

Climate Change Adaptation and Development Aid: Emerging Challenges and Opportunities

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SUMMARY

Adaptation to anthropogenic climate change has emerged as a key focus of development aid. Current financing commitments indicate that there will be tens of billions of dollars in funding each year for adaptation in the developing world, most of which will be channelled through the development sector including non-governmental organisations, multilateral and bilateral development agencies. However, in light of the many serious critiques of development aid over the past five decades, there are pressing questions around how these adaptation efforts of the development sector in the developing world can be effective, appropriate and sustainable.

This thesis engages with these questions by investigating how adaptation is being conceptualised and utilised by different actors associated with the development sector. The investigation draws upon extensive primary and secondary data, collected with a range of qualitative research techniques, at local, national and international sites. These include exploratory literature reviews, semi-structured interviews, participant observation and focus groups. This thesis draws together a number of different papers that investigate adaptation and the development sector to identify some of the challenges and opportunities for the planning and implementation of adaptation.

This thesis calls for rethinking of how the subject of adaptation is being engaged by the development sector. The research shows that adaptation is being conceptualised in many divergent ways and that there is a need for clearer and commonly understood boundaries in its meaning. It also demonstrates that development actors are utilising different conceptualisations to support particular approaches to development aid that are guided by pre-existing assumptions, such as the need for economic growth. This thesis also draws upon research from local community sites in Nepal and Bangladesh to argue that existing perceptions and practices of communities, including collective action, should be key considerations in the planning and implementation of adaptation processes. The findings of the papers in this thesis come together to provide guidance for the development sector by suggesting that approaches to adaptation should not be bedded in long held assumptions of how development aid should happen. Rather, adaptation needs to be approached cautiously, and in a way that supports the diverse practices of local communities as they react in their own particular ways to the threat of climate change.

CANDIDATE'S STATEMENT

I certify that the work in this thesis entitled *Climate change adaptation and development aid: Emerging challenges and opportunities* has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree to any other university or institution other than Macquarie University.

I also certify that the thesis is an original piece of research and it has been written by me, except as otherwise indicated. Any help and assistance that I have received in my research work and the preparation of the thesis itself have been appropriately acknowledged.

In addition, I certify that all information sources and literature used are indicated in the thesis.

The research presented in this thesis was approved by the Macquarie University Ethics Review Committee (Reference number: HE25SEP2009-D00134).

Philip Edward Ireland

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CONTRIBUTIONS TO PAPERS

This PhD is presented in thesis by publication form. The majority of the chapters are stand-alone papers (journal articles and a book chapter). These papers are published, in press, or under review for publication, as indicated in Chapter 1.

Two of the papers included in this thesis were co-authored by the PhD candidate and a supervisor. The table below summarises the respective contributions of authors to each of the papers.

Table of candidate's contribution to each paper

Chapter	Paper Title	Concept	Data collection	Analysis	Writing	Total
4	Climate change adaptation and disaster risk reduction: Contested spaces and emerging opportunities in development theory and practice	100%	100%	100%	100%	100%
5	Climate Change Adaptation Exchanges: An exploration of the possibilities and risks	100%	100%	100%	100%	100%
6	Climate change adaptation: Business-as-usual development or an emerging discourse for change?	100%	100%	100%	100%	100%
7	Nepalgunj, the centre of the world: Local perceptions of environmental change and the roles of climate change adaptation actors	100%	100%	100%	100%	100%
8	The role of collective action in enhancing communities' adaptive capacity to environmental risk: An exploration of two case studies from Asia	80%	60%	60%	70%	67%
9	Strategic localism for an uncertain world: Postdevelopment and climate change adaptation	60%	100%	70%	70%	75%

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List of Acronyms (each will be spelt out when first used in a chapter and paper)

CBA	Community Based Adaptation
CBO	Community Based Organisation
CCA	Climate Change Adaptation
DRR	Disaster Risk Reduction
HIPC	Heavily Indebted Poor Countries
INIFID	International NGO Forum on Indonesian Development
INGO	International Non Governmental Organisation
IPCC	Intergovernmental Panel on Climate Change
LDC	Least Developed Country
MDB	Multilateral Development Bank
MDG	Millennium Development Goal
NAPA	National Adaptation Programme of Action
NGO	Non Governmental Organisation
ODA	Overseas Development Assistance
REDD	Reducing Emissions from Deforestation and Degradation
UN	United Nations
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
UNISDR	United Nations International Strategy for Disaster Reduction

PREFACE

"Philosophers have interpreted the world in various ways, the point however is to change it" – Marx (1888). Thesis on Feuerbach.

The foundations of my Ph.D. journey date back to 2007 – a year of significant change in my personal life and an awakening of my interest in climate change and social justice.

I was living in Newcastle, just North of Sydney, Australia. On Friday the 8th of June, 2007, Newcastle was hit with its worst storm in over 30 years. Unrelenting rain, ferocious winds and flooding caused extensive damage across the city and resulted in the deaths of 10 people. I remember at the height of the storm, as the tiles were blown loose on the roof of my house and water poured in, we heard on the radio that several coal ships were at risk of being beached. Newcastle exports more coal than any other port in the world and is currently in the midst of doubling its export capacity. By the evening the 'Pasha Bulker', a 76 000 tonne coal ship was beached on the iconic Nobbys Beach. The irony wasn't lost on me. A coal ship washed ashore by an extreme weather event at the world's largest coal export port. Greenpeace beamed messages onto the side of the stranded ship that read, "coal causes climate chaos".

Later that year, the climate chaos continued. But this time it was in a location that was far more vulnerable. Cyclone Sidr smashed into the coast of Bangladesh on November 15th 2007. Estimates of the lives that were lost range up to 10 000. There was something about this disaster that deeply impacted me. I will never forget the images that were beamed onto my TV screen of decimated villages, stranded families and rows of corpses. I had studied climatology during my undergraduate degrees. I knew that the Asian monsoonal climate system was changing and becoming more unpredictable. But until this point, I hadn't fully appreciated the potential human impacts of a changing climate in developing countries.

