchers have also started to explore the relationship between effectiveness and legitimacy (see e.g. Bäckstrand et al. 2021; Schmelzle and Stollenwerk 2018).

Based on the three elements described above, the rest of this chapter outlines a theoretical approach to studying transnational adaptation governance. It is based on a broad trans-disciplinary approach that reaches beyond traditional epistemological boundaries. In order to study the many origins, foci, geographies and dimensions of transnational adaptation governance adequately, a set of diverse and eclectic theoretical perspectives will be applied to bring together insights that will help achieve the dissertation's aim and objective and contribute to additional theoretical understanding of both climate change adaptation and transnational governance. While this theoretical approach does not claim to encompass all characteristics of transnational governance, its logic is three-fold. First, using international regime theory,

the theoretical approach will provide better understanding of the broader landscape of climate adaptation in the context of the climate regime. Second, with help from institutional theory and orchestration theory, the dissertation will provide insights on the role of actors and institutions and how they are shaping governance activities and their outcomes. Third, using critical political economy, the theoretical approach will highlight what role power, interest and uneven geographies have in shaping structural inequality and social conflict in transnational adaptation governance. This is important for emphasising the political nature of the emergence of transnational adaptation governance and to complement the institutionalist governance perspectives on adaptation, which is the primary focus of this dissertation.

This chapter has established how different theoretical lenses can provide insight into transnational adaptation governance. The intention is not to test different theories or to generate hypotheses as competing explanations of transnational adaptation governance as an empirical phenomenon. Instead, the dissertation adopts a constructive approach with respect to the plurality and complementarity of these lenses in its empirical analysis. They will be used in a way that illuminates and draws attention to the three specific cases of transnational adaptation governance and their interpretation and explanation (see Chapter 1). With this conceptual framing, the dissertation seeks to demonstrate that transnational adaptation governance is an object worthy of detailed empirical analysis, which requires different theoretical as well as methodological approaches.

3.2 Adaptation in the broader landscape of the climate regime

3.2.1 Regimes and regime changes

International regime theory seeks to explain the creation, stability and effectiveness of international organisations and the agreements they oversee. As there is no governing authority in the international system capable of

making and enforcing rules, regimes have been established to fill this lacuna. Regimes are defined as "implicit or explicit principles, norms, rules and decision-making procedures around which actors' expectations converge in a given area of international relations" (Krasner 1983:186). The primary function of regimes is to facilitate the making of mutually beneficial agreements among governments (Keohane 1989; Young and Zürn 2006). Regimes are often bound by multilateral agreements and international organisations tend to provide oversight and compliance.

A general explanation for the emergence of new regimes is that new policy problems arise that create need for new forms of governance and for the participation of particular actors in this response. In other words, governance emerges because there are functions to be fulfilled that currently are not being addressed (Keohane 1984). This functionalist perspective on regimes stipulates that a new policy problem identifies specific governance requirements and assumes that the involved actors will seek to fulfil these functions in order to contribute to the resolution of the policy problem or provide public goods (Ruggie 1998). One such requirement is the need to fill the global governance gaps that have been created by the failure of intergovernmental processes (Haas 2008), such as climate change, where transboundary public goods are undersupplied (Bulkeley et al. 2014).

In this context, international organisations have an important political function as 'legitimisers' of international regimes and states that participate in them (Claude 1966). Liberal institutionalism emphasises legitimate regimes as instrumental in building democracy and reducing the cost of conflicts (Barnett 1997). Constructivist scholars factor in the role of norms, values and knowledge as core legitimising factors (Khan 2013), which create a 'compliance pull' in terms of states' adherence to international rules and norms, as well as creation of 'shared understanding' of joint legal obligations (Brunnée and Toope 2010; Franck 1990). For climate change, the UNFCCC has since 1992 functioned as an international organisation and a facilitator of the climate regime where states negotiate limiting greenhouse gas emissions

(mitigation) as well as transition towards climate-resilient societies (adaptation) and the global financing implications for achieving these causes (climate finance).

A comprehensive regime occurs when the "interests of essentially all the most powerful actors are sufficiently similar, across a broad issue-area, that they 'demand' international institutions as ways to achieve their objectives through reducing contracting costs, providing focal points, enhancing information, and therefore credibility and monitoring compliance" (Keohane and Victor 2011: 8f). On the other end of the spectrum, regimes can become highly fragmented without clear leadership and non-existent linkages between various institutional elements. In between these two extremes exist a wide range of regimes with identifiable cores and non-hierarchical but loosely coupled systems of institutions (Keohane and Victor 2011). For an international regime to be robust, the four constituent elements that define a regime and shape regime members' expectations and behaviour – principles, norms, rules, and decision-making procedures – should converge (Krasner 1983: 2). In reality, however, strong convergence is often elusive. In the context of climate change, Keohane and Victor (2011) argue that there is no comprehensive and robust regime. Instead, the authors argue that climate change is a regime complex, which consists of a loosely-coupled set of specific regimes that are partially overlapping. Regime-complexes occur when any (or all) of the four constituents diverge as powerful regime actors may prefer a regime complex to any feasible comprehensive, highly integrated, institution (ibid.).

Chapter 4 (see also Chapter 1) discusses how adaptation grew from initially being a minor part of the climate change regime to developing its own principles, norms, rules and decision-making procedures. This process started initially with adaptation finance, and then expanded to adaptation planning and risk management. This dissertation suggests that adaptation is sufficiently distinct from mitigation as it contains different forms, functions and agency, which partially operate through different principles, norms, rules, and decision-making procedures (see also Hall and Persson 2018; Khan

2013). Klein et al. (2017) elaborate that in its most recent form adaptation has moved from focusing on policy development and implication to implementation of adaptation activities. This shift also signified a movement from a mainly public sector focus to broaden the scope to include a wider set of non-state actors. Issues such as cities and infrastructure, disaster risk reduction, risk assessment, planning and evaluation as well as finance, investment and business were deemed as new priority areas (Klein et al. 2017). For these reasons, it is possible to argue that adaptation is a distinct part of the climate regime-complex.

In a stable regime, actors have a set of shared ideas about who the authoritative actors are and how governance should be carried out (Bulkeley et al. 2014). However, uncertainty can build in a system, no matter how stable it seems at first. Complex systems, like the climate regime-complex, are inherently characterised by uncertainty that provides opportunities for speculation and innovation (Sheingate 2003). The adaptive nature of political actors enables them to evaluate and question the appropriateness or utility of the governance system (Rosenau 1981). When a stable regime becomes unstable, and a so-called critical juncture arises (Bulkeley et al. 2014), uncertainty builds in the regime and catalyses innovation in governance arrangements, through e.g. experimentation (Hoffmann 2011). Thus, as a regime is constantly evolving and developing, studying transnational adaptation governance through the lens of emergence will help illuminate the role and function of new actors and institutions and bring insights into how they shape a changing regime.

3.2.2 Regime effectiveness

Assessing the effectiveness of a regime focuses on the extent to which actors and institutions contribute to the progress that has been made towards a certain specified goal (Young 2011). Questions about how international regimes perform, as Mitchell (2008:79) notes, highlight two issues: in what dimension should effectiveness be evaluated and how should that evaluation take place. Thus, a measure of effectiveness lies in the character of the

problem itself, and in the problem-solving capacity of the actors defining that problem. Standard measures compare actual performance of a regime with the counterfactual, i.e. what would have happened if the regime was not in place (Young 2011). Approaches to studying effectiveness assess behavioural change and change in social and environmental quality or through hypothetical counterfactuals (Mitchell 2008; Underdal and Young 2004).

It is possible to assess regime effectiveness using political systems theory, through a threefold typology of output, outcome and impact (Easton 1965; Young 2011). Outputs are assessed in terms of how well they generate behavioural change (outcome) and to what extent they lead to improved social and environmental quality (impact). Outputs direct attention to matters like the promulgation of regulations designed to operationalise rules and the development of policy instruments intended to guide the behaviour of key actors. Output effectiveness is intended to move a regime from paper to practice. Outcomes involve measurable changes in the behaviour of regime members and those subject to their jurisdiction. Outcome effectiveness focuses on internal regime results in order to reach the set goals and objectives (Young 2011; Young 2004). In other words, a regime can be assessed by directing attention to the outputs and regulations that are created in order to operationalise the regime, and the outcomes and changes in behaviour of the involved actors. This is usually referred to as goal attainment of a regime. Goal attainment is a minimal condition for effectiveness and encompasses all factors of institutional setting that might lead to a change of behaviour of involved actors, which itself is a necessary factor required to achieve the goal of solving environmental problems (Skjaerseth et al. 2006).

Goal attainment encompasses outputs and outcomes of a regime related to its set goals. Effective goal attainment can change behaviour of actors and their interests, but also policies and performance of institutions. However, even if both compliance and behavioural modification is achieved, it may not necessarily mean a great deal for the broader impact if individual goals do not match broader institutional goals (Underdal 2001a). Henceforth,

effectiveness can also be assessed in terms of its problem-solving capacities, via a conception of an ideal outcome or a collective optimum as set by the institutions involved (Mitchell 2008), which can be linked to actual (measurable) improvement of the environment. Goal attainment and problem-solving are seen as subsequent stages in a causal chain (Miles et al. 2001).

For regime-actors, it is crucial to define the institutional goals with precision, as the problem-solving dimension is interested in establishing a causal relation between the regime and the biophysical environment. Impact characterises the actual improvement of the physical and social environment. Impacts are defined as "contributions regimes make to solving the problems that lead to their creation in the first place" (Young 2004: 12f). However, attributing environmental improvement to political action is fraught with difficulty. Variables that affect the social and the biophysical environment are numerous and inherently complex and data is generally difficult to access. The impact of a regime on the social and biophysical environment can be determined only in retrospect. And even then, most of the time there are no sufficient data to be able to make robust statements on a regime's attribution to societal and/or environmental improvement (Mitchell 2008). In addition, a major challenge for empirical research on international regimes is that many of the key variables identified in models and theories are dependent on some form of 'judgmental' assessment rather than straightforward observation and measurement (Underdal 2001b).

From a policy perspective, the Paris Agreement (UNFCCC 2015) asserts that effective adaptation is a long-term endeavour that protects people, livelihoods and ecosystems. It emphasises increased adaptive capacity and strengthened resilience and reduced vulnerability as effective outcomes (Article 7.2). The Paris Agreement also states that adaptation should be 'country-driven, gender-responsive, participatory and fully transparent approach, taking into consideration vulnerable groups, communities and ecosystems, and should be based on and guided by the best available science and, as appropriate, traditional knowledge of indigenous peoples and local knowledge

systems, with a view to integrating adaptation into relevant socioeconomic and environmental policies and actions, where appropriate' (Article 7.5). However, while these elements describe the characteristics of effective adaptation, the Paris Agreement offers few suggestions for how they should be measured. Furthermore, as chapter 1 has shown, current adaptation efforts tend to fail to achieve effectiveness and more then often increase, redistribute or create new vulnerabilities. This effectively leaves a knowledge gap with regards to the assessment of effectiveness of transnational adaptation governance.

As an alternative to measuring environmental and social impact, Keohane et al. (1993) suggest focusing on observable political effects of the institutional components of a regime. With this in mind, Bulkeley et al. (2014:52), in their analysis of transnational climate governance, suggest that impact can be assessed in how it has altered the notion of "what counts as climate governance and who can legitimately claim to govern climate change." In other words, impact can be assessed in terms how governance processes of a regime create new norms and shared ideas, which allow individual and institutional components of a regime to flourish. For example, for adaptation, potential impact could be assessed in terms of the potential in shaping the system of rules and rule-making of the global response to climate change risks impacts.

Novel issues of global governance, such as transnational adaptation governance, generate the possibility of multiple claims on authority in parallel and competing processes to achieve legitimacy (Suchman 1995). In this sense, the importance of transnational adaptation governance lies in the ways in which state and non-state actors, and their activities, are reshaping the architecture of adaptation governance and altering the notion of what counts as governance and who can legitimately claim to govern climate change adaptation. Effectiveness of transnational adaptation governance could then be assessed in terms of increased potential for – rather than actual – problem-solving. A transnational component of adaptation could, for example,

generate information, build capacity and/or create standards that are translated into effective adaptation outcomes 'on the ground' leading to the increased success of the adaptation regime.

3.2.3 Agency in international regime theory

International regime theory has traditionally not ascribed agency to non-state actors in a significant manner. Nevertheless, participation of non-state actors in international regimes is not a new phenomenon. One early scholar on private international regimes was Haufler (1993), who worked on broadening the narrow state-centric view on regimes and propagating for increased legitimacy through private participation in international affairs. This early work was only concentrated on private economic actors, such as large transnational corporations, while, for example, civil society organisations were deemed as too weak to have a serious impact on world affairs. Today, however, a majority of global and transnational governance scholars agree that international regimes have independent influence and can operate outside the control of the states, and that non-state actors, including private economic actors, civil society organisations, academia and others, can exercise influence alongside, or even beyond, the state (see e.g. Biermann and Gupta 2011; Karlsson-Vinkhuyzen and McGee 2013; Quack 2010; Scholte 2011).

For example, Abbott (2012) argues that the climate regime is a highly complex institutional environment, mired in fragmentation and polycentricity, signifying decentralised or fragmented institutions. Drawing on regime theory and polycentric governance, he argues that state-centric regime theory itself is insufficient for describing the empirical observation of climate change. Abbott also argues that the primary interest of regime theory, the promulgation of legally binding regimes, does not capture networked or market-driven transnational initiatives. Instead, he makes the case for a transnational regime complex for climate change, which better captures the 'Cambrian explosion' of transboundary non-state activity that has been ongoing in the climate regime over the past decade.

Building on this, Hale et al. (2021) argue that an effective climate regime-complex needs to account for non-state and sub-national climate action and its contributions to achieving low-carbon and climate-resilience. The authors make the case for tracking progress, implementation and impact for non-state and sub-national climate action. Building on the systems approach (Easton 1965), the authors' causal framework focuses on targets, inputs, outputs, outcomes, and impact. Effectiveness is then measured in various stages of the process through ambition, robustness implementation and substantive progress (see also Chapter 6).

As transnational adaptation governance emerges, assessing its effectiveness in terms of potential for problem-solving also emphasises the need to study how legitimacy is achieved beyond states and international organisations (Bernstein 2011). For example, state actors and international organisations who are delegating authority to non-state actors can choose which intermediaries to engage, and whom to leave out. They can, thus, shape governance outcomes with little oversight or deliberation (Bäckstrand and Kuyper 2017). On the other hand, participation of non-state actors in global governance can also be seen as a way of decreasing the perceived legitimacy deficit in global governance through procedural values, such as participation, transparency, accountability and inclusion (Kuyper et al. 2018; Nasiritousi et al. 2016), or through increasing its effectiveness (Bäckstrand et al. 2021).

3.3 Actors and institutions as components of international regimes

3.3.1 Institutional emergence and the role of non-state actors

As previous section explained, international regimes do change, and one particular component of regime change that is of interest for this dissertation is the role of non-state actors. Regime theory approaches have provided powerful tools for analysing international politics. However, as mentioned above, it has been criticised for its state-centric approach, often omitting or

ignoring the role of non-state actors and the institutions through which they operate (Biermann et al. 2009). Institutional theory and regime theory share many assumptions and overlaps. However, a key difference lies in the perception of agency. While regime theory mainly looks to states and international organisations, institutional theory allows for more granularity in who the agents of change are and how they are shaping principles, norms, rules, and decision-making procedures of an institution and henceforth a regime (Barkin 2013).

In the environmental governance domain, institutions have long been recognised as central to understanding and addressing environmental problems at various levels (Ostrom 1990; 2005; Young et al. 2008). Institutions can be defined as the "rules of the game" that guide the behaviour of actors and structure policymaking to favour some outcomes over others through the way they create and distribute incentives, or as "humanely devised constraints that shape human interaction" (North 1990: 3). Institutions can be either formal (e.g. laws, regulations and standards) or informal (e.g. norms, habits and customs) (Farrell and Héritier 2003). Institutional theory provides an approach to studying climate change by focusing on the central logics that guide society, organisations and individuals and their material and symbolic relationship to the environment (Bartlett et al. 2009). In the context of global and transnational governance, institutions shape the key processes of steering and decision-making in a way that gives emphasis to the role of organisations, structures, networks, and relationships that contribute to influencing societal processes, such as those that work towards low-carbon and climate-resilient societies (Jordan 2008; Treib et al. 2007).

Institutional theory emphasises actors and structures embedded in the broader landscape (regime). To explain regime change, functionalist institutional approaches point to an institutional void, which creates a functional demand for new actors to assume a more prominent role (Biermann and Dingwerth 2004). By giving a unique insight into the relationships between an actor and its environment, functionalist institutionalism puts rationality

and efficiency as explanatory variables into perspective by emphasising legitimacy and effectiveness as important factors for organisational behaviour (Tolbert and Zucker 1983). Actors seeking to govern must choose legitimation strategies to support their claims to act as authoritative governors of an issue area. Global and transnational actors and those whom they seek to govern operate within a social context of prevailing norms, accepted practices and shared ideas, which constitutes actors' identities and the practices they enact. Actors are thus constrained in how they go about securing recognition and making claims of legitimacy. They follow a 'logic of appropriateness', meaning that actors are driven by rules of appropriate or exemplary behaviour, organised into institutions (March and Olsen 1989). From this perspective, adaptation, which was previously dominated by public actors, was ineffective in dealing with novel issue areas, such as transboundary risks and impacts from climate change. The notion was that the institutional structure of the existing regime did not fit the scale of the problem (see e.g. Cox 2012; Khan 2013; Tennekes et al. 2014), which created a window of opportunity that allowed new actors, predominantly non-state actors, to contribute to the governance of adaptation in the UNFCCC. Early efforts towards non-state adaptation governance focused particularly on adaptation finance (see Chapter 4 and 5).

An alternative strand of institutional theory might also be of relevance here. New institutionalism, emphasising the rational choice of actors, explains emergence through actors' realisation that their goals can best be achieved through institutions (Flinders 2005). Actors follow a 'logic of consequences' (March and Olsen 1989), they know what they wish to achieve and how to do so, and will follow particular courses of action to achieve these ends. A constellation of actors that comprise this organising unit is called an organisational field, which, in turn, is used to explain institutional change. Organisational fields comprise those organisations that, in the aggregate, constitute a recognisable area of institutional life that shapes the emergence of new arrangements, the form they take, as well as the practices of the agents operating within the field (DiMaggio and Powell 1983; Scott 1991). In this sense,

emergence of a new organisational field is accelerated by either inertia or radical change in response to exogenous shocks (Mahoney and Thelen 2010; Streeck and Thelen 2005).

Dingwerth and Pattberg (2009) elaborate three phases for emergence of transnational governance as an organisational field. First, prototypes for this type of governance were established in the early 1990s. The authors give examples of initiatives such as the Forest Stewardship Council or the Coalition of Environmentally Responsible Economies. These early institutions were aware and learned and studied from each other during their design processes. In the second phase, the early initiatives become more expansive over time through a process of institutionalisation, where these initiatives gained broader acceptance. Third, the early initiatives that focused on sustainability labelling and certification schemes expanded to other domains, such as cities and regions, transboundary water management, climate and development finance among others. Chapter 6 showcases this expansion of governance initiatives into an organisational field. It explores transnational adaptation initiatives in different issue areas, including agriculture and biodiversity, water management and cities and regions.

The next section will go into further detail on how these two strands of institutional theory are reflected in two separate but overlapping institutional structures of transnational adaptation governance.

3.3.2 Institutional structure of transnational adaptation governance

The institutional structure of transnational adaptation governance can vary in terms of how interaction occurs. Here two specific aspects are of interest: hierarchical and non-hierarchical.

First, in Chapter 4 and 5, in the context of adaptation finance, a hierarchical structure gives one or a few public actors the possibility to reach collectively binding decisions without the consent of others. Often in this case, it requires that states or international organisations act as 'orchestrators'

(Abbott et al. 2014; Abbott and Snidal 2009). Orchestration is 'a process whereby states or international organisations initiate, guide, broaden, and strengthen transnational governance by non-state and/or sub-state actors (Hale and Roger 2014: 60f). In this sense, public sector actors delegate authority to private actors for governing adaptation activities (Abbott and Snidal 2009). Without strong oversight (i.e. orchestration), this line of arguing emphasises that transnational governance may relieve states from their public responsibility and could contribute to continuous privatisation or greenwashing of climate change governance (Chan et al. 2018). Hale and Roger (2014) distinguish between two types of orchestration: initiating and shaping. In the first type, international organisations support transnational actors to resolve a collective problem by unlocking their agency. Meanwhile, shaping occurs when an international organisation enhances existing initiative or a set of initiatives by providing resources or extending its legitimacy.

As an example of the first type, orchestration tends to arise when states and international organisations are not able to achieve policy goals through intergovernmental cooperation (Hale and Roger 2014). For example, in Chapter 4 of the dissertation, it is shown how an international organisation, the Global Environment Facility (GEF), as an initiator delegates authority to non-state actors in UNFCCC adaptation finance projects. Orchestration can represent an alternative option to negotiating an international treaty and/or avoid expected sovereignty costs by delegating authority to an international organisation (Hale and Roger 2014). In Chapter 5, this dissertation discusses how developing country governments can create 'enabling environments' as a form of orchestration for mobilisation and delivery of private sector adaptation finance.

With regards to the second type, transnational governance is generally approached as an 'arena' for transnational interactions, where actors can be individuals, groups, organisations, movements, associations, and business enterprises. For example, in the climate context, the UNFCCC secretariat can

provide such an arena where state and non-state actors are cooperating in an environment orchestrated by a global institution (Hickmann et al. 2021). Specific examples include the UNFCCC Non-State Actor Zone for Climate Action (NAZCA), the Lima Paris Action Agenda (LPAA)[9], and the Private Sector Initiative (PSI) of the UNFCCC Nairobi Work Programme (Hsu et al. 2016; Pauw 2015; Widerberg 2017).

A second example of institutional structure are non-hierarchical transnational partnerships and initiatives in which can resemble a networked- and/or market-structure and form an organisational field. For example, networks of cities, states and regions, corporations and other private actors as well as an emerging global civil society, over time began to see themselves as increasingly authoritative actors of global (adaptation) governance (Bulkeley 2010; Papin 2019; Setzer et al. 2020). Networked initiatives denote a non-hierarchical constellation of interdependent actors with varying power resources (Treib et al. 2007). This can include, inter alia, transnational advocacy or municipal networks. This includes voluntary certification schemes and Corporate Social Responsibility (CSR) programs. Market-based initiatives operate by creating economic incentives for businesses to provide public goods 'voluntarily', such as a clean environment, improved labour conditions, or reduced conflict (Roger and Dauvergne 2016). Non-hierarchical initiatives engage in a broad range of purposes, including service-provision, knowledge transfer and/or standard-setting (Beisheim et al. 2014). They operate both through 'softer' governance functions, such as capacity building and information sharing, as well as 'harder' governance functions, including monitoring and evaluation, certification and target setting (e.g. Bulkeley et al. 2012; Chan et al. 2018). In Chapter 6, this dissertation elaborates how transnational adaptation initiatives in a wide range of different sectors, including water, biodiversity, resilience and sub-national governance, emerged as an organisational field. In Chapter 7, interaction is conceptualised along a specific agriculture supply-chain, where actors are bound through the common interest of supply-chain governance and exposure to climate change.

9 LPAA has subsequently changed name to Marrakesh Partnership for Global Climate Action. Both NAZCA and LPAA are commonly viewed as belonging to the broader umbrella of the Global Climate Action Platform (GCAP)

In both these cases, it is clear that non-state actors and institutions under which they are operating are assuming more authority and are undertaking governance functions that previously were under the guise of states and international organisations. This raises two important questions: how to assess effectiveness of institutional regime components; and what makes actors accept or contest the authority of global and transnational governance? The next section will discuss strategies for assessment of how actors and institutions are shaping transnational governance activities and their outcomes.

3.3.3 Effectiveness and legitimacy through an institutional theory lens

An important question for transnational governance is how can it be effective, if cooperation between global/transnational and national/sub-national institutions is burdensome, and compliance cannot be assured? Similarly, how can transnational institutions gain legitimacy if decision-making procedures are blurred or even completely lacking?

Assessing the effectiveness of institutional initiatives faces considerable challenges. Perhaps the most important challenge is deciding what exactly to measure. Coherently measuring impact in terms of greenhouse gas emissions reduction or number of lives saved is near impossible in adaptation initiatives operating in multiple sectors. Proponents of transnational climate governance tend to emphasise the potential of governance initiatives to widen participation, and to enable effective solutions for climate challenges. Effectiveness can then be conceptualised as the extent to which transnational initiatives have led to more effective governance of climate challenges. In other words, if the emergence of transnational climate governance is seen as a response to the lack of an effective or efficient climate regime, effectiveness translates into a concern with the extent to which transnational actors can fill these gaps by offering more effective forms of action, provide more efficient or flexible responses, or improve the quality of governance (Bulkeley et al. 2014).

With the growth of governance beyond the state, it is important to understand when and why actors and institutions gain, sustain, and lose the

confidence and trust of their audiences as this raises questions about authority and sovereignty (Scholte and Tallberg 2018). Constructivist theories are using norms to define characteristics and explain changes in global governance (Barnett and Finnemore 2004; Clark 2007; Hurd 2007). A norms perspective assumes that legitimacy is perceived as strong to the extent that an institution conforms to embedded norms of world politics and is weakened to the extent that it deviates from them (Barnett and Finnemore 1999; Keck and Sikkink 2008). Institutions are therefore obliged to justify their decisions and policies with respect to embedded norms. For example, no adaptation effort or activity, transnational as well as territorial, would be perceived as legitimate if it did not conform to the norm of achieving climate resilience.

In an effort to assess variation of effectiveness in transnational governance, Liese and Beisheim (2014), emphasise the degree of institutionalisation as a key variable for effective policy outcomes. Building on Abbott et al. (2000), the authors emphasise the role of obligation, precision and delegation as key variables for effectiveness. Obligation signals that actors are following agreed rules and risk penalisation for breaking these rules. Precision means that rules and commitments are unambiguous and define actors' conduct. Delegation means that external actors have been granted authority to monitor procedures and resolve disputes. In addition, Liese and Beisheim (2014) place importance on process management, including coherent procedures for management and communication, as well as sufficient staffing and management capacities, and organisational learning and actor inclusion. Chapter 6 adopts this approach to explain effectiveness, focusing on the role of actors, processes, institutional design and context as independent variables for institutional effectiveness.

Meanwhile, research efforts aimed at exploring the role of legitimacy for effective outcomes has conceptualised notions of legitimacy deficit in terms of 'input' and 'output' legitimacy. Input legitimacy refers to the procedural characteristics of a rule-setting process. In this vein, a global institution's exercise of authority is accepted based on its procedural factors and formal decision-making processes. The premise here lies on process criteria, which

are deemed important for the perception of legitimacy of global and transnational actors. Actors support an institution's exercise of authority, i.e. legitimate exercise of power, because of how it operates and how it is set up. In other words, governance is regarded as legitimate because the appointed authorities follow formal decision-making processes (Dellmuth et al. 2019). In climate change, it has been claimed that inclusion of non-state actors in the UNFCCC decision-making processes could be seen as a way to increase legitimacy through procedural values, in this case increased participation and accountability (Nasiritousi et al. 2016), which would in turn increase the potential for effective outcomes.

Output legitimacy refers to acceptance of rules because of their perceived ability to solve problems. Here, legitimacy is derived from an external audience's evaluation of actors' performance (Scholte and Tallberg 2018). An actor can gain or lose legitimacy depending on whether their audience perceive them as contributing to, or undermining, desired societal outcomes (Dellmuth et al. 2019). For example, Bäckstrand (2008) argues that emergence of transnational climate governance is seen as an effect of the weakening of performance of conventional state-led governance arrangements. Non-state actors, in turn, are assumed to increase performance, and thus legitimacy and effectiveness, by providing specific knowledge and expertise (Chan et al. 2018; Kuyper et al. 2018). An emerging idea is that legitimacy and effectiveness of governance are mutually dependent and mutually reinforcing. As Schmelzle and Stollenwerk (2018:450) note: "effective governance increases the legitimacy of the responsible governance actors, and higher levels of legitimacy increases their effectiveness". Bäckstrand et al. (2021:2) note that output legitimacy is associated with a "consequential logic of effectiveness". However, the authors also emphasise that there is insufficient empirical knowledge on how synergistic this relationship is in practice, particularly in climate governance.

To explore this relationship systematically, Dellmuth et al. (2019), drawing on input and output legitimacy, argued that existing work did not say

much about the quality of the process and the outcomes. The authors (see also Scholte and Tallberg 2018) built a theoretically-derived typology which more precisely distinguishes the quality of legitimacy and effectiveness in global and transnational governance. Applying the 'procedure' and 'performance' categories on one axis, they seek to capture the qualitative character of legitimacy sources, spanning the 'democratic', 'technocratic', and 'fair'. Democratic procedure is used to capture perceptions that affected actors have due voice and control over governance arrangements. The technocratic category captures perceptions that a governing authority is effective in the light of best available knowledge and policy instruments. Meanwhile the fairness category captures perceptions that process and outcome are just and equitable with regards to implicated actors. The authors argue that institutional sources of legitimacy can be captured by identifying features within each category, which in turn generates perceptions of legitimate and effective global and transnational governance initiatives by those that are governed by them (Dellmuth et al. 2019; Scholte and Tallberg 2018).

This approach allows for a systematic assessment of institutional sources of legitimacy across institutions, audiences, context and time. Hitherto, it has mainly been applied to international organisations. In Chapter 7, this dissertation applies this approach in a transnational adaptation governance setting, focusing on a broad set of public and private actors involved in the governance of a specific agriculture supply-chains. The purpose is to explore whether all actors have a shared understanding of each legitimacy source and, if not, what the differences are based upon and how are actors making legitimate governance claims in seeking to govern climate adaptation.

3.4 The role of power and interests

The aim of the last section of this theoretical chapter is to discuss the role of power, interests and uneven geographies and how they shape structural inequality and social conflict in transnational adaptation governance.

An institutional theory lens is effective in explaining how non-state actors emerge and how they can shape or change an international regime. A critical political economy lens serves as a useful complement to highlight the role of power, interests and hegemonic tendencies that are prominent in global affairs (Cox 1987; Goldman et al. 2018; Newell 2008). Studying cross-border problems through the lens of critical political economy is useful when focusing on the structural inequality and power dynamics in the realm of climate change. Particularly so, when considering countries' varying vulnerabilities and their abilities to adapt to climate change impacts and risks (Ciplet 2019; Sultana 2022).

Similar to institutional theory, critical political economy focuses on the interplay between actors and structures and their co-constitutive nature. Critical political economy, however, is interested in how power arises and reproduces and assumes the world as structured between a core and a periphery. It emphasises social conflicts, identities, interests and norms, as well as the consequences, contradictions, messiness and instabilities of social and political life (Wallerstein 1974). Critical political economy suggests that the dynamic between actors and institutions is shaped by their inherent power relations and that actors' pursuit of specific interest are driven by the historical and social constitution of these interests rather than individual choices. In the climate change negotiations, this is characterised in the contrast between rich core of industrialised countries that have benefited from large use of fossil fuels and poor developing countries (periphery) who have done little to contribute to the climate problem, but who stand to lose the most from climate impacts because of historical, economic, political and social factors (Ciplet et al. 2022).

From a critical political economy perspective, transnational governance and the shift from hierarchical organisational structures to networks and market-structures has emphasised privatisation as a primary tool for addressing social problems, whilst neglecting other normative concerns that are not aligned to the narrowly defined forms of measurement, such as economic

growth (Ciplet 2019). At the same time, the relative cost of participation and the uneven capacity of both state non-state actors have been shown to affect the uneven patterns of agency in transnational governance (Clapp 1998; Compagnon et al. 2012).

Through privatisation, the process of pursuing legitimacy becomes a political strategy that entails efforts to depoliticise the rules and practices by taking them out of the arena of formal public debate and contestation (Bulkeley et al. 2014). While norms and discourses are acknowledged by critical political economy, these structures are subordinate to the primary structure of capitalism. Here, the purpose of transnational governance is to provide a regulatory framework for global capitalism (Scholte 2018). Legitimacy, in turn, involves the legitimation of global capital (Slaughter 2015). For example, when large transnational corporations are exposed to societal pressures through boycotts, naming and shaming or other oppositional tactics, or to avoid being publicly targeted, businesses may choose to participate in transnational initiatives or even create their own in order to protect their reputations (Van der Ven 2019). Competing initiatives can also arise, where some are promoted by non-governmental organisations and others by corporations and compete for market share in commodities as environmental interests battle with profit-seeking actors (Marx and Wouters 2015). In Chapter 6, this dissertation looks at the coffee supply-chain and explores how these dynamics play out (see also Levy et al. 2016)

The consequence is a production and re-production of significant economic inequalities (Arrighi et al. 2003). Such inequalities have generally stimulated a series of conflicts and opportunities in climate change politics (Newell and Paterson 2010). In the climate change negotiations, for example, this is often characterised by the disagreements between developed and developing countries regarding delivery of climate finance, the remuneration for loss and damage for vulnerable countries that did not contribute to the changing climate, as well as the broader issues around climate justice and equity (Adger et al. 2006; Kartha et al. 2018; Roberts and Parks 2007).

From a critical political economy perspective, the emergence of transnational climate governance can be seen as part of a broader phenomenon of the changing nature of the economy and the state reflected in neoliberal global environmental governance (see e.g. Ciplet and Roberts 2017; Newell and Paterson 2010; Okereke 2007). Global and transnational institutions are, in turn, regulatory institutions of global capital and, therefore, agenda-setters for global issues, including climate change. Meanwhile, for example, indigenous knowledge for building resilience and adaptation tends to be considered as less legitimate (Ford et al. 2016). In climate change mitigation, these dynamics have been played out more clearly in for example carbon markets and certification schemes. This market commodification process has been effectively disguised as operating in the service of broader public goods and has become further normalised by transnational governance (Bulkeley et al. 2014).

Climate change adaptation presents a particularly interesting puzzle from a critical political economy perspective. While mitigation of climate change is 'neutral' in the sense that emission reductions are same wherever they happen, adaptation is contextualised. Climate change adaptation is of particular importance to communities in developing countries because of their disproportionate exposure to impacts and lower capacity to respond (IPCC 2022). Pre-existing socio-economic vulnerabilities and inequities are at risk of multiplying against new climate stressors (Adger 2006).

Transnational adaptation governance may similarly be very effective in producing and reproducing certain sorts of rationalities and practices, whether or not they in fact help societies to adapt to climate change. As discussed in Chapter 1, the broadening of adaptation has made the topic open for diverging interpretations. In addition, the conceptualisation of transboundary risk has brought adaptation and adaptation governance into new domains, such as trade, finance and security. This puts additional light on exploitation of smallholder farmers in developing countries for resources that are primarily consumed in developed countries (Adams et al. 2021). Similarly, adaptation

priorities are increasingly clashing with business strategies and exposing conflicts between social and environmental ambitions. For example, a company's strategy to implement deforestation-free agriculture supply-chains, a key ambition of the European Union and its flagship strategy "A European Green Deal", could increase vulnerability of local communities depending on those forests (Dzebo et al. 2022; European Commission 2019).

In this sense, climate change impacts are seen as just another factor that aggravates the deeply rooted social-economical vulnerabilities of people at risk (O'Brien et al. 2004; Sultana 2022). This raises questions whether transnational adaptation governance could be seen as another arena for exploiting these conditions; and to what extent the appropriation of climate change adaptation by transnational actors reproduces norms and rationalities that are furthering the interests of the dominant political and economic forces in the climate change regime.

4/ Transnational Adaptation Governance: A fourth era of adaptation[10]

4.1 Introduction

Rather than approaching the state as the only actor with purpose and power, the growing field of 'climate governance studies' has sought to establish a broader conception of politics that captures the richness and complexity of climate governance beyond the UN process (Hale and Roger 2014; Okereke et al. 2009). The attention has turned towards the multiple ways through which transnational actors and networks such as international organisations, environmental non-governmental organisations, corporations and city networks contribute to public rule-setting and steering (Andonova et al. 2009; Bäckstrand and Lövbrand 2015; Bernstein 2011; Biermann et al. 2009; Hoffmann 2011; Pattberg and Stripple 2008). limate governance has been understood to comprise "all purposeful mechanisms and measures aimed at steering social systems towards preventing, mitigating or adapting to the

10 This chapter is based on the following publication: Dzebo, A. and Stripple J. (2015). Transnational Adaptation Governance: A fourth era of adaptation. Global Environmental Change. https://doi.org/10.1016/j.gloenvcha.2015.10.006. It has been slightly updated for clarity in 2022.

risks posed by climate change" (Jägers and Stripple 2003:285). Thus far, virtually all studies of transnational climate governance have concerned mitigation, i.e. the reduction of the sources – or enhancement of the sinks – of greenhouse gases (see e.g. Andonova et al. 2009; Hoffmann 2011). In a comparative study of 60 transnational governance initiatives operating in the climate change domain, only two of them had a focus on adaptation (Bulkeley et al. 2012).

Adaptation, which has previously been seen as an exclusively national and local, or even private matter – primarily concerning the exposed subjects – is currently being systematically addressed by international institutions such as the UNFCCC, the Food and Agriculture Organisation (FAO) and the World Trade Organisation (Persson 2011). Researchers have focused on the overarching institutional architecture of global adaptation (Biermann and Boas 2010; Khan and Roberts 2013; Persson et al. 2009), particularly as it relates to development (Ayers and Dodman 2010) and political economy (Harmeling and Kaloga 2011; Sovacool et al. 2015). The question of how to allocate adaptation finance in an efficient (Fankhauser and Burton 2011) and ethical way (Adger et al. 2006; Duus-Otterström 2015; Grasso 2010) has also generated considerable debate. But while adaptation governance seems increasingly to involve new types of non-state actors, including the private sector (Acclimatise 2014; Surminski 2013), the transnational dimension of adaptation governance has received a scant amount of attention. Despite a plethora of institutions and actors and hundreds of adaptation projects, the extent to which adaptation is governed transnationally has not been well explored.

The aim of this chapter is to give an account of the scope, institutionalisation and governance functions of transnational adaptation governance (see Chapter 1 for definition and operationalisation). In the adaptation domain, is there a deepening and broadening of interactions, processes and institutions that cross national boundaries and include non-state actors? (c.f. Pattberg and Stripple 2008). While transnational climate (mitigation) governance

has been described as 'experimental' (Hoffmann 2011) and initiated in the 'private realm' by non-state actors such as environmental organisations, local authorities and business firms, transnational adaptation governance is more firmly anchored within the UNFCCC and is distinguished from development, which is the primary task of bilateral assistance. Transnational adaptation governance is predominantly organised as projects, and typically managed by the multilateral funds that specifically target climate change.

For the purpose of this chapter, 250 adaptation projects were reviewed of which a database was constructed for 26 projects that met the criteria (see more for definition and criteria of transnational adaptation governance in Chapter 1). The transnationalisation of adaptation governance is conceptualised in terms of three core issues: scope (i.e. initiating actors, organisational form and governance structure), institutionalisation (i.e. how projects emerge and maintain activity) and functions (i.e. the specific governance functions that the projects undertake). Whereas the bulk of adaptation finance is not governed transnationally, transnational adaptation governance is nevertheless emerging under a 'shadow of hierarchy', both within and alongside the current multilateral and intergovernmental order. While the relatively low number of identified projects imposes limitations to this study, there are reasons to believe that transnational adaptation governance will increase significantly in the next few years (see Chapter 1). Huq and Toulmin (2006) have described how since 1990, adaptation has progressed through three 'eras' of climate and development discourse, from being a marginal concern focused on scientific measurement to an increasing focus on development, inequality, public policy frameworks and the proper devices (e.g. dikes, early-warning systems, new seeds), which could help facilitate adaptation in vulnerable places around the world (see also Klein et al. 2017). This chapter argues that a 'fourth era' of adaptation is emerging, in which adaptation is increasingly governed globally and transnationally, and where attention is turned towards 'softer' forms of governance such as agenda setting, information sharing and capacity building.

4.2 The global governance of adaptation

The UNFCCC, which was agreed upon in Rio de Janeiro in 1992, established two main categories of action in response to climate change, namely mitigation and adaptation. Whereas mitigation refers to actions devised for reducing greenhouse gas emissions in order to prevent dangerous anthropogenic interference with the climate system (UNFCCC Article 2), adaptation was not defined in the convention text. In fact, the word's meaning has always been the source of much academic and policy debate (Schipper and Burton 2009). Adaptation governance has primarily been shaped by national governments within the context of the UNFCCC. Almost all key adaptation activities and decisions have been formed here, including a process for preparing the National Adaptation Plans of Action (NAPA), the 2001 Nairobi Work Programme on impacts, vulnerability and adaptation to climate change, the 2004 Buenos Aires programme of work on adaptation and response measures (a dataset on local coping strategies compiled by the UNFCCC secretariat) and the 2010 Cancún Adaptation Framework.

Huq and Toulmin (2006) and Ayers et al. (2012) identify three eras of the adaptation regime. The first era was initiated by the IPCC and its First Assessment Report in 1990, which recognised climate change as a global problem requiring urgent action. This eventually led to the creation of the UNFCCC, but adaptation was still marginalised by both decision-makers and climate scientists (see also Chapter 1).

The second era started in 2001, with the release of the IPCC's Third Assessment Report, and it was here that climate change was recognised as a development problem. The countries that would suffer the most from climate change were developing countries, while the Least Developed Countries would be the most vulnerable to the adverse effects of climate change (Adger et al. 2003). This recognition was transformed into policy at the 7th Conference of the Parties in Marrakech in 2001, where three multilateral funds were established to manage multilateral funding for adaptation. The

Marrakech meeting also initiated the National Adaptation Plans of Action, which are documents supplied by a country belonging to the Least Developed Country group, in which targets and priorities for urgent and immediate adaptation needs are specified and ranked by the country—rankings which can then be used to disburse adaptation funds. The idea behind National Adaptation Plans of Action is to empower the recipient country to make its own decisions about prioritisation criteria (Pauw and Pegels 2013). Notwithstanding the augmented efforts to bring adaptation to the climate change agenda, most of these steps were nominal, with the emphasis of the IPCC reports heavily inclined towards mitigation (Huq and Toulmin 2006).

The IPCC's Fourth Assessment Report in 2007 initiates the third era (Ayers et al. 2012) of the adaptation regime. The report, which stated that the warming of the climate is unequivocal, and that climate change impacts are already taking place (IPCC 2007), identified adaptation needs in different sectors and regions. The report defined adaptation as "adjustments in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities" (IPCC 2007:27). In other words, adaptation refers to measures that enable natural or human systems to cope with a changing climate. The Bali Action Plan, negotiated at the 13th Conference of the Parties in 2007, raised the political status of adaptation, but for the emergence of new institutions and actors in adaptation governance, the Cancún Adaptation Framework – adopted in 2010 to promote adaptation action with the same level of priority as mitigation – was particularly important. At Cancún, countries established the Green Climate Fund, agreed on a mechanism to promote the transfer of technologies for mitigation and adaptation in developing countries, established a process of preparing National Adaptation Plans to identify medium- and long-term adaptation needs and develop strategies to address those needs, put in place an Adaptation Committee to offer technical support and share information and agreed on a work programme on 'loss and damage' associated with unavoidable climate impacts in particularly vulnerable countries.

Notwithstanding the significant rise of a 'global' adaptation discourse in the climate change negotiations, multilateral adaptation finance has been far from sufficient. Thus far, US$ 6 billion has been pledged, of which 83% was recently pledged through the Green Climate Fund, which is not yet operational. This should be contrasted with the World Bank's estimations of the costs for developing countries to adapt to climate change, which amount to US$ 70 billion and US$ 100 billion a year between 2010 and 2050 (World Bank 2010). More recently, the United Nation Environment Programme's Adaptation Gap Report concluded that the costs for adaptation might be two to three times higher than previously estimated (Alverson et al. 2014).

Hitherto, global adaptation governance has mainly been made manifest through the establishment and financing of specific projects, which indicates a step away from the calls for the 'mainstreaming of climate change adaptation' into a general development agenda (see e.g. Persson and Klein 2009; Smith et al. 2011). In theory at least, the project-driven approach, which is delimited and easily monitored, should be able to facilitate accountable and transparent forms of governance, though in practice the decision-making process is more complicated. There is no space in this chapter to go into the details of how the different funds operate, but the general tendency is that while decisions about adaptation finance (how much and to which countries) are made at the highest level of a state or an international organisation, decisions about which particular projects to support are made at lower administrative levels (Persson and Remling 2014; Remling and Persson 2015).

International multilateral funds are key actors in the global governance of adaptation. Article 21.3 of the UNFCCC states that the Global Environment Facility provides the instruments for transferring financial resources from developed to developing countries through three 'adaptation funds' established at seventh Conference of the Parties in Marrakech: the Least Developed Countries Fund, the Special Climate Change Fund and the Kyoto Protocol Adaptation Fund. In addition, the Global Environment Facility established the Strategic Priority for Adaptation (SPA) under its Trust Fund.

Aside from the UNFCCC funds, the financing for adaptation is provided through several different channels. The World Bank-operated Pilot Programme on Climate Resilience (PPCR), a sub-programme of the Climate Investment Funds (CIFs), aims to pilot and demonstrate ways to integrate risk and resilience into national development planning. Moreover, Official Development Assistance (ODA), private sector flows and investments, as well as domestic, national, sectoral and local budgets of developing countries, are providing money for adaptation (Buchner et al. 2015).

By and large, global adaptation governance is tightly controlled by multilateral institutions and national governments. Most of this governance is not transnational, as the projects involve just one country and rarely involve non-state actors in the initiating project phase. Nevertheless, there is a growing transnational aspect of adaptation that has not been sufficiently understood. The next section outlines some issues concerning the methodology used in this study, and then shows how adaptation is governed transnationally by focusing on its scope, its institutionalisation and how it functions.

4.3 Methodology

Methodologically, the research process started with a thorough review of adaptation project documents. From a long list of over 250 funded adaptation projects, 26 regional and global projects were identified that qualified according to criteria for transnational adaptation governance as defined in Chapter 1. The selected projects are all Global Environment Facility projects funded through the three climate funds. In total, the project funding is ca. US$ 170 million, with an additional US$ 530 million in co-financing over the period from 2002 to 2014 (see Annex 2 for detailed project info). The reasons for examining Global Environment Facility projects lie in how they are structured. The Global Environment Facility is an international organisation, which means that all funded projects are publicly initiated. It has no mandate to initiate projects; instead, the process for developing projects is

driven by the recipient countries in collaboration with one of the 10 international organisations (United Nations agencies and regional development banks) designated as 'implementing agencies'. These include, inter alia, the United Nation Environment Programme, United Nations Development Programme (UNDP), Food and Agriculture Organisation and the African Development Bank (AfDB). The Global Environment Facility does not hold the mandate, capacity and expertise for implementing and managing projects on the ground, which is why other organisations are crucial in the governing of adaptation. Furthermore, Global Environment Facility funding only covers the incremental or additional costs associated with transforming a project with national benefits into one with global environmental benefits. This means that co-financing is necessary and allows other actors, including non-state actors, to become an integral part in the governance of adaptation.

Graham and Thompson (2014) fruitfully conceptualise the Global Environment Facility as an 'orchestrator', in which the facility and the implementing agencies complement each other in an efficient way. The Global Environment Facility's secretariat governs through indirect and soft means such as shepherding projects before they are approved by the council (the organisations' intergovernmental governing body) and through their methodologies for the monitoring and evaluation of projects. It is therefore possible to explore transnational adaptation governance from the 'inside view' of any of the nodes in the governance landscape, from donor and recipient countries to international organisations. Such a strategy is useful and complements the 'outside view', which attempts to grasp transnational adaptation governance as a field of activities on its own terms.

The identified projects operate either regionally, where they include a set of neighbouring countries, or globally where they include a set of countries working towards a global target (e.g. related to an outcome from the UNFCCC negotiations). A database of 26 projects fitting the criteria was created, which focused on the scope of the projects, their institutionalisation and their primary functions. The 26 projects were selected because of their

'transnational' nature (for a more comprehensive analysis of a larger subset of Global Environment Facility projects, see Biagini et al. (2014).

This enables the study to provide some perspective on how, and the extent to which, adaptation is governed transnationally. It needs to be kept in mind that there are many other instances of adaptation occurring throughout the globe, e.g. in local communities, cities, companies, as well as around ecosystems such as rivers, lakes, deserts and forests. An analysis of these governance arrangements is explored in Chapter 6.

4.4 Transnational adaptation governance: scope, institutionalisation and functions

4.4.1. Scope

Analysing the projects in terms of their initiating actors, the projects can be categorised into two distinct categories. First, there are projects that mainly involve public actors as project initiators, namely national governments and international organisations. A second hybrid category, include additional actors, e.g. non-governmental organisations, business organisations, foundations, community-based organisations or local and regional governments. For analysing the role of non-state actors in adaptation governance, this distinction between public and hybrid approaches in climate change adaptation is useful. However, both sets of categories explicitly mention inclusion and cooperation with non-state actors, including private actors. Moreover, adaptation projects almost exclusively take place in developing countries, particularly in Least Developed Countries.

Time period	Number of projects
2002-2004	2
2005-2008	7
2009-2014	17

Table 2 Number of projects per time period

All the projects have a clear organisational structure, including a governing body or a steering committee, and most of the projects involve some form of advice giving/stakeholder panel. The time aspect of the transnational projects indicates that the cooperation across boundaries is relatively recent in origin and growing. Table 2 shows that this has predominantly emerged in the period after 2009, with more than 65% of the projects being funded between 2009 and 2014. One of the distinctive characteristics of transnational climate governance is that it involves a variety of actors, ranging from non-state actors to states who contribute with different capacities and different sources of authority (Andonova et al. 2009). Nonetheless, the focus on adaptation shows something different. The main initiating actors are international organisations (100%) and national governments (75%), thus making the transnational adaptation governance primarily public. However, there are a few exceptions in which other actors are involved in project initiation, which include regional and local governments (20 and 23%), business organisations (8%) and non-governmental organisations (31%) (Figure 1). Yet, what is more interesting is that hybrid projects are mostly found after 2009, and predominantly include non-governmental organisations as the project initiating actors.

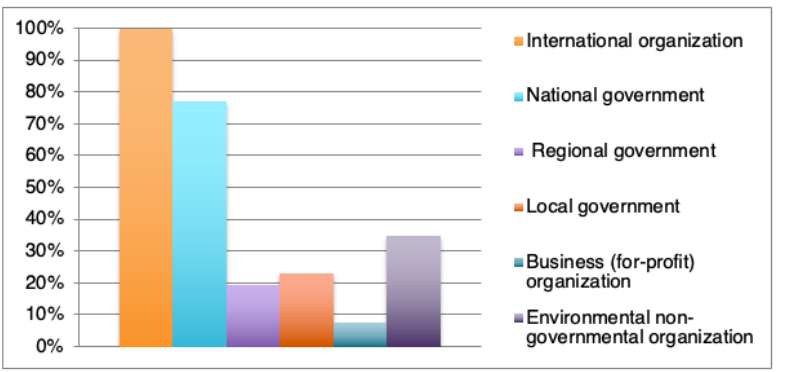

Figure 1 Involvement of initiating actors

The hybrid projects include environmental non-governmental organisations, business organisations and local and regional governments. Of the 26 projects, 13 can be classified as a hybrid. Among others, these include actors such as the Stockholm Environment Institute (SEI), the International Union for Conservation of Nature (IUCN), the International Institute for Sustainable Development (IISD) and the business-consulting firm McKinsey and Co.

The focus of hybrid projects is cross-sectoral, with no specific emphasis on a single adaptation issue, such as land degradation or water resources management, while a few of the projects have a technological transfer component. For example, in a project that aims to develop a decision-making framework and a detailed methodology for the cost-benefit calculation of adaptation measures, McKinsey was included as the actor with the role to develop and test this new methodology. Another project involving the Stockholm Environment Institute sets targets for building capacity, establishing knowledge support and developing and implementing concrete adaptation technologies. The institute's role in the project was to lead the project management unit. By contrast, public projects engage with the built environment to a larger extent, primarily in water resource management, sea level rise and coastal defences. In terms of financing spent, the public projects have received the lion's share of the disbursements, 70% of the total public financing and 68% of total co-financing, thereby indicating that while new actors are emerging in adaptation governance, there is relatively little finance channelled through such projects. The governance structure of the projects in the database shows that the overwhelming trend leans towards an arrangement through governance networks, meaning public, semi-public and private actors who depend on one another's resources and capacities in order to govern the specific project, but who are operationally autonomous in the sense that they are not commanded by superiors to act in a certain way (Torfing 2005:307).

Of the 26 adaptation projects, 25 are network-based, whereas one project is governed through market mechanisms. As of yet, no project has engaged

in harder forms of governance structure, e.g. through the forming of a new organisation. According to Bäckstrand (2008), the rise of transnational networked governance signifies a shift to 'new' modes of governance, building on non-hierarchical steering distinguished by a decentralised, voluntary, market-oriented interaction between public and private actors. Conca distinguishes between transnational networks that influence the creation and operation of governance institutions, but are not recognised as authoritative (as in the case of non-state actors involved in multilateral negotiations), and those that govern "in the sense of bringing together a sufficient marriage of power and legitimacy to establish, operationalise, apply, enforce, interpret or vitiate the [network's] behavioural rules" (Conca 2005:190). Considering the strong influence of authoritative actors, such as international organisations and national governments, the projects in this analysis lean towards a networked governance in which non-state actors try to influence, but are not seen as authoritative. Nevertheless, almost all projects involve consultations with non-state actors, even though they are not an integral part of the project. Therefore, it is probable to assume that these actors are attempting to influence project outcomes.

The one initiative focused on market mechanisms is a risk insurance facility, which aims to enable and develop new weather risk insurance and reinsurance products, in addition to pricing and claims settlement processes for such products, to automate insurance underwriting and to increase public awareness of weather risk in participating countries. Insurance products provide one avenue for countries to manage the financial risks arising from climate fluctuations. Still, while risk insurance could be a potential mechanism to increase adaptation market mechanisms, there are inherent difficulties in forming a marketplace for adaptation projects. Persson (2011) points to the fact that for adaptation, in contrast to mitigation, it is not obvious what the commodity would be.

For the purpose of this analysis, data is distinguished as either dominated by public actors or as a hybrid, in which non-state actors have a more advanced

role. The next section will analyse the mechanisms of institutionalisation and how they are different for the two types of projects.

4.4.2 Institutionalisation

In terms of institutionalisation, the most common aspects in the projects are softer forms of institutional features such as a registering of members, a memorandum of understanding and a voluntary affiliation (Figure 2). The lack of strong forms of institutionalisation such as compulsory actions and legal entities indicate that, at least so far, relatively 'soft forms' of institutionalisation characterise transnational adaptation governance. But turning to the distinction between public and hybrid governance initiatives, a few interesting aspects become visible (Figure 3). To a larger extent, public initiatives engage with broader spectra of institutional functions than hybrid initiatives, which to some extent include both a legal entity category and compulsory actions. Hybrid initiatives mostly engage with softer forms of institutional functions. In other words, we might say that public initiatives can be seen as seeking a greater legitimacy, whereas hybrid initiatives strive for a greater efficiency.

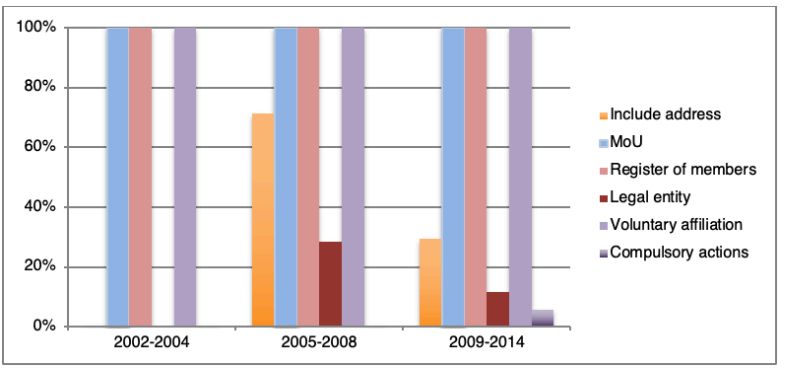

Figure 2 Level of institutionalisation – timescale

Considering the few initiatives with harder forms of institutionalisation, another explanation could be that the projects are primarily taking place in the Least Developed Countries, in which such mechanisms are regarded as

either unnecessary or unworkable. Bulkeley et al. suggest a similar conclusion in their analysis of transnational climate change initiatives. The authors argue that for mechanisms in which "participation includes the least-developed countries in the world, reflecting both the challenges of the limited institutional resources and the focus of the initiatives in the database [. . .] for which[. . .]there is little mandate for action" (Bulkeley et al. 2012: 606).

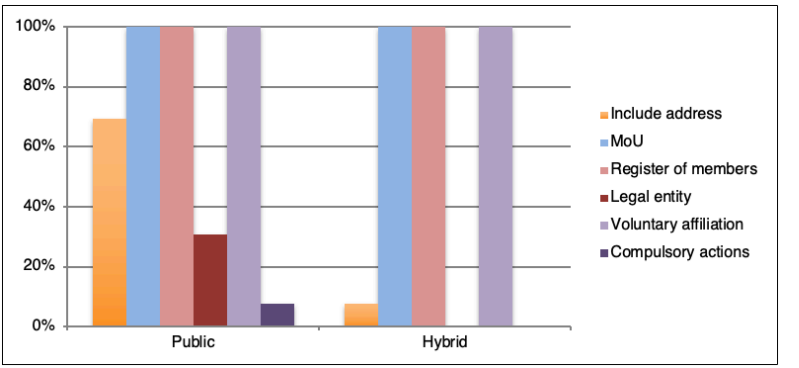

Figure 3 Level of institutionalisation - public/hybrid continuum

Common approaches to the question of how and why transnational adaptation governance arrangements are emerging tend to understand transnational governance as either being a question of governing 'beyond the state' or the 'hollowing out' of the state, whereas governing 'as such' remains the same. As shown here, in contrast, transnational adaptation governance is primarily placed within the international sphere, where international organisations and states continue to be the main actors.

Alternative approaches drawn from critical social and political theories can be used to recast the relationship between the state and other actors. Sending and Neumann argue that "the ascendance of non-state actors in shaping and carrying out global governance functions is not an instance of a transfer of power from the state to non-state actors, or a matter of the changing sources of, or the institutional locus, for authority. Rather, it is an expression

of a change in 'governmentality', by which civil society is redefined from a passive object of government to be acted upon, into an entity that is both an object and a subject of government" (Sending and Neumann 2006:657f.). Lövbrand and Stripple have recently shown how studies in governmentality can be brought to the study of global climate governance. By drawing upon an anti-foundational understanding of power and government (the state has no essence, no preordained function or any autonomous source of power), they show how the state versus non-state dichotomy can be recast. Instead, the analytical gaze is turned to exploring how both the 'state' and the 'non-state' are articulated, codified and enacted into the practices of climate government (Lövbrand and Stripple 2014).

The analysis of the empirical findings of adaptation finance highlight that the role of non-state actors in transnational adaptation governance is increasing, but not aiming to replace the traditional actors in transnational adaptation governance. Instead, a cautious conclusion is that rather than seeking authority, non-state actors aim to a position themselves as being integral to the adaptation governance landscape.

4.4.3 Functions

In seeking to characterise what transnational governance arrangements do, work in this field has focused on the functions that governance initiatives undertake. Bulkeley et al. note that "[w]hile there is significant diversity in the literature in the terms used, a relatively discrete set of functions can be identified: agenda setting; information sharing; capacity building; soft and hard forms of regulation; and integration across different global environmental governance arenas" (Bulkeley et al. 2012:595). The authors suggest that the different types of actors involved matter in the constitution and operation of transnational governance (Bulkeley et al. 2012). Across the cases in this chapter, capacity building and information sharing are the most common functions among the projects in the database, with both functions present in all 20 projects (Figure 4), while other functions are generally less prominent. This resonates well with the findings of (Biagini et al. 2014), whose analy-

sis of 96 Global Environment Facility projects finds capacity building being present in the overwhelming majority of the projects (along with some form of planning/management or improved practices). Capacity building is also identified elsewhere as one of the primary activities needed in developing countries to help prepare for climate change (Tompkins et al. 2010).

With regard to adaptation governance, this is further supported by a study of the Africa Adaptation Programme (AAP), which analyses what African countries perceive to be adaptation priorities. Kumamoto and Mills (2012) analysed more than 900 adaptation activities and found that the countries in their study almost exclusively prioritised soft interventions, primarily including capacity building and information sharing. However, another explanation could be the discrepancy between the demand and supply of adaptation finance. The adaptation needs are estimated in the billions (Alverson et al. 2014; World Bank 2010), whereas the available finance for adaptation is much less (Savvidou et al. 2021).

It is important to note that while this database is too small to draw any robust conclusions, there are some noteworthy developments to discuss. Interestingly, governance functions seem to develop over time. While the initial projects only focused on capacity building and information sharing, later projects have broadened their governance functions to include, to a various extent, harder forms of functions such as direct action, monitoring and certification, as well as the provision of funding, target setting and rule setting (Figure 4).

Moreover, Figure 5 indicates that to a (slightly) greater extent, hybrid projects are concerned with 'harder' governance functions. These projects mostly work on methods for decision-making frameworks for 'mainstreaming' climate change into regional policy coherence, technical assistance and monitoring adaptation options. Why do hybrid initiatives engage with harder forms of governance than the public ones, such as target setting and rule setting? One answer may be that they are striving for greater efficien-

cy, though another answer could be the weak institutional structures of the Least Developed Countries in which most of these projects take place, which require non-governmental entities such as non-governmental organisations and business firms to engage and contribute with both knowledge and expertise (Duffy 2006).

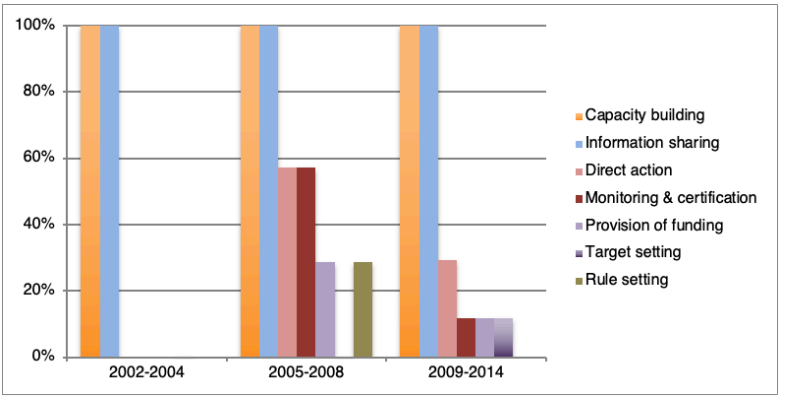

Figure 4 Initiative governance functions - timescale

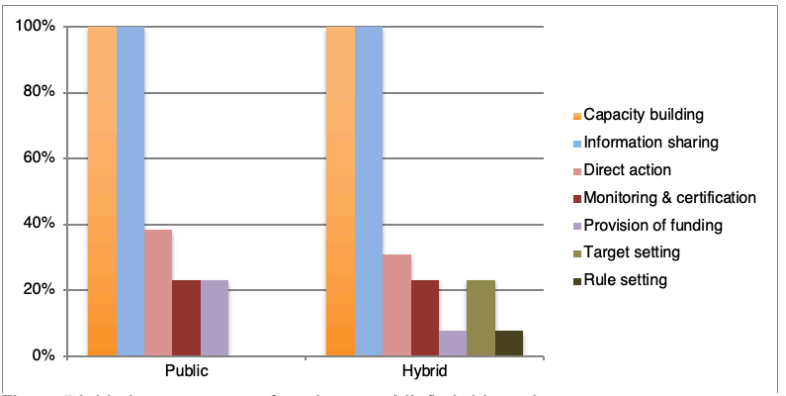

Figure 5 Initiative governance functions - public/hybrid continuum

Whereas information sharing and capacity building are often thought of as 'softer' forms of governance, their role in shaping the conduct of actors

should be appreciated. The ubiquity of information sharing and capacity building implies that these initiatives shape the subjectivity (in various ways) of those they govern. For example, in the Africa Adaptation Programme, the prioritised interventions include building institutions, developing a financial framework, knowledge creation and management, and raising the awareness of climate change. This suggests that these interventions focused on developing capacity at the systemic, institutional and individual levels (Kumamoto and Mills 2012).

While there are difficulties to conclude an analytical distinction between public and hybrid arrangements, it is clear that transnational adaptation governance is mainly focused on soft functions such as information sharing and capacity building. These functions ensure that actors internalise norms about how to act on climate change; other functions may be understood in combination with these core functions in order to provide normative objectives and contexts within which action is organised and pursued (Bulkeley et al. 2012:605).

4.5 Transnational adaptation governance: where next?

This chapter has shown that the governance of adaptation is emerging under a 'shadow of hierarchy', in which the architecture of the adaptation finance regime is predominantly based around national governments and international organisations. While non-state actors have an increasingly influential role in adaptation governance, no projects have been initiated by non-state actors.

It is believed that new governance initiatives through public-private partnerships have the potential to "decrease the legitimacy and accountability deficits by including a diverse set of private and public actors" (Bäckstrand 2008:78). But an increased influence of business, power inequalities and skewed representation of stakeholders, as well as a reinforcement of elite

multilateralism and a retreat of state responsibility in the production of public goods, could lead to a further fragmentation of environmental governance by reducing the legitimacy of decision-making and reducing the scope of accountability (Bäckstrand 2008). Hence, it remains to be seen as to how the costs of adaptation will be distributed. There is a need to be aware of public-private partnerships, in which public means taking all the risk and private means taking all the profit (see e.g. Duffy 2006; Goldman 2005; Jagers and Duus-Otterström 2008). By including more non-state actors in adaptation governance, one must also ensure that these actors remain committed to the common good and are held accountable when they seek to renege on their commitments to maximise their individual profits. From other studies, we know that entities, which are seen as 'less powerful', can still leverage and exert significant influence if the timing is right (Börzel and Risse 2005:126). While non-state actors will always have difficulties in directly influencing the global climate change negotiations, they can influence and shape the ways in which states seek to govern climate change, in addition to undertaking means for governing climate change in their own right (Okereke et al. 2009). With relevance to the Least Developed Countries, Vogel argues that "governance without government" is seldom as effective as "government in areas of consolidated statehood". Even so, in some cases these are the sole rules that exist (Vogel 2009; 2010).

As Chapter 1 has showed, new institutions and transnational actors in adaptation governance is increasingly being recognised. For example, the process of designing and developing the National Adaptation Plans explicitly recognises the need to include non-state actors and cross-border cooperation in adaptation planning (UNFCCC 2012). This is a significant departure from earlier UNFCCC adaptation decisions (Pauw and Pegels 2013). Furthermore, even though this chapter only focused on governance of adaptation finance within the UNFCCC, there seems to be an increasing number of initiatives outside the UNFCCC that increasingly focus on transnational cooperation on adaptation-related activities. One example here are city networks such as the C40 initiative, a global network of city governments seeking to ex-

ert leadership in reducing emissions and building resilience locally, and the ICLEI's Global Cities Network, aimed at sustainable, resilient, resource-efficient and biodiverse cities (Betsill and Bulkeley 2006; Bulkeley 2010). How these institutional initiatives are shaping transnational adaptation governance is explored in Chapter 6. Lastly, another area is public-private initiatives along the supply chains. A key example of this is the partnership between the Gesellschaft für Internationale Zusammenarbeit[11] (GIZ) and the company Cafédirect, which has strengthened the capacity of small-scale farmers to cope with the impacts of climate change, while improving their access to financial and technical support mechanisms (GIZ et al. 2010). Chapter 7 further discusses how adaptation and climate risk is being governed in agricultural supply-chains. These forms of cooperation 'from below' have the possibility to govern adaptation through the diffusion of information, knowledge and norms, including the pooling and distribution of financial, managerial and technical resources, and more recently, the negotiation and establishment of rules and standards outside the intergovernmental arena (Andonova et al. 2009).