This was also the year that I met a young woman named Hannah who had grown up in Nepal. She told me about melting glaciers, of failed crops due to changing seasons and about increasing numbers of natural disasters. Her family had lived in a rural town called Neplganj in which people were highly dependent upon small-scale agriculture and

highly vulnerable to the impacts of climate change. Her father had spent several years working with a small NGO facilitating collectives with landless women who were vulnerable to the impacts of climate change.

I later married Hannah and travelled back to Nepal and Nepalganj with her to conduct part of the field research for my Ph.D. My time with this community, including the women's collectives that Hannah's father had worked alongside, challenged many of my presuppositions about climate change adaptation. My observations from this location eventually became a key pillar of my thesis.

November 2007 was also a significant fork in the road for Australian climate policy to reduce greenhouse gas emissions. On Saturday, 24 November, the Australian people elected a Labor leader after more than ten years under the conservative government of John Howard. As Prime Minister, John Howard had refused to ratify the Kyoto Protocol. This is the landmark international protocol to the United Nations Framework Convention on Climate Change (UNFCCC) that has the goal to stabilise greenhouse gas concentrations in the atmosphere in order to limit anthropogenic climate change. Climate change impacts in places like Nepal and Bangladesh are being driven by 200 years of rapidly increasing greenhouse gas emissions around the globe, mostly in developed nations. One of the first acts of the newly elected Labor Prime Minister Kevin Rudd was to go to the UNFCCC conference in Bali, December 2007, and ratify the Kyoto Protocol. As the conference erupted in applause to the announcement from Australia, I felt buoyed by international capacity to address the threat of climate change.

The key outcome of the UNFCCC conference in Bali was the 'Bali Road Map'. This action plan set out a negotiating process to establish a more comprehensive international climate change regime once the first commitment period of the Kyoto Protocol came to an end in 2012. One of the key pillars of the Bali Road Map was to support the urgent implementation of adaptation to protect developing countries against climate change. Negotiations under the Bali Road Map were set to conclude in 2009 in Copenhagen.

These experiences from 2007 were formational in my Ph.D journey. My eyes were opened in new ways to the potential impacts of climate change in my home town and in communities in developing countries. I wondered how people, particularly those who

were already vulnerable, were going to cope with the impacts of climate change? Is it possible to adapt to climate change? And if so, what does that look like? Would international agreements provide the change and assistance that was required? These questions were some of the seeds that shaped my research aims.

I would also like to take this opportunity to acknowledge how the field of climate change has evolved since the conception of my Ph.D. and comment upon the form of this thesis. Over the past four years of researching and writing this Ph.D. international climate politics have evolved significantly. UN climate conferences, most recently in Durban, have failed to achieve an outcome that is anywhere near what the sciences suggests is necessary to avoid catastrophic climate change. Recent reports of the International Energy Agency and United Nations Environment Program have presented very stark warnings about future climate change impacts that may be unavoidable unless greenhouse gas emissions cannot begin declining within 4 years. Accompanying these alarming trends the body of literature on climate change and adaptation has grown substantially. The most recent addition to this work, the IPCC's special report 'Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation' is over 600 pages long and involved over 200 authors. In this thesis I can only offer a small time bound contribution to the dynamic and rapidly growing field of climate change adaptation.

In relation to the form of this thesis, a thesis by publication offers a number of opportunities and challenges compared to a thesis by dissertation. Whilst both contain substantive introductions and conclusions, the chapters in a thesis are published (or in review) as peer-reviewed papers or book chapters. Most of the papers have been commented on and impacted by academics at conferences, and extensively through the peer review process. In addition, the requirements of different journals also took the papers in slightly different directions. As such, the works presented in this thesis are both standalone papers, that can be read outside the context of this thesis, and chapters that are part of a whole. This thesis form inevitably results in some repetition between the papers and minor inconsistencies.

The advantage of a thesis by publication is that it demonstrates a dynamic research process in a way that a dissertation usually cannot. The papers within this thesis reflect

my journey with the topic. They have been left as they were at the time of publication or submission to review. As these contributions were largely composed throughout my candidature the shifts in my thinking and use of language is on full display. Also, there are points of minor inconsistency between the papers that reflect the evolution of my thoughts through the research process. Along the way I draw attention to these shifts where possible by way of exposition of the dynamic research process.

Before we step into the introduction I want to reflect upon the statement of a young Marx introduced at the beginning of the preface. When I commenced this Ph.D. I did, however naively, want to change the world through my research and do more than just interpret it. As you will no doubt discover, this Ph.D. did become, in large part, about seeing and about interpretation. However, my views on Marx's comment also shifted throughout my Ph.D journey. Put very simply, I wonder if interpretation, and seeing what is already happening in new ways, is at the very core of changing the world. In this vein, I hope that the exploration and interpretation in this Ph.D. contributes to positive change in the world.

CHAPTER 1 – INTRODUCTION

1.1 Introduction

Adaptation to anthropogenic climate change is widely recognised as one of the most significant challenges facing the developing world in the 21st Century. Billions of development aid dollars have begun to flow through the development sector – a broad grouping of organisations and institutions that are working in developing countries with the stated aims to reduce poverty and/or support social, economic and cultural development - for the purposes of planning and implementing adaptation to climate change. This thesis takes as its starting point an interest in this recent trend towards adaptation in the development sector in light of the well-documented shortcomings of post-World War Two development aid. The research that I present is grounded in the concern that actions carried out in the name of adaptation by the development sector may not actually address the challenges of climate change in developing countries, and at worst, may undermine future adaptation efforts. As such, the aims of this thesis are to explore how adaptation is being conceptualised and utilised in the development sector, and to identify challenges and opportunities for making adaptation more effective, appropriate and sustainable.

In this introductory chapter I begin by establishing the basis and context of these research aims. I do this by identifying: 1) that anthropogenic climate change poses real threats to communities in developing countries and that some form of adaptation will be necessary, 2) that the subject of adaptation is receiving significant attention in the development sector and that this is accompanied by financing for adaptation related activities and 3) that the impacts of development aid have been significantly critiqued and these critiques present concerns for how the development sector will plan and implement adaptation. These three points form the overarching rationale for the research presented in this thesis and also frame the context of the thesis contribution. Following this section I introduce the guiding conceptual framework that informs the specific research questions and research design for addressing the research aims. The framework that I discuss incorporates postdevelopment perspectives (Escobar 1992; Gibson-Graham 2005; McKinnon 2007; Sidaway 2007), a non-hierarchical view of scale (Howitt 1993; Marston et al. 2005) and the tradition of transdisciplinarity (Albrecht et al. 1998; Max-Neef 2005; Steiner and Prosch 2006). I then move to consider the key

contributions and coherence of this body of work. I conclude Chapter 1 by outlining the overall structure of the thesis, including the focus of each of the initial chapters and the published papers.

1.2 Basis and context of research aims

The first point that I consider is the rationale for adaptation to climate change in the developing world. I begin by providing a brief history of the broader adaptation concept. The information that I present here is complemented by more substantive reviews of the adaptation literature in each of the papers of the thesis. Each paper reviews the literature relevant to its particular focus whilst Chapters 4 and 5 provide more general overviews of the adaptation literature.

One of the first times that the concept of adaptation was linked to human systems, rather than the natural sciences, was in the mid 19th century. The anthropologist Julian Steward coined the term ‘cultural adaptation’ in order to describe how a society adjusted to the natural environment through subsistence activities (Butzer 1980). During the 1980s theorists such as Butzer (1980), Denevan (1983) and Hardesty (1986) began rethinking the concept of cultural adaptation and applied it to environmental change. They raised questions about how humans could adapt to a range of changes in the global environment, including anthropogenic interference in the climate system. By 1995, rising interest in the subject of adaptation to climate change resulted in it becoming a core theme of the Intergovernmental Panel on Climate Change (IPCC) in its second assessment report (IPCC 1995). Since this time there has been an increasing awareness that humanity’s response to anthropogenic climate change should involve both mitigation (the reduction of greenhouse gas emissions) as well as adaptation (IPCC 1995, 2001a, 2007a, 2012; Tompkins and Adger 2005). There are many definitions for climate change adaptation across the literature (Berang-Ford et al. 2010; Clark 2012; Smit and Wandel 2006), and the most prominent one that I refer to in this thesis comes from the 2007 IPCC report. It describes adaptation as an adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities (IPCC 2007a). Whilst this definition provides a useful reference point, this thesis seeks to understand how a range of different actors associated with development aid are conceptualising and utilising the subject of adaptation in their day-to-day work. I find that the IPCC definition is only one

of many influences that are shaping how development actors are considering adaptation policy and practice. For example, I demonstrate that approaches to adaptation are also being impacted by pre-existing assumptions about development aid and that this presents challenges for future planning and implementation of adaptation.

The subject of adaptation is increasingly becoming a priority for the development sector in association with a growing body of evidence that demonstrates anthropogenic greenhouse gas emissions are altering the climate and that developing countries are most vulnerable to climate change. Recently, the Special Report of the IPCC titled 'Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation', has demonstrated that it is "likely" that anthropogenic emissions have already caused changes to climate extremes and that this will continue to change in the coming decades (2012, p. 6, 9-11). This is in the context of greenhouse gas emissions that continue to rise to unprecedented levels in human history (WMO 2011). The types of climatic changes that have been identified as requiring adaptation include rising sea levels, increases in the length, frequency and/or intensity of heatwaves over most land areas, increases to heavy precipitation events and increases to cyclone intensity in some regions (IPCC 2012). The recent report of the IPCC is accompanied by a wealth of academic literature that also draws attention to the potential negative impacts of climate change and the need for adaptations (Adger et al. 2005; Adger et al. 2009; Fussler 2009; IPCC 2007b; Karbassi et al. 2011; McKibben 1999). The challenge of adaptation to climate change is most pressing in developing countries due to factors including climate sensitive geographic location (such as in low lying Asian river deltas), inadequate urban planning, a scarcity of livelihood options for the poor (IPCC 2012) and greater reliance upon climate sensitive sectors such as agriculture (Lemos et al. 2007; Nath and Behera 2011; World Bank 2010). Nepal and Bangladesh are two developing countries that I focus upon in this thesis which are particularly vulnerable to climate change (IPCC 2007a). It is widely accepted in the development sector and in the academic literature that adaptation is linked to development aid, as it is the subjects of development efforts – 'poor' people – who are often also the most vulnerable to climate change (Adger et al. 2003; Huq and Ried 2004; Klein et al. 2007; Leary et al. 2008; McGray et al. 2007; Lemos et al. 2007; Sietz et al. 2011; Thomalla et al. 2006). The literature on the linkages between adaptation and development aid has grown substantially during the course of researching and composing this thesis (for example see Arnell 2011; Clark 2012; IPCC

2012). The papers presented within represent an active and ongoing contribution to this field of research.

In response to the identified need for adaptation and the linkages to existing development efforts, recent years have witnessed a growing volume of funding available for the development sector to design and implement adaptation projects. This is the second key contextual consideration that forms the basis for the research aims. Table 1.1 shows some of the largest examples of recent climate change adaptation related funds and programs. It also demonstrates the wide range of organisations in the development sector that are engaging the subject of adaptation and the high volume of financing.

Table 1.1 Examples of development funds focused on climate change adaptation

Name of fund/program	Administering organisation (type)	Stated objective	Pledges and expenditure (USD million)
Pilot Program for Climate Resilience	The World Bank (Multi-lateral development bank)	To provide programmatic finance for national climate resilience development plans	1208
Adaptation Fund	United Nations Framework Convention on Climate Change (UN - multilateral)	To finance concrete adaptation projects and programs in developing country Parties to the Kyoto Protocol, in an effort to reduce the adverse effects of climate change facing communities, countries and sectors.	404
Least Developed Countries Fund	The Global Environment Facility and the UN Development Program (Multilateral)	To support the preparation and the implementation of the National Adaptation Programs of Action (NAPAs), which are country-driven strategies that identify the immediate needs of LDCs in order to adapt to climate change.	415
International Climate Change Adaptation Initiative	Ausaid (Bilateral)	To meet high priority climate change adaptation needs in vulnerable countries in Australia's region	350
Community-based Adaptation	CARE International (International Non-Government Organisation)	To integrate adaptation into new and existing projects in climate-sensitive areas and to design new programs which specifically aim to address climate change impacts through community-based adaptation	NA

Sources: Climate Funds Update (2012), AusAID (2012), Care International (2012).