The absence of private actors in adaptation is sometimes explained in regard to the limited possibility to make profits. Historical patterns of private finance investments have shown that private-sector finance is unevenly distributed among countries and among economic sectors, and it often does not match developing countries' most pressing needs (Atteridge 2011). But it is likely that the Green Climate Fund's affiliation to the UNFCCC and its ambition to leverage private finance for adaptation – along with the other examples presented here – will spark a new set of public-private engagements in adaptation governance. There is at least a widespread expectation that engaging the private sector will be crucial to the success of adaptation efforts in developing countries (Biagini and Miller 2013). Recent research has also shown that the domestic private sector in particular could contribute substantially to adaptation (Pauw 2015). In Chapter 5, this dissertation explores the role of states in enabling private finance for adaptation benefits.

11 German Society for International Cooperation

4.6 Conclusions

Over the course of a few years, adaptation has gone from being a local, domestic and private matter to a concern for multilateral institutions and international organisations. Whereas the internationalisation of adaptation governance has received some scholarly attention (Khan and Roberts 2013; Persson 2011), very little is known about its transnational dimensions. For example, to what extent does adaptation governance cut across state-based jurisdictions? To what extent does adaptation governance operate across the public-private divide? In contrast to mitigation, in which transnational governance initiatives are a thriving area of research (Bulkeley et al. 2014), transnational adaptation governance is slowly emerging.

This chapter explores the scope, institutionalisation and functions of transnational adaptation governance by examining adaptation-related climate finance. After an examination of over 250 projects, 26 regional and global projects were found in which adaptation is transnationally governed (i.e. across national boundaries and when at least one actor is a non-state agent). The overwhelming majority of initiating actors consists of governments and international organisations, but there are projects in which other actors are involved such as non-governmental organisations, business firms and local/regional governments. In terms of institutionalisation, public initiatives engage with broader institutional functions, whereas hybrid initiatives tend to focus on efficiency rather than gaining legitimacy. In terms of the functions of governance, transnational adaptation governance consists mostly of 'soft' forms of governance — capacity building and information sharing. That being said, hybrid projects, in which non-state actors assume more responsibility, tend to engage with 'harder' forms of governance to a larger extent than public projects, such as monitoring and certification, target setting and rule setting. Overall, as opposed to mitigation, what comes through is that adaptation to climate change is governed under a 'shadow of hierarchy', in which the architecture is predominantly based around states and international organisations. Rather than establishing forms of governing 'beyond the state' or through the 'hollowing out' of the state, non-state actors seek to influence

many kinds of decisions in various ways, thereby becoming integral to the very project of governing adaptation.

Over the last decade, international adaptation governance has been about the governing of finance for projects to be carried out in the Least Developed Countries to support their governmental and institutional structures. This has led governments to keep projects and flows of finance under the auspices of the UNFCCC. Nevertheless, a recent change towards adaptation governed by a transnational constituency can be identified. In their overview of the history of adaptation, Huq and Toulmin (2006) identify 'three eras' of climate and development discourse. Drawing from the discussion of adaptation in Chapter 1 as well as this chapter, the dissertation argues that a 'fourth era' of adaptation is emerging. This new 'era' is not replacing the established territorial adaptation efforts, but instead is emerging alongside, as in many ways they are complementing each other. The former is mainly focusing on the national and subnational levels, essentially because implementing adaptation will primarily have benefits at these scales, while the latter is regional and global in scope, where adaptation is increasingly governed globally and transnationally, and where 'softer' forms of governance such as agenda setting, information sharing and capacity building are predominant.

5/ Enabling environment for private adaptation finance effectiveness[12]

5.1 Introduction

The need for investments to address climate change is daunting. For instance, trillions of US$ globally by 2030 are needed just for the transition to low-carbon and climate-resilient infrastructure (Global Commission on the Economy and Climate 2016). In developing countries, where socio-economic conditions and limited infrastructure exacerbate vulnerability to climate change, investment in adaptation is particularly critical (IPCC 2022). Globally, public and private investments into climate-related activities are increasing. In 2014, the public and private sectors invested a combined US$391 billion (Buchner et al. 2015). However, as much as 92% of private finance stays in the country where it originates, meaning it can be questioned to what extent international private finance can support developing countries. Moreover, private investments in adaptation are not included in this number,

12 This chapter is based on the following publication: Dzebo, A. and Pauw, P. (2019). A framework for mobilizing private finance and tracking the delivery of adaptation benefits. SEI Working Paper. Stockholm Environment Institute, Stockholm. It is published as a Stockholm Environment Institute report and has gone through a formal peer review process, managed centrally by the institute's peer review team. More info can be found here: https://www.sei.org/about-sei/governance/ethical-practice-peer-review/. The text has been slightly updated in 2022.

because it is difficult to track or, in many cases, even identify private finance flows to adaptation (Atteridge and Dzebo 2015; Pauw et al. 2015). It is therefore unknown to what extent the private sector might address the costs of adaptation in developing countries, which could rise to US$140–300 billion per year by 2030 (UNEP 2016).

In order to support developing countries with their mitigation and adaptation efforts, developed countries under the UNFCCC pledged to mobilise US$100 billion per year by 2020. The private sector is mentioned as a source of this finance (UNFCCC 2009). This notion of non-state climate action where actors such as private companies, the civil society, cities and municipalities, among others, are governing climate change with and without nation-states has been increasingly prominent in global and transnational climate governance (Biermann et al. 2009; Bulkeley et al. 2014; Chan et al. 2016). However, as with finance, the overwhelming focus of non-state climate action has been on climate change mitigation. Total bilateral and multilateral public support for climate change adaptation reached US$25 billion in 2014, of which US$22.5 billion targeted developing countries This means there is both an investment gap (given the high adaptation costs) and a finance gap (given that the US$ 100 billion needs to be balanced between mitigation and adaptation) (Pauw et al. 2015). As far as the private sector invests in adaptation, this often happens autonomously and without a clear intention to address climate change (Averchenkova et al. 2016; Brink et al. 2016; Juhola 2013).

Hitherto, the plethora of adaptation research in developing countries has focused on public finance, households and communities, particularly in rural environments (Crick et al. 2018). However, the private sector, large international and domestic corporations as well as Micro, Small, and Medium-sized enterprises (MSMEs), plays a critical role in contributing to developing countries' growth and development efforts. In Africa for example, the private sector composes almost 67% of the continent's investment, 75% of its economic output and 90% of its formal and informal employment

(AfDB 2013a). The private sector is also exposed to different climate-related risks, ranging from economy-wide risks to specific sectoral, industry or company-level risks. Adverse impacts from climate change can be both direct, including damage to infrastructure and disruption to production processes, and indirect, through disruption to supply chains, and changes in regulation, product demand, and business reputation (Carter et al. 2021). Adapting to climate change is not simply a technical issue that can be resolved through large-scale investments in infrastructure or technology transfers but requires enabling policies and an appropriate institutional environment for private sector actors (Biagini and Miller 2013; Crick et al. 2018). At the same time, a country cannot become resilient if its private sector is not resilient (Pauw 2015).

Adaptation finance requires multiple layers of governance, including both domestic and international actors and institutions, and involving a plethora of national and sectoral policies, as well as various financial instruments to mobilise and deliver the funds. However, a structured governance approach to the challenges of private adaptation, and particularly how transnational actors can be enabled to invest in adaptation, has yet to be developed.

So how can countries understand and increase private sector contributions to the financing of adaptation activities? In order to address this question, this chapter develops an empirically-driven, analytical framework for private adaptation finance and tests it in two countries in Sub-Saharan Africa, Kenya and Rwanda. The framework focuses on the interaction between three building blocks: enabling environments, mobilisation, and delivery of finance for effective adaptation outcomes. As part of the latter, it identifies whether effective private investments in adaptation also contribute to the US$100 billion pledge under the UNFCCC. The framework emphasises the challenges developing countries face in order to make private finance accountable to public priorities. It focuses on mobilised private adaptation that contributes to a public good, i.e. they are accessible to all citizens and they can be enjoyed by many without reducing their availability (Geaves and Pen-

ning-Rowsell 2016; Hall and Persson 2018). The framework is not meant as a tool to help countries mobilise as much private investment as possible. Instead, it aims to identify current shortcomings and overall limits of mobilising private investments that lead to effective adaptation outcomes. This, in turn, could help governments to make the right decisions on how to reduce vulnerability of their people and economies.

The next section explains the chapters methodological approach. Section 5.3 introduces the framework itself. Section 5.4 presents the results of the analysis. Finally, the chapter discusses the key benefits and challenges of applying this framework and provide recommendations for decision-makers.

5.2 Methodology

The analytical framework was developed and improved incrementally through a mixed-method approach, including a literature analysis; a side event at the 2015 UN climate negotiations in Paris to discuss the first version of the framework with experts; an application phase through fieldwork in Kenya and Rwanda (February/March 2016); as well as discussions on the results at a side event at the 2016 Marrakech Climate Change Conference and two workshops in Kenya and Rwanda (December 2016).

Kenya and Rwanda were selected because their nationally determined contributions emphasised the role of the private sector in scaling up adaptation activities 08/12/2022 11:22:00. Both countries also have strong policy environments, with well-developed national development plans and strong relationships with international development partners. In both Kenya and Rwanda, the private sector is split into two weakly connected parts: a formal sector of larger businesses, which is relatively healthy and productive, and a very large informal small business sector, which supports almost nine out of ten workers (excluding agriculture). The informal sector is poorly documented and is not supported by coherent government action (AfDB 2013b).

Both countries also face serious risks from climate change. Kenya's natural resource base makes the country highly vulnerable to climate change impacts. On an annual basis, extreme climatic events could cost the economy as much as US$500 million (SEI 2009a). For Rwanda, floods and droughts cause major socio-economic impacts and hinder growth. By 2030, climate change impacts could amount to 1% of Gross Domestic Product (GDP) and is estimated that Rwanda needs to invest US$50–300 million per year in adaptation (GoR 2015; SEI 2009b).

Data on both case studies was collected through face-to-face, semi-structured interviews, 25 in Rwanda and 20 in Kenya, with 51 stakeholders in total, including decision-makers from ministries, agencies, international organisations, the private sector and the civil society. The framework was first introduced to the interviewee, which was followed by a list of open questions. Respondents were identified through existing literature and policy documents, cooperation with local partners and snowballing. Interviewees were offered anonymity in order for them to speak more freely. The interviews took place in English and took 45-60 minutes. They were transcribed, coded, and analysed qualitatively. Lastly, the field research and the preliminary findings were discussed with stakeholders at two workshops in December 2016 in Nairobi and Kigali.

5.3 Conditions for effective policies – analytical framework

This section discusses the conditions for effective policies for private sector adaptation through an analytical framework that consists of three key components: enabling environments, mobilisation, and delivery of finance for adaptation. The framework applies an institutional approach that captures the key processes of governance in a way that emphasises the roles of different public and private actors that contribute to decision-making and influence societal processes through organisations, structures, networks, and

relationships (Jordan 2008; Treib et al. 2007). The framework examines not only how investment can occur (this is studied broadly in literature, see e.g. Crick et al. (2018), Pauw (2015) and Stenek et al. (2013)), but also allows for the identification of ways in which actors might fail to contribute to adaptation. The framework assumes that there is a causal relation where enabling environments should lead to increased mobilisation and subsequent delivery of private finance for effective adaptation outcomes (Figure 6) (see Miles et al. 2001).

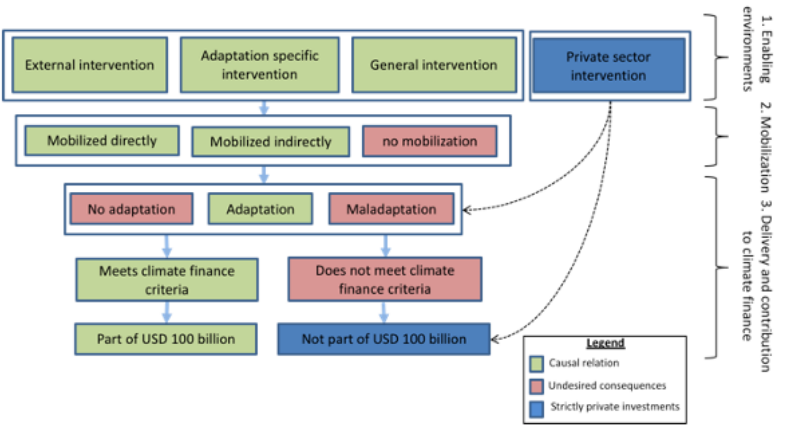

Figure 6 An integrated approach to private investments in adaptation activities

5.3.1 Enabling environments

Broadly speaking, enabling environments in public policy are institutional and regulatory frameworks meant to stimulate a desired outcome (Vedung 2011). It draws attention to promulgation of regulations designed to operationalise rules and the development of policy instruments intended to guide the behaviour of key actors (Young 2011). In terms of climate change adaptation, the literature to date has focused on incentives created by the public sector that mobilise private finance, directly or indirectly. These include industrial policies, subsidies, support, aid, assistance, fiscal policy and fiscal instruments that lead towards climate-resilient development (Druce et al.

2016; Stenek et al. 2013), and that are either top-down instruments, delegated by a public authority, mandated by law or self-initiated i.e. private-private (Mees et al. 2014; Tennekes et al. 2014).

To make policies effective, four different instruments can be applied. First, policy and regulatory instruments are intended to influence behaviour through mandatory or voluntary measures, such as standards, planning and zoning laws, property rights, licensure requirements, and restrictions on import and export. Second, economic instruments are intended to influence behaviour through price-based mechanisms, and include taxes and levies, incentives and subsidies, direct investments, lending and guarantees, insurance, public procurement, and price controls and support. Third, awareness-raising instruments are intended to share and disseminate information and sponsor capacity-building, training and education, certification and labelling, and voluntary accounting systems. Lastly, data and technology instruments can provide information and communication technologies (ICT) that enable investments by improving access to data and information in remote areas through the internet and mobile phones, for instance (Ampaire et al. 2017; Crick et al. 2018; Naidoo et al. 2012; Stenek et al. 2013).

As shown in Figure 6 (part 1), the framework identifies four distinct categories of enabling environments. First, enabling environments are stimulated externally by international actors. For example, international development agencies or finance institutions can incentivise investments by international or domestic private sector actors. Instruments used include grants, (concessional) loans, insurance, export credits, risk guarantees, and non-financial instruments such as in-kind or technical assistance (Pauw 2017). Second, countries themselves adopt targeted measures to incentivise private investment in adaptation, such as lifting import tariffs on supplies and equipment to build irrigation systems. Third, countries incentivise domestic and international private investment in general, which might contribute to adaptation directly or indirectly, such as through infrastructure improvements, investments in research or policies intended to increase Foreign Direct

Investment (FDI). In both cases, the goal is to increase the legitimacy of private authority (Green 2013). Finally, the private sector itself can create an enabling environment for other private actors' investment in adaptation. For example, insurers or retailers may require their policyholders or suppliers to 'climate-proof' their operations (see Jensen et al. 2017).

Whilst efforts to create enabling environments neither guarantee effective policies nor necessarily result in desired mobilisation of investments, they are a precondition for achieving effective outcomes and subsequent impact (Easton 1965). Therefore, assessing enabling environments remains an important first step.

5.3.2 Mobilisation

Enabling environments can mobilise additional private investments in adaptation, directly or indirectly (Figure 6, part 2). This is a minimum condition for effective policy implementation, which itself is a necessary factor required to achieve the goal of solving environmental problems, or in this case adaptation effectiveness (see Skjaerseth et al. 2006). Still, an enabling environment will not necessarily lead to private-sector finance being mobilised for adaptation specifically. Private investments in adaptation compete for capital with other investment priorities with lower uncertainties (UNEP 2016) or higher potential internal rates of return. Business might also choose to invest in expansion rather than in adaptation, which is more about consolidating existing operations. Thus, creating an enabling environment might not be sufficient. Badly designed or ineffective policies may not only fail to mobilise the desired private investment in adaptation but could even create additional barriers (Berliner et al. 2013; Naidoo et al. 2012) or lead to maladaptation (Juhola et al. 2016; Magnan et al. 2016).

In line with Brown et al. (2015), the chapter distinguishes between directly and indirectly mobilised private investments. When private finance is directly mobilised, the money is 'co-invested' alongside public finance in a project, programme or fund as a direct result of the public-sector intervention

(Brown et al. 2015:V). This type of finance is generally easier to track, as it happens 'at the source'– where public finance is being provided, and mostly also around the same time or shortly after the provision of public finance. However, direct mobilisation also has risks. For example, climate-proofing of infrastructure might be bankable, but a commercial bank cannot provide a market-based loan to the construction firm if it must compete with a concessional loan from a development bank. Indirect mobilisation of private finance is more difficult to identify, track and account. Here, private investments result from a public-sector intervention, e.g. a project preparation grant or technical assistance, but tracing the causal links can be more difficult, as the intervention only supports enabling outputs that occur one or more steps upstream of the private investment (Brown et al. 2011, 2015).

It is relatively easy to compile an overview of a country's enabling environment as described in step 1 in Figure 6. However, it is much more difficult to assess whether additional private adaptation is mobilised (step 2 in Figure 6). Multilateral Development Banks (MDBs) started to report on their mobilised private adaptation investments. They managed to leverage US$270 million of private finance, which helped to make $1.5 billion of their finance more climate-resilient in a total project portfolio of investments with adaptation components of $5.5 billion. However, in their review of this portfolio, Vivid Economics (2015) notes that the Multilateral Development Banks activities might reflect the convenience of adding adaptation components to projects under existing processes, as much as a deliberate attempt to address adaptation priorities. Some private banks and investors also started to report on investments in private adaptation, albeit in different ways. For instance, Standard Chartered and Swiss Re have supported farmers in reducing their exposure to extreme weather risks; Credit Suisse has supported infrastructure resilience investments through its lending portfolio, and Goldman Sachs has offered catastrophe-linked securities to transfer risks from extreme weather (Crawford and Seidel 2013).

Nevertheless, evidence of direct and indirect mobilisation of private investment in adaptation activities remains elusive. Climate Policy Initiative tracks climate finance flows and notes that information about private investment in adaptation remains one of the most important gaps (Buchner et al. 2015). An explanation for this could be that both the domestic and international private sector might be incentivised to contribute to adaptation, without calling it adaptation (Averchenkova et al. 2016; Klein et al. 2017). Thus, the visible level of identifiable private investment in adaptation probably understates the actual activity level (Agrawala et al. 2011; Pauw 2015).

Effectiveness of mobilisation focuses on internal results, which in this context means amounts of mobilised private finance. However, even if both compliance (i.e. effective enabling environment) and behavioural modification is achieved (i.e. mobilisation), it may not necessarily mean a great deal for the broader institutional effects if individual goals do not match broader institutional goals (Underdal 2001a). In other words, if mobilised private finance does not lead to effective adaptation.

5.3.3 Delivery of finance for adaptation

Of the three building blocks of the framework, delivery of finance that leads to effective outcomes on adaptation is the most difficult to assess (Figure 6, step 3). The analytical framework is interested in establishing a causal relation between an effective policy and the problems it manages to solve (see Young 2004), in this case how mobilised private finance delivers effective adaptation outcomes (Figure 6, part 3).

Private adaptation-related investments, for example in the agricultural sector, do not automatically generate public goods. As already mentioned, such investments are often not reported as adaptation investments, and their (long-term) adaptation effects are therefore difficult to measure. Investments may be directed to a sector or a location that is not a priority for the country or the affected community. In addition, private investments in

adaptation can actually lead to maladaptation and/or increase or distribute vulnerability (Eriksen et al. 2021). For example, building a new dam to ensure a steady water supply for a company's operations may reduce the water available to local farmers, or force people in the area to relocate (Juhola et al. 2016; Magnan et al. 2016). Similarly, private flood barriers in one place can exacerbate flood risks elsewhere, as they push the water out in another direction (Druce et al. 2016).

To ensure that private climate finance delivers benefits on adaptation, effective policies require accountability mechanisms that are enforced by the national or local governments (Agarwal et al. 2012; Newell 2008). One way to assess adaptation mobilised finance has effectiveness potential would be to identify whether delivered private adaptation finance can be counted towards the US$100 billion climate finance commitment made under the UNFCCC. This is the regime where discussions on international private adaptation finance first emerged, and in this context criteria for monitoring, reporting and verification are being developed for private adaptation finance to be accountable in a consistent, transparent, comparable, complete and accurate manner (Ellis and Moarif 2015; UNEP 2011; UNFCCC 2014).

There have been attempts to develop a system for monitoring, reporting and verification that is suitable for private investments in adaptation activities (Brown et al. 2015; Jachnik et al. 2015; Pauw et al. 2016). However, given that private finance for adaptation may be mobilised through interventions that occur upstream of the private finance involvement in the investment value chain, existing tracking efforts will not capture all mobilised private finance for adaptation (Donner et al. 2016; Ford et al. 2015). Tracking efforts may also overestimate the direct mobilisation effect of public adaptation co-finance at the project level (Brown et al. 2015). Furthermore, apart from green bonds, most types of traditional private finance instruments (debt and equity) would be very difficult to align with the requirements for monitoring, reporting and verification. For public climate finance, all actors, from taxpayers in developed countries, to citizens in the recipient countries,

expect a meaningful contribution to achieving public benefits related to climate change activities. The degree to which private investors share common goals with expected beneficiaries of adaptation benefits is not equally clear (Atteridge and Dzebo 2015).

5.4 Private adaptation finance in Kenya and Rwanda

5.4.1 Enabling environments

Enabling environments for private investments in adaptation can be created by adaptation-specific interventions and general interventions by the government, by international development agencies and development banks, and by the private sector itself (see Figure 6). The application of the framework demonstrates that both Kenya and Rwanda have in different ways developed a broad institutional and regulatory framework for adaptation over the past years, which includes the explicit intent to mobilise private finance for climate activities. Bilateral development partners and international organisations are supportive of the intent but have limited experience themselves. In both countries there is widespread recognition that the creation of an enabling environment is difficult and that barriers to the mobilisation of private investments in adaptation exist. Private sector interventions, in contrast, where one private actor incentivises another to adapt, are so far rare.

Examples of adaptation-specific interventions were identified in policy documents and through interviews. Kenya prioritised adaptation in national policymaking, as can be concluded from the installation of the Climate Change Directorate under the Ministry of Environment and Natural Resources and 'climate desks' at various other ministries, as well as its National Climate Change Policy (GoK 2013), the Kenya National Adaptation Plan (GoK 2016a), the NDC (GoK 2016b) and the Climate Change Act (GoK 2016c) (see also Crick et al. 2016) for a comprehensive overview of the Kenyan climate policy landscape). These documents all include elements on mobilising private sector investments. For example, Kenya's NDC refers to creating an

enabling environment for private investments and to demonstrate an operational business case in trade, manufacturing and financial services (GoK 2016b). Kenya's National Adaptation Plan was drafted in consultation with the private sector. In 19 out of its twenty 'Adaptation Actions' the private sector carries partial responsibility for implementation. Also, it is envisaged that finance from development partners and the private sector will support the implementation of some of these actions (GoK 2016a).

Kenya's National Climate Change Action Plan recommends the creation of a 'Kenya Climate Change Fund'. The fund would catalyse private sector funding and have governance structure with government, civil society and private sector representation (GoK 2013). This might help to overcome a complaint by several interviewees from both the private sector and development organisations that climate finance is currently too close to the central government for the private sector to benefit and for development partners to retain ownership over the finance they provide (see also Shawoo et al. 2022a). Subsequently, Kenya approved the Climate Change Act in 2016. A first attempt in 2012 failed partly, according to one respondent from a non-governmental organisation, because non-state actors were not sufficiently involved in the drafting process. The Act raises the legal status of addressing climate change and addresses the mobilisation and transparent management of climate finance (GoK 2016c). The Act mandates a creation of Kenya's Climate Change Fund, which is still under construction. However, at the sub-national level, several counties have created their own climate funds that are also structured to blend public and private financial resources (Murphy and Orindi 2017). The Act also provides for the creation of the National Climate Change Council, headed by the President and including the Kenya Private Sector Alliance (KEPSA) as a member in order provide stronger legitimacy to climate action.

Respondents also indicated that international development actors help to create enabling environments for private sector adaptation. For example, the formulation of a National Climate Change Action Plan was financed by the UK Department for International Development (DfID). In terms of activities

on the ground, the German Society for International Cooperation is actively promoting private-sector participation through public-private partnerships (PPPs) in climate projects and programmes, although the focus is on mitigation. Another example is the Danish International Development Agency (DANIDA), which operates a fund where the private sector can apply for up to 80% grant funding. At the time of the interview, there had not been any adaptation-related applications. A third example is the Netherlands Development Organisation (SNV) which aims to develop the adaptation business sector directly, while promoting Dutch technology in various Kenyan sectors.

Rwanda also aims to enable investments in climate activities by creating incentives through public policy. These include Vision 2020, which stipulates that the underdeveloped private sector needs to be adapted to the country's economic needs and drive economic growth. Vision 2020 outlines the government's ambition to become a middle-income country by 2020 (GoR 2000). The Economic Development and Poverty Reduction Strategy 2013–2018 (GoR 2013), Rwanda's most important economic strategy document, requires that ministries and agencies identify key private actors in each sector to engage them in their efforts. More specific to adaptation, the Green Growth and Climate Resilience National Strategy (GoR 2011) lays out a pathway to a green economy, with targeted programmes for each sector, with a purpose to mainstream climate change into all sectors of the economy. It emphasises the need to secure domestic sources of revenue and leverage private capital for low carbon and adaptation activities.

As an additional step, Rwanda has also created a national 'Green Fund' for climate change (FONERWA), with help from international development partners, to serve as the 'engine of green growth'. It is a nationally driven, cross-sectoral climate and environment investment fund, the largest of its kind in Africa. A key aspect of FONERWA, according to the fund's coordinator, is that it requires projects to show how they contribute to Rwanda's main policy objectives in the Green Growth and Climate Resilience National Strategy.

As for external international interventions, almost all international organisations interviewed for this study (German Society for International Cooperation, Kreditanstalt für Wiederaufbau[13], US Agency for International Development (USAID), AfDB and the Swedish International Development Agency (SIDA)) cited Rwanda's Vision 2020 goal of encouraging private investment. However, only the German Society for International Cooperation has a specific programme targeting private-sector adaptation. The agency works with the tea and coffee sectors and the Rwanda Association of Manufacturers, providing technical assistance and extended credit lines to Micro, Small, and Medium-sized enterprises together with the German Development Bank (GIZ 2014).

Despite all the steps towards the creation of enabling environments in both Kenya and Rwanda, there is widespread recognition that the creation of an enabling environment is difficult and that barriers to the mobilisation of private investments in adaptation still exist. For example, the Government of Kenya notes that "[b]arriers include gaps in policy and legislation, weak institutional capacity, poor management of natural resources, limited private sector involvement, lack of capital and financing, and inadequate access to (...) technology" (GoK 2013:40). In Kenya, six respondents emphasised that private actors' awareness on adaptation needs to be raised as a precondition for them to invest in adaptation. Similarly, three respondents stated that adaptation is relatively new on the agenda of most ministries, other than the environment ministry, and that awareness and coordination among the ministries needs to be improved too. For example, one interviewee from an international organisation stated that private-sector adaptation is important in value-chain management, but is so far hardly addressed because adaptation has not been an important issue for ministries of trade and agriculture. Respondents also came up with practical ideas to improve the enabling environment for adaptation, for example by promoting research and development, making irrigation equipment tax exempt or by developing green credit lines.

13 German Development Bank

Several representatives of Rwandan government – including the Rwanda Development Board (RDB), the Rwanda Environmental Management Agency (REMA), and the Ministry of Environment (MINIRENA) – emphasised that the private sector in Rwanda in general has low awareness of climate risks and adaptation options. Efforts are, however, ongoing in both countries to increase private sector awareness. The Rwanda Environmental Management Agency has teamed up with the Private Sector Federation (PSF), which promotes the interests of the business community, to hold awareness-raising initiatives and trainings. However, the activities did not focus specifically on climate change, and funding is scarce, so only a fraction of businesses were being reached. An interviewed PSF employee, however, brought up examples where the private sector has invested in climate-proofing its own operations as a consequence of a public incentive.

Private sector interventions, where one private actor stimulates another to adapt, are so far rare. In Kenya, KEPSA and the Kenya Association of Manufacturers are investing in efforts to increase the awareness and public understanding on adaptation. Less directly aimed at adaptation, two respondents mentioned that the Kenya Tea Development Authority, the Coffee Board of Kenya and the Kenya Flower Council have set policies for farmers as suppliers and members. For these high-value export crops, the industry sets quality standards, employs extension officers, and tracks back bad harvests. Indirectly, modern communication technology can also stimulate private-sector adaptation. For example, millions of Kenyans have gained access to finance through the mobile money transfer technology of M-Pesa, boosted farmers' resilience to harvest losses according to two respondents. Notwithstanding this, there was a wide consensus among numerous respondents in both countries that the financial sector is investing more and more in mitigation activities such as clean cookstoves and solar energy, but not in adaptation-related products such as bio-fertilisers and irrigation equipment.

Lastly, interviewed private sector actors raised the concern that many actions that reduce climate risks, such as conservation, ecosystem restoration, capacity building and education, do not produce immediate economic benefits. Indeed, many benefits of adaptation measures are difficult to measure in economic terms and are perceived as part of the public realm (Sovacool et al. 2015). This issue is not only relevant to the private sector: even within ministries, a former MINIRENA employee in Rwanda said it was a problem to constantly have to show how a project or an initiative contributed to GDP to get a budget allocation.

5.4.2 Mobilisation

Enabling environments created by the public sector should mobilise additional private investments that could contribute to adaptation (see Figure 6). The application of the framework helped to demonstrate that in Kenya and Rwanda, both direct and indirect mobilisation of investments in adaptation seem to be limited, for four reasons. First, international private finance is not prioritised towards climate-relevant issue areas. Second, much of the directly mobilised private investments are not labelled or tracked as adaptation investments. Third, indirectly mobilised investments are mostly in-kind or technological and difficult to track and aggregate. And finally, because of low enforcement of existing policies in both Kenya and Rwanda, policies are not being implemented and investments are not mobilised.

Investments by the international private sector do not prioritise climate-relevant sectors. Although both Kenya and Rwanda are successful in mobilising foreign direct investment, 672 million US$ in Kenya and 293 million US$ in Rwanda in 2016 (UNCTAD 2018), it goes entirely into sectors that are less of a priority for adaptation. In Rwanda Foreign Direct Investment goes to financial services, ICT and manufacturing (GoR 2017), while in Kenya it goes to ICT and renewable energy (GoK 2016d).

And to the extent that investments by both the domestic and international private sectors do address adaptation-related sectors, multiple interview-

ees in both Rwanda and Kenya state that there is a lack of quantitative data on whether enabling environments directly or indirectly mobilise private finance for adaptation. As also demonstrated in literature (Brown et al. 2015; Buchner et al. 2015; Pauw 2015), private actors, particularly Micro, Small, and Medium-sized enterprises, do not keep track of adaptation-related investments; and many large-scale investments in sectors relevant for adaptation – including agriculture, social entrepreneurship, ecotourism and improved water management – are generally not labelled as investments in adaptation activities, let alone tracked as such (see also Averchenkova et al. 2016).

The interviews led to a few notable exceptions of direct mobilisation of private investments in adaptation. Rwanda's climate fund FONERWA is required to direct at least 20% of its resources to the private sector, mainly through grants and credit lines. In 2016, the fund exceeded its target with 37% of projects being led by the private sector. However, within these projects, little direct private investments are mobilised. Instead, private sector contributions were in kind or involved technology transfer. More importantly, as one FONERWA official pointed out, most FONERWA-funded projects involving the private sector focus on mitigation, whilst adaptation projects are usually managed by government agencies or civil society organisations. Of all existing FONERWA activities, there is only one project that mobilised private investments in adaptation: rooftop rainwater harvesting by a consortia of a ministry (MINIRENA), a bank and a manufacturer of water storage tanks. The interviewed project partners all considered this project a success. However, the financial actor, a bank that provided subsidised loans, saw its participation in the project as corporate social responsibility rather than a bankable investment (Dzebo and Pauw 2016). The interviewed bank official argued that even though the bank made a profit on its engagement, the alternative cost was high, as its profits would have been even higher if it had not worked with smallholder farmers.

In Kenya, an example of direct mobilisation where public funding led to private investments is the Kenya Biologics' development of organic fertilisers. The Climate Innovation Centre (CIC), a donor-supported incubation centre for new Micro, Small, and Medium-sized enterprises that work on climate action, provided 50.000 Kenyan Shilling (about US$500) seed funding to an Kenya Biologics, which later successfully attracted private equity from a Dutch firm (Pauw and Dzebo 2016). However, while the CIC promoted this project as successful direct mobilisation of private finance for adaptation (in this case environmentally friendly crop protection products), the amount of mobilised investment is unknown, and the adaptation outcomes are not monitored or reported.

An interviewed employee of FONERWA also noted that Rwanda, like many countries in Sub-Saharan Africa, have limited internal capacity to channel large amounts of finance to adaptation projects on the ground. There is low capacity for disbursement of finance. Even in cases where funding for adaptation was approved, it was hard to disburse the funding in an efficient way. A number of barriers impede private actors' engagement, including both knowledge and capacity issues as well as high transaction costs and high upfront capital costs of investing in both short- and long-term adaptation measures (see also Trabacchi and Stadelmann 2016).

The amount of indirectly mobilised private sector investments with adaptation outcomes remains unclear. Several respondents from international development agencies and international organisations noted that private sector contributions through in-kind or technology could be seen as indirect mobilisation, as well as CSR, but that it was difficult to track and quantify and aggregate these in monetary terms.