Whilst the volume of climate finance is not a central theme of this thesis, it is an important contextual point that demonstrates the growing significance of this field. There are currently over 14 dedicated multilateral climate change adaptation funds in addition to a range of other initiatives such as bilateral aid programs and development NGOs (Climate Funds Update 2012). This trend looks set to increase into the future. Under commitments made at the Copenhagen climate conference in 2009 (UNFCCC 2009) and re-affirmed at the Cancun climate conference in 2010 (UNFCCC 2011), climate financing in developing countries, which includes adaptation, is set to reach around 100bn USD per year by 2020. This is the same order of magnitude as the total current annual overseas development assistance (World Bank 2011). In this thesis I engage this emerging trend by seeking to understand how the development sector is conceptualising adaptation and how they are utilising the concept in their work, in light of the well-critiqued history of development aid.

It should be noted that since commencing this doctoral research in 2008 there has been a growing body of work on informing, monitoring and evaluating adaptation efforts in the development aid sector (see: Arnell 2011; Lamhauge et al. 2012; Liverman 2011; Spearman and McGray 2011; weADAPT 2012). For example, Spearman and McGray (2011) have recently characterised types of adaptation efforts, early lessons and models for monitoring and evaluation with the aim of guiding the work of the development sector. However, they also note that the monitoring and evaluation of adaptation efforts will “evolve substantially in the years ahead” and that many research questions remain around how “we confront the complexities and uncertainties of climate change adaptation” (p. 3). Arnell (2011) also reflects this view and identifies that many academic papers on adaptation focus on conventional impact assessments when “the requirements for adaptation management may be rather different” (p. 110). Likewise, Liverman suggests that “Adaptation cannot rely on outdated models of information delivery that assume scientists are best placed to know what is needed” (2011, p. 3). These perspectives identify the need for further analysis of how adaptation can be facilitated in the development sector. The focus of this thesis complements this recent ongoing research by providing additional sets of reflections and suggestions on how adaptation can be sustainable, appropriate and effective. I engage the subject of adaptation and the development sector by using several different theoretical lenses and research sites to provide a differentiated and constructive contribution to this ongoing research endeavour.

The third point that forms the basis for the thesis aims relates to the well-documented shortcomings of development aid since World War Two. So far in this introduction I have established the need for adaptation to climate change in developing countries and the new focus that the development sector is placing upon this subject. I now move to build upon these two points to argue that the contested history of development aid is cause for critical investigation of how the development sector is engaging the important subject of adaptation. The discussion that I present here draws upon many long-standing critiques of development (Escobar 1992; Esteva 1992; Ferguson 1990; Sachs 1992; Shiva 1993) including postdevelopment perspectives (Gibson-Graham 2005; McKinnon 2007; Sidaway 2007), that highlight the need for continued scrutiny and mindful interrogation of the policies and practices of the development sector. In Chapter 3 I provide a more detailed overview of key ideas and influences in the history of development aid and introduce how these relate to emerging approaches to adaptation.

For the purposes of this thesis I accord with Sachs (2010) who suggests that the era of development aid commenced in 1949 when US President Harry S. Truman declared that more than half the world was in poverty with inadequate food, disease and a primitive economic life. President Truman stated: “we must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas” (Sachs 2010, p. 1). Since this pronouncement, a vast set of development theories, organisations, and goals have emerged in developing countries around the globe. Whilst recognising that the roots of development go back much further in time to the era of colonialism (Escobar 1995a; Esteva 1992; Pieterse 2010), this thesis is primarily concerned with the development sector that has evolved over the past 60 years. Following the reconstruction of Europe after World War Two, in the late 1950s development efforts began to refocus upon the ‘third world’ (Escobar 1995a) pursuing goals such as economic development (Rostow 1960), modernisation (Lee 2000) and poverty reduction (Pieterse 2010). Within this historical context the development sector emerged, consisting of Bretton Woods institutions (e.g. Multi-lateral Development Banks), United Nations organisations (e.g. United Nations Development Programme and the various technical capacity support programmes), bilateral development organisations (e.g. USAID) and non-governmental organisations (e.g. CARE International). Over the past 60 years organisations in the development sector have pursued a swathe of different development activities in

developing countries including the construction of infrastructure, technical assistance, gender empowerment, education and healthcare. In recent years climate change adaptation has become a new focus of development aid.

The development sector has been widely criticised for failing to achieve past goals for development, and instead spawning numerous additional problems and exacerbating existing ones. A wealth of research has identified a range of perverse outcomes from development aid. These include environmental damage (Sidaway 2007; Shiva 1993), expanding bureaucratic state power (Ferguson 1990), violent conflict (Verhoeven 2011), widening social and economic inequality (Sachs 2010) and creating an imagined geography of underdevelopment (Escobar 1995a). Recent scholarship, characterised by titles such as *'The Curse of Aid'* (Djankov et al. 2008), *'The Trouble with Aid'* (Glennie 2008) and *'The Aid Trap'* (Hubbard and Duggan 2009), questions the fundamental logic of development aid and the development sector and suggests that many development programs may have a net negative impact on developing countries.

A recent example of development efforts that have been criticised for failing to achieve what it set out to do is the Millennium Development Goals (MDGs). In 2000, all United Nations member states and other development organisations agreed upon eight international development goals that were set to be achieved by 2015.¹ These provided a new impetus for development efforts around the globe and mobilised additional development aid finance. The World Bank (2011) estimates that around US\$128bn is now spent on development per year, more than double that of two decades ago. However, as we quickly approach 2015 many scholars are pointing to serious flaws with MDG efforts (Langford 2010; Saith 2006; Pieterse 2010; Vandemoortele 2011) that reflect critiques of previous development efforts (Escobar 1992, 1995a; Esteva 1992; Sachs 1992). For example Vandemoortele (2011) and Saith (2006) suggest that MDG efforts have focused on universalising growth-centred development blueprints and that they have failed to impact upon within-country social and economic inequity. Pieterse (2010) echoes this critique and suggests that development goals, such as the MDGs, are rarely achieved and that the actual achievements of the development sector are to perpetuate development discourses, maintain development paradigms and tweak "the perception of receding horizons" (p. 209). These historical critiques raise important

¹ For a full description of these goals see: <http://www.un.org/millenniumgoals/>

questions around whether the new focus upon adaptation will produce similar problems to previous development efforts or whether it could be different. These types of questions have also been posed for climate change and adaptation in the academic literature. For example, Liverman raises concerns about possible negative impacts of carbon trading on local communities that is done in the name of addressing climate change (Liverman 2009; Liverman and Bumpus 2010). Similarly, Lemos et al. (2007) pose questions around how to integrate development and adaptation planning “in ways that avoid the pitfalls of past failed development practices” (p. 26). In this vein, other research has explored the idea of ‘maladaptation’ whereby adaptation strategies have perverse outcomes and end up increasing the vulnerability of communities (Barnett and O’Neill 2010; Burton 1997; Scheraga and Grambsch 1998).