Several respondents from civil society in both Kenya and Rwanda referred to non-enforcement of existing policies as a key barrier to private action on adaptation. For example, farmers still grow crops close to rivers and on slopes and, thus, contributing to further land degradation and increasing

vulnerability. And, in Kenya, it was noted that despite extension services' efforts to promote crop diversification, many farmers still do mono-cropping. Furthermore, even when private finance is mobilised, lack of knowledge and experience with adaptation – or a narrow focus on self-interest – may lead the private sector to invest in counterproductive measures.

5.4.3 Delivery of finance for adaptation

According to the framework (see Figure 6), mobilised adaptation investments can lead to adaptation or not, or even cause maladaptation. The analysis has two main conclusions. First, there are no indicators in place to measure adaptation outcomes from private finance, which means that they are not being monitored or reported. Second, the connection to the US$100 billion of climate finance as negotiated under the UNFCCC was considered far-fetched.

Respondents provided anecdotal evidence of investments that created effective outcomes or caused maladaptation. As a whole, however, it is uncertain to what extent enabling environments and mobilised investment contribute to effective adaptation outcomes. This is the case both for explicit adaptation projects, and for investments that could contribute to adaptation indirectly.

In Kenya and Rwanda, businesses have not adopted explicit criteria along which they could measure their impact on adaptation. Four respondents from civil society, international development agencies and research stated that maladaptation from private sector activity is currently a blind spot, with two additional respondents stating that there is a need for monitoring instruments to prevent private maladaptation. Safeguards currently used by both the government and development agencies, such as environmental impact assessments done by NEMA, are stated not to include adaptation criteria. Similarly, the Rwanda Development Board, which facilitates private investments, domestic and Foreign Direct Investment, does require environmental impact assessments as compulsory for most projects, however there are no specific requirements with regards to adaptation. During the workshops in

both Rwanda and Kenya, participants broadly agreed that adaptation criteria in environmental impact assessments on water and land use, for instance, would reduce maladaptation and increase effectiveness.

For effective adaptation outcomes, it was also noted that adaptation does not have to be the main objective; it can also be an intended or unintended co-benefit. For example, in Rwanda, climate change will affect hydropower generation capacity, so watershed management and forest landscape restoration, which support adaptation, can also help ensure a reliable renewable energy supply. Some investments that contribute to adaptation – by reducing poverty or making natural resource use more sustainable – were not motivated by climate concerns. The restoration of the Rugezi watershed in Rwanda is an example. Hydropower is crucial to the country's power supply, but climate change is expected to shift rainfall patterns. One of the main power stations, Ntaruka, had seen a steep decline in generation capacity, due in part to poor management of the upstream wetlands and degradation of the surrounding watershed. A major watershed restoration project not only brought substantial environmental benefits, but also restored and increased Ntaruka's generation capacity, and made the facility more resilient to future changes in rainfall 08/12/2022 11:22:00. Several Rwandan interviewees mentioned this as a case where a development project had clear positive adaptation outcomes. The watershed project also illustrates the value of explicitly considering climate change and adaptation, to decrease the risk of projects leading to maladaptation and increasing local people's vulnerability.

Apart from the potential benefits from criteria for adaptation, a lack of criteria also brings certain risks. First, respondents from the civil society in both countries indicated that private sector investments in adaptation in one place can redistribute vulnerability elsewhere (see also Atteridge and Remling 2018; Eriksen et al. 2021). For example, if a company protects its water supply, it might either benefit communities (if increased water efficiency makes more water available to communities) or harm them (if the company secures its water intake at the cost of others' access to water).

Second, respondents from the civil society and from the Rwandan government referred to 'climate-washing', where private-sector projects of questionable benefit could be misidentified as serving adaptation because they fit with the prevailing discourse. It could also happen by mistake when actors without sound experience in or knowledge of adaptation to manage adaptation programmes (Mustelin et al. 2013). In the past, government- or non-governmental organisation-sponsored projects have been labelled as 'adaptation' because it increased the chances of getting international funding (Ireland 2012).

Lastly, during the interviews and the workshop it became clear that private investments will not cover certain sections of society. For example, in agriculture, the private sector is interested in index insurance for farmers that can afford it, but not in promoting climate-smart agriculture for a larger number of more vulnerable (subsistence) farmers.

Regardless of the lack of data on private investments that benefit adaptation, respondents and workshop participants highlighted that according to them, there is currently little direct, explicit investment in adaptation coming from international businesses. During the workshop in Nairobi in particular, respondents also questioned why the US$100 billion in climate finance was included in the framework because climate finance as negotiated under the UNFCCC has hardly sparked the private sector's interest to date. In Kenya, private sector actors noted that they are users and implementers of adaptation interventions, not financiers that contribute to the US$100 billion.

During the workshops in both Rwanda and Kenya, participants however also noticed that the domestic private sector would become more interested in international climate finance if could tap into the Green Climate Fund or other international funding opportunities. The Green Climate Fund, as a new and major actor at the international climate finance scene, could contribute to speeding up the process to install adaptation criteria through its own guidelines for project implementation. This might provide an incentive

to monitor and quantify private investments in adaptation. However, there is currently only one private mitigation finance project ongoing in Kenya and Rwanda, a private investments fund for off-grid solar power (GCF 2015). Rwanda was also awarded readiness support from the GCF to help government agencies to better communicate and coordinate and build capacity, and thus attract more international climate finance, including private finance.

5.5 Discussion and conclusion

In developing countries in particular, adaptation needs and costs far exceed what the public sector can finance and achieve. It is therefore crucial to engage the private sector in adaptation, and many countries are already aiming to do so. However, given the variety of sectors, climate impacts, governance levels and uncertainties, it is very complex to mobilise private investments that contribute to adaptation. This chapter presented an empirically-driven framework to easily understand the strengths and weaknesses in current practices to mobilise private investments in adaptation. The framework distinguishes three key building blocks: enabling environments, mobilisation of finance and effective delivery of adaptation.

Based on the testing of the framework in Kenya and Rwanda, some conclusions for these two countries, and on how to use this framework in other countries, for particular sectors, or on sub-national levels can be drawn. Despite the differences between Kenya and Rwanda, the framework was easily applicable in both countries.

The framework demonstrates that both Kenya and Rwanda have a strong focus on enabling environments to mobilise private investments. Lots of efforts are put on developing a large number of policy objectives and instruments, both adaptation-specific and more general interventions. Beyond the role of national governments, international actors operating in Kenya and Rwanda – including bilateral agencies, international organisations and multilateral development banks – generally support mobilisation of private finance

but have limited experience themselves with mobilising private finance for adaptation. Currently, only one actor, the German Society for International Cooperation in Rwanda, targets private sector adaptation directly.

For this reason, it remains unclear to what extent enabling environments lead to the mobilisation of private investments in adaptation. Much of the mobilised private finance flows are not labelled or reported as adaptation investments, while indirectly mobilised finance is delivered mostly through in-kind and technology transfer, and thus, difficult to quantify and aggregate. Furthermore, much less effort by the government is diverted towards enforcing existing policies and safeguarding and ensuring that those instruments are leading to desired behavioural changes. Although some policies are even turned into legislation, in practice their implementation is not sufficiently monitored. Meanwhile, international private finance, through Foreign Direct Investment, remains a "black box" for adaptation.

However, despite the lack of mobilisation, this analysis points out that there is potential to increase both public and private sectors investments in climate-related activities if the government and the international organisations invested in efforts to reduce investment risk, increasing awareness, and reducing red tape. Governments and international organisations can put more explicit emphasis on adaptation by integrating it in risk-sharing and co-financing strategies. This is also confirmed in literature, where more than 25% of African firms mentioned availability and cost of finance as the biggest barrier, nearly twice the rate seen in other regions (Beck and Cull 2014). International private investments could indirectly contribute to adaptation co-benefits, but they need to be publicly reported and verified. Financial instruments that are specialised for adaptation, such as risk guarantees and green bonds, could ensure impact of mobilised private finance in developing countries. Conversely, there is a risk of transnational corporate exploitation of the developing countries such as the extension and legitimation of supply chain activities in the Global South by western corporations, along the lines that operate in other environmental governance arenas (Clapp 1998; Conca 2005). This is further explored in Chapter 7.

Finally, knowledge on whether mobilised investment delivers effective outcomes on adaptation, or if it increases vulnerability through maladaptive practices, is even lower, perhaps apart from corporate social responsibility contributions. In applying the framework this chapter demonstrates that private adaptation investments are not tracked and that there is an increasing knowledge gap once we move down in the framework. The creation of a tracking system might be complicated, given the variety of sectors, timescales and spatial scales involved (Christiansen and Martinez 2018; Leiter and Pringle 2018). However, there are indirect ways to monitor private contributions to adaptation. For example, incorporating adaptation components in environmental impact assessments could help to prevent maladaptation, while maximising on positive contributions to adaptation. The international actors can also develop indicators for increasing the role of the private sector in their projects. Both environmental impact assessments and the development of adaptation indicators could increase public and private investments in adaptation activities and help raise awareness of climate risks and adaptation options. Given the knowledge gap on delivery of adaptation finance, it remains unknown whether private finance contributions could contribute to US$100 billion climate finance target (Pauw et al. 2015).

With regard to private sector roles and responsibilities, raising private sector awareness of climate change impacts is important. In line with earlier research (see Druce et al. 2016; Pauw et al. 2016), the interviews and workshop outcomes demonstrate that one of the key challenges is that the concept of adaptation is alien to the private sector. Adaptation as a concept is abstract and hard to grasp for non-experts, which contributes to a lack of awareness, albeit this is slowly starting to change (see Chapter 1 and Chapter 7). This might in principle be a communication issue: the private sector might invest in reducing risks from climate-related hazards without knowing it is adapting to climate change. However, it also makes private sector contributions to adaptation invisible (Agrawala et al. 2011) and creates a barrier for effective cooperation and communication between private and public actors. A respondent from the private sector for example stated that his company had very little experience in working with development agencies. Capacity

building, awareness campaigns, and information sharing are a pre-condition for private adaptation investments and need to be provided by both the domestic public sectors and the international community (Druce et al. 2016).
This framework has three big advantages. First, by structuring complex discussions around mobilisation of private investments for effective adaptation outcomes, it helps to identify countries' strengths and weaknesses. Second, the framework can open a debate on how enabling environments can be unsuccessful, how mobilisation of investments might fail, and of how private investments can cause maladaptation or redistribute vulnerability. And third, the framework can help to shift the focus from stimulating action (through enabling environment) towards stimulating successful adaptation (through monitoring and reporting, and enforcement in general). Enabling environments are only a means to an end, and not an end in itself.

This framework can be used to identify countries' strengths and weaknesses, as well as potential to mobilise private investments in adaptation. Because the framework is so simple and straightforward, it can be used by civil society, public servants, researchers or others to generate an overview quickly. At the same time, the simplicity is also a weakness. The framework could be used for more detailed analysis either by adding parameters and better defined and measurable variables for each step, or by focusing on specifics (sub)sectors or levels of governance, and potentially adapt the framework for this purpose. For example, the implications of climate change for the mining sector are completely different from those faced by agricultural enterprises; and even within the agricultural sector this chapter shows that there are large differences and opportunities as to how private actors can contribute to adaptation.

6/ Effective governance of transnational adaptation initiatives[14]

6.1 Introduction

As discussed in Chapter 1, two significant traits of transnational climate governance research today are that most initiatives are located in the Global North (Roger et al. 2015) and that the plethora of empirical observations focus on climate change mitigation (Bulkeley et al. 2014; Chan et al. 2018). In contrast, adaptation to climate change has been given limited attention. Historically, the focus of the research community and practitioners has been on direct impacts and environmental modelling, generally delimited to national borders, leading to the perception that adaptation does not constitute a global public good and that it is not a legitimate or urgent issue for global governance (Benzie and Persson 2019; Berrang-Ford et al. 2011; Ford and Berrang-Ford 2011). However, as this dissertation stipulates in Chapter 1, following the 2015 Paris Agreement, adaptation in the UNFCCC

14 This chapter is based on the following publication: Dzebo, A. (2019). Effective governance of transnational adaptation initiatives. International Environmental Agreements: Politics, Law and Economics, DOI: https://doi.org/10.1007/s10784-019-09445-8. The text has been slightly updated in 2022.

is being discussed as a challenge faced by all, with local, subnational, national, regional and international dimensions (see also Persson and Dzebo 2019). Researchers are increasingly turning their focus to global aspects of adaptation, including the overarching institutional architecture (Biermann and Boas 2010; Khan and Roberts 2013; Magnan and Ribera 2016; Persson et al. 2009), finance (Dzebo and Stripple 2015), development (Ayers and Dodman 2010) and political economy (Khan 2013; Sovacool et al. 2015). However, as Ford et al. (2015) note, there is a lack of approaches and indicators that focus on whether and how adaptation is taking place globally.

Understanding how adaptation governance is shared across levels and actors is important because it has implications for the quality of governance, its effectiveness and its legitimacy (Karlsson-Vinkhuyzen and Vihma 2009; Roggero et al. 2019). The emergence of transnational climate governance is well established in the literature (see Chapter 1). But while adaptation governance seems to increasingly involve new types of actors (Isoaho and Surminski 2015; Klein et al. 2017), the interaction between state and non-state actors across national borders and the effectiveness, normative impact, and distributional consequences (Abbott 2012) of this interaction on the governance of adaptation are insufficiently explored by empirical research. Chapter 4 showed how transnational adaptation governance is emerging as a fourth era of adaptation. This chapter continues to explore this phenomenon, looking beyond adaptation finance, and turns towards the potential impact of transnational adaptation governance.

This chapter analyses the effectiveness of transnational adaptation initiatives. It offers an assessment of 40 initiatives, compiled in a new database, that are governing adaptation across borders and that include non-state actors. It asks: do transnational adaptation initiatives achieve their stated goals and objectives, and which factors explain their ability to contribute to effective climate change adaptation? The analysis focuses on what the initiatives are producing in terms of outputs and the outcomes they lead to. The

database has been constructed through a literature review and analysis of existing work on global climate action. It is complemented by 31 semi-structured interviews with stakeholders connected to the initiatives.

As Chapter 3 has elaborated, assessing effectiveness in environmental regimes is fraught with difficulties. This chapter limits itself to an evaluation of outputs and what outcomes they lead to, as opposed to impact. It analyses the role of four independent variables: actors, process, institutional design, and context. While such a functionally orientated analysis can indicate and seek to explain how and why adaptation initiatives perform in certain ways across multiple dimensions, it needs to be complemented in the future to consider also how power relations between various actors and structures influence the effectiveness and design of initiatives. Nevertheless, this chapter offers an initial framework for, and results of, empirical analyses of the effectiveness of a set or transnational adaptation initiatives, which constitute an element of broader global and transnational adaptation governance.

The next section explains the methodology for data collection and analysis. Section 6.3 then introduces the analytical framework for studying independent variables. The following section starts with a discussion of the emergence of transnational adaptation initiatives and then presents the assessment. Section 6.6 elaborates on the results with the support of the analytical framework. The chapter then concludes with reflections on the implications for transnational adaptation governance and proposes avenues for further research.

6.2 Methodology

To address the research questions, a new database was created that includes 40 initiatives that govern adaptation transnationally and that work across several topics, including cities and regions, agriculture and biodiversity, water management and broader cross-sectoral resilience (Table 3). The transnational adaptation governance criteria, as set in chapter 1, was used for the selection of the initiatives.

- 100 resilient cities	- Global Platform for Sustainable Cities
- Adaptation Learning Mechanism	- Global resilience Partnership
- Africa Climate-Smart Agriculture Alliance	- Global Water, Climate and Development Programme
- AfricaAdapt	- Great Green Wall for the Sahara and the Sahel Initiative
- Arctic Adaptation Exchange	- Initiative for Adaptation of African Agriculture to Climate Change
- Asian Cities Climate Change Resilience Network	- Initiative for Coffee and Climate
- C40 Cities	- InsuResilience
- Caring for Climate	- Local Governments for Sustainability (ICLEI)
- Cities Alliance	- Making Cities Resilient Campaign
- Cities Climate Finance Leadership Alliance	- Megacities alliance for Water Under Climate Change
- Climate Technology Centre and Network	- NAP Global adaptation network
- Climate-Smart Agriculture (CSA) Booster	- Network of Regional Governments for Sustainable Development
- Compact of Mayors[15]	- Partners for Resilience
- Coral Triangle Initiative	- R4 Rural Resilience Initiative
- Covenant of Mayors	- Regions of Climate Action
- Emerging and Sustainable Cities Program	- ResilienceTools
- Evergreen Agriculture Partnership	- ResilientAfrica Network
- Global Alliance for Climate-Smart Agriculture	- Southern voices
- Global Facility for Disaster Reduction and Recovery	- Sustainable Agriculture Network
- Global Framework for Climate Services	- Transformative Actions Program

Table 3 List of transnational adaptation initiatives included in the database

Data were collected through a review of existing databases and lists, including the Lima-Paris Action Agenda, the UNEP Climate Initiatives Platform, the Climate Cooperative Initiatives Database (Chan et al. 2018), initiatives in the area of human settlements and adaptation (UNFCCC 2017) as well as a broader literature review and web search[16]. Given that research on transnational adaptation governance is at an early stage, the approach of this chapter does not assume full representativeness in its data sample. For each individual initiative, policy and other documents were collected. While this is mainly a desk-based study, 31 semi-structured interviews[17] were undertaken with actors working with adaptation-related issues within the initiatives. The interviews helped bring out some of the more intangible aspects of an initiative as well as complementing the literature and documentary review.

For analysing the data and to assess effectiveness, the chapter draws on the framework developed by Liese and Beisheim (2014). Each initiative is assessed on a three-point scale (high, medium, low) (see Table 4), and outputs and outcomes were assessed based on the extent to which they contributed to reaching the objective(s) of the initiatives. The variety of transnational initiatives governing adaptation in diverging socio-economic sectors poses challenges for a comparative assessment. For example, some of the initiatives focus on several, and sometimes competing, thematic issues.

15 The two initiatives 'Compact of Mayors' and 'Covenant of Mayors' have subsequently merged into one initiative called 'Global Covenant of Mayors'. In this study, they have been assessed separately.
16 The initiatives were reviewed and entered into the database between January and June 2017
17 Nine out of forty initiatives did not respond to multiple requests for interview.

Furthermore, it is not always clear-cut whether outputs aim to improve climate adaptation directly or have other aims and meet adaptation objectives indirectly (Sovacool et al. 2015). In this chapter, outputs that have an objective to decrease vulnerability in human and natural systems from the impacts of climate change are assessed. The chapter does not consider distributive or indirect impacts or the broader political economy of adaptation initiatives (see e.g. Berrang-Ford et al. 2011; Sovacool et al. 2015).

	Goal attainment		Problem solving
	Output	**Outcome**	**Impact**
High	Provision or adoption of knowledge, standards, services as envisioned in the stated goals.	Substantial change in behaviour of targets, extensive application/implementation of knowledge, standards, services.	Substantial contribution to solution of problem.
Medium	Substantial policy papers and some provision of knowledge, standards, services, but failure to achieve all stated goals.	Some change in behaviour of targets, some application or implementation of knowledge standards, services.	Some contribution to solution of problem.
Low	Mere paperwork and meetings with no or few results.	No or low change in behaviour of targets, hardly any application/implementation of knowledge, standards, services.	No or low contribution to solution of problem.

Table 4 Qualitative indicators of regime effectiveness (Source: Liese and Beisheim 2014: 21)

The assessment was based on documents, both internal and external, interview data, as well as academic and grey literature. As a first step, a qualitative analysis of outputs and how they relate to an initiative's goals was undertaken. Outputs are here defined as direct activities of an initiative, which include tangible and attributable products, such as project reports, policy briefs, academic publications, events and workshops, analytical tools and frameworks, databases, and training manuals. While outputs do not guarantee problem solving, nor necessarily result in desired behavioural changes, they are a precondition for achieving effective outcomes and subsequent impact. Therefore, assessing output effectiveness remains an important first step (Chan et al. 2018).

As a next step, the study assessed to what extent an initiative's outputs managed to achieve behavioural change. For example, if an actor, such as a government ministry, took up a decision-support tool as a method for

making decisions or writing legislation, this was coded as a desired change in behaviour. Initiatives can also draft joint principles and use advocacy instruments and campaigning to create outcomes. Assessment of outcomes was done through review of internal and external documents and complemented with interviews when available.

This chapter does not make any attempts to establish causality or attribution and therefore avoids discussing the initiatives' impact on actual improvement of the environment. For adaptation particularly, as discussed in Chapter 3, a key issue is that biophysical and socio-economic, as well as spatial and temporal, context affect impacts of adaptations (Adger et al. 2005).

6.3 Analytical framework

Transnational interactions involve agreements between a variety of state and non-state actors such as non-governmental organisations, foundations, companies, research institutions, or trade associations (Andonova 2014; Andonova et al. 2009; Bäckstrand 2008). Literature on transnational climate governance assumes that non-state actors increase the effectiveness of governance because they bring in resources and knowledge that public actors lack (Biermann et al. 2009; Chan and Amling 2019; Hsu et al. 2016; Jägers and Stripple 2003; UNEP 2015). For example, Cole (2015) argues that the best chance of progress on stabilising the climate is a polycentric approach to climate governance. Several studies have considered what conditions lead to effective outputs and outcomes (e.g. Chan et al. 2018; Hsu et al. 2015; Widerberg et al. 2016). Drawing on this literature, an analytical framework is presented below that elaborates on key drivers of effectiveness for transnational adaptation initiatives. Four broad categories are derived from this review, suitable for a 'medium-N study': actors, process, institutional design and context.

Within the actors category, key factors for the success of an initiative are seen to be an optimal mix of partners, and the extent to which leadership is shown by both individuals and organisations (Pattberg and Widerberg

2016). Other factors considered important in the literature include a combination of willingness and capabilities among partners, the extent of partners' resources, and, in particular, engagement on the part of the most powerful and influential members of the initiative (Beisheim and Campe 2012). On the other hand, large power-asymmetries between actors can be detrimental (Newell et al. 2012). Internal participatory structures, the broad characteristics of the participants, and fairness and equity, are particularly relevant for successful adaptation (Adger et al. 2005; Paavola and Adger 2006). With regard to leadership, a powerful orchestrator is considered a key ingredient in effective governance (Abbott and Snidal 2009; Chan and Amling 2019). For example, international organisations or other appropriate authorities can support and steer transnational schemes (Abbott 2012; Abbott et al. 2014). It is, however, unclear what exactly is required of an 'orchestrator' to deliver effective outcomes (Glasbergen 2010).

Second, process implies that efficient management of transnational governance initiatives is an important design feature of its effectiveness. A sufficiently funded, independent secretariat with full-time staff, a coherent management strategy with a clear decision-making framework, common strategic plans, clear division of roles and responsibilities, and multilevel forums to coordinate funding and resources have been identified as effective management structures (Aylward et al. 2003; Szulecki et al. 2011). Pattberg and Widerberg (2016) argue that a good structure for process management includes staff focusing exclusively on achieving the objectives of the initiative and on ensuring effective communication between initiative members.

The third category is institutional design. It implies that the level of institutionalisation matters for effectiveness. More specifically, Beisheim et al. (2014:26) argue that obligations (clear and binding rules), precision in norms (meaning that rules and commitments are strictly enforced and that there is a clear and unambiguous mandate for actors), and delegation (meaning that there are external monitoring and evaluation functions) are all key to effective transnational initiatives (see also Abbott et al. 2000). A high

level of institutionalisation is important for capacity building and institutional learning, stronger accountability and enhanced transparency (Pattberg and Widerberg 2016).

Lastly, with regard to context, Pattberg and Widerberg (2016) argue that meta-governance is an appropriate lens through which a fragmented governance system should be assessed. For meta-governance, i.e. organisation of self-organisation, or the regulation of self-regulation (Jessop 2011), authors draw attention to managing plurality with the aim of inducing more coherence in institutional fragmentation (Biermann et al. 2009; Derkx and Glasbergen 2014). Pattberg and Widerberg (2016) argue that initiatives should be assessed on how they liaise within their issue areas as well as across different policy regimes. In the case of transnational adaptation initiatives, this means determining how aligned they are with key principles of different international regimes such as the UNFCCC, Agenda 2030, the Sendai Framework for Disaster Risk Reduction, among others.

6.4 Assessment of transnational adaptation initiatives

6.4.1 The emergence of transnational adaptation initiatives

As Chapter 1 has shown, the local and national dimensions of adaptation are well understood after decades of natural and social science research, including reviews by the Intergovernmental Panel on Climate Change. Climate impacts are locally differentiated, climate vulnerability depends on local context, and successful adaptation is often enabled by local knowledge and support (IPCC 2018). However, climate change impacts, and adaptation measures taken to address these impacts, that may be experienced locally have cross-border and sometimes even global repercussions (Challinor et al. 2018; Hedlund et al. 2018). In addition, adaptation actions, even those taken at the local to national level, are shaped and steered by a governance system made up of actors who operate transnationally and globally. As shown in Chapter 4 transnational adaptation governance initially emerged under a

'shadow of hierarchy', where international organisations orchestrated activities, shaped by 'softer' forms of governance such as information sharing and capacity building (see also Chan and Amling 2019).

This chapter explores how further development is taking place in the field of transnational adaptation governance. As shown in Chapter 1, the 2015 Paris Agreement and its framing of adaptation as a global challenge and the global goal on adaptation has contributed to increased transnational activity on adaptation. In addition, the UNFCCC has emphasised that adaptation is intrinsically linked to broader sustainable development, including agreements such as the SDGs and the Sendai Framework for Disaster Risk Reduction (UNFCCC 2018).

Consequently, transnational adaptation governance takes place in several domains beyond provision of adaptation finance. The rest of this chapter explores how transnational adaptation initiatives in sectors focusing on cities and regions, agriculture and biodiversity, water management and resilience are contributing to effective adaptation outcomes.

6.4.2 Are transnational adaptation initiatives achieving their goals?

The 40 transnational initiatives are for the most part manifestations of networked governance, with most initiatives involving more than two different actor types. Thirty-five initiatives have a dedicated webpage and 5 are hosted by a larger web-portal, mainly through an international organisation. In terms of scope, 27 initiatives are global in scope, whilst 14 have a regional focus. In terms of their main approach with regard to climate change, 25 initiatives have adaptation as their main objective. In addition, 13 initiatives that have an equal adaptation and mitigation approach and 3 initiatives focus mainly on mitigation activities with a lesser focus on adaptation.

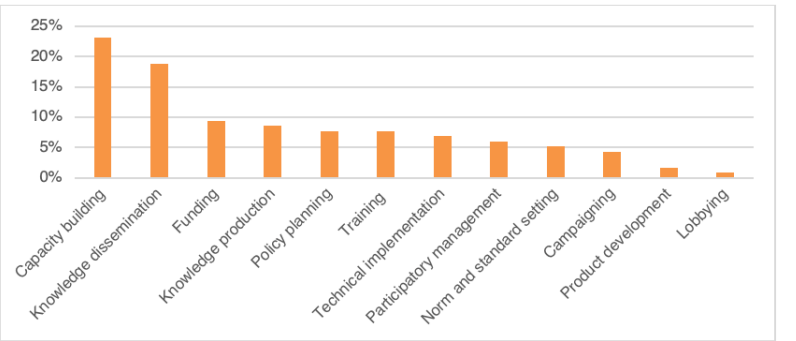

Figure 7 Governance functions

The governance function of the initiatives was analysed based on their self-declared objectives and assessed along the twelve functional categories derived from Pattberg et al. (2012). As initiatives often focus on more than one governance function, the three most prominent functions were coded. Figure 7 shows the frequency of governance functions employed across the initiatives. It indicates that more than 40% of the initiatives focus on institutional capacity building and knowledge dissemination, followed by funding and knowledge production, which can be seen as 'soft' governance approaches. In contrast, 'harder' governance functions, such as norm and standard setting and technical implementation, are less prominent. These results are highly similar to Chan and Amling's (2019) findings of a larger dataset.

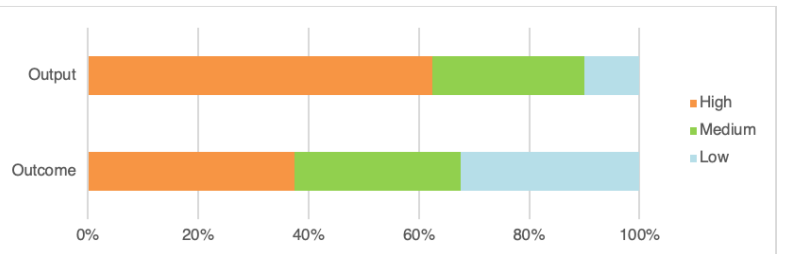

Figure 8 Effectiveness of transnational adaptation initiatives

Figure 8 presents the aggregated results of the analysis. It shows that the majority of initiatives reach high (almost two-thirds) or medium (almost one-third) effectiveness in terms of producing outputs that relate to their objectives. However, when it comes to outcomes, almost two-thirds of the initiatives fail to generate substantial change in behaviour, by e.g. leading to extensive application and implementation of knowledge, standards and services. A selection of initiatives is discussed below to demonstrate how the assessment of effectiveness was done.

High effectiveness

In terms of delivering effective outputs, as Figure 8 shows, almost two-thirds, or 25 initiatives, create outputs that correspond with the stated goals and objectives. With regard to effectiveness, the assumption here is that there is a causal relation between outputs and outcomes. From this it follows that only the initiatives that score high on output can lead to successful outcomes. Thus, of the 25 initiatives, 15 achieved effective outcomes, in the sense of leading to substantial change in the behaviour of targets. Initiatives that are effective are, in general, those that have been operating for more than 5 years. Of the 15 initiatives that scored high on goal attainment, 14 have been active since 2011 or earlier.

One successful initiative is Southern Voices, a coalition of climate networks and partners in the Global South. Its main adaptation-related output, the Joint Principles for Adaptation (Southern Voices 2015a) is a benchmark tool for adaptation planning and implementation and is applied in several countries. The partners are not only adhering to its principles, but the principles are also used to influence external partners' behaviour. For example, in Guatemala, the tool has been translated into national climate law (Southern Voices 2015b). It has also been promoted by the UNFCCC as supplementary material for the National Adaptation Plan (NAP) process[18] (UNFCCC 2012).

Another successful example is the R4 Rural Resilience Initiative, led by the World Food Programme (WFP), which among other things develops risk

18 http://www4.unfccc.int/nap/Guidelines/Pages/Supplements.aspx.

management strategies, such as insurance mechanisms, for improved livelihoods in rural Ethiopia, Senegal, Malawi, Zambia and Kenya. The initiative builds on proven achievements in terms of behaviour change (WFP and Oxfam 2017). Its outputs are well connected to the objective to increase communities' resilience to climate variability and risks. In addition, two independent impact evaluations have found that the initiative has demonstrated strong results in reducing the adverse impact of shocks on the food security of participant households, which amount to circa 300,000 people (Dalberg 2016; Madajewicz et al. 2013).

A third example is the Sustainable Agriculture Network (SAN), a consortium of non-governmental organisations working to conserve biodiversity and promote rural development. SAN is working with the Rainforest Alliance[19], a well-established certification system, in order to reach a broad set of target communities. SAN spans over 42 countries including 101 different crops and 1.2 million, mostly smallholder, farms on 3.5 million hectares. Evaluation reports found that the certification scheme has led to greater productivity and profitability, stronger ecosystems, and better livelihoods (Milder and Newsom 2015; SAN 2016). In addition, some academic studies have found positive effects from the certification scheme (Barham and Weber 2012; Ochieng et al. 2013).

Medium effectiveness

Ten initiatives achieve medium effectiveness. The Africa Adapt initiative, which aims to gather adaptation practitioners across Africa to share knowledge and insights, managed to become self-sustaining after funding from international development partners ended through a successful output strategy. However, its aim to increase adaptive capacity among local communities and national decision makers is hindered because it does not provide insights on how knowledge production and dissemination is being applied.

The Global Platform for Sustainable Cities is an initiative headed by the World Bank and founded in 2016. The platform has developed multiple

19 From 1 October 2017 the partnership between SAN and the Rainforest Alliance was terminated and SAN has decided to change its business model to work directly with stakeholders rather than through certification.

publications, arranged workshops as well as created diagnostic tools for cities that align well with its objective to promote an integrated approach to urban development by focusing on urban sustainability indicators, planning, and financing (GPSC 2016). However, while the initiative holds promise, it is too soon to assess effective outcomes. As one interviewee noted, it is easy to contribute to the global discourse on sustainable cities, but it is more difficult to implement measures locally on the ground.

Low effectiveness

Fifteen initiatives score low on effectiveness. Several of these manage to deliver knowledge outputs without a broader objective to build capacity and/or change behaviour of target groups. For example, the Adaptation Learning Mechanism has been active since 2007 and has collected a wealth of data on its knowledge platform, which is a part of its goal. However, beyond this, the platform does not reach the second part of its goal to build partnerships and indicates no proof of progress on this target.

Some initiatives show few or no outputs. For example, the Initiative for Adaptation of African Agriculture to Climate Change had its launch at the climate negotiations in Marrakech in 2016 where it enjoyed strong visibility. Its objective is to place the adaptation of African agriculture at the heart of climate change decision-making, and to foster implementation of solutions, particularly within the framework of the Global Climate Action Agenda. However, it has failed to build on its momentum, and little has been achieved since.

Lastly, the Cities Climate Finance Leadership Alliance, an alliance of 40 public and private organisations working to mobilise climate finance, does not present any outputs on its web page despite having a secretariat and several working groups. While the members independently might be successful, the alliance itself fails to show any progress on its goals.

6.5 Explaining the effectiveness of transnational adaptation initiatives

The previous section shows that transnational adaptation initiatives are generally more effective when it comes to producing outputs rather than outcomes and—presumably, by implication—impact. On the other hand, it also shows that many initiatives are successful in changing behaviour internally across its partners, as well as of external target audiences. Why does effectiveness vary between initiatives? This section discusses to what extent the four variables of the analytical framework can explain effectiveness.

6.5.1 Actors

In terms of types of actors involved across the initiatives, Figure 9 shows that non-governmental organisations are most commonly engaged in transnational adaptation. Almost 85% of the initiatives have at least one non-governmental organisation as a partner, followed by international organisations (around 70%) and national governments (55%), who are most often represented by their international development assistance organisations. It also shows that 50% of the initiatives involve the private sector. However, in terms of leading initiatives, international organisations are the most important actors, leading almost 45% of the initiatives, followed by non-governmental organisations, which lead more than 30%. Along with the findings in Chapter 4, this indicates that, in contrast to broader transnational climate governance, transnational adaptation continues to be strongly anchored to the public sector.

This becomes more evident when focusing only on those initiatives that are effective, where 8 out of 15 initiatives are led by international organisations. This corresponds well with the theory on orchestration (Abbott and Snidal 2009). Actors that are leading these initiatives include the World Food Programme, the World Bank, the World Meteorological Organisation (WMO), and various other UN Agencies. international organisations often have personnel and resources to support, steer and transform an initiative from idea to practice. However, international organisation leadership is no guarantee

for effective outcomes and contribution to problem solving because more international organisation-led initiatives do not reach high effectiveness than do. Three reasons for this have been derived from the interviews. First, initiatives can be in their early phase and it is too soon to evaluate. Second, small initiatives can experience problems breaking through in a competitive environment. Third, funding has expired and the initiative is no longer a priority within the international organisation.

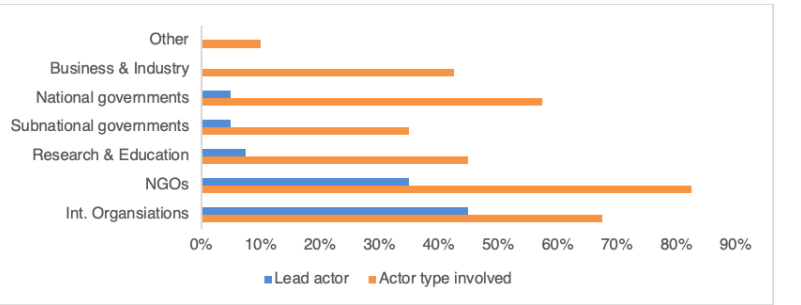

Figure 9 Actor involvement in initiatives

Non-governmental organisations lead six of the initiatives, making non-governmental organisations the second most prominent lead actor type. However, what characterises most of the non-governmental organisation-led initiatives, and particularly those that are effective, is their proximity to a larger organisation. The NAP Global Network receives support from the German and the US governments. Similarly, two city-initiatives, the 100 Resilient Cities and the Asian Cities Climate Change Resilience Network, receive financial and organisational support from the Rockefeller Foundation, a large private donor. This implies that it is hard to achieve effective outcomes without leadership or direct support from a large actor. The one outlier, the Resilient Africa Network, is a consortium of research organisations. However, even here, the initiative is funded by the US Agency for International Development.

The analysis also shows that there is no clear link between the number of actor types participating in an initiative and its effectiveness. This indicates

that there is no solid formula for the perfect number of actor types and that each initiative seeks its own balance (see also Pattberg and Widerberg 2016). However, initiatives with active participation from actors from the Global South tend to be more effective, making up two-thirds of the total. This might indicate that broad participation is important for effectiveness, although contrasting results have been discussed elsewhere (see e.g. Beisheim and Liese (2014).

6.5.2 Process

The effectiveness of the initiatives does not vary across issue areas or policy fields. What did explain the variance in effectiveness was the type of provision – which can be structured in a typology of three core functions (Liese and Beisheim 2014: 38) that represent broader categories of the governance functions above (Figure 10). Initiatives can be providers of 'knowledge transfer', 'service provision' and/or 'standard-setting'. Knowledge-transfer initiatives are those that generate new expertise and provide forums for generation and dissemination of knowledge through, for example, exchange of new practices. Service-provision initiatives are those where the main function is to distribute resources and services, for example funding. Standard-setting initiatives aim to establish new rules and setting minimum-standards for its members or a broader community.

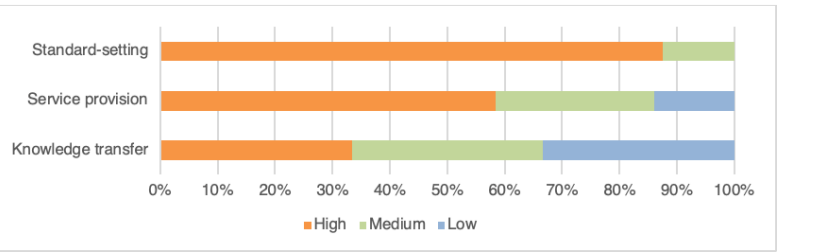

Figure 10 Aggregated effectiveness scoring based on 'type of provision'

In total, 18 initiatives are primarily knowledge-transfer providers, 18 focus on providing services, and 4 primarily set standards. Figure 10 shows that standard-setting initiatives to a larger extent achieve high effectiveness,

with three of four initiatives being effective. Eight service-providing initiatives are effective. And lastly, only eight out of 17 knowledge-transfer initiatives are effective. This indicates that standard-setting and service-provision initiatives have better outcome effectiveness. In contrast, knowledge-transfer initiatives, while good at creating outputs, they to a larger extent fail to achieve outcome effectiveness.

Initiatives with a clear mandate and decision-making structure and a well-staffed secretariat tend to perform better (Liese and Beisheim 2014:28). All initiatives that score high on effectiveness have dedicated staff with at least five full-time equivalent (FTE), either at a standalone secretariat or hosted by a larger international organisation. In terms of variance between the type of provision, service-providing initiatives focus mainly on funding, participatory management and institutional capacity building. Standard-setting initiatives tend to focus on norm and agenda-setting and advocacy and campaigning. The primary function of the majority of knowledge-transfer initiatives is knowledge dissemination. The latter have a stronger focus on creating outputs without a clear mandate to achieve effective outcomes. In contrast, both service-providing and, in particular, standard-setting initiatives require a more stringent management strategy and clearer decision-making procedures (e.g. Beisheim and Liese 2014). Thus, the better and more efficient the process management, the more effective is the initiative.

In contrast, initiatives that lack strong process management fail to achieve effective outcomes even though they are led by a strong orchestrator. For example, the Global Alliance for Climate-Smart Agriculture (GACSA) initiative is led by the Food and Agriculture Organisation, and despite having a high profile and being hosted by an international organisation, its effectiveness is hampered by a lack of dedicated staff. GACSA is only supported partly by Food and Agriculture Organisation staff and therefore lacks a proper secretariat with a clear governance and facilitation unit. Beisheim and Liese (2014) argue, however, that most initiatives undergo tremendous changes during their first years of existence. Thus, an ability for

organisational learning and capacity building could improve effectiveness through process management over time.

6.5.3 Institutional design

In contrast to Beisheim and Liese (2014) and Szulecki et al. (2011), obligation was found not to be as strongly correlated with effectiveness. While those initiatives with binding rules and quantified targets tend to be more effective, this was not a precondition for effectiveness. Of the 15 initiatives that scored high on effectiveness only three had binding rules and for another three initiatives, rules were contingent. Most of the effective initiatives did not impose binding targets or conditionalities or apply quantified targets in order to achieve effectiveness. This can partially be explained by the nature of transnational adaptation initiatives, which focus more on soft governance. In terms of type of provision, however, standard-setting initiatives, which achieve a higher level of effectiveness, depend to a larger extent on binding rules and conditionality, where compliance mechanisms were seen as more important for operations than for knowledge-transfer and service-provision initiatives.

There is, however, a strong connection between effectiveness and initiatives with a clear governance structure, development of strategic plans and monitoring and evaluation, through regular external or internal evaluation reports. All 15 initiatives that scored high on goal attainment have strategic plans and systems for monitoring and evaluation. Contrary to other research (Beisheim and Liese 2014a; Homkes 2011), both the standalone initiatives and those hosted by a larger international organisation could achieve effectiveness if there was a high level of institutionalisation.

In contrast, all cases where initiatives scored low on effectiveness, rules were found to be vague and broad so that they impede compliance, monitoring, reporting, and evaluation, and consequently limit progress towards achieving the set objectives.

6.5.4 Context

A way to understand the role of context for the effectiveness of an adaptation initiative is to assess its alignment with international regimes, including the UNFCCC, the Agenda 2030 and the Sendai Framework for Disaster Risk Reduction as well as coordination between initiatives working in a similar issue area.

In terms of adherence to the UNFCCC, an interesting finding emerges. Of the 15 initiatives that score high on both output and outcome efficiency, six are committed or highly committed to the UNFCCC process. This means that they see the UNFCCC adaptation regime as instrumental for their success. What seems to be equally important for effective initiatives is adherence to other policy regimes, including Agenda 2030, the Sendai Framework for Disaster Risk Reduction, UN-Habitat, and the UN Convention on Biological Diversity (UNCBD). While there are overlaps, several effective initiatives tend to adhere to these regimes to a larger extent than the UNFCCC. For example, the R4 Rural Resilience Initiative and the Making Cities Resilient Campaign do not operate closely to the UNFCCC, while Sustainable Agriculture Network and the Resilient Africa Network largely operate outside its scope, but have nevertheless been successful.

Another important context-related aspect is a meta-governance perspective, which relates to organisation of self-organisation within networked governance (Jessop 2011). In other words, how do initiatives coordinate between themselves within a specific issue area? This was an important factor for effectiveness. Of the 15 effective initiatives, 12 coordinate with at least one other initiative in their issue area, which indicates that transnational adaptation is a manifestation of networked governance (Jordan 2008; Treib et al. 2007). Particularly, initiatives focusing on cities and regions often complement each other, seeking to fill in gaps rather than replicating each other's work. This networked relationship can take the form of a Memorandum of Understanding (MoU) where there is overlap (such as between C40 and 100

Resilient Cities), through joint initiatives (such as Transformative Actions Program or the Cities Climate Finance Leadership Alliance), or through joint work under the UN-Habitat platform (See also Papin 2019).

6.6 Conclusion

This chapter assessed the effectiveness of 40 initiatives that are governing adaptation across borders and that include non-state actors, through an analysis of outputs produced and the outcomes these have led to. It asked: do transnational adaptation initiatives achieve their stated goals and objectives, and which factors can explain their ability to contribute to effective climate change adaptation? The assessment found that while almost two-thirds of the initiatives produced effective outputs, only one-third achieved effective outcomes, in the sense of leading to substantial change in behaviour of targets.

Based on the discussion of results above, five conclusions can be made in relation to explaining the effectiveness of transnational adaptation initiatives. First, orchestration is key: more important than optimal partner mix, strong leadership is vital for effective adaptation outcomes. Even those initiatives that were not led by an orchestrator often had a powerful supporting actor, such as an international organisation, government, or large private foundation. This indicates that orchestration is not only a top-down technique, but that it also operates from the bottom-up where non-governmental organisations and other non-state actors are actively seeking orchestration (Abbott et al. 2014).

Second, effectiveness requires good process management. A powerful orchestrator is not enough if there is not an independent secretariat and full-time staff with a clear decision-making structure and the capacity and funding to achieve the objectives.

Third, the type of provision affects where initiatives put emphasis on effectiveness. Knowledge-transfer initiatives are good at producing outputs, but many fail to achieve strong outcomes unless their mandate is broader than knowledge dissemination, while service-providing and standard-setting initiatives, which require a more stringent management strategy and clearer decision-making procedures, tend to focus more on outcomes.

Fourth, as in previous literature (Beisheim and Liese 2014b; Szulecki et al. 2011), high level of institutionalisation matters for effectiveness. Furthermore, a low level of institutionalisation is the best explanatory factor for low effectiveness. Most initiatives that scored low on effectiveness had no binding rules, lacked quantified targets and had no external systems for monitoring.

Lastly, from a meta-governance perspective, initiatives that are internally coordinating in their issue area, seeking overlaps and complementarity rather than competition, are more effective. In addition, effectiveness of transnational adaptation initiatives goes beyond adherence to the UNFCCC. Global platforms such as the Global Climate Action Agenda, the Sustainable Development Partnerships Platform, the Small Island States Partnership Framework, among others, are important arenas for increased coordination and stronger adherence to global adaptation-related regimes (Hsu et al. 2015).

However, a majority of the initiatives were not found to be highly effective when it comes to producing outcomes. Why? One issue could be a lack of private sector involvement. Another possible explanation is the lack of long-term and sustainable funding. For example, if a project is successful and changes the behaviour of targeted communities, there is a risk that the same communities return to unsustainable practices if there is not enough focus on capacity building and community development for the long term. In addition, some initiatives can be effective with regard to other objectives and do not always prioritise the adaptation-specific goals. Furthermore, there is a discrepancy between the nature of the problem (climate change) in

contrast to the internal objectives of an initiative. Climate change is a complex issue, that can be called a malign problem (Miles et al. 2001), with several competing interests and solutions, as well as complex relationships between adaptation and mitigation. A specific initiative might focus on a small, often manageable, part of this highly complex issue, and while it can be effective in achieving its own objectives, it might not contribute more broadly to solving the climate change problem. For example, even though the SAN initiative achieves effective adaptation outcomes, despite decades of efforts by state and non-state actors alike, the production of many agricultural commodities continues to be defined by smallholder poverty (DeFries et al. 2017) (see also Chapter 7).

Nevertheless, given that transnational adaptation initiatives are often relatively small in scale and reach, and often focus on softer governance, their main impact may be found in how they contribute to the broad processes of changing the climate change regime rather than their individual effects (see e.g. Bulkeley et al. 2014; Hoffmann 2011).

7/ Legitimacy contestation in the governance of transboundary climate risks[20]

7.1 Introduction

In an interconnected world, a central challenge for global governance frameworks, policies, and regulations is to appropriately assign the authority for managing affairs which have cross-border ramifications. Climate change is a clear case-in-point. While constrained in-part by the biophysical nature of a changing climate, this challenge is essentially political, given that its resolution depends on forging a collective view of fairness in the international community, both in terms of assigning roles to public and private actors (Mees et al. 2012), and distributing the consequences of action or inaction (Caney 2005; Shue 1995). It is therefore essential to consider on what basis an approach to global and transnational climate governance is understood to be legitimate, as this can reveal useful information about the evolving nature of governance in a globalising world.

20 This chapter is based on the following publication: Dzebo, A., & Adams, M., K. (2023). Contesting Legitimacy in Global Environmental Governance – An Exploration of Transboundary Climate Risk Management in the Brazilian-German Coffee Supply-Chain. Earth System Governance Journal, 15. https://doi.org/10.1016/j.esg.2023.100166.. The promotor of this dissertation, Prof. Frank Biermann, is the editor-in-chief of the journal Earth System Governance. However, Prof. Biermann was "blinded" during the entire review of this article and had neither access to nor any information about any part of the review process, including the selection of reviewers, and he has not taken part in any decisions related to this article.

Legitimacy and its origins have become increasingly important objects of study in recent years (Tallberg et al. 2018). While domestic politics in the modern era has seen legitimacy become deeply entangled with the concept of democracy, as elaborated in Chapter 3, those same standards do not neatly apply to global affairs. Instead, scholars have turned their attention to broader sources of legitimacy, ranging from employing agreed processes based on shared values, to producing effective outcomes (Hurrell 2005; Scholte and Tallberg 2018). Moreover, novel global challenges generate the possibility of multiple claims on authority in parallel and competing processes to acquire legitimacy, which have been documented in other settings (Suchman 1995). This highlights the need to consider both the origins of legitimacy, as well as the processes through which it is contested, negotiated and claimed (Bäckstrand and Söderbaum, 2018; Freeman and Langbein, 2000). There is yet limited academic research which considers how competing claims for legitimacy are produced in emerging areas of global governance or how they interact.

The aim of this chapter is to further unpack and empirically explore the contested nature of legitimacy in global governance by examining an emerging arena with competing claims for legitimacy: the governance of transboundary climate risks. There is growing recognition in the scholarly and policy communities that many climate risks and impacts can be transboundary in nature, crossing international borders as people, goods, and capital do (Challinor et al. 2017; Liverman 2016), and requiring new governance arrangements, which take into account both adaptation efforts for managing climate risks and their spill-over effects (Carter et al. 2021). From shared water resources under stress, to supply-chains affected by extreme weather events, climate impacts in one country will generate risks and opportunities for actors elsewhere, creating a need for a global approach to adaptation governance (Benzie and Persson, 2019; Hedlund et al. 2018). For example, in agriculture supply-chains, reduced harvests both impact the livelihoods of smallholder farmers engaged in agricultural production, as well as those companies and consumers who depend on their goods. This phenomenon

complicates existing tropes of vulnerability to climate change, at once revealing new risks – including for developed countries – and portraying adaptation as a global challenge where the need to build resilience is interconnected between state and non-state actors (Benzie et al. 2018). As also discussed in Chapter 1, recognising the transboundary nature of climate risk challenges the traditional framing of adaptation as a highly localised issue, and places it squarely in the purview of global and transnational adaptation governance as countries grapple with previously unidentified risks or areas of shared interest (Benzie and Persson 2019). It also connects adaptation governance, previously anchored to the UNFCCC, to new domains and actors (Persson 2019).

The objective of this chapter is to explore the theoretical propositions about the sources of legitimacy and consider them in an empirical context. It demonstrates how actors are deploying competing claims for legitimacy to advance and shape contested visions of how adaptation should be governed across borders. It identifies patterns in how the sources of legitimacy are deployed, reflecting different and competing visions for transnational adaptation governance. As an emerging governance challenge, there are presently no internationally agreed frameworks, policies, or regulations for governing transboundary climate risks, nor is there consensus about which policy regimes or actors should be tasked with developing and implementing them. In many cases where shared resources are in question, states play a central role, though there are challenges to balancing the pursuit of one's interest in affairs abroad with principles of state sovereignty, especially where differences in power or complex historical relationships exist (Schrijver 1997). International organisations, such as the UNFCCC or the World Trade Organisation, and multilateralism may mitigate this, but it is unclear which organisations may have the appropriate mandate or expertise to do so. Likewise, non-state actors, including private actors, are increasingly involved in transnational governance arrangements in multiple areas, including forest governance (Bernstein and Cashore 2012), municipal networks (Papin 2020) and climate action (Chan et al. 2018). As Chapter 1 has shown, deepened

economic integration has seen non-state actors become increasingly engaged in global and transnational climate governance (Biermann et al. 2009; Djelic and Sahlin-Andersson 2006), particularly with regard to supply-chains and trade (Soundararajan et al. 2019). Taken together, the unstable intersection of unclear public and informal private governance mechanisms, grappling with an emerging issue, generates a space for political contestation wherein different approaches for adapting to transboundary climate risks can be advanced, challenged, or reified.

The chapter empirically explores competing claims for legitimacy for a specific case where the governance of transboundary climate risks is actively unfolding: the Brazilian-German coffee supply-chain. Brazil is one of the largest and most climate-vulnerable coffee exporters in the world (Bunn et al. 2015), while Germany is both a major coffee consumer and re-exporter. Specifically, it asks: what are the primary governance pathways for managing transboundary climate risks being considered by actors and on what grounds are they understood to be legitimate? The analysis is based on 41 semi-structured interviews, conducted with public and private actors across the full coffee supply-chain, examining the governance options identified and their perceived sources of legitimacy. To answer this question, the chapter applies a set of existing theoretical propositions about the institutional sources of legitimacy (Dellmuth et al. 2019; Tallberg et al. 2018) and consider actors' deployment of legitimation and delegitimation strategies. It confirms that the institutional sources are present in this study and are actively deployed by actors who advocate for different governance arrangements. The chapter also finds that the institutional sources are not interpreted in the same way by all actors. These insights are presented and discussed through five inductively defined governance pathways: Transnational Governance, Development Cooperation, International Diplomacy, Global Markets and Domestic Policy. The chapter's findings shed light on the multiplicity of governance options available for transboundary climate risks, their contested nature, and the grounds on which their legitimacy is understood and shaped by actors who actively shape the governance landscape in this space.

The next section considers the most relevant theoretical advancements for the study of institutional sources of legitimacy in global governance and identify several knowledge gaps which this chapter begins to address. Then, the chapter provides a detailed overview of the case study and methodological approach. Thereafter, it presents the analysis of institutional sources of legitimacy in the Brazilian-German coffee supply-chain by identifying five governance pathways for transboundary climate risks, each underpinned by distinct operationalisations of legitimacy. The chapter then discusses these results, including their implications for future empirical work on transboundary climate risk, as well as for the theoretical understanding of legitimacy and the role that its contestation plays in global governance, before offering some concluding remarks.

7.2 Legitimacy: approaches, sources and contestation

Legitimacy is a crucial concept for the study of global governance and international politics. Bodansky (2013) suggests that where a decision is made for a collective to constrain a group's behaviour, efforts to enforce those decisions can vary in their level of coercion, on one end of the spectrum employing "hard power" or force, and on the other "soft power" and influence. Where the aim of governance is to influence and "substitute the ruler's judgement for that of its subjects" (Bodansky, 2013: 325), legitimacy is a key component of brokering that substitution.

While there is broad agreement that legitimacy is essential for functional global governance architectures (Biermann and Gupta 2011), significant debate remains about its nature and how it should be studied (Agné 2018). Generally, these positions can be understood as distributed along a spectrum. Toward one end, there are a number of scholars whose work has taken a normative approach to legitimacy, or one rooted in political theory (see i.e. Beetham 2012; Grossman 2013; Keohane 2011). Here, legitimacy stems from adherence to a particular principle or set of principles, such as democratic decision-making processes or respect for human rights. Put differently, in

this understanding, to have legitimacy is to appropriately confer authority, i.e. legitimate exercise of power, on a specific normative basis. It is then the job of the researcher to identify the relevant political principles for an institution or governance process to be legitimate, and assess whether the subject in question meets that standard. This perspective has led to concerns about a "democratic deficit" in international organisations, as much of global governance does not operate based on the same principles of electoral democracy which are hallmarks of domestic political processes (Beetham 2013; Dahl 1999; Moravcsik 2004).

Alternatively, others have increasingly advocated for a sociological approach to legitimacy, arguing that the legitimacy of a governance process comes not directly from adherence to political principles, but rather the acceptance of an audience, be they citizens in general or specifically affected parties (Weber 1978). From this perspective, building legitimacy is a social process through which authority is conferred, allowing a range of actors to be seen as appropriately governing, potentially distinct from a formal designation of authority such as a legal mandate (Rosenau and Czempiel 1992). Here, legitimacy is a socially constructed phenomenon, which may or may not be based on the same principles political philosophers would anticipate. Research in this area has focused on empirical examples of legitimacy in global governance, working to identify relevant "audiences" of governance processes and explore their views of specific institutions (Anderson et al. 2019; Dellmuth and Tallberg 2015; 2020). Importantly, this process of socially constructing legitimacy is not necessarily a benign one. Social forces such as these are not separate from but rather fundamental to the exercise of power and legitimacy should be understood as something that is produced through the active negotiation of consent between ruler and ruled (Ciplet 2015; Clark 2001; Gramsci 1971).

Between these two poles, Agné (2018) contends that a normative sociological approach to legitimacy in global governance presents an opportunity to benefit from strengths of each archetype. While sociological legitimacy has

appropriately gained traction in recent years, there remains value in employing the tools of political theory to locate sources of legitimacy, rather than doing so on a purely empirical basis. A normative sociological approach to legitimacy begins by developing an understanding of legitimacy sources using political theory, before examining the social perceptions of those sources in a particular context. Our work adopts this view and builds on this foundation.

What, then, are the relevant sources of legitimacy for the governance of transboundary climate risks? Tallberg et al. (2018a) argue that sources of legitimacy can be located at the individual, institutional, or structural level. This chapter is mainly interested in understanding the institutional sources of legitimacy for plausible governance pathways.

There exist a wide variety of conceptual tools and classification schemes for the institutional sources of legitimacy. For example, in Chapter 3, this dissertation elaborates input and output legitimacy as a starting point. In an effort to move beyond this dichotomy, Scholte and Tallberg (2018) and Dellmuth et al. (2019) have recently proposed a more nuanced framework: a matrix where one axis mirrors the input/output dimensions, and the other seeks to capture the qualitative character of legitimacy sources, spanning the democratic, technocratic, and fair (Table 5). The three categories are, in turn, used to capture perceptions of affected publics in terms of due voice and control over governance (democratic), effective and efficient application of best available knowledge (technocratic) and just, equitable and impartial processes and outcomes (fair) (Scholte and Tallberg, 2018). This proposed framework systematically organises a number of important institutional sources of legitimacy offered by scholars (i.e. Bernstein and Cashore 2007; Hurd 2002; Scharpf 1997) though does not claim to be exhaustive.

Procedurally, institutional features of legitimacy can be rooted in democratic norms, such as participation (i.e. affected parties are involved and can deliberate in policy-making processes) and accountability[21] (i.e. the policy-making adequately answers to the public it affects through transparency,

21 Scholte and Tallberg (2018) identify "Accountability" as a second indicative feature of democratic procedural legitimacy, while Dellmuth et al. (2019) use "Transparency". This chapter has opted to use accountability, as transparency is but one element of accountability, which is understand to be a prin-cipal feature of democracy more broadly.

consultation, review, and redress). Technocratic norms are contextualised through efficiency (number and speed of policy-making) and utilising relevant expertise (based on knowledge and skills), whilst fairness, alludes to impartiality (processes are followed consistently without discrimination), and proportionally (based on relative contributions) (Scholte and Tallberg, 2018). From a performance perspective, legitimacy may stem from promoting democracy itself (by increasing participation and public accountability in wider society). Technocratically, legitimacy stems from the notion of problem solving (full and fast realisation of results) or producing the largest collective gains (for the society as a whole). Lastly, in the context of fair, human dignity (i.e. outcomes uphold norms of basic humanity for all) and distributive justice (benefits are shared equally among those concerned) are signifiers of legitimacy (Scholte and Tallberg, 2018). In practice, an institution may do all or none of these things well. Whether or not it is understood to be legitimate, then, depends on the active acceptance of its audience, based on some constellation of these features.

	Democratic	Technocratic	Fair
Procedure	Participation; Accountability	Efficiency; Expertise	Impartiality; Proportionality
Performance	Democracy promotion in wider society	Problem solving; Collective gains	Human dignity; distributive justice

Table 5 Institutional Sources of Legitimacy (Scholte and Tallberg 2018; Dellmuth et al. 2019)

This framework allows for systematic assessment of legitimacy sources across institutions, audiences, contexts, or time. It also raises a number of questions in need of further exploration. First, does this framework have utility for a wide range of international institutions and organisations? Much of the existing literature on legitimacy has focused on international organisations, and individual ones at that, rather than a broader set of international institutions, to include formal treaties and bodies, as well as informal governance mechanisms and norms (Mitchell et al. 2020). This is a particularly relevant challenge for transnational governance as non-state actors and informal mechanisms are of especially high importance (Orsini et al. 2020).

Second, do all actors have a shared understanding of each legitimacy source, or views as to which are most important for global governance? In the likely event that different understandings and preferences exist, what are those differences based upon, how are they contested and how do actors navigate them? Here, the literature on legitimation and delegitimation in global governance is instructive. Bäckstrand and Söderbaum (2018) argue that legitimation and delegitimation are two sides of the same coin, in that actors employ a variety of discursive, institutional, and behavioural techniques in an effort to either advance or challenge the legitimacy of a particular global governance institution.[22] For that reason, the authors argue, both need to be integrated in a single framework. Operationally, both legitimation and delegitimation can invoke the same institutional sources for opposite purposes. This chapter focuses on the discursive practices of legitimation and delegitimation, through self-justification and endorsement of practices and actions on the one hand, and criticism on the other (Bäckstrand and Söderbaum 2018; Steffek 2003).

7.3 Transboundary climate risks in the coffee supply chain

As Chapter 1 explains, an important new frontier for climate governance is the management of transboundary climate risks. As interconnections between countries have become both more prevalent and economically important, the risks and impacts of climate change have not been confined to national borders. Recent work highlights potential adverse impacts from transboundary climate risks on trade, businesses and supply-chains implying both political and security implications and requiring adaptation intervention in terms of "development assistance, diplomacy and foreign policy" (Carter et al. 2021:69).

As an emerging challenge, it is presently unclear which actors have the authority to govern these risks, or on what premises a legitimate global governance institution might be constructed. One obvious candidate is the

22 Notably, Bäckstrand and Söderbaum (2018) focus the bulk of their attention on international organisa-tions, in much the same way that other literature on legitimacy in global governance has, appearing to use "global governance institution" as synonymous with "international organisation." Despite this, this chapter contends that their arguments generally hold for a broader conception of global govern-ance institutions in line with the chapter's approach.

UNFCCC, which has made some strides towards recognising adaptation as a global challenge and formulating a global goal on adaptation (UNFCCC 2015). However, neither the UNFCCC nor any other policy regime has established frameworks, nor are there actors or institutions with a clear mandate to govern these risks (Benzie and Persson 2019). This absence of clear roles and norms, while not uncommon for novel issues in global governance, creates a space for political contestation with legitimacy at its center.

In agricultural supply-chains, for example, long-term changes to climatic patterns may lead to diminished yields of a particular crop (IPCC 2019), extreme weather events can disrupt trade, transport or other key logistics systems (Adams et al. 2021; Bailey and Wellesley, 2017), while adaptation actions responding to the perceived manifestation of climate impacts can materially alter laws and policies relevant for agricultural production, processing and trade (Adams et al. 2020; Magnan et al. 2016). As such, both producing and consuming countries, as well as private actors, have concrete interests in effective transboundary climate risk governance.

One pertinent example is the international coffee trade, which provides employment and income to an estimated 25 million households, or over 60 million people, of which 80% are smallholder farmers with production areas smaller than 5 hectares (ICO, 2019; Sachs et al. 2019). Coffee is one of the most traded agricultural commodities in the world with roughly 7.8 million tons exported and exchanged on commodity markets in 2019, 72% of total coffee production worldwide (ICO 2020). Likewise, coffee is highly vulnerable to climate change, which risks reducing the global area suitable for coffee production by up to 50% by 2050 (Bunn et al. 2015). Smallholder coffee farmers would be disproportionately affected by climate change, as they have fewer financial resources to use for agricultural inputs and depend heavily on rain-fed agriculture (Beuchelt and Zeller 2011).

In addition to the direct impacts on smallholder farmers, the highly globalised nature of coffee trade creates transboundary effects throughout the

whole supply-chain, affecting actors both in producer and consumer countries (Bednar-Friedl et al. 2022; Ghadge et al. 2020). The systemic nature of climate risk in agriculture supply-chains means that it is present in all parts of the supply-chain, simultaneously, threatening the stability of commodity markets, posing risks to food security as well as livelihoods of smallholder farmers. The traditional management logic to replace high-risk production areas to more resilient ones will no longer be a plausible strategy for commodity traders, as well as countries (Adams et al. 2021).

Brazil is the world's largest coffee producer, representing nearly 29% of total exports, while Germany is the second largest importer in the world, importing 3.2B USD in 2019, a large importer of Brazilian coffee, and an important re-exporter of roasted coffee (Barros 2019). The two countries have had a strategic partnership since 2008, which includes a high-level consultation mechanism covering a broad set of topics including the environment and climate change (Bastos et al. 2014). Brazil and Germany have also been engaged in deliberations around the EU-MERCOSUR Free Trade Agreement, which would be the largest free trade agreement for both of the participating blocs (Brunsden et al. 2019). While the parties have come to an agreement in-principle after twenty years of negotiations, final texts have not yet been produced or signed, in part because the deal has been heavily criticised throughout the European Union. A key reason for this has been Brazil's management of the Amazon rainforest and recent increases in deforestation under the Bolsonaro Administration. A number of European Union countries have threatened on these grounds to not sign or ratify the deal (Colli 2019).

From a governance perspective, the coffee supply-chain is regulated at the international level by the World Trade Organisation and the International Coffee Organisation (ICO), among others, as well as a patchwork of bilateral and multilateral free trade agreements and national laws. This fragmented landscape, as well as the novelty of transboundary climate risks as a phenomenon, has created a governance gap where managing transboundary climate risks is currently "no-one's job" (Benzie and Harris 2020).

Furthermore, the coffee supply-chain itself is composed of a plethora of private producers, cooperatives, traders, roasters and retailers, who must navigate this landscape in order to stay in business. In addition, the coffee sector has a critical mass of sustainability initiatives, including certification schemes, non-governmental organisations, and trade associations (Levy et al. 2016). There is a pressing need to govern these risks and develop effective, coordinated adaptation responses (Adams et al. 2021).

7.4 Methodology

In order to empirically explore the contestation of legitimacy in the governance of transboundary climate risks and its implication on transnational adaptation governance this chapter draws on an extensive stakeholder mapping of the Brazilian-German coffee supply-chain, including coffee producers, cooperatives, traders, roasters, and retailers, as well as relevant sustainability initiatives, certification schemes, government ministries and agencies, trade associations, civil society organisations and researchers. Employing a snowball sampling technique, the authors conducted 41 semi-structured interviews (21 in Brazil, 16 in Germany and 4 international) with 65 experts, decision-makers and practitioners during field visits to Brazil and Germany (January 2020 and March 2019, respectively) (Table 6). In Brazil, particular attention was focused on state of Minas Gerais, which is the largest coffee producing state in Brazil. Additional interviews were conducted in Brasilia, São Paolo and Santos, a major port for commodity exports. In Germany, interviews took place in Berlin, Bonn and Cologne, as well as Hamburg, which is a hub for European coffee roasters.

Interviews focused on professional responsibilities, the relevance of climate change to respondent's work, effectiveness in current climate risk management, which actors were best placed to manage transboundary climate risks and why, as well as the role of global and national partnerships in order to gather the views of respondents on which actors and governance processes were perceived as legitimate and why. The authors, as appropriate, asked

probing questions about potential governance arrangements and their underlying norms and values, soliciting views on the prospect for more or better regulation of climate change; which actors are best placed to develop or institute those regulations, at what level, and why; potential negative outcomes from more regulations, and for whom; and whether recent regulation in the coffee sector has affected the respondent's stance towards climate risks and impacts. Where an interview included more than one expert, each response was accredited to that specific expert. Interviews were transcribed and transcripts were verified by respondents for accuracy.