In this thesis I draw upon critical perspectives of development, including postdevelopment, to understand the challenges and opportunities for effective adaptation in the development sector and in vulnerable communities. Postdevelopment theorists call for a critical rethinking of development that is mindful of the long history of development critiques (Escobar 1995b; Ferguson 1990; Saunders 2002; Sidaway 2007) and attentive to nascent possibilities in communities (Gibson-Graham 2005; McKinnon 2007). As I demonstrate in Chapter 3 - which provides a brief history of development influences and theories - postdevelopment perspectives depart from most preceding development theories by suggesting that it is not possible to codify universally applicable approaches to development. Put another way, there is no ‘one size fits all’ approach to development be it creating free markets, gender empowerment or micro enterprise. In this vein, this thesis is not seeking to define exactly what adaptation is, nor propose a specific and detailed set of guidelines for adaptation projects. Rather than questioning what development aid programs are *actually* doing and how they could be better, postdevelopment asks questions about how development has formed as a mode of understanding and how it continues to be sustained and reshaped in the world (Esteva 1992; Escobar 1995a, 1995b, 2004; McKinnon 2006). Postdevelopment theorists often draw attention to how development is always embedded in politics and ideology and suggest that it always warrants critical analysis and mindful interrogation (Ferguson 1990; McKinnon 2007). In this thesis I consider how the development sector is engaging the subject of adaptation in light of this critical tradition. Postdevelopment perspectives also seek to identify new possibilities and opportunities to think about

development differently. This includes new efforts to value diverse practices that are already occurring in local communities (Gibson-Graham 2005, 2008) and to identify what has been missed or suppressed within dominant development discourses. This focus of postdevelopment on local communities is formed partly in response to a long history of hierarchical logics of scale in development that have obscured the significance of local communities (Escobar 2001; Gibson-Graham 2005; Santos 2004). In this thesis I bring postdevelopment perspectives to bear as I consider how approaches to adaptation are being shaped within the development sector and what other possibilities may exist. In places, the conclusions of this thesis depart from postdevelopment theory by containing suggestions that are situated within existing development aid paradigms. In Chapter 10 I reconcile this issue by suggesting that there is a need for a dynamic tension in the way the development sector approaches adaptation, between postdevelopment and alternative development perspectives.

1.3 Conceptual framework for addressing the research aims

In light of this research context, the aims of this thesis are to examine how adaptation is being conceptualised and utilised in the development sector and to identify challenges and opportunities for effective adaptation. When I use the term 'conceptualise' I am referring to how adaptation is defined, how it is thought about and what meaning it holds for individuals and organisations associated with development aid. Accordingly, when I use the term 'utilise' I am referring to how development actors apply the concept in their work, such as in a funding proposal or project. In this section I outline the conceptual framework that guides the design of the specific research questions that address the research aims. Building upon postdevelopment theory presented in the previous section, here I also introduce a non-hierarchical view of scale and the tradition of transdisciplinarity. I identify how these theoretical perspectives relate to each other and how they are appropriate for addressing the aims of this research.

Studies on climate change draw upon a range of different models on scale and different perspectives within these models. The issue of scale is central to climate change research as different assumptions, such as what data should be collected and analysed, can lead to contrasting research outcomes (Cowell 2003; Few et al. 2004; Howitt 1993). For instance, there are differences between studies that are based on global climate scenarios (for example see UNEP 2001 and World Bank 2010, 2011) as opposed to those

that are community based (for example see Allen 2006 and Ensor and Berger 2009). Where studies that focus on global climate scenarios use aggregate data, such as national and regional indicators (World Bank 2010), studies that are community based often focus more upon social-cultural factors, local perspectives and qualitative data (Ensor and Berger 2009). Cowell frames the scalar tension in environmental research as “the need to balance autonomy for particular social groups with more universal agendas” or “reconciling the claims of ‘global’ (scientific) and ‘local’ knowledge” (p. 343). Aalst et al. (2008) suggest that early research into adaptation was “dominated by a top-down thinking derived from the original characterisation of the issue as a global environmental pollution problem” (p. 166). These different approaches to adaptation research are often framed within a hierarchical model of scale. This is the dominant scale framework that is utilised in climate change research. A good example of how this model of scale is applied in climate change research is represented in Adger et al. (2006) who draw upon a hierarchical view of scale to explore how adaptation may occur. They state that “levels of actions will take place in hierarchical structures” from the higher “nation state” to “lower elements of the political and jurisdictional scale” (Adger et al. 2006, p. 77-78). These hierarchical models of scale reflect the dominant school of thought, such as Taylor’s world-systems theory (1988, 1993) where global and national actors are implicitly positioned as more powerful and influential than local level actors.

To date, much of the research on climate change has been characterised by different perspectives within a hierarchical model of scale. For example, Hinkel suggests that research carried out more from a climate change mitigation perspective is “top down” and research that is carried out more from the adaptation perspective is “bottom-up” (2008, p. 9). He suggests that “top down” approaches focus on the biophysical aspects of vulnerability and often involve indicator-based approaches (see Adger 2004 and Brooks et al. 2004) and the development of climate change scenarios whereas “bottom up” approaches focus on the social aspects of vulnerability (Hinkel 2008). These different approaches each reflect the dominance of certain scales over others, and are positioned within hierarchical frameworks. In terms of socio environmental research Few et al. (2004) suggest that narrow scalar perspectives “may intentionally or unintentionally privilege certain groups over others” (p. 3). Scale is interrelated to the issue of discipline dominance whereby approaching research from within a certain disciplinary

perspective can result in a bias towards certain perspectives of scale. The discussion presented here will be further borne out in the following section on transdisciplinarity.