Type of actor	Traders and roasters	Sustainability initiatives	Cooperatives	Association	Government and IOs	Academia
No. of interviews	7	10	3	8	12	1

Table 6 Overview of expert interviews

In order to study competing claims for legitimacy, a textual analysis was conducted, which identified "legitimacy claims" throughout the corpus of interview material. A legitimacy claim is an actor statement, which makes an effort to either advance or challenge the legitimacy of a particular approach to transboundary climate risk governance. This analysis led to the development of a database which included basic information about the claim (i.e., legitimation/delegitimation), actor(s) involved, potential policy mechanism identified, and the institutional sources of legitimacy invoked (based on Table 5). It identified 315 unique (de)legitimation claims where interviewees explicitly or implicitly advanced or challenged the authority of an actor/institution, group of actors/institutions or governance arrangements as appropriate for managing transboundary climate risk. When respondents made claims which referenced specific sources of legitimacy (Table 5), these were then coded and the process noted how they were being understood across contexts, whether they were supportive of or disparaging of said source with regard to a possible pathway. Every step of the analysis and then was validated by the authors individually and then jointly agreed on. The number of (de)legitimacy claims in each interview ranged from 1 (lowest) to 16

(highest). On average, 6 claims were made per interview and were often a mix of legitimation claims (supporting some actors/institutions/governance arrangements) and delegitimation claims (challenging others). Based on this database, authors then structured the results through an aggregation of actors and policy mechanisms identified, as well as the varying deployment of legitimacy sources, to identify the primary modes of governance being considered by interviewees for the governance of transboundary climate risks and their respective normative foundations.

7.5 Legitimacy sources of five governance pathways

In the Brazilian-German coffee supply-chain, interviewees collectively described five distinct governance pathways for transboundary climate risks, where the purpose of governance activities (or lack thereof) is to incentivise behavioural change (Table 7). In the first pathway 'transnational governance', activities are dominated by the private sector through e.g., private certification schemes, insurance, sustainability initiatives or corporate social responsibility and, to some extent, public-private partnerships. The second pathway, 'international diplomacy' mainly engages sovereign states, who negotiate as equals to jointly on international rules and regulations intended to benefit both parties, either through bilateral engagement or under the guise of international organisations and clubs. In the third pathway, 'development cooperation', Transboundary climate risk governance is achieved through development and climate finance support from donor countries. In addition, the chapter presents two pathways suggested by interviewees where the governance of transboundary climate risk itself is delegitimised: 'global markets', where consumer preferences should govern market signals and where other intervention is unwarranted; and 'domestic policy', where the public sector is wholly responsible for governance mechanisms for national and local adaptation within national borders. In many cases, individual actors were engaged in multiple pathways, playing different roles in different contexts. In this sense, the pathways should not be seen to be mutually exclusive nor as necessarily exhaustive. The primary distinctions between

governance pathways are the policy mechanisms employed in each instance, the relationship between key actors involved and the normative basis for their perceived legitimacy as an appropriate institution for the governance of transboundary climate risks.

	Transnational Governance	Development Cooperation	International Diplomacy	Global Markets	Domestic Policy
Key Policy Mechanisms	Certification Schemes; Private Finance, Insurance, and Credit Schemes; Public-Private Partnerships	Development Assistance; Capacity Building and Technology Transfer	Bi/Multilateral Engagement; International Agreements	Market Signals; Consumer Behaviour	Domestic Law; Domestic Strategies and Plans
Key Actors Engaged	Private Companies; Civil society; States	Development Banks/Agencies; Civil society; International organisations	States; International Organisations and Clubs	Consumers; Private Companies	States; Local/Regional Governments
Ambition for International Cooperation	High	High	High	Low	Low

Table 7 Five Governance Pathways for Transboundary Climate Risks

The sources of institutional legitimacy across governance pathways are summarised in Tables 8-9. Table 8 shows the distribution of legitimation claims and Table 9 the distribution of delegitimation claims. To provide more granularity, darker shading indicates that a specific institutional source was referenced in over 20% of the total claims. Lighter shading indicates that the institutional source was referenced in under 20% of the total claims. For instance, under 20% of all legitimacy claims pertaining to the 'Development Cooperation' pathway suggested that development cooperation would be an efficient mode of governing transboundary climate risks. Respondents focused much more often on how Development Cooperation was accountable to recipient country priorities. At the same time, respondents who made claims de-legitimising the development cooperation pathway also

referenced efficiency, underscoring how climate risk in the agricultural sector was not always a sufficiently high priority by development agencies. The institutional sources that are blank were not represented at all by the legitimacy claims.

			Transnational Governance n = 73	International Diplomacy n = 40	Development Cooperation n = 26	Domestic Policy n = 31	Global Markets n = 15
Procedure	Democratic	Participation		Of Relevant States	Of Local Actors and Businesses		
		Accountability	To Consumers and Shareholders	To Citizens	To Recipient Country Priorities	To Citizens	
	Technocratic	Efficiency					Of the Market
		Expertise	In the Sector		In Key Technical Issues	In National Context	In the Sector
	Fair	Impartiality		Rules Apply to All Parties			Of the Market
		Proportionality					
Performance	Democratic	Democracy Promotion in Wider Society					
	Technocratic	Problem Solving					
		Collective Gains					
	Fair	Human Dignity					
		Distributive Justice					

Table 8 Sources of Institutional Legitimacy and how they are Deployed and Interpreted in Legitimation Claims across TCR Governance Pathways

			Transnational Governance n = 45	International Diplomacy n = 26	Development Cooperation n = 13	Domestic Policy n = 33	Global Markets n = 13
Procedure	Democratic	Participation					
		Accountability	To Producers	Historical Colonialism		To Producers	
	Technocratic	Efficiency		Slow Processes	Other Priorities	Slow Processes	
		Expertise					
	Fair	Impartiality					
		Proportionality					
Performance	Democratic	Democracy Promotion in Wider Society					
	Technocratic	Problem Solving				Low Enforcement	
		Collective Gains					
	Fair	Human Dignity					
		Distributive Justice					

Table 9 Sources of Institutional Legitimacy and how they are Deployed and Interpreted in Delegitimation Claims across TCR Governance Pathways

Those institutional sources where actors had different interpretations from their theoretical definitions, or where (de)legitimation claims focused on certain characteristics of the broader definition, are provided with brief descriptions, which are further elaborated on in the text below. For example, using the 'Development Cooperation' pathway again, delegitimation claims against this pathway as appropriate for transboundary climate risk governance invoked efficiency as an institutional source. However, efficiency was largely interpreted as a priority issue by interviewees, rather than number and speed of decisions. In other words, bilateral agencies and development banks, as key actors in this pathway, were seen as having other priorities on their agenda and did not consider transboundary climate risk as pertinent. The rest of this chapter will further elaborate on these tables for each pathway.

7.5.1 Transnational governance

The first and most prominent governance pathway is the "transnational governance" pathway. In this case, interviewees envision a central role for the private sector in governing transboundary climate risks, and, to a lesser extent, public-private partnerships which would aim to create norms and standards to be adopted by key players in the coffee sector. Governance of climate impacts and risks in the supply-chain should be done with existing mechanisms, which, in turn, need to be scaled-up for broader reach. As the most diverse of the governance pathways, interviewees consistently invoked the central role played by sustainability certification schemes and advocacy groups, such as Rainforest Alliance and Fairtrade, the importance of traders and roasters including Louis-Dreyfus Company and Neumann Kaffee Gruppe, as well as coffee cooperatives working on the ground with strong links to producers.

When interviewees spoke supportively of the transnational governance pathway, the most commonly cited institutional source of legitimacy was the ability of the private sector to solve problems, followed by statements

about the importance of expertise in the coffee sector. The private sector is understood to be the most effective actor to govern transboundary climate risks, relying on their superior knowledge of the coffee sector and the challenges faced by businesses working to maintain profitability while navigating other risks, such as strong price fluctuation. Interestingly, while problem solving was seen as central to the legitimacy of transnational governance, remarkably little was said about the collective gains which might be produced in this pathway, implying that while the private sector may be well-equipped to resolve their own problems, they are not understood to produce wider benefits for society.

A high proportion of legitimacy claims also referenced the importance of accountability. However, the interpretation of accountability was to consumers and shareholders, while excluding producers and their local communities[23], as an effort to supply products in line with growing interest in sustainable consumption. Large traders and roasters were seen as key actors, given their significant size relative to other players, their role as intermediaries between the markets of producing and consuming countries, and their ability to alter incentive structures to incorporate transboundary climate risk management. For example, several cooperatives in Brazil called on traders to increase their share of certified coffee, creating higher demand for sustainable coffee in consuming countries.

Somewhat paradoxically, problem solving is also the most commonly invoked feature in delegitimation claims about the transnational governance pathway. Several interviewees noted that climate risks were not the most relevant challenges facing the coffee sector and private companies were unlikely to make investments in climate action. Interviewees also referred to the limited effectiveness of certification schemes in improving sustainability, either because competition among the numerous schemes has led to reducing requirements for producers to participate, or, because certification has been viewed by producers as a short-term opportunity to supply coffee

23 As Table 9 shows, delegitimation claims for accountability emphasised the lack of accountability for producers.

to niche markets, rather than a long-term investment in sustainability. Moreover, interviewees noted that many private companies lacked transparency in their activities and were not accountable to the farmers who produced their coffee, further undermining the legitimacy of the pathway.

Taken together, this suggests that despite the pre-eminence of the transnational governance pathway in the Brazilian-German coffee supply-chain, there remain a number of questions about its ability to solve problems as an institution and its accountability structures. Market-based approaches to problem solving dominate this pathway, but key issues – i.e., which problems are addressed, and to whom actors are accountable – remain unresolved. For example, certification schemes and sustainability standards have been largely ineffective in rectifying this situation (Bray and Neilson 2017; Grabs 2020).

7.5.2 International diplomacy

The second governance pathway, "international diplomacy," emphasises the role of foreign policy conducted between countries. For this pathway, interviewees referenced the importance of international negotiations as key venues for governing transboundary climate risks. Here, the fundamental premise is the equal engagement of countries in international fora, bilateral and multilateral, agreeing as sovereign states to common rules or goals. In the Brazilian-German coffee supply-chain, one of the most relevant diplomatic processes is the negotiation of the EU-MERCOSUR Free Trade Agreement, where Germany and Brazil are engaged as members of their respective trading blocs in constructing the architecture for the future of trade between the regions. Notably, the role of sustainability in free trade agreements has been an important topic of scholarly and policy inquiry in recent years (i.e. Esty, 1994; Jinnah and Morin, 2020) and has been a critical sticking point of the EU-MERCOSUR discussions.

Legitimation claims for the international diplomacy pathway rely on both problem solving and the promotion of collective gains more than any other governance pathway, suggesting that as an institution, the interviewees

understand international diplomacy to be potentially highly effective, particularly when it comes to providing common goods. Similarly, interviewees also noted the critical role of impartiality for international diplomacy, as countries are understood to jointly and voluntarily agree to the establishment of rules which benefit both parties and are applied equally for all involved. The democratic principles in the process, participation and accountability are also referenced repeatedly, underscoring the importance for all negotiating parities to participate on equal terms, and highlighting the role of the state in promoting its national interest through diplomatic engagement, aligned with the traditional democratic conception of state accountability as a product of popular domestic support.

At the same time, both problem solving and accountability are also identified as key challenges for the international diplomacy pathway. In delegitimation claims, a number of interviewees suggested that as international diplomacy often occurs at high levels of abstraction, rules and regulations agreed may have little practical effect on the everyday circumstances for many coffee producers. Several representatives of traders and cooperatives, for example, dismissed the EU-MERCOSUR trade agreement as relevant for the governance of transboundary climate risks in the coffee[24] supply-chain, as its statute is "too coarse" for incorporating climate risk management, as one member of a Brazilian coffee cooperative expressed. Similarly, global governance institutions, such as the UNFCCC, World Trade Organisation and the International Coffee Organisation were rarely invoked by interviewees as potentially effective arenas for governance of the Brazilian-German coffee supply-chain. Furthermore, delegitimation claims invoked the lack of accountability in the international system. As one interviewee noted, coffee trade has its foundations in the colonial system and these structures are still being persistent even today, making it impossible for developed and developing countries to negotiate as equals. Efficiency also featured strongly in delegitimation claims about the international diplomacy pathway, as interviewees remarked that processes were slow and cumbersome, and depended

24 It was noted several times that other crops and products such as soy, maize and meat were more dependent on the trade agreement than coffee, implying that trade negotiations as a policy mechanism of this pathway could be stronger in other agricultural products as well as other issue areas.

heavily on the relationship between the administrations in power which regularly changed. For example, the EU-MERCOSUR agreement took 20 years to negotiate.

The international diplomacy pathway is rooted in an institutionalist worldview, where rules and regulations are deployed in an effort to constrain market forces and facilitate the pursuit of a shared goal. However, for its potential to effectively govern transboundary climate risks, activity needs to take place at higher pace and at much lower levels of abstraction.

7.5.3 Development cooperation

The third identified pathway for governing transboundary climate risks is a "development cooperation" pathway. This pathway is directly borne of the logic of the donor-recipient relationship, often between countries in the Global North and Global South, where the developed country is understood to be a benevolent supporter of the developing country's needs and aspirations (Kothari 2005). In the Brazilian-German coffee supply-chain, actors like the German Society for International Cooperation, the German Development Bank, the Federal Ministry for Economic Cooperation and Development (BMZ), and the European Union aim to support the Brazilian government in achieving its self-articulated goals, often through the provision of development assistance or climate finance.

Legitimation claims for this pathway are relatively diffuse, relying on participation, accountability, expertise, and problem solving. Beginning with participation, interviewees emphasised the ability of actors in the development landscape to bring all the relevant players to the table, referring to the private sector in addition to a specific focus on the inclusion of smallholder coffee farmers and local governments. On accountability, respondents noted that the German government had a duty to support Brazilian coffee producers given the unequal terms of trade in the coffee sector, where most profit is made in developed countries where the coffee is roasted and sold (Sachs et al. 2019). In this sense, the German government could be seen to hold a

degree of responsibility to the support segments of the Brazilian economy which drive the more lucrative German domestic coffee market. This line of argumentation is complemented with references to expertise and problem solving, as German development agencies are understood to have a high capacity to share relevant knowledge about climate risk management in agricultural systems and build the resilience of smallholder farmers.

In contrast, delegitimation claims of the development cooperation pathway relied heavily on efficiency, though rather than referring to number and speed of policy decisions, here efficiency reflected the strategic priorities of the actors engaged. As actors in the German government have a limited amount of time and resources to pursue their goals, they preferred to allocate its development cooperation resources elsewhere, either towards climate change mitigation in Brazil, or to other countries with more significant climate adaptation needs. Representatives of German development agencies, as well as the European Union Delegation in Brazil, clearly stated that development support for Brazilian smallholder coffee farmers was not a priority issue. Instead, development cooperation efforts were seen as better targeted to Least Developed Countries with lower capacity to deal climate risks, preferring instead to work with the Brazilian government on deforestation initiatives in an effort to reduce fossil fuel emissions generated through land use change. This is reflective, in part, of the historical relationship between Brazil and Germany, and their relative stature in world economic affairs. As one member of the European Union delegation stated: "Brazil is not a country where we focus on development projects; we want to go in as 'equal' partners focusing on bigger issues, working on a peer-to-peer basis."

The development cooperation pathway is underpinned by the notion of German government support for Brazilian-led efforts to address transboundary climate risks in the coffee supply-chain. Notably, however, invocations of fairness are rare, and while accountability, expertise, and problem solving feature prominently, they are not invoked in the same way across contexts.

7.5.4 Domestic policy

Whereas the three pathways above have placed international cooperation at the center of transboundary climate risk governance, albeit based on distinct logics, the remaining two governance pathways challenge this notion, maintaining instead that despite the shared interest in climate risk management across borders, joint governance may be inappropriate. The "domestic policy" pathway invoked a larger amount of (de)legitimacy claims than the development cooperation pathway and contends that Germany and Brazil should each deal with climate risk focusing on their respective sides of the supply-chain separately, implying a limited role for global governance. Actors legitimising this pathway underscored the idea that national governments would know best what was needed for their particular contexts and therefore be better able to solve problems and produce collective gains. Most importantly, however, interviewees argued that it was a national responsibility to coordinate and govern domestic affairs, holding national and local governments accountable to their citizens. In Brazil, legitimation claims pointed to the particularly strong environmental regulatory landscape in Brazil, the existence of the national coffee fund, Funcafé, which provides funding for various initiatives in the coffee sector, as well as the low-carbon agriculture (ABC) plans under implementation throughout the country. In Germany, several interviewees argued that the best opportunity for Germany to address transboundary climate risk in the coffee supply-chain was to abolish the national tax on certified and sustainable coffee (Molenaar and Short 2018).

At the same time, interviewees also challenged these same sources of legitimacy. Several actors noted that while there is a strong regulatory space in Brazil, very few laws address climate change, and the enforcement of environmental policy in Brazil leaves much to be desired. In conjunction, there remain outstanding questions about government's accountability for or ability to effectively pursue environmental protection or climate action.

7.5.5 Global markets

Similar to domestic policy, the final governance pathway limits the possibility of international cooperation to manage transboundary climate risks. "Global markets" stresses non-interventionism and the minimisation of any effort to manipulate markets to influence consumer and producer behaviour. While less prominent in the Brazilian-German coffee supply-chain than other pathways, the laissez-faire global markets approach still holds sway among a number of actors, particularly multinational companies. Supported for many of the same reasons as the transnational governance pathway, legitimation claims focus on the private sector's ability to innovate and solve problems, their high level of expertise and experience in the coffee business, and the ability of the market to act as an impartial distributor of goods and services across society. As one interviewee from a large Brazilian coffee cooperative noted: "coffee can stand on its own legs without the help of the government."

In contrast, delegitimation claims focused heavily on the well-documented failures of both the private sector and governments to effectively solve the problem of smallholder farmer poverty and build resilience and improve livelihoods. Interviewees noted frequently and critically that the price of coffee, which is set on financial markets[25], can perpetuate smallholder poverty. It was noted multiple times that large price fluctuations served as a deterrent for those smallholder farmers who wanted switch to more sustainable practices or participate in a certification scheme or sustainability initiative.

7.6 Discussion and conclusion

As few studies have been conducted which explicitly engage with the governance of transboundary climate risks, this chapter proposes an empirically driven framework of five pathways which are being actively explored, negotiated, and contested in the Brazilian-German coffee supply-chain. While

25 Tariffs on coffee imports play a relatively limited role in determining the market price of coffee, as tariffs are set at the national level and many large importers (i.e., the US, Canada, EU, and Japan) do not currently impose them on green coffee imports, although some EU member states, including Germany, do.

the proposed pathways are not necessarily exhaustive nor mutually exclusive, and the balance between them in any case will be contextually specific, the chapter contends that the pathways may be generalisable to adaptation and climate risk in other supply-chains, broader issues of global governance, or for foreign affairs more broadly.

These findings complement those of Steven Bernstein and Benjamin Cashore (2012) who developed a similar framework of four pathways for global environmental governance, focused on how international processes may facilitate change at the national, subnational, or firm level. While Bernstein and Cashore's work was deductive and conceptually driven, this chapter begins from the empirical and inductively validates some of their most important contributions, supporting the potential generalisability of our proposed pathways. At the same time, our proposal considers the essential role of legitimacy as fundamental to each pathway's operating logic, advancing beyond the consideration of policy mechanisms alone.

Importantly, it is this advancement which allows for the active deliberation of the grounds on which an approach to transboundary climate risk governance may be governance and to assess whether those conditions are indeed met in practice. First, the transnational governance pathway assigns strong weight to the private sector's ability to effectively govern transboundary climate risk. However, this pathway is the closest to business-as-usual for the sector, and as Chapter 6 shows, the governance initiatives on which it heavily relies have been shown to be insufficient for broadly achieving effective sustainability outcomes. Furthermore, pertinent to this pathway, there is also a need to explore what consequences an increased influence of large multi-national corporations can have on inequality and vulnerability of local communities in developing and least developed countries, including smallholder farmers (Clapp et al. 2018). Second, to presume that international diplomacy occurs between truly equal states would be to overlook decades of research on international political economy, power, and the various forms of coercion which are commonplace in global governance and foreign affairs

(Ciplet et al. 2015; Newell, 2008; Stephen and Zürn, 2019). Third, while it is consistently implied that development cooperation is a benevolent exercise driven by a recipient country, a wealth of literature in development studies and development aid would call this in to question (Carbone 2007; King 2013; Shawoo et al. 2022a). Lastly, neither domestic policy nor global markets pathways make any efforts to actively govern transboundary climate risks across borders, either allowing for autonomous adaptation activities and measures entirely at the domestic level, or mediated solely through market forces. In short, among all three of the pathways with the highest ambition for international cooperation, serious questions exist about the accuracy of their assumed premises. Taken together, it is clear that significant work remains to consider the constellation of governance pathways appropriate for managing transboundary climate risks in a given circumstance, on what basis, and to establish the conditions on which that legitimacy rests.

This chapter has also sought to contribute to the growing literature on the critical role of legitimacy in global climate governance, at once rooted in political principles and socially constructed by negotiation between ruler and ruled. Research to-date has not grappled with the full diversity of actors and institutions involved in global climate governance, nor explored how (de)legitimation processes relate to the institutional sources of legitimacy. In many cases, scholarly work has been directed at established processes and policy regimes where existing institutions experience an incumbency advantage, rather than emerging challenges of global importance where these issues are being navigated in real-time.

This chapter intended to address some of these knowledge gaps. For the governance of transboundary climate risks, where few formalised institutions exist[26] and complex relationships between public and private are central, the discursive practices of actors provide important insights as new approaches to global climate governance are negotiated and evolve. Specifically, as actors deploy rhetorical arguments to justify or challenge the legitimacy of a governance approach, they draw on the same suite of legitimacy sources to

26 A notable exception is the governance of transboundary watercourses or river basins, which is better established, although the effects of climate change on these arrangements too require further study (see e.g. Milman et al. 2020).

advance their views, in line with those proposed by Dellmuth et al. (2019) but do so in markedly different ways. In other words, while actors are (de)legitimising certain pathways, they do not always have a shared understanding or interpretation of each legitimacy source. Key questions about who should participate and how, to whom governance should be accountable, whose expertise is valuable, or what constitutes justly distributed gains all remain open for interpretation. In this way, legitimacy itself becomes a site of political contestation as actors negotiate what it means to legitimately hold the authority to govern. Even from a normative sociological perspective, the definition of each institutional source of legitimacy cannot be taken as given, but rather must be understood as socially constructed, mobilised in (de) legitimation claims to either advance or undermine a governance approach.

Moving forward, more work is required to better understand the drivers behind the use of different legitimacy sources, or their incongruent definitions, as well as how these differences are navigated and resolved. Here, the chapter proposes two avenues for further research. First, this chapter focused on institutional sources of legitimacy and presented their contestation in the form of governance pathways. Complementing research at the agent-level should identify the mechanisms and strategies through which actors deploy their power to promote their interests or worldviews in the process of (de) legitimising different approaches to global climate governance (Dellmuth 2018). In addition, complementing research on individual agency and institutional sources should explore how social structure shapes the legitimacy beliefs of actors and institutions, and explore the inter-relationship and co-determination between the three dimensions: individual, institutional and structural (Scholte 2018).

Second, complementing research should explore to which extent these findings may be case-driven; the specific relationship between Brazil and Germany may be different than Germany and Rwanda, for instance, as the contestation of legitimacy in global climate governance is embedded in a broader political economic context. First, for this specific case, coffee is

largely produced in developing countries and primarily processed and consumed in developed ones, where profits tend to be larger (Levy et al. 2016; Sachs et al. 2019). In addition, there is a complex historical relationship between Brazil and Germany: where Germany and the European Union are highly industrialised economies, and Brazil is an emerging economy which, while susceptible to international pressure, is somewhat more insulated than other similar countries due to its large size. Similarly, what is understood to be legitimate in the coffee supply-chain may not apply equally well to the rice trade, or for the movement of climate refugees, both areas equally relevant for transboundary climate risk governance (Hedlund et al. 2018). While differences are certain to exist across these contexts, systematic inquiry is needed to explore precisely how structural factors condition the social construction of legitimacy across contexts, including which legitimacy sources are understood to be most compelling or essential.

The contestation of legitimacy is part-and-parcel of global governance in a changing world. As novel challenges emerge, and institutions, policy regimes, and state and non-state actors interact in new ways, legitimacy is situated at the center of a burgeoning debate about appropriate global governance in the modern era, actively produced by parties who would seek to exert influence over others, and negotiated with those who may be subject to that authority.

8/ Conclusion

8.1 Introduction

This dissertation started with the observation that climate change adaptation over time has emerged from being a minor policy field in the UNFCCC negotiations to becoming a separate issue area on par with climate change mitigation. The main driver for this shift has been the increasing awareness that countries will not be able to limit the temperature increase to sufficient level to avoid adverse risks and impacts and that adaptation measures are necessary to reduce decrease vulnerability in human and natural systems from the impacts of climate change (IPCC 2022). As Chapter 4 shows, this development took place through four eras of adaptation, of which the fourth era framed adaptation as a global challenge and where attempts at governing adaptation were becoming increasingly transnational, involving interactions between state and non-state actors across borders.

Furthermore, increasing flows of finance, trade and people across national borders has brought attention to the fact climate change risks and impacts are having transboundary implications, meaning that responses to climate change, i.e. adaptation, need to be coordinated across scales and borders (Challinor et al. 2017; Hedlund et al. 2018). On these premises, this dissertation stipulated that adaptation governance has global implications and is governed by state and non-state actors alike.

In light of this shift, this dissertation set out to explain the emergence of transnational governance mechanisms in the context of climate change adaptation. In novel issue areas, it is important to first explore how governance arrangements emerge to understand their broader implication (Karlsson-Vinkhuyzen and Vihma 2009). The dissertation then set out to explore effectiveness and legitimacy of transnational adaptation governance. To answer this dissertation's research questions, a broad theoretical approach was constructed, drawing from international regimes theory, orchestration theory, institutional theory and critical political economy, with the ambition to characterise climate change adaptation as a distinct part of the climate change regime complex. It also aimed to explain how institutional change catalysed the emergence of transnational adaptation governance; and to explore uneven geographies in the context of transnational adaptation governance and its consequences for countries in the Global North and the Global South.

The cross-sectoral and multi-level nature of adaptation makes it an interesting issue area for furthering research on transnational governance and this dissertation complements current research on transnational climate governance. First, it has broadened existing transnational climate governance research, which was overwhelmingly geared towards climate change mitigation (Chan et al. 2018; Roger et al. 2017). Second, it has revisited the role of public actors in transnational climate governance, where many (institutionalist) scholars tend to assume that governance initiatives could succeed where states and international organisations previously have faltered

(Andonova et al. 2009; Bäckstrand 2008). Third, the dissertation has taken a novel approach to adaptation, exploring governance efforts aimed at reducing vulnerability in human and natural systems from the impacts of climate change. This approach links climate risks and the responses to avoid adverse impacts derived from those risks. It also takes into account how misguided adaptation efforts can reinforce, redistribute or create new vulnerabilities. Lastly, it has broadened the scope of adaptation efforts to include both formal mechanisms within the UNFCCC and the informal arrangements aimed at governing adaptation, at risk of not being captured within the formal structure of the UNFCCC. This inquiry of transnational adaptation governance has featured an iterative research approach combining database analysis with qualitative approaches, such as semi-structured interviews, document analysis and participant observation.

This chapter will revisit the dissertation's central research questions and discuss the implications of the findings for global and transnational governance, focusing on the three main concepts that form the backbone of this study: emergence, effectiveness and legitimacy. The chapter will also discuss the theoretical and practical implications of this dissertation for climate change research and policy in general and for adaptation in particular. Finally, the chapter will discuss the limitations to this dissertation's approach and propose avenues for future policy and research needs.

8.2 Key findings and theoretical implications

8.2.1 Emergence

The first research question that the dissertation set out to answer was: '*Why is transnational adaptation governance emerging and how can its emergence be explained?*' This section elaborates that transnational adaptation governance emerged because of the limitations of existing actors in the climate regime-complex to deal with an emerging issue area. It then highlights the strengths and limitations of institutional theory in explaining the emergence

of transnational adaptation governance, before making the case for why critical political economy is a crucial theoretical complement for answering this research question.

Emergence of adaptation as a distinct part of the climate regime-complex

Regime theory stipulates that new international regimes emerge when new policy problems arise that require novel forms of governance to effectively respond to these problems (Keohane 1984). The analysis in Chapter 4, including a combination of a historical perspective and empirical analysis, showed how adaptation over time became distinguished from climate change mitigation, characterised by separate forms, functions and agency and operating through different norms, rules, principles and procedures. The dissertation argues that adaptation is a distinct part of the climate regime-complex. This institutionalisation process took course over a couple of decades and is categorised in Chapter 4 through three distinct eras of adaptation (see also Chapter 1). However, while there is an assumption that international regimes arise to fill the global governance gaps created by the failure of intergovernmental processes (Bulkeley et al. 2014), early adaptation emphasised national and local issues, and, thus, did not respond to the issues of transboundary risks and impacts of climate change.

This allowed for further evolvement of adaptation governance. In chapter 4 this dissertation introduces a fourth era of adaptation, which led to both globalisation and transnationalisation of adaptation and became a starting point for global and transnational adaptation governance (see also Hall and Persson 2018; Persson 2019), with the Paris Agreement as the ultimate policy shift that framed adaptation as a global challenge. Using the example of adaptation finance, Chapter 4 showed how experimentation emerged through the introduction of global and regional adaptation finance projects, including both state and non-state actors. Furthermore, as Chapter 6 shows, over time transnationalisation of adaptation went beyond adaptation finance to include initiatives focusing on a wide range of issues, including agriculture,

water management, resilience and cities and municipalities. In line with functionalist institutionalism, the dissertation argues that transnational adaptation governance emerged because the climate regime-complex was ineffective in dealing with a novel issue area, which led to a window of opportunity that allowed new actors, mainly non-state actors, to engage with adaptation activities and broadening the adaptation concept to incorporate transnational adaptation governance.

Explaining the emergence of transnationally governed adaptation

In research on transnational climate governance, three most common approaches aiming to explain emergence emphasise the absence of strong international regimes and the withdrawal of the nation-state (Visseren-Hamakers and Glasbergen 2007); the failure of existing governance mechanisms (Andonova et al. 2009); and as being part of the broader shift in global climate governance towards 'fragmentation', where governance of an issue area takes place across several policy domains (Biermann et al. 2009).

With regards to the first point, the analyses in Chapters 4 and 5 on adaptation finance show that, while the role of non-state actors in the adaptation regime is increasing, they are not aiming to replace the traditional actors, i.e. states and international organisations, but instead is emerging alongside, at times complementing each other. Similarly, in Chapter 6 transnational adaptation initiatives included interactions between a variety of international organisations and non-state actors, which were governed across multiple scales, borders and sources of authority. In this sense, transnational adaptation governance is different from the broader transnational climate governance in the assumption that non-state actors are not aiming to replace states and international organisations, but rather to complement and position themselves as being integral to an adaptation governance landscape.

From a theoretical standpoint, states and international organisations often act as orchestrators of transnational adaptation governance. As discussed in Chapter 3, orchestration implies a process where states or international

organisations facilitate governance and delegate authority to non-state actors (Abbott and Snidal 2009). It involves public institutions directing non-state actors towards a common goal, seeking to "unlock the agency of transnational actors to help provide public goods transnationally" (Hale and Roger 2014: 64). In Chapter 4, adaptation finance projects were dominated by states and international organisations. Similarly, in Chapter 6, even though transnational adaptation initiatives included a broad set of non-state actors, international organisations were dominant, particularly with regards to the leadership of initiatives. Additionally, other non-state actors, particularly non-governmental organisations were actively seeking orchestration. Furthermore, as Chapter 5 showed, states play a crucial role in facilitating and creating enabling environments for transnational actors. Lastly, Chapter 7 emphasises the ability of states, either through international diplomacy or development cooperation, to facilitate and steer governance of transboundary climate risks. Thus, all four Chapters of this dissertation provide individual examples of the importance of states and international organisations as orchestrators of transnational adaptation governance. In addition, they also provide novel perspectives on the relationship between state and non-state actors in transnational governance.

Regarding the second point, the emergence of transnational adaptation governance can to some extent be related to the limitations of existing governance mechanisms, where the emergence signifies new forms of governance where other forms of steering are unable to deliver optimal resource mobilisation and coordination (Rhodes 1997). However, it is also true that transnational adaptation governance has emerged as a response to a novel issue area of global climate governance. The evolution of adaptation governance is also a consequence of the increasing insights that climate change risks and impacts cannot be limited to national borders, but have transboundary implications (Benzie and Persson 2019). This has brought in new actors and new governance mechanisms, but as complements and not replacement for the failure of existing mechanisms. In other words, both the limitations of existing mechanisms as well as the broadening of the concept of adaptation

itself have led to the emergence of transnational adaptation governance. The emergence of these new and powerful actors requires stronger accountability mechanisms to ensure that they remain committed to delivering to adaptation as a global public good and not renege on their commitments to maximise individual profits.

Lastly, regarding the third point, the ambiguity of adaptation renders it attractive for new actors and institutions to adopt, since they can use that ambiguity strategically. Institutional change is driven endogenously by ongoing political-distributional struggles between actors seeking to influence the meaning, interpretation, and enforcement of institutional rules, which are inherently indeterminate and contestable (Hall 2017). In this sense, the ambiguity of rules allows for flexibility by actors that can give rise to gradual change over time (Mahoney and Thelen 2010). It is relatively easy for new actors to align their own goals and norms and become part of new transnational networks seeking to govern adaptation, but – as the next section will show – not necessarily to be strengthened. Chapter 6 shows how transnational adaptation initiatives span across several sectors and issue areas, including agriculture and biodiversity, water management, cities and regions and resilience, where transnational adaptation initiatives had several objectives, of which adaptation was one. The chapter also shows that the initiatives are not only adhering to the UNFCCC, but also to the 2030 Agenda, the Sendai Framework for Disaster Risk Reduction, UN-Habitat, and the UN Convention on Biological Diversity, among others. Similarly, Chapter 7 emphasises how adaptation can be governed transnationally through a specific supply-chain, where particularly large global corporations are increasingly involved in adaptation governance. In both these cases, it holds true that the broadening of adaptation and adaptation governance also increases its complexity where governance is increasingly fragmented.

Consequences of uneven geographies

However, there are also some considerable discrepancies between theoretical assumptions and empirical patterns of emergence of transnational

adaptation governance. For example, functionalist institutionalism assumes that emergence occurs where the governance deficits are the greatest. In reality, however, as shown in Chapter 6, most initiatives that fall under transnational adaptation governance are dominated by actors in the global North, while the adaptation needs are most pressing in the global South. Non-state actor participation dominated by the Global North allows narrower economic interests to exert undue influence over global climate governance, as powerful groups have stronger ability to participate in the international fora then many from the Global South (Newell 2000). This process tends to mask the incongruent power imbalances between rich and poor countries as well as between powerful non-state actors, such as global corporations, and for example non-governmental organisations from the Global South. Ultimately, institutional theory fails to address the fundamental point of who gains and who loses in this way of framing and addressing political issues. As Bäckstrand (2008) notes, issues such as skewed representation and increased influences of multinational corporations risks reducing the legitimacy and accountability of transnational governance; whilst participation dominated by actors from the Global North allow for narrower interests, often aligned with and masked from neoliberalist ideologies (Newell 2008).

Drawing on critical political economy, this dissertation also presents an alternative explanation to the emergence of transnational adaptation governance. In the context of developing countries, weak state rule has created the political space for transnational governance initiatives to build capacity and control within those countries by actors that reside beyond their boundaries (Duffy 2006). As research on global environmental governance has shown, transnational governance represents an extension of transnational corporate exploitation of developing countries through the extension and legitimation of supply chain activities in the South by western corporations (Clapp 1998; Conca 2005). These signs are also present in Chapter 7, in the Brazilian-German coffee supply-chain, where the major actors and those that are making the largest profit from the coffee sector, the traders and retailers, are based in the Global North, while the coffee producers are mired in smallholder

poverty. The broadening of adaptation and the subsequent emergence of transnational adaptation governance in global supply-chains can then also be understood as part of the general reorganisation of governance that creates norms, incentives and structural conditions for the increased marketisation of adaptation governance both in developed and developing countries.

8.2.2 Effectiveness

The second research question the dissertation set out to explore was: '*Under what conditions is transnational adaptation governance effective?* Cataloguing the emergence of transnational adaptation governance is not the same thing as demonstrating its impact on reducing vulnerability to climate change. This section will discuss the conditions for effectiveness, both at regime level and its institutional components. It provides arguments for how transnational adaptation governance has increased the potential for effectiveness of adaptation efforts to decrease vulnerability to climate change. Following this, the section then discusses why this potential not yet has been realised, elaborating on the drivers of effectiveness and their limitation for increasing the overall success of adaptation.

Emergence has increased the potential for effectiveness

As the previous section on emergence noted, the ambiguity of the adaptation concept is one reason for the emergence of transnational adaptation governance. This broadening of who governs adaptation has had an impact on how the system of rules and rule-making has changed.

First, the Paris Agreement itself is an indication for how the rise of global and transnational aspects of adaptation governance have shifted the perception of adaptation. The emergence of transnational adaptation governance has increased the potential of non-state actors to assert influence on how adaptation should be governed, which has resulted in the recognition of adaptation as a global challenge and a global goal, and shifted the notion of how key decisions about how to deal with climate change are being made in new sites of governance instead of solely in the confines of states and international organisations.

Second, as Chapter 6 notes, transnational adaptation governance takes place across a multitude of international organisations and their (overlapping) regimes, including the 2030 Agenda, the Sendai Framework for Disaster Risk Reduction, the UN-Habitat, and the UN Convention on Biological Diversity. Thus, while the Chapter highlights the importance of the UNFCCC for effective adaptation, it also states that adherence to other international regimes is important for successful adaptation. This is also emphasised within the UNFCCC, stating that adaptation is intrinsically linked to broader sustainable development, including the 2030 Agenda and the Sendai Framework for Disaster Risk Reduction (UNFCCC 2018). In other words, transnational adaptation governance has brought forward a broadening and linking of international regimes in which adaptation is governed.

Third, transboundary climate risk has aligned topics such as trade and supply-chains with adaptation activities, as shown in Chapter 7. Particularly important has been the realisation that large multi-national conglomerates, such as international traders, are increasingly becoming key actors for governing adaptation across borders. Furthermore, several countries have in the past couple of years undertaken risk assessments for the implications of transboundary climate risks, highlighting the potential for adverse impacts on trade, domestic businesses, supply-chains as well as security implications (see e.g. Peter et al. 2021; Prytz et al. 2018; Smith et al. 2018). Thus, transboundary climate risk is an additional component inviting states and international organisations to reconsider the benefits of global cooperation on adaptation between public and private actors.

From effectiveness potential to effective outcomes?

This broadening of rules and rule-making in adaptation governance has several implications for effectiveness. First, it requires increased and improved policy coherence measures between different and overlapping policy regimes to better capture the drivers of effectiveness (Shawoo, et al. 2022b). Lack of coherence and coordination increases the risk that many activities that might be effective take place outside of the climate regime-complex. As Chapter 6 notes, coordination across issue areas and regimes leads to

higher effectiveness. However, coordination between different policy regimes is lacking as they continue to operate in silos (UNDP 2017). As Persson (2019:4) strongly emphasises "[a]lthough adaptation is today pursued by a range of actors and institutions at multiple levels, the UNFCCC regime is still central for shaping governance and politics of adaptation, by defining rules and norms on the division of responsibilities, by creating a demand for adaptation knowledge, and by hosting an arena for showcasing and exchanging adaptation practices." Improved coherence would ensure policy learning across regimes and increase information sharing.

Second, while the framing of adaptation as a global challenge has expanded its ex ante effectiveness potential and changed the perception of who sets the adaptation agenda and rules, it has not led to an institutional strengthening and consolidation. For example, despite the Paris Agreement's declaration of adaptation as a global challenge and a global goal, little has happened in the following six years. At the latest climate negotiations in Glasgow, in 2021, countries agreed to continue to discuss by devoting a 2-year work programme between 2022-2024 to improve assessment of progress toward the global goal on adaptation and enable its implementation (UNFCCC 2021).

Drivers of effectiveness

With regards to the institutional drivers of effectiveness of transnational adaptation governance, Chapter 6 found that the majority of initiatives were effective in producing outputs that reflected the initiatives' stated goals and objectives, but that far fewer initiatives managed to go beyond and achieve output effectiveness. A key explanatory factor for lack of effectiveness was low level of institutionalisation: a lack of clear rules and norms and diffuse delegation structures, for example a lack of strategic planning and systems for monitoring and evaluation.

On the contrary, a key driver that determined outcome effectiveness is orchestration. Initiatives where an international organisation delegates authority achieve higher levels of effectiveness than those that operate more as

stand-alone initiatives. Initiatives that are orchestrated by a larger actor tend to have better access to support and resources. Consequently, in contrast to the broader transnational climate governance, involvement of international organisations and states is more important in transnational adaptation governance (Bulkeley et al. 2014; Chan et al. 2018), and indicates that effective transnational adaptation governance is stronger aligned with hierarchical governance structures. This finding corresponds with the analytical framework in Chapter 5, which hypothesises that governments and international organisations need to create enabling environments, e.g. by reducing risk and bureaucracy and increasing awareness, as a precondition for effectiveness; in this case for mobilisation and delivery of private adaptation finance for developing countries.

However, Chapter 6 also notes that effective outcomes could be achieved without orchestration if operation takes place in the proximity of a larger organisation, for example through financial or organisational support. Thus, even in the examples of networked governance, non-state actors do not need to be seen as authoritative or operationally autonomous (Torfing 2005) to achieve effective outcomes.

Decreasing the vulnerability to current and expected climate impacts

To summarise, non-state actors have had an impact in terms of how they have changed adaptation governance, in the context of the climate regime-complex, and increased the potential for effectiveness. Beyond this, it is more difficult to ascertain the capacity of transnational adaptation governance to decrease vulnerability to climate change risks and impacts. Transnationally governed adaptation has brought in a multitude of new and non-state actors in adaptation governance, who pursue many different and individual interest and strategies. However, while activity has increased in scale and scope, it has also increased fragmentation and has hitherto failed to provide evidence on its ability to improve the overall response to climate change. Chapter 5, which aimed to assess whether public incentives could be linked to benefits to adaptation from private finance, showed that it was

impossible to ascertain effectiveness beyond anecdotal cases. It concluded that issues such as low prioritisation of adaptation by private sector actors, lack of strong monitoring, reporting and verification mechanisms, and low enforcement of national-level policies act as a barrier for effectiveness. Similarly, in Chapter 7, while the transnational governance pathway was the most dominant pathway for how actors should adapt to transboundary climate risk, interviewees consistently emphasised the low effectiveness and lack of impact of current efforts within this pathway.

As discussed in Chapter 3, assessing the impact of a regime on the social and biophysical environment can be determined only in retrospect. And even then, determining attribution of political actions is a challenging task as data is often insufficient and is in many cases dependent on judgement rather than objective observation and measurement (Mitchell 2008; Underdal 2001b). While this is true for most environmental regimes, for adaptation it becomes even more convoluted. Reducing the vulnerability of human and natural systems to current and expected climate impacts implies that adaptation is ongoing through time and is implemented against the context of a constantly changing climate. This does not only allow for constant shifting of goalposts for measurement, but it also provides a basis for confusion for how adaptation should be interpreted and inhibits standardisation and comparability across scales and time (Leiter 2017), as a different point in time might have given different results (Ulbert 2013). What then becomes considered as 'effective' adaptation tends to vary across levels and scales.

An important caveat to add is that assessing these initiatives along the degree to which they solve the governance problem they were set-up to address is complicated as the governance deficit that is intended to be overcome is embedded in a broader socio-economic context that the initiatives do not control (Young 1999). For example, Puig and Bakhtiari (2020) note that most effectiveness parameters are outside the direct control of transnational initiatives, including the policy and regulatory environment within which initiatives operate and the extent to which these initiatives are perceived as

acceptable alternatives to government action. Moreover, Bednar et al. (2019) found that while networked adaptation initiatives, which operate on a similar basis to the initiatives analysed in Chapter 6, fail on achieving impact on the ground in terms of effectively implementing policies, they succeed in coordinating policy ideas and in motivating other actors across sectors and scales, thereby being an integral component for effective adaptation.

8.2.3 Legitimacy

The reason for the third research question of this dissertation lies in the basic tenant of political theory that people seek legitimacy in the actions of those who govern them (Bodansky 1999). The third research question that this dissertation set out to explore was *'On what grounds is transnational adaptation governance understood to be legitimate?'* This section will discuss the legitimacy of transnational adaptation governance and how it relates to the broader climate regime-complex. It states that at the broader landscape level, transnational adaptation governance has increased process legitimacy by increasing participation of non-state actors in adaptation governance. At the institutional level, legitimacy in transnational adaptation governance is based on expertise where non-state actors have specific necessary knowledge which gives them the ability to deliver effective adaptation outcomes. However, notwithstanding this effectiveness does not extend to broader societal impacts. Furthermore, legitimacy of transnational adaptation governance is not grounded in questions around fairness and justice, which are key components for effective and successful adaptation (Eriksen et al. 2021).

A broadening of processes in which adaptation takes place

As several Chapters of this dissertation have noted, while adaptation governance is dominated by states and international organisations, non-state actors are increasingly emerging, creating implications for the legitimacy of transnational adaptation governance. Thus, as Chapter 7 portrays, transnational adaptation governance[27] is often juxtaposed with international development cooperation and international diplomacy as a legitimate governance pathway for the management of transboundary climate risks.

27 In Chapter 7, the dominant governance pathway for transboundary climate risks is called 'transnational governance'. For the sake of consistency, in the conclusion it is referred as transnational adaptation governance

Transnational adaptation governance as an emerging global governance challenge has brought multiple claims on authority in parallel and competing processes striving to attain legitimacy (Suchman 1995). This has, in turn, raised questions, both about the legitimacy of the process and in the performance. At the regime level, the Paris Agreement has brought about calls for a 'all hands on deck' approach, where states and international organisations need support from, inter alia, cities, civil society organisations and the private sector to increase legitimacy (Hale 2016). This set of literature suggests that a broad inclusion of actors leads to an increase in procedural legitimacy, which, in turn, increases the chance for effective outcomes (Jager et al. 2020; Mena and Palazzo 2012). This was also indicated in Chapter 6, where participation by a broad set of actors was one variable for effectiveness. Similarly, in Chapter 7, the transnational adaptation governance pathway was more strongly invoked because of the plethora of actors, and particularly non-state actors, than international development and international diplomacy. On the other hand, other literature has argued that a larger set of actors, with different agendas, increases the risk of conflicts of interests, leading to lower effectiveness; notwithstanding the increase in procedural legitimacy (see e.g. Allan 2019; Hovi et al. 2019). Based on this dissertation's findings, it can be argued that transnational adaptation governance has increased legitimacy in process, but that there is no proof that this has led to improved performance (i.e. effectiveness) as the previous section discussed.

A technocratic approach to legitimacy

At the institutional level, transnational actors seeking to govern adaptation need to secure consent from those they are aiming to govern by employing legitimation strategies (Black 2008). Institutional sources of legitimacy then become a critical component for actors involved in transnational adaptation governance. Focusing on which grounds actors legitimised (and delegitimised) adaptation governance, Chapter 7 empirically explored legitimacy as procedure and as performance, separated into the three categories 'democratic', 'technocratic' and 'fair'. What is striking about transnational adaptation governance is that a very small amount of legitimacy claims are based on sources of fairness. Rather, the pathway is legitimised based on technocratic

sources (and to a lesser extent democratic). This contrasts with international diplomacy and international development, which are both more strongly embedded in democratic sources of legitimacy. Thus, it could be argued, that a broadening of adaptation, particularly activities not strongly related to the UNFCCC process – such as supply-chain governance where there is a strong influence of business and skewed representation of stakeholders and unequal power relations – could increase the risk of diluting the fairness and equity processes embedded in the climate change negotiations, which, in turn, could create new legitimacy problems. As the section on emergency in this chapter discussed, for adaptation this can have wide-ranging consequences on inequality and increased vulnerability of those countries and communities that are already highly exposed to climate risks and impacts (Thomas et al. 2019).

For procedural legitimacy, drawing on the findings in Chapter 7, actors legitimising transnational adaptation governance emphasised expertise as non-state actors were seen as holding important knowledge specific to its sector that other actors are lacking. More importantly, accountability was listed as key a source of legitimacy. However, in contrast to the traditional interpretation of accountability in the context of international organisations, i.e. transparency, consultation, review and redress that adequately considers the public it affects (Scholte and Tallberg 2018: 63), here accountability primarily refers to shareholders of the supply-chain corporations and the consumers of the product. This differs significantly from the other two proposed pathways for transboundary climate risk, where accountability in the development cooperation pathway emphasises recipient country priorities, and the international diplomacy emphasises citizens. The implications from this, as Chapter 7 states, are that in transnational adaptation governance it cannot be assumed that all actors have the same interpretations of sources of legitimacy.

With regards to performance legitimacy, following from the expertise as a legitimating factor for procedural legitimacy, the most common institutional source of legitimacy for transnational adaptation governance was its

problem-solving ability. In the supply-chain analysis in Chapter 7, actors argued that the private sector is best positioned to realise its goals to the fullest extent, and therefore able to deal with climate risk and implement adaptation activities. However, the same actors were to a much lesser extent seen as able to provide collective gains to the whole society. In other words, while transnational adaptation governance has the potential to deliver effective outcomes, the overall societal and environmental impact is seen as lacking.

Transnational adaptation governance can thus be seen as embedded in a technocratic discourse where the pursuit of efficiency and its perceived capacity to solve problems are its defining characteristics, working within the boundaries of liberal environmentalism. In Chapter 7, the most common governance mechanism in transnational adaptation governance are certification schemes, which, following a logic of appropriateness, aim to create shared norms based on established standards, development of best practices and voluntary commitments (Bernstein and Cashore 2007). This has institutionalised the norm of voluntary standard-setting initiatives as the prominent tool for governing adaptation and climate risk in supply-chains. However, as noted above, its impact on social and environmental improvement in the coffee supply-chain remains marginal. As almost all large supply-chain actors (roasters and traders) legitimised this governance mechanism, they are following a logic of consequences as they seek a low-cost option for dealing with climate risk and adaptation, whilst maintaining accountability to their shareholders. Norms that are shaping actors preferences reflect prevailing power relations and modes of production, and frame the way in which transnational actors are seeking to secure consent of those that they are governing (Bulkeley et al. 2014).

Contested legitimacy in transnational adaptation governance

Legitimacy claims are, however, rarely uncontested. While some actors legitimised transnational adaptation governance, others made opposing claims, delegitimising this pathway on the same basis. For example, while, as

mentioned above, transnational adaptation governance was legitimised for its accountability to consumers and shareholders, it was contested on that same notion for its lack of accountability to producers, in this case smallholder coffee-farmers. This demonstrates a dissonance in the perception between public sector ambitions and private sector realities with regards to adaptation and the ability of adaptation efforts to improves the livelihoods of vulnerable communities (Pauw et al. 2016). Second, several claims delegitimised the broader global governance for dealing with adaptation and climate, where some proponents were arguing that market is the most effective tool for governing global affairs, while others emphasising that adaptation should be governed nationally and sub-nationally and not extend beyond borders.

In conclusion, while transnational adaptation governance has increased the process legitimacy of adaptation, key questions remain about who should govern adaptation and climate risk, and to whom governance needs to be accountable. However, more importantly, the delegitimation of transnational adaptation governance point to a broader legitimacy crisis in contemporary global governance. Hooghe et al. (2019) point to increasing shifts in attitude towards matters of international affairs. For example, attitudes towards migration and trade-exacerbated inequality are increasingly invoked as a political reaction where national interest needs to protect itself against transnational shocks.

8.3 Limitations and future policy and research needs

This dissertation has showed that there are limits to what transnational governance can legitimately and effectively achieve in terms of delivering successful adaptation. Notwithstanding, transnational initiatives, whether they are networked or market-based, orchestrated or stand-alone, have effectively changed the way adaptation is governed and will continue to remain important features of future adaptation governance, particularly as the

progress on the global goal on adaptation becomes more formalised. This section will discuss limitations with this dissertation's approach and propose future research avenues for global and transnational adaptation governance.

A stronger critical theory approach is needed

A global and transnational governance approach is important for capturing how new actors are emerging; how effective their actions are; and how they are perceived as legitimate by those constituencies that are being governed. This dissertation has mainly sought to explain these aspects in following an institutionalist tradition, emphasising adaptation as part of a broader climate regime-complex where actors and institutions interact to govern towards a specific purpose.

To a lesser extent, it has also sought to complement this approach with a critical political economy perspective to highlight the uneven geographies in adaptation governance. Notwithstanding this, issues around power imbalances and the distribution of benefits between actors in transnational adaptation governance need further exploration. For example, in agriculture supply-chains, and also in supply-chains in many other sectors, developing countries tend to be exporters of agriculture products and other natural resources to developed countries, where the raw material is often valorised and where most of the profit arises, both for states and multinational corporations. In the context of increasing transboundary climate risks and impacts, historical power relations, power and vested interests risk entrenching technocratic and market-dominated governance approaches at the expense of a growing inequality (Clapp et al. 2018). Future research should explore what it means for poor and vulnerable communities when adaptation is increasingly governed by private multi-national corporations instead of local and national governments.

A critical research perspective is important for emphasising the limits of global and transnational governance and its impact on national and subnational decision-making. A largely institutional framing of governance risks

excluding the impact of politics on outcomes. On the one hand, ideas, framings, discourses, policy paradigms, societal norms and values influence perceptions, guide behaviour of actors and structure policymaking (Kern 2011; Shearer et al. 2016). On the other hand, unequal representation, material and vested interests and actors' individual values can undermine both legitimacy of global and transnational institutions as well as their effectiveness (Schirm 2016). Further research is necessary to bring out more details on the interaction between ideas, institutions and interests in transnational adaptation governance.

Better methods for assessing effectiveness are needed, particularly for adaptation

With regards to the study of effectiveness, this dissertation has shown that transnational adaptation governance can, under certain contexts, create effective outcomes, particularly in terms of how it has shifted the perception of who can and should govern adaptation. This political shift has led to significant changes in adaptation governance. However, as the dissertation has shown, beyond these political effects it is yet uncertain to what extent transnational adaptation governance has created a real impact in terms of contributing to decreasing vulnerability to climate change impacts. However, Roger and Dauvergne (2016) have noted that, even beyond adaptation, studies on transnational climate governance effectiveness have high variability in their results. Consequently, the authors argue, views on the reliability of methods to the study of transnational climate initiatives and partnerships are widely diverging. More research is needed to further study the link between outcome and impact, both methodologically and empirically. Here, a promising study by Hale et al. (2021) that integrates ad-hoc and post-hoc evaluation in a novel analytical framework could be a step forward.

Looking at adaptation effectiveness specifically, the indistinctiveness of the term 'adaptation' continues to be a problem for both research and policy. As Chapter 1 discussed, adaptation is a fuzzy and ambiguous concept and its measurement faces difficult methodological data challenges.

As Dilling et al. (2019: 573) note "caution must be exercised in promoting any particular definition or metric for adaptation success: this will undoubtedly privilege some views and exclude others, and not necessarily lead to the changes needed to support adaptation". In contrast to climate mitigation metrics, there are no explicitly agreed metrics in the UNFCCC or beyond. For adaptation, it "becomes hard to measure the extent to which individual actions are contributing to a shared global goal" (Persson 2019: 9), leaving adaptation governance with an implementation deficit where UNFCCC guidelines are difficult to translate into national implementation (Dupuis and Knoepfel 2013). In a recent global systematic study on evidence of human adaptation to climate change, the authors assessed over 48 000 articles and found that adaptation activities are largely fragmented, with limited evidence of impact on risk reduction (Berrang-Ford et al. 2021).

Transboundary climate risk will increase the legitimacy crisis of global governance

While 'territorial' adaptation faces conceptual issues, the notion of transboundary climate risk has increased the interest of adaptation in global supply-chains, for example by bringing in powerful multi-national corporations into the discourse (Dzebo et al. 2022). Furthermore, as climate change risks and impacts are becoming more visible, there is an uncertainty about what an increased securitisation of adaptation means for global and transnational governance. For example, defence ministries and departments are taking an increasing interest on climate risk and adaptation strategies (Garfin et al. 2021). Both these examples might lead to increased politicisation of adaptation as stakes in adaptation governance increase (Persson and Dzebo 2019). It can also lead to targeted delegitimation practices of established global institutions (Bäckstrand and Söderbaum 2018). At the same time, a legitimacy crisis can lead to profound institutional changes (Zelli 2018). define, operationalise and institutionalise an adaptability norm across different global governance domains. Subsequently, there is a gap in knowledge on how the nature of global and transnational adaptation governance is changing, which possible future pathways it might take and what the implications are for

effectiveness and legitimacy. There is a need for more comparable research from other domains, such as the abovementioned security and trade, but also health and tourism. Similarly, research on how adaptation can be institutionalised and operationalised in other global and transnational governance domains is important to explore (Persson 2019). Adaptation governance, at all levels, needs to account for these novel insights. A more nuanced understanding of when adaptation should be governed transnationally, nationally or sub-nationally, as well as in which domain or regime, is needed for further strengthening of legitimacy and effectiveness.

Stronger UNFCCC leadership through the global goal on adaptation

In addition to the need for research that explores how adaptation is mainstreamed in other regimes, adaptation as a global challenge needs better conceptualisation in the climate regime. Particularly important is to better account for global and transnational governance of adaptation and climate risk. At the climate negotiations in Glasgow in 2021, the UNFCCC parties launched a two-year work programme for operationalising the global goal on adaptation (UNFCCC 2021).

Drawing on the insights from this dissertation, the process towards operationalising the global goal on adaptation should aim at a better understanding of what such a goal actually means for the framing of adaptation as a global challenge. This should include developing a broad package of methodologies, data, visualisation and metrics for evaluation, of key transboundary climate risks in different countries and regions, and globally; both by countries and by transnational actors (Dzebo et al. 2022). Furthermore, a global goal on adaptation should internationally recognise adaptation as a public good. A shared nature of climate risks would encourage adaptation planners and stakeholders to incorporate multiple scales when analysing and responding to climate risks and impacts. Thirdly, a global goal on adaptation should encourage information-sharing on how state and non-state adaptation efforts can reduce climate risks without distributing vulnerability elsewhere or lead to maladaptive outcomes. Lastly, a global goal on

adaptation should provide more clarity on which actors – public and private, state and non-state – should govern a specific risk, and, particularly, at what scale it should be governed.

Strengthening the knowledge on global and transnational dimensions of adaptation and climate risk, and shifting the perception of countries' vulnerability to climate change impacts (see e.g. Carter et al. 2021; Hedlund et al. 2018) is crucial as many countries continue to view adaptation as a secondary concern in the climate negotiations. The recognition of adaptation as a global challenge means that all countries have a shared interest in building adaptive capacity and climate resilience, beyond national borders. Transnational adaptation governance actors, including donors and recipients of adaptation finance, international organisations and development agencies, non-governmental organisations and particularly private companies have a responsibility to support vulnerable communities and eco-systems on which everyone depends on. This is imperative and a prerequisite to achieve a globally just adaptation governance, which assures that climate risks are addressed and managed with fairness and equity at the forefront.

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Annex I Participation observation

This Appendix includes the events (conferences, workshops and meetings) where participation observation was conducted between 2015-2022. The included event in this list focused in some way on climate change adaptation and were related to at least one of the dissertation's research questions. Events with an asterisk indicate engagement beyond participation, e.g. through a presentation or a speech. Some events, such as the COP and Bonn Climate Change Conference (SB) of the UNFCCC included several of side events and other activities, such as workshops and negotiation sessions. They are not included separately.

Conference, Earth System Governance: Governing accelerated transitions: justice, creativity, and power in a transforming world, 20-24 October 2022, Toronto, Canada.

Seminar: Meeting with the climate attachés of the United Kingdom Nordic embassies. 27 September 2022. Online.

Virtual Symposium: Renewable Energy and Climate Cooperation: A Case for Sweden and Japan Jointly Organised by the Institute for Security and Development Policy (ISDP), Sweden & Kajima Institute of International Peace (KIIP), Japan, 25-26 November 2021, Online*

Webinar: Input for GSDR 2023 - Designing and Evaluating Coherent Policies and Measures for the SDGs – Scientific Insights for the 2023 GSDR, 26 October 2021, Online*

Conference: Earth System Governance in turbulent times: prospects for political and behavioral responses, 7-9 September 2021, Online*

Conference: ECPR General Conference held online 30 August -3 September, 2021*

Webinar: Formas dialogue on policy coherence for sustainable development, March 10, 2021, Online

Webinar: 4C Sustainable Coffee Day: Carbon Footprint of Coffee and Climate Change Adaptation Strategies, 15 October 2020, Online*

Workshop: Overcoming Incoherence in National Climate and Sustainable Development Goal Implementation Workshop to develop a research programme, 10-11 September 2019, Stockholm, Sweden*

Negotiations: Bonn Climate Change Conference SB . Organised by the UNFCCC Secretariat. Bonn (Germany), 17-28 June, 2019, Bonn, Germany*

Conference: Global Conference on Strengthening Synergies between the Paris Agreement and the 2030 Agenda for Sustainable Development, Organised by the UN Department of Economic and Social Affairs and the UN Framework Convention on Climate Change secretariat with the Ministry of Foreign Affairs and the Ministry of Energy, Utilities and Climate, Denmark, 1-3 April, 2019, Copenhagen, Denmark*

Negotiations: 24th Conference of the Parties (COP) to the UNFCCC. Organised by the UNFCCC secretariat, 3-14 December, 2018, Katowice, Poland*

Workshop: SEI Tools & Capacity Building workshop Eynsham Hall, 28-30 November, 2018, Oxford, United Kingdom*

Conference: Earth System Governance: Governing Global Sustainability in a Complex World, 5-8 November, 2018, Utrecht, The Netherlands*

Conference: Adaptation Futures Conference: Dialogues for Solutions, 18-21 June, 2018, Cape Town, South Africa*

Workshop: PRINDCISSA project Workshop on Adaptation Finance in Agriculture in Sub-Saharan Africa, 22 June, 2018, Cape Town, South Africa*

Workshop: Nordic Workshop Climate Change Adaptation and Loss & Damage after Paris – Bridging Different Levels of Governance, 13-15 May, 2018, Copenhagen, Denmark*

Roundtable: United Nations expert group meeting in preparation for HLPF 2018: Transformation towards sustainable and resilient societies, 3-4 May, 2018, New York, USA*

Conference: Connection between the implementation of Paris Agreement and Sustainable Development Goals in Vietnam, 23 May, Hanoi, Vietnam*

Workshop: Friederich Ebert Stiftung: Ask the Expert: SDG-NDC Toolkit, 24 May, Hanoi, Vietnam

Forum: InsuResilience Global Partnership Forum, 16 November, 2017, Bonn, Germany

Negotiations: 23th Conference of the Parties (COP) to the UNFCCC. Organised by the UNFCCC secretariat, 6-17 November, Bonn, Germany*

Conference: Climate Action and Human Wellbeing at a Crossroads: Historical Transformation or Backlash?, 4-5 November, Bonn, Germany

Conference: Earth System Governance: Allocation & Access in a Warming and Increasingly Unequal World, 9-10 October, 2017, Lund, Sweden*

Conference: International Studies Association Hong Kong: The Pacific Century?, 14-17 June, 2017, Hong Kong*

Conference: European Climate Change Adaptation Conference: Our climate Ready Future, 5-9 June, 2017, Glasgow, Scotland*

Workshop: The emerging complexity of climate adaptation governance in a globalising world: International scientific workshop, 22–24 May 2017, Stockholm, Sweden*

Conference: Interconnections "Between the 2030 Agenda for Sustainable Development and the Paris Climate Agreemet: Exploring the Role of Non-State and Subnational Actors", 12-13 May, 2017, Bonn, Germany*

Spring School: INNOGOV Governing Climate Change: Polycentricity in Action: An International Spring School, 28-31 March 2017, Heerlen, The Netherlands

Workshop: Joint G20 Expert Workshop on "Resilience, Climate Risk Insurance and Climate Finance", March 21, 2017, Berlin, Germany

Roundtable: The Dickson Poon School of Law, King's College London Ideas Lab in Climate Law & Finance: Tragedy of the horizon or Time for improvement? 31 January, 2017, London, United Kingdom

Workshop: Private investments in climate change adaptation, 5 December 2016, Africa Center of Technology Studies, Kenya, Nairobi*

Conference: Earth System Governance: Confronting Complexity and Inequality, 7-9 December, 2016, Nairobi, Kenya

Workshop: Mobilising and delivering private-sector finance for climate-resilient investments in Rwanda, 13 December, Kigali, Rwanda*

Negotiations: 22nd Conference of the Parties (COP) to the UNFCCC. Organised by the UNFCCC secretariat, 7-18 November, Marrakech, Morocco*

Roundtable: OECD Climate Change Expert Group (CCXG), Global Forum on the Environment and Climate Change, 13-14 September, 2016, Paris, France

Workshop: OECD Business Engagement in INDCs and the Paris Agreement, September 12, 2016, Paris, France

Negotiations: Bonn Climate Change Conference SB 44. Organised by the UNFCCC Secretariat, May 16–26, 2016, Bonn, Germany*

Conference: Adaptation Futures: Practices and Solutions, 10-13 May, Rotterdam, The Netherlands*

Workshop: OECD Research Collaborative on tracking private climate finance, 14 March, 2016, Paris, France

Negotiations: Bonn Climate Change Conference SB 42. Organised by the UNFCCC Secretariat, 1-11 June 2015, Bonn, Germany*

Conference: Climate Strategies Global Climate Policy Conference: New Research for Effective Action at Paris and Beyond, 1-2 March, New Delhi, India*

Conference: OECD and IEA Climate Change Expert Group Global Forum, 17-18 March, 2015, Paris, France