In this thesis I adopt a non-hierarchical perspective of scale (Howitt 1993; Kelly 1997) as a useful framing to derive the research questions and research design. The development sector is engaging the subject of adaptation at multiple scales that include international climate negotiations, local communities and national governments. Emerging from a critical geography of scale, a non-hierarchical perspective rejects attempts to posit certain scales as more significant than others, such as positioning the global level over the national and the local level in Taylor's world-systems theory (1988, 1993). Within the fields of socio environmental research Cowell (2003) and Few et al. (2004) suggest that scale is an intensely political frame that can shape debates and policy outcomes. I agree with Howitt (2003) who argues that schemas that position any particular scale as 'the essential scale', or conversely ignore scale politics altogether, cannot adequately participate in "the struggle for social and environmental justice" (p. 145). My response to these theoretical perspectives in this thesis is to sidestep dominant discourses that privilege certain scales above others.

I utilise a framing that suggest all scales are significant and can play a role in illuminating our understanding of how adaptation is being conceptualised and utilised in the development sector. I draw upon features of critical geography debates that recognise different scales, such as the 'global' and the 'local' as constructed (Kelly 1997), interrelated (Schatzki, 2002), multi-directional (Howitt 1993) and simultaneous (Howitt 1998, 2003). The way that I consider a non-hierarchical perspective of scale in this thesis is also consistent with postdevelopment perspectives. Many postdevelopment theorists have eluded to a vision of scale that is non-hierarchical by critiquing the way that hierarchical logics have obscured certain spaces, such as 'the local' (Escobar 1995, 2001; Gibson-Graham 2005; Santos 2004). For example, Gibson-Graham (2005) draw on the idea of 'trans-scale' to consider the linkages between different sites to show how place-based movements are challenging the hegemony of globalisation.

One way of conceptualising non-hierarchical scale that I utilise to address the research aims is through the notion of sites (Marston et al. 2005, p. 424). I use the concept of sites throughout the thesis to suggest that each of the papers in this thesis focuses on a

particular site or set of sites that are related to adaptation and the development sector. In the conclusion (Chapter 10) I bring together the perspectives and insights from these different sites to derive several overarching conclusions. The way that I use the term 'site' is informed by the novel perspectives of Schatzki (2002) and Marston et al. (2005). Schatzki (2002) defines a site as a bounded domain or a space, and Marston et al. (2005) build on this to suggest that a site allows "various inhabitants to hang together in event-relations by virtue of their activities" (p. 425). In the case of this thesis, each of the sites that the papers focus on are bounded by their relevance to the subject of adaptation and the development sector. For example, the site that I investigate in Chapter 7 is the local community of Nepalganj, Nepal. This is a town that is vulnerable to the impacts of climate change and contains development organisations that are planning adaptation projects. There are also other types of sites that I draw upon in this thesis. Marston et al. (2005) suggests that site can contain "interacting human and non-human inhabitants" (p. 125) and that it can be actualised out of a complex number of connected processes (p. 426). An important component of this framing is that a site does not necessarily have to refer to a physical location, such as Nepalganj. A site can also refer to other types of bounded spaces such as a set of interconnected literatures or development organisation reports that focus on the same topic. In chapters 4 and 5 I focus upon these types of sites that are not physical locations, yet are still interrelated through their impact upon one another. For example, development organisations working in developing countries draw upon reports and the academic literature to shape their activities in physical locations. Using the framing provided by Schatzki (2002) and Marston et al. (2005) I suggest that the development sector is filled with interconnected sites that simultaneously exist and impact upon each other. In order to explore how adaptation is being conceptualised and utilised across the development sector, this thesis draws upon a number of different sites to investigate a range of different perspectives. These different sites are named in the bridging sections prior to each of the papers in this thesis. In accordance with my effort to side-step dominant logics of scale, engagement with multiple sites provides an opportunity to see the challenges and opportunities for adaptation from a number of different angles. Each of the papers in this thesis explores a different site or set of sites that are interconnected through their relevance to the research topic. The findings from each of these sites combine to form several overarching thesis contributions.

One type of site that I pay particular attention to in this thesis are local communities that are vulnerable to the impacts of climate change and may be subject to adaptation efforts undertaken by the development sector. This focus is appropriate in light of the perspectives of critical geographies of scale and postdevelopment which suggest that these sites have been undervalued in the past (Escobar 1995, 2001; Santos 2004) and that there are diverse practices that have not yet been acknowledged and understood by the development sector (Gibson-Graham 2005; McKinnon 2007). The recent IPCC report (2012) reinforces the value of research focused on local community sites by identifying that there is a need for more information on disaster risk and adaptive capacity at the local level.

The tradition of transdisciplinarity (Albrecht et al. 1998; Max-Neef 2005; Nicolescu 2012; Steiner and Prosch 2006) is the final component of the conceptual framework that underlies the research questions and guides the research design. Transdisciplinarity refers to a research approach that engages multiple disciplines and is often focused on solving real world problems (Steiner and Prosch 2006; Taplin 2003). Albrecht et al. (1998) suggest that transdisciplinarity is suited to research problems that are part of a dynamic system that is operating across many different sites. In this vein, Nicolescu argues that transdisciplinarity is an approach to research that “should be open, not dogmatic” (2012, p. 2). These points also relate to the prior discussion on scale where I demonstrated that some individual disciplines are biased towards certain perspectives on scale. For example, Hinkel suggests that “bottom up” research approaches have their roots in fields such as natural hazards and focus on local level communities (2008, p. 10). As such, there exists internal consistency between the perspectives of non-hierarchical scale and transdisciplinarity.

In recent years, there has been a growing volume of conceptual and methodological work around transdisciplinarity and the integration of human and environmental systems (Hinkel 2008; McGregor 2012; Nicolescu 2012; Turner et al. 2003). For example, Hinkel (2008) suggests that vulnerability assessments can be a transdisciplinary approach to the issue of climate change that can capture information about how different systems are impacted by climate change (Turner et al. 2012). Over time, vulnerability assessments have become increasingly transdisciplinary as researchers have moved from exploring single climatic stresses through impact

assessments to multiple stresses through adaptation policy assessments (Fussler and Klein 2006). Furthermore, as this thesis will demonstrate, a range of concepts from across different disciplines are being used to understand adaptation such as coping (Paul and Routray 2010), resilience (Cannon and Muller-Mahn 2010) and adaptive capacity (Smit and Wandel 2006).

As identified so far in this introduction, both the development sector and climate change are complex systems that are unfolding simultaneously at multiple different sites. A transdisciplinary approach is appropriate for an exploration of these systems for as Hinkel aptly suggests there are no “ready-made methods that can be taken off the shelf” (2008, p. 11). For example, I draw upon physical sciences to understand climate change and its impact upon local sites, I draw upon social sciences to conduct qualitative research and gather empirical data from people, and I draw upon the humanities to explore the history of development and contextualise contemporary approaches to adaptation. Furthermore, transdisciplinarity is suited to the aims of this thesis as it is an approach that seeks to contribute to real world solutions (Lawrence 2010), such as identifying challenges and opportunities for effective adaptation. In order to address the research aims and questions, the papers in this thesis cross over a number of disciplinary boundaries. This will be explored throughout the thesis and is evidenced by the range of journals in which the papers have been published.

1.4 Research questions

The research questions have been designed to address the research aims in light of the conceptual framework of postdevelopment, non-hierarchical scale and transdisciplinarity. The preceding discussion has outlined the case for multi-sited research that includes local communities and is sufficiently flexible to cross disciplinary boundaries. The specific methodology, methods, field sites and participants that I draw upon to address these research questions are introduced and explored in Chapter 2.

The first two research questions directly address the first part of the research aims and incorporate the framework of non-hierarchical scale by seeking investigation at a range of different sites. They are:

1. *How is adaptation conceptualised at several different sites associated with the development sector, including local communities in the developing world?*

2. How are development actors utilising the concept of adaptation at several different sites associated with the development sector?

The label of 'development actors' that I use in these questions pertains to individuals who are actively involved in the development sector such as development organisation employees and government officials. It is important to note that the first question seeks information from a range of sources that are relevant to the development sector such as academic literature, government representatives and community members, whereas question two is focused specifically upon the development organisations and their employees. All of the papers that explore these two questions also identify potential implications of the findings.

The third research question relates more directly to the second part of the research aims on identifying challenges and opportunities for effective adaptation. I engage this research aim by focusing upon local communities. The third research question is:

3. How are some local communities already responding to challenges associated with the climate?

This question has been designed in consideration of postdevelopment perspectives that seek to value diverse practices at the local level, a non-hierarchical perspective of scale that critiques how local sites have been obscured via traditional scale logics and recent adaptation literature which identifies a gap in knowledge from these sites (Acosta-Michlik et al. 2008; IPCC 2012). I have used the broad framing of 'challenges associated with the climate' as opposed to 'climate change' in order to avoid the imposition of ideas on communities with which they may not be familiar. This issue will be discussed further in Chapter 2. Each of the research questions will be restated in the bridging sections that sit before each chapter.

1.5 Thesis contributions

By addressing these three research questions, this thesis makes a number of contributions to contemporary debates around adaptation and development. Firstly, this thesis clearly demonstrates that there is ambiguity in parts of the development sector around what adaptation actually is and what actions it involves. There are divergent conceptualisations of adaptation that link it to many different, and at points contradictory, development approaches that have existed prior to the emergence of the subject of climate change adaptation. Related to these divergent conceptualisations, this

thesis demonstrates that some development actors may be passively and actively utilising the new concept of adaptation to fund and implement pre-existing approaches to development. Examples identified by participants in this thesis include sustainable livelihoods programs, disaster risk reduction, the construction of large-scale infrastructure and agricultural intensification. I suggest that the association of these actions with adaptation in the development sector is being driven by an ongoing imperative for certain types of development, more than by the unique challenges of climate change and adaptation. Actions undertaken in the name of adaptation may result in ineffective adaptation that could at worst, undermine opportunities for adaptation in the future. Using adaptation as a justification for existing development activities also has the potential to cloud important political or problematic aspects of development actions. Drawing upon postdevelopment critiques, I argue that the ways adaptation is being conceptualised and utilised obscures alternative possibilities for adaptation and sheds light on one way that the development sector continues to be sustained in the world.

Accompanying this critical analysis, this thesis also draws upon research from local communities in Nepal and Bangladesh to argue that there are a range of nascent perceptions and practices that should inform approaches to adaptation. I posit these contributions in the spirit of postdevelopment thinking, which calls development actors to move ahead uneasily, without the confidence that any particular approach is the 'right' one and with the knowledge that development work is embedded in politics. I show a number of examples of communities in rural Nepal and Bangladesh already making adjustments at the local level that may be enhancing adaptive capacity to a range of uncertainties including climate change. I suggest that the enhancement of social networks and collective action may be one of the first steps in supporting adaptation in communities. In addition, the research from Nepalganj, Nepal, explores community perceptions of environmental change and perceptions of development actors to argue that international development organisations may not be best placed to facilitate adaptation. For example, community members were distrustful of international organisations that had come from outside their context and instead looked to local organisations and government for support. The findings from these local sites complement my analysis of the development sector to suggest that adaptation should not be engaged with the familiar certainties of how development should happen, but in a

way that supports the diverse practices of local communities as they act in their own particular ways to anthropogenic climate change.

1.6 Thesis structure

The structure of this thesis reflects the requirements of a Ph.D. by publication. The front section (Chapters 1-3) of the thesis provides a substantive introduction, describes research design and provides background to development aid. The back section (Chapter 10) provides an overarching conclusion that brings the findings from each of the papers together. In contrast to a traditional dissertation, the middle sections of this thesis contain a number of stand-alone papers that are either published, accepted for publication or under review. These papers are predominantly in parallel contributions (as opposed to in series) that each investigates one or more of the research questions at different sites associated with adaptation and the development sector. The papers all relate to the overarching research aims, questions and design. These diverse investigations combine to produce several differentiated, yet related, conclusions that provide insights into the theorisation and use of this increasingly prominent concept in development. It should also be noted that the overview presented in this section is complemented by bridging sections that sit before each of the papers. Each contains a section that outlines the publication details, the link to the previous chapter, a table with the relevant research questions, sites and findings and a brief discussion of the contribution of the chapter to the thesis and the intended audience.