Annex II List of Climate Finance Projects

	Project title	Arrangement	Project period	GEF - Funding (Mn US$)	Co-funding (Mn US$)	Regional /global	Countries	Public actors	Non-state actors
1	Southeastern Europe and Caucasus Catastrophe Risk Insurance Facility (SEECI CRIF) (SCCF)	Public	2011-2014	5,5	21,5	Regional	Albania, Macedonia, Serbia, Tajikistan and Montenegro	United Nations Development Programme (UNDP) Secretariat of the Pacific Regional Environment Programme National governments	Local consultants International consultants
2	Adaptation to the impact of rapid glacier retreat in the tropical Andes project (SCCF)	Public	2008-2012	6,9	21,7	Regional	Bolivia (Plurinational State of), Colombia, Ecuador, Peru, Bolivia, Ecuador	Food and Agriculture Organization of the United Nations (FAO)	Local consultants International consultants
3	Pacific Adaptation to Climate Change (PACC) (SCCF)	Public	2008-2012	13,2	44,5	Regional	Asia and the Pacific	Meteorological Research Institute of Japan (MRI) National Oceanographic and Atmospheric Administration (NOAA) National Governments United Nations Development Programme (UNDP) Secretariat of the Pacific Regional Environment Programme National governments	Local consultants International consultants
4	Piloting climate change adaptation to protect human health (SCCF)	Public	2009-2014	20,4	15,9	Global	Bangladesh, Bhutan, China, Fiji, Jordan, Kenya, Uzbekistan	United Nations Development Programme (UNDP) World Health Organization (WHO) National governments	Local consultants International consultants
5	Technology Needs Assessment (SCCF)	Public	2009-2012	8,1	2,9	Global	Ghana, Senegal, Uganda, Argentina, Bahamas, Nauru, Cambodia	United Nations Environment Programme (UNEP) TMA Norway	Local consultants International consultants
6	Building Climate resilience of urban systems through Ecosystem-based Adaptation (EbA) in Latin America and the Caribbean (SCCF)	Public	2014-2017	6	21,9	Regional	El Salvador Jamaica Mexico Among others	United Nations Environment Programme (UNEP) Ministry of Environment and Natural Resources (El Salvador) Ministry of Land and Environment (Jamaica) UNEP Regional Office for Latin America and the Caribbean (ROLAC) Spanish Agency for International Cooperation and Development (AECID) Inter-American Development Bank (IADB) Government of Jamaica	Na.
7	West Balkans Drina River Basin Management Project (SCCF)	Public	2014-2017	4,4	99,7	Regional	Bosnia-Herzegovina (BH) Serbia Montenegro	World Bank Sava River Commission European Investment Bank (EIB) National Governments	Na.
8	Community-based Adaptation (CBA) (SPA)	Public	2007-2011	5	4,5	Global	Bangladesh Bolivia Guatemala Jamaica Kazakhstan Morocco Namibia Nicaragua Samoa Vietnam	United Nations Development Programme (UNDP) Host governments	Na.
9	A Framework for Sustainable Water Resources Management in the Rio de la Plata Basin to Address the Hydrological Effects of Climatic Variability and Change (SPA)	Public	2009-2014	10,7	51	Regional	Argentina Bolivia Brazil Paraguay Uruguay	United Nations Environment Programme (UNEP) The Intergovernmental Coordinating Committee for the La Plata Basin (CIC) National executing agencies – Argentina: Secretary of the Organization of American States (GS/OAS) Brazil: Itaipu Binacional (ITAIPU) Bilateral	Na.
10	Integrated and Sustainable Management of Transboundary Water Resources in the Amazon River Basin (SPA)	Public	2005-2007	12,2	23,6	Regional	Bolivia Brazil Colombia Ecuador Guyana Peru Suriname Venezuela	United Nations Environment (UNEP) Organization of the Amazon Cooperation Treaty (OTCA). National governments	Na.
11	Implementation of Adaptation Measures in Coastal Zones Project Special Program on Adaptation to Climate Change (SPA)	Public	2006-2011	2,1	3,4	Regional	Dominica St. Lucia St. Vincent and Grenadines	World Bank Caribbean Community Climate Change Centre (CCCCC)	Na.
12	Strengthening Coastal and Marine Resources Management in the Coral Triangle of the pacific (SPA)	Public	2011-2014	13,1	23,8	Regional	Fiji Indonesia Papua New Guinea Palau Solomon Islands Timor-Leste Vanuatu	Asian Development Bank Coordinating Committee of Governments of Papua New Guinea, Solomon Islands, and Timor Leste, plus Governments of Fiji and Vanuatu United States Government Australian Institute of Marine Science	Local consultants International consultants

	Project title	Arrangement	Project period	GEF - Funding (Mln US$)	Co-funding (Mln US$)	Regional /global	Countries	Public actors	Non-state actors
13	Strengthening Coastal and Marine Resources Management in the Coral Triangle: Southeast Asia (SPA)	Public	2011-2015	11,2	28,9	Regional	Indonesia Malaysia Philippines	Asian Development Bank CTI National Coordinating Committees of Governments of Indonesia, Malaysia, and Philippines United States Government Japan Fund for Poverty Reduction	Local consultants International consultants
14	Adaptation to Climate Change – Responding to Coastline Change and its human dimensions in West Africa through integrated coastal management (SPA)	Hybrid	2007-2011	3,3	9,7	Regional	Senegal Gambia Guinea Bissau Mauritania Cape Verde	United Nations Development Programme (UNDP) United Nations Educational, Scientific and Cultural Organization/Intergovernmental Oceanographic Commission (UNESCO/IOC JICA)	Local consultants International consultants IUCN
15	Assisting non- LDC developing countries with country-driven processes to advance National Adaptation Plans (NAPs) (SCCF)	Hybrid	2014-2016	4,5	34,6	Global	Non-LDC developing countries	United Nations Environment Programme (UNEP) United Nations Development Programme (UNDP) United Nations Institute for Training and Research (UNITAR) Food and Agriculture Organization of the United Nations (FAO) World Health Organization (WHO)	Global Water Partnership
16	Expanding the On-going Support to Least Developed Countries (LDC) with Country-driven Processes to Advance National Adaptation Plans (NAPs) (LDCF)	Hybrid	2015-2017	6,2	8,4	Global	Least Developed Countries (LDCs)	United Nations Environment Programme (UNEP) United Nations Development Programme (UNDP)	National Adaptation Plan Global Support Partner Organizations (NAP-GSP)
17	Technical assistance to LDCs to implement the UNFCCC 8/CP 8 Decision (LDCF)	Hybrid	2003-2004	0,6	0,24	Global	Least Developed Countries (LDCs)	United Nations Development Programme (UNDP) United Nations Institute for Training and Research (UNITAR) Swiss Agency for Environment, Forest and Landscape	Local and regional governments Local consultants International consultants
18	Technical assistance to Francophone LDCs to implement the UNFCCC 8/CP 8 Decision (LDCF)	Hybrid	2003-2004	0,2	0,04	Global	Francophone Least Developed Countries (LDCs)	United Nations Development Programme (UNDP) United Nations Institute for Training and Research (UNITAR) French Ministry Foreign Affairs Swiss Agency for Environment, Forest and Landscape	Local and regional governments Local consultants International consultants
19	Assisting LDCs with country-driven processes to advance National Adaptation Plans (LDCF)	Hybrid	2013-2014	2	8,4	Global	Least Developed Countries (LDCs)	United Nations Development Programme (UNDP) United Nations Environment Programme (UNEP) International Fund for Agricultural Development (IFAD) United Nations Institute for Training and Research (UNITAR) Food and Agriculture Organization of the United Nations (FAO) World Health Organization (WHO)	Global Water Partnership Local and regional governments Local consultants International consultants
20	Building capacity for LDCs to participate effectively in intergovernmental climate change processes (LDCF)	Hybrid	2013-2015	4	19,7	Global	Least Developed Countries (LDCs)	United Nations Environment Programme (UNEP) United Nations Development Programme (UNDP) United Nations Institute for Training and Research (UNITAR) UN Habitat	International Institute for Environment and Development (IIED)
21	Rural Livelihoods' Adaptation to Climate Change in the Horn of Africa -Phase II (RLACC II) (LDCF)	Hybrid	2015-2018	17	30	Regional : Sudan Somalia		African Development Bank (AfDB) Swiss Development Cooperation Agency	African Water Facility
22	Enhancing capacity, knowledge and technology support to build climate resilience of vulnerable developing countries (SCCF)	Hybrid	2012-2015	4,9	23	Global:	West Africa, South Asia and SIDS (Small Island Developing States)	United Nations Environment Program (UNEP) China National Development and Reform Commission (NDRC) Institute of Geographical Science and Natural resource Research, Ch, Chinese Academy of Sciences (IGSNRR-CAS) Swedish International Development Agency (SIDA)	African Climate Policy Centre (ACPC) Stockholm Environment Institute (SEI)
23	Economic Analysis of Adaptation Options in support of decision-making (SCCF)	Hybrid	2009-2010	1,5	3,5	Global		United Nations Environment Program (UNEP)	McKinsey and Co.
24	Climate Change Adaptation in the Eastern Caribbean Fisheries Sector (SCCF)	Hybrid	2014-2018	5,4	34,9	Regional	St Vincent and the Grenadines, Grenada, Dominica, St Lucia, Trinidad and Tobago, Antigua and Barbuda, St Kitts and Nevis	Food and Agriculture Organization of the United Nations (FAO) Caribbean Regional Fisheries Mechanism (CRFM) Western Central Atlantic Fishery Commission (WECAFC) Caribbean Network of Fisherfolk Organizations (CNFO) Fisheries and environment agencies and ministries in participating countries	Private sector, CARIBSAVE The nature Conservancy (TNC) University of the West Indies (UWI)
25	Adaptation Learning Mechanism: Learning by Doing (SPA)	Hybrid	2005-2007	0,85	0,65	Global		United Nations Development Programme (UNDP) United Nations Office for Project Services (UNOPS) Government of Switzerland	Stockholm Environment Institute (SEI)
26	Integrating Vulnerability and Adaptation to Climate Change into Sustainable Development Policy Planning and Implementation in Eastern and Southern Africa (SPA)	Hybrid	2005-2008	1,0	1,0	Regional	Kenya Madagascar Rwanda Tanzania Mozambique	United Nations Environment Program (UNEP)	African Centre for Development Studies (ACTS) International Institute for Sustainable Development (IISD)

Annex III List of transnational adaptation initiatives

100 resilient cities
Adaptation Learning Mechanism
Africa Climate-Smart Agriculture Alliance
AfricaAdapt
Arctic Adaptation Exchange
Asian Cities Climate Change Resilience Network
C40 Cities
Caring for Climate
Cities Alliance
Cities Climate Finance Leadership Alliance
Climate Technology Centre and Network
Climate-Smart Agriculture (CSA) Booster
Compact of Mayors[28]
Coral Triangle Initiative
Covenant of Mayors
Emerging and Sustainable Cities Program
Evergreen Agriculture Partnership
Global Alliance for Climate-Smart Agriculture
Global Facility for Disaster Reduction and Recovery
Global Framework for Climate Services
Global Platform for Sustainable Cities
Global resilience Partnership
Global Water, Climate and Development Programme
Great Green Wall for the Sahara and the Sahel Initiative
Initiative for Adaptation of African Agriculture to Climate Change

28 The two initiatives Compact of Mayors and Covenant of Mayors have subsequently merged into one initiative called Global Covenant of Mayors. In this study, they have been assessed separately.

Initiative for Coffee and Climate
InsuResilience
Local Governments for Sustainability (ICLEI)
Making Cities Resilient Campaign
Megacities alliance for Water Under Climate Change
NAP Global adaptation network
Network of Regional Governments for Sustainable Development
Partners for Resilience
R4 Rural Resilience Initiative
Regions of Climate Action
ResilienceTools
ResilientAfrica Network
Southern voices
Sustainable Agriculture Network
Transformative Actions Program

Annex IV Interview templates

Chapter 5

Private Finance for climate change adaptation – What are the options?

Interest in private finance for climate activities is increasing rapidly. However, it is far from clear how the private sector might make a substantial contribution, in particular for adaptation. This questionnaire aims to shed light on what are the 'real' options for private adaptation finance and how can private finance contribute to adaptation activities in an effective and efficient way.

Basic information
Name of interviewer:
Name, affiliation and title of interviewee:
Date and place of interview:
Additional information:

Introduction
This first section is designed to provide background information about you and your organisation and the type of private adaptation finance-related decisions that you face within the context of your organisation.

Q1. Can you briefly tell me about your role and level of responsibilities in your organisation?
Answer:

Q2. Could you briefly explain how you see the role of the private sector in your area of work?
Is the private sector adapting to climate change?
Is it important that the private sector adapts to climate change? Why?

Do you have examples?
Do you have examples where the private sector is increasing vulnerability to climate change?

Answer:

Enabling environments

Enabling environments are the institutional and regulatory frameworks that should enable investments in climate activities by creating incentives through public policy. Enabling environments can focus on both general private sector development as well adaptation-specific private sector development. They can be initiated by a developing country government or they can be catalysed by international climate and development finance.

Q3. What is the strategy of Rwanda to enable the private sector to contribute to climate change adaptation?
Is international finance involved?
Is it focused on climate change adaptation in particular?
Are you using specific financial instruments?
What type of private sector is involved? Who are the key actors?

Answer:

Q4. What is the strategy of your organisation to prevent the private sector to increase vulnerability to climate change?

Answer:

Mobilisation

The objective of enabling environments is to mobilise additional investment in adaptation from the private sector. A fairly straightforward example is public-private partnerships. But mobilisation can also occur indirectly where a public intervention creates downstream private investments. However, efforts to create an enabling environment do by no means guarantee that additional private finance will be mobilised.

Q5. Is your organisation mobilising additional private sector investment in general?
Is the investment mobilised directly or indirectly?
Has there been no mobilisation despite enabling actions? If so, why?
Are there any examples? What were the factors determining their

success?
Answer:

Q6. How do you make sure that the mobilised investment addresses climate change adaptation?
What kind of safeguards is there in place to ensure this? Indicators?
How do you track that the mobilised finance contributes to adaptation? Is any reporting and verification done?
Is there a risk for this investment to cause maladaptation?
Answer:

Delivery
Developed countries – parties to the United Nations Framework Convention on Climate Change (UNFCCC) – committed to mobilize US$100 billion a year by 2020 to address adaptation and mitigation needs of developing countries. There is a strong expectation that a substantial share of this finance will come from private sources.

Q7. How is your organization's adaptation work related to international climate finance under the UNFCCC?
Are the measures you have undertaken quantifiable?
Answer:

Q8. Could international support help to strengthen, replicate and/or scale-up the measures?
Are the measures enabled by international support?
Are they part of the 100bn?
Answer:

Wrap-up and next steps
Q9. Is there anything else you think is important which we have not touched upon yet?
Answer:

Thank you so much for your time and your valuable contribution.

Chapter 6

Global and regional sustainability partnerships – Interview template
Name:
Initiative:
Intro

Describe your initiative.
Describe your role in the initiative.
Describe how the initiative approaches climate change adaptation.
Describe how you work with other partners of the initiative.

Answer:

Motivations

Why have you chosen to form the initiative with other international actors?

What are the benefits of this organisational form?

Answer:

Which principles are guiding this partnership?

Are equity and justice issues an important part for the success of your initiative?

Answer:

What is the nature of the problem that you are trying to fix?

Answer:

Is the UNFCCC process relevant for the initiative? Why/why not?

Are any other international processes important?

Answer:

Organisational characteristics

What are the main objectives of your initiative?

Do you have adaptation-specific objectives?
Do all partners in your initiative agree to this problem definition?

Answer:

How are you collaborating between different sets of actors (public, private, NGOs, business, research etc.) to reach this objective?

Internal partners to the initiative
Broader external partners

Answer:

What is the capacity of the initiative to realise the objective(s)?

How many staff (FTE)?
How many of these are directly related with climate change adaptation?

Answer:

Are you considering the balance between the developed and developing countries?

Are actors from the Global South involved?
If so, to what extent? Are they shaping policies or implementing partners or involved in any other capacity?

Answer:

How are you monitoring and evaluating progress?

Are there any compulsory actions?

Answer:

Progress

What type of provisions have you been undertaking in order to reach your stated objectives?

Answer:

What have been major achievements to date?

What type of outputs has the initiative produced?

Answer:

Have you seen changes in the behaviour of certain target groups?

What types of behavioural change?
Can you attribute these changes to your (initiative's) work?

Answer:

Broader impact

Do you believe that your initiative is reaching its objective? Why/why not?
Do you believe that your initiative is having an impact? Why/why not?
What are the opportunities and challenges that you have observed through the initiative's work to reach the adaptation targets as set by the Paris Agreement?

Answer:

Chapter 7

Interview template for Coffee supply chains
Name:
Organisation and role:

1. Objective

What is the objective of your work/organisation?

Answer:

What is the role of climate risk and climate change in your work?

What climate-related activities do you engage with?
Where along the supply chain are they focused, and why?
Who makes decisions about climate change interactions and investments?
How is your department involved in the decision-making process?
What other risks do you deal with?

Answer:

If there are no climate-related activities, what do you need to start thinking about climate risk and climate change?

What information or resources are missing, or what topics would you want to learn more about?

Answer:

How does your organisation think about supply chain sustainability in the face of climate change?

What are the biggest challenges or opportunities?

Answer:

2. Partners

What other organisations and actors do you work closely with?

How do you work together?
What is your motivation to engage with them?
What is their motivation to participate?
What is their responsibility and what is yours?
Do you work with the Brazilian government?
Do you work with the foreign partners or governments?

Answer:

3. Legitimacy

If we wanted to better account for climate change in coffee production, do we need more regulation?

Where should those regulations come from, and what might they say?

Could there be negative consequences of those regulations? For who?

Have the regulations around coffee production changed recently? How did that affect your work?

Is there a role for the Government of Brazil here? Which part?

What role, if any, do international actors play? Is that role different for countries than for companies?

Answer:

4. Effectiveness

Do you feel like climate change is being sufficiently addressed in your work?

How could it be better?

What is needed to improve and whose responsibility is it?

Do you feel like coffee producers in Brazil are sufficiently prepared for climate change?

Answer:

Do you have any plans for future activities?

Would you like to do more/different activities?

If so, do you have all mechanisms, tools etc. in place or is there anything else you may need?

Answer:

How likely is it in the future that climate-related impacts will disrupt your business model?

If likely, how disruptive will it be?

Answer:

Summary

Over the past three decades, interest in climate change adaptation has increased substantially – from a minor policy field to be considered on par with climate change mitigation – leading to the emergence of a new field of research, aimed at understanding, informing and governing adaptation. This development has been primarily progressed under the guise of the United Nations Framework Convention on Climate Change (UNFCCC). However, despite this paradigm shift we are nowhere near being ready for dealing with the current and emerging climate change risks and impacts. Despite countries' agreeing the 2015 Paris Agreement to limit the temperature increase to 1,5 °C above pre-industrial levels in order to avoid adverse climate risks and impacts, research from the International Panel on Climate Change emphasises that global warming is likely to reach this level in 10-20 years.

Meanwhile, the world we live in is increasingly becoming interdependent across borders. Global flows of finance, trade and people are increasing by the day. Consequently, impacts of climate change are transmitted from one place to another, meaning that responses to climate change risks and impacts will need to be coordinated in a way that connects places and people, geographically and socially, across scales and boundaries. Moreover, the impacts of climate change hit the most vulnerable people the hardest. As extreme weather events hit more often and become more severe, accounts of them are strikingly similar in that the poorest and most vulnerable people and communities are the ones most affected by the impacts. Climate change exacerbates existing inequalities, including those related to gender, income, age and ethnicity. Consequently, in an interconnected world, a central challenge for adaptation governance is to assign authority for affairs which have cross-border ramifications. This new challenge highlights the need for a

policy regime for climate adaptation that addresses the transboundary effects of climate change while accounting for differences between countries needs and capacities as well as those between public and private actors.

This doctoral dissertation explores the emergence of transnational adaptation governance and aims at explaining the role of transnational actors in enhancing the success of adaptation. In political science, transnational governance, emphasising the role of non-state actors in international relations, seeks to apprehend how transboundary issues can be best captured in policy and decision-making. The interaction between state and non-state actors across national borders and the effectiveness, normative impact, and distributional consequences of this interaction on adaptation governance are insufficiently explored by empirical research. Understanding how transnational adaptation governance is emerging is important as it has implications for the effectiveness and legitimacy of adaptation governance.

Adaptation, due to its cross-sectoral nature and close connection to trade, finance, tourism and security, offers an ample empirical field for furthering the academic field of transnational governance. To date, theorisation of transnational climate governance has mainly focused on accounting the impacts of transnational initiatives, particularly with regards to the potential for emission reductions, and discussing their effects on the behaviour of states in the international arena. With regards to adaptation, much less focus has been put on the emergence of transnational efforts and governance initiatives. Furthermore, another gap in existing research lies in the lack of assessment on the ability of transnational adaptation governance to deliver effective governance outcomes and its potential for impact on the global efforts to decrease the vulnerability of social and natural systems from climate change. Lastly, as transnational adaptation governance is a novel and emerging issue area of global governance, research has not sufficiently raised issues around its legitimacy, for example in terms of the power and authority of transnational actors in influencing domestic policy processes. While many policymakers and experts agree that non-state actors ought to

take on a bigger role in governing adaptation, the underlying motivations of these actors are not well-understood, particularly when interactions cross borders, i.e. are transnational.

To explain emergency, effectiveness and legitimacy of transnational adaptation governance, this dissertation outlines a broad trans-disciplinary theoretical approach. It draws on international regime theory to provide a better understanding of the broader adaptation landscape. This is complemented with institutional theory and orchestration theory, which help to provide insights on the role of actors and institutions and how they are jointly shaping governance activities and their outcomes. Lastly, critical political economy complements the theoretical approach as an analytical lens used for highlighting the role of power, interest and uneven geographies. Its importance lies in emphasising the political nature of the emergence of transnational adaptation governance and to complement the institutionalist governance perspectives on adaptation.

This dissertation is the first attempt to operationalise transnational adaptation governance as a distinct phenomenon. It focuses on three specific cases: adaptation finance, transnational adaptation initiatives and as a governance response to transboundary climate risk. By doing so, it covers the breadth of transnational governance related to adaptation. The first empirical observation of transnational adaptation governance was in adaptation finance, where global and regional multilateral adaptation projects increasingly involved non-state actors governing adaptation transnationally. This observation introduces the fourth era of adaptation, where transnational adaptation governance is an emerging characteristic. However, in contrast to the broader transnational climate governance, the role of states and international organisations, both as orchestrators and as policy enablers, continues to be important. Regarding the second case, transnational adaptation governance can be observed in global initiatives and partnerships both within and, outside of the UNFCCC. These transnational adaptation initiatives are governing across multiple issue areas, including cities and regions, agriculture

and biodiversity, water management and broader cross-sectoral resilience. The third case of transnational adaptation governance focuses on the role of transboundary climate risks and impacts in agriculture supply-chains. Agricultural products, such as coffee, include large and complex supply-chains and are traded globally, often involving large multi-national corporations operating in the middle of these supply-chains. At the same time, agriculture is one of the most climate vulnerable sectors and has significant implications for both food security and global trade. This implies that local climate impacts can cascade throughout global supply-chains requiring adaptation responses that are coordinated across borders and between state and non-state actors. In this dissertation, a specific case of the Brazilian-German coffee supply-chain is explored.

The dissertation concludes that transnational adaptation governance has emerged as a phenomenon that is characterised by significant diversity. It contains multiple types of actors – state and non-state, public and private – at different scales, in different regions, with unequal power relations. This broadening of adaptation has led to new actors – particularly private sector actors – increasingly governing adaptation transnationally and has led to a contestation of legitimacy as actors grapple with previously unidentified risks or areas of shared interest. While the broadening of adaptation and the entrance of new and non-state actors has increased the effectiveness potential, the legitimacy of transnational adaptation governance is not grounded in fairness and justice, which are key components for successful adaptation outcomes.

Keywords: Climate change adaptation, Transnational governance, Adaptation finance, Transboundary climate risk, Orchestration, Effectiveness, Legitimacy.

Samenvatting

In de afgelopen drie decennia is de belangstelling voor aanpassing aan klimaatverandering aanzienlijk toegenomen - van een minder belangrijk beleidsterrein tot een beleidsterrein dat op gelijke voet staat met mitigatie van klimaatverandering - hetgeen heeft geleid tot het ontstaan van een nieuw onderzoeksterrein dat gericht is op het begrijpen, informeren en sturen van aanpassing. Deze ontwikkeling heeft zich voornamelijk voltrokken onder het mom van het Raamverdrag van de Verenigde Naties inzake klimaatverandering (UNFCCC). Ondanks deze paradigmaverschuiving zijn we echter nog lang niet klaar voor de aanpak van de huidige en opkomende risico's en gevolgen van de klimaatverandering. Ondanks het feit dat landen het in 2015 eens zijn geworden over de Overeenkomst van Parijs om de temperatuurstijging te beperken tot 1,5 °C boven het pre-industriële niveau teneinde schadelijke risico's en gevolgen voor het klimaat te voorkomen, benadrukt onderzoek van het Internationaal Panel inzake klimaatverandering dat de opwarming van de aarde dit niveau waarschijnlijk over 10-20 jaar zal bereiken.

Ondertussen wordt de wereld waarin wij leven steeds meer grensoverschrijdend van elkaar afhankelijk. De wereldwijde geld-, handels- en mensenstromen nemen met de dag toe. Bijgevolg worden de gevolgen van de klimaatverandering van de ene plaats naar de andere overgebracht, wat betekent dat de reacties op de risico's en gevolgen van de klimaatverandering moeten worden gecoördineerd op een manier die plaatsen en mensen, geografisch en sociaal, over schalen en grenzen heen met elkaar verbindt. Bovendien treffen de gevolgen van de klimaatverandering de meest kwetsbare mensen het hardst. Naarmate extreme weersomstandigheden vaker voorkomen en ernstiger worden, zijn de verslagen erover opvallend gelijklopend, in die zin

dat de armste en meest kwetsbare mensen en gemeenschappen het meest door de gevolgen worden getroffen. Klimaatverandering verergert bestaande ongelijkheden, onder meer op het gebied van geslacht, inkomen, leeftijd en etniciteit. In een onderling verbonden wereld is een centrale uitdaging voor het aanpassingsbeheer dan ook het toewijzen van bevoegdheden voor zaken met grensoverschrijdende vertakkingen. Deze nieuwe uitdaging benadrukt de noodzaak van een beleidsregeling voor klimaatadaptatie die de grensoverschrijdende effecten van klimaatverandering aanpakt en tegelijkertijd rekening houdt met de verschillen tussen de behoeften en capaciteiten van landen en tussen publieke en private actoren.

Dit proefschrift onderzoekt de opkomst van transnationaal adaptatiebestuur en tracht de rol van transnationale actoren in het vergroten van het succes van adaptatie te verklaren. In de politieke wetenschap probeert transnationaal bestuur, dat de nadruk legt op de rol van niet-statelijke actoren in internationale betrekkingen, te begrijpen hoe grensoverschrijdende problemen het best kunnen worden opgenomen in beleid en besluitvorming. De interactie tussen statelijke en niet-statelijke actoren over nationale grenzen heen en de effectiviteit, normatieve impact en distributieve gevolgen van deze interactie voor het aanpassingsbeheer zijn onvoldoende onderzocht in empirisch onderzoek. Het is belangrijk te begrijpen hoe transnationaal aanpassingsbeheer tot stand komt, aangezien dit gevolgen heeft voor de doeltreffendheid en de legitimiteit van het aanpassingsbeheer.

Aanpassing biedt, vanwege het sectoroverschrijdende karakter en het nauwe verband met handel, financiën, toerisme en veiligheid, een ruim empirisch veld om het academische veld van transnationale adaptatiebestuur verder te ontwikkelen. Tot dusver heeft de theorievorming over transnationale klimaatbestuur zich vooral toegespitst op het in kaart brengen van de effecten van transnationale initiatieven, met name wat betreft het potentieel voor emissiereducties, en op de bespreking van de effecten daarvan op het gedrag van staten in de internationale arena. Wat aanpassing betreft, is veel minder aandacht besteed aan het ontstaan van transnationale inspanningen

en bestuurlijke initiatieven. Een ander hiaat in het bestaande onderzoek is het gebrek aan beoordeling van het vermogen van transnationale adaptatiebestuur om tot effectieve bestuurlijke resultaten te komen en de potentiële impact ervan op de wereldwijde inspanningen om de kwetsbaarheid van sociale en natuurlijke systemen voor klimaatverandering te verminderen. Aangezien transnationale adaptatiebestuur een nieuw en opkomend terrein van mondiale bestuur is, zijn in het onderzoek tot slot onvoldoende vragen gesteld over de legitimiteit ervan, bijvoorbeeld wat betreft de macht en het gezag van transnationale actoren bij het beïnvloeden van binnenlandse beleidsprocessen. Hoewel veel beleidsmakers en deskundigen het erover eens zijn dat niet-overheidsactoren een grotere rol zouden moeten spelen bij het beheer van de aanpassing, zijn de onderliggende beweegredenen van deze actoren niet goed begrepen, met name wanneer de interacties grensoverschrijdend, d.w.z. transnationaal zijn.

Om de noodzaak, effectiviteit en legitimiteit van transnationale adaptatiebestuur te verklaren, schetst dit proefschrift een brede transdisciplinaire theoretische benadering. Het put uit de internationale regimetheorie om het bredere aanpassingslandschap beter te begrijpen. Dit wordt aangevuld met institutionele theorie en orkestratietheorie, die helpen inzicht te verschaffen in de rol van actoren en instellingen en hoe zij gezamenlijk vorm geven aan bestuursactiviteiten en de resultaten daarvan. Ten slotte vult de kritische politieke economie de theoretische benadering aan als analytische lens die wordt gebruikt om de rol van macht, belangen en ongelijke geografische omstandigheden te belichten. Het belang ervan ligt in het benadrukken van de politieke aard van het ontstaan van transnationaal aanpassingsbestuur en het aanvullen van de institutionalistische bestuursperspectieven op aanpassing.

Dit proefschrift is de eerste poging om transnationale adaptatiebestuur als een apart fenomeen te operationaliseren. Het richt zich op drie specifieke gevallen: aanpassingsfinanciering, transnationale aanpassingsinitiatieven en als bestuurlijke reactie op grensoverschrijdende klimaatrisico's. Op die

manier wordt de breedte van transnationaal aanpassingsbestuur bestreken. De eerste empirische waarneming van transnationale bestuur op het gebied van aanpassing heeft betrekking op de financiering van aanpassing, waarbij mondiale en regionale multilaterale aanpassingsprojecten steeds vaker niet-overheidsactoren betrekken die de aanpassing transnationaal regelen. Deze vaststelling leidt het vierde tijdperk van aanpassing in, waarin transnationale bestuur een opkomend kenmerk is. In tegenstelling tot de bredere transnationale klimaatbestuur blijft de rol van staten en internationale organisaties, zowel als aanstuurder als beleidsbevorderaar, echter belangrijk. Wat het tweede geval betreft, kan transnationale adaptatiebestuur worden waargenomen in mondiale initiatieven en partnerschappen, zowel binnen als buiten het UNFCCC. Deze transnationale aanpassingsinitiatieven besturen meerdere gebieden, waaronder steden en regio's, landbouw en biodiversiteit, waterbeheer en bredere sectoroverschrijdende veerkracht. Het derde geval van transnationaal aanpassingsbeheer betreft de rol van grensoverschrijdende klimaatrisico's en -effecten in de toeleveringsketens van de landbouw. Landbouwproducten, zoals koffie, omvatten grote en complexe toeleveringsketens en worden wereldwijd verhandeld. Tegelijkertijd is de landbouw een van de meest klimaatgevoelige sectoren en heeft hij aanzienlijke gevolgen voor zowel de voedselzekerheid als de wereldhandel. Dit betekent dat lokale klimaateffecten kunnen doorwerken in de mondiale toeleveringsketens en dat er aanpassingsmaatregelen nodig zijn die grensoverschrijdend en tussen overheids- en niet-overheidsactoren worden gecoördineerd. In dit proefschrift wordt een specifiek geval van de Braziliaans-Duitse koffieketen onderzocht.

Het proefschrift concludeert dat transnationale adaptatiebestuur een fenomeen is geworden dat wordt gekenmerkt door een aanzienlijke diversiteit. Het omvat meerdere soorten actoren - staat en niet-staat, publiek en privaat - op verschillende schalen, in verschillende regio's, met ongelijke machtsverhoudingen. Deze verbreding van het aanpassingsproces heeft ertoe geleid dat nieuwe actoren - met name uit de particuliere sector - het aanpassingsproces in toenemende mate transnationaal aansturen en dat de legitimiteit wordt

betwist naarmate de actoren worstelen met niet eerder geïdentificeerde risico's of gebieden van gemeenschappelijk belang. Hoewel de verbreding van adaptatie en de toetreding van nieuwe en niet-overheidsactoren het potentieel voor effectiviteit hebben vergroot, is de legitimiteit van transnationaal adaptatiebestuur niet gebaseerd op rechtvaardigheid en billijkheid, die belangrijke componenten zijn voor succesvolle adaptatieresultaten.

Trefwoorden: Aanpassing aan klimaatverandering, Transnationaal bestuur en -beleid, Aanpassingsfinanciering, Grensoverschrijdend klimaatrisico, Orkestratie, Effectiviteit, Legitimiteit.

Curriculum Vitae

Adis Dzebo was born on the 27th of December in 1982 in Banja Luka, a city that at the time belonged to Yugoslavia, but is now part of Bosnia and Hercegovina. At the age of nine, he was forced to flee the country together with his mother and sister due to a civil war that ravaged Yugoslavia and eventually led to its demise. His dad joined the rest of the family a few months later. With his family, in 1992, he settled down and adapted to a new life in a new country, Sweden. Adis resumed his education and eventually studied the natural and technical science program at high school in Kristianstad.

Insights from high school taught him that he was more aligned towards the social sciences and after mandatory civil service and a few years of slacking or travelling, in 2005, Adis enrolled at the Political Science and Economics program at Lund University. He received his BSc with distinction in 2010, having also studied film and literature theory for 1,5 years, taken a sabbatical in 2007 to study French in Paris and engaged in voluntary work for 6 months in Chennai, India in 2009.

After finalising his studies in Lund, Adis moved to the United Kingdom to pursue a Masters program in Climate Change and International Development at the University of East Anglia. Having received an MSc with distinction, Adis moved back to Lund University in 2011 and took a position as a research assistant in the Department of Political Science.

In 2012, Adis moved to Stockholm for a part-time internship at the Stockholm Environment Institute and a part-time job as a political advisor for the Green Party in Stockholm. The internship turned into a permanent position (half-time) in 2013 and since 2014, he has been working full-time for the

Stockholm Environment Institute. At SEI, he has led its flagship initiative on climate and development finance for 5 years. He is also the lead developer of the NDC-SDG Connections, a tool that visualises the links between the Paris Agreement and the 2030 Agenda.

Adis has also been a guest researcher for 6 months at the German Institute for Development and Sustainability in Bonn and has also spent 6 months at the Utrecht University Copernicus Institute of Sustainable Development, officially starting to work on this thesis as an external PhD student. Currently, Adis is leading a large programme on policy coherence between climate change and sustainable development. The programme is a joint initiative between Stockholm Environment Institute, German Institute for Development and Sustainability, Utrecht University and Linköping University.

Besides work, Adis has had multiple interests and hobbies over time, including snowboarding, climbing, hiking, long-distance running and sauna, He has also organised night clubs, climbed Mount Kilimanjaro and driven a car around Lake Victoria. Having turned 40, however, Adis mostly sits on his couch enjoying well-told stories through multiple mediums: tv, film, game or book. He also likes to build Lego with his son.

He lives currently in Berlin with his wife Katharina and son Edward.

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