Following on from this Chapter 1, Chapter 2 outlines the methodology, field sites, participants and methods. The discussion on methodology outlines the philosophical foundations of the way I approached the research for this thesis and explores postcolonial geography, performative epistemology and constructivist grounded theory. This is followed by a description of the field site locations and participants before I introduce the specific methods that were utilised for the research.

Chapter 3, 'A brief history of development', is an overview of the key ideas and influences in development history that are referred to throughout the thesis. This chapter covers the topics of colonialism, modernisation, developmentalism, neoliberalism, alternative development and postdevelopment in order to provide background that is relevant to, but not present in, most of the papers. This is the final

chapter prior to the papers and it provides useful framing that situates this thesis in the history of development debates. As several of the papers in this thesis identify, the way that many development stakeholders are approaching the subject of adaptation is by absorbing it into pre-existing development paradigms.

At this point the thesis moves into the papers and the accompanying bridging sections. The papers of the thesis have been ordered broadly in relation to which research question they address and on which site they focus. Papers at the beginning of the thesis are primarily focused on question one, on how adaptation is being conceptualised, whilst those at the end are primarily focused on question three, on how several local communities are already responding to environmental change. I have chosen this order, as opposed to the order in which they were composed or published, as the papers have been peer reviewed, edited and published in different ways and on variable timeframes. Before moving to provide a summary of each particular chapter I will firstly identify the overarching flow. Chapters 4 and 5 are primarily focused on the literature and published documents of development organisations to identify key ways that adaptation is being conceptualised. Chapter 6 draws upon the perspectives of development actors from different sites associated with the development sector to investigate how the concept of adaptation is being utilised in the development sector. Chapters 7 and 8 focus on several local communities in developing countries, to explore how communities that are vulnerable to climate change perceive their vulnerability and how they are responding to existing challenges associated with the climate. Lastly, Chapter 9 draws on a range of the research data to explore both the implications of how adaptation is currently being utilised and the possibilities for effective adaptation efforts in the future.

Chapters 4 and 5 are all largely based upon desk research and do not explicitly draw upon the field research. Chapter 4, titled, 'Climate change adaptation and disaster risk reduction: Contested spaces and emerging opportunities in development theory and practice' and published in *Climate and Development*, explores how adaptation is being conceptualised through the pre-existing approach of DRR. This is the first paper that I published during my Ph.D. research and as such reflects the beginning of my thought process on these issues. In bridging sections throughout the thesis I identify how my understanding of adaptation and use of language evolves in light of the dynamic learning process of my Ph.D. In this paper I argue that the way DRR is being considered as

adaptation in the literature demonstrates that conceptualisations of adaptation are open and flexible. This could both enable the other pre-existing development approaches to be considered in adaptation and also open up opportunities to rethink development.

Chapter 5 builds upon the previous chapter by further interrogating the conceptualisation of adaptation as a continuum of activities. I engage with this conceptualisation by drawing upon ideas around development funding. I demonstrate that the ways in which adaptation is conceptualised has implications for the types of projects that may be funded. This paper, 'Climate change adaptation exchanges: An exploration of the possibilities and risks', emerged from the colloquium 'Debt for Development Exchanges' at the University of New South Wales on the 19th of March 2010 and was subsequently published as a book chapter in *Debt for Development Exchanges: History and New Applications*, (Buckley, R. 2011, Cambridge University Press). Drawing upon the apparent flexibility of the adaptation concept presented in Chapters 4, and the conceptualisation of an adaptation continuum, this chapter presents three models that explore the idea of debt for adaptation exchanges.

At this point in the thesis I move to focus upon the data collected during the field research. Chapter 6, 'Climate change adaptation: Business-as-usual development or an emerging discourse for change?', is published in the *International Journal of Development Issues* and investigates how development actors are conceptualising adaptation and how they are utilising adaptation concepts in their work. I identify that amongst the participants in the research there is no consistent understanding of adaptation and that it is being linked to a range of pre-existing approaches to development. Drawing upon discourse theory I explore how flexible adaptation discourses may be enabling development actors to repeat past development practices that are more related to an ongoing imperative for certain types of development rather than addressing the unique challenges of climate change. Conversely, I also suggest that adaptation may be opening up new spaces for development actors to critique development and to consider alternatives. Many development actors see adaptation as a 'turning point' in development aid and suggest that it points to new paradigms and practices.

The next paper in the thesis moves to a different site in the development terrain in which I consider the practices and perspectives of a particular community. Chapter 7,

'Nepalgunj, the centre of the world: Local perceptions of environmental change and the roles of climate change adaptation actors', published in *Local Environment*, considers perceptions of development actors and community members in a single local context in Nepal. This paper provides a different perspective to the papers that preceded it, by exploring perceptions of adaptation and those who seek to implement it, through the eyes of those who are living in developing world communities. This lens of analysis raises a number of important questions regarding the implementation of adaptation and identifies potential opportunities for effective adaptation. Using the example of the town of Nepalgunj in Nepal, which is vulnerable to climate change, this paper explores how local community members understand the climate related challenges that they are facing. I identify that while the community is sensitive to climate change impacts, they are not familiar with the concept of climate change. In addition, this paper explores community perceptions of the development organisations that are working in the geographical area. This paper concludes by drawing attention to the intrinsic capacity of local groups to enhance adaptive capacity through the facilitation of local government advocacy, social networks and collectives.

Chapter 8 further hones in on the potential role of collective action in adaptation to climate change. 'The role of collective action in enhancing communities' adaptive capacity to environmental risk: An exploration of two case studies from Asia' is co-authored with Frank Thomalla and is published in *Public Library of Science - Disasters*. Drawing upon the examples of women's collectives in Nepal and community based disaster management in Thailand, this paper examines how collective action may enhance adaptive capacity and the factors that enable and hamper this action. It argues that collective action, and in particular social networks and local government, may be an important element of adaptation in some contexts.

The final paper builds upon the examples and analysis of the previous chapters to explore a postdevelopment approach to adaptation. Chapter 9, 'Strategic localism for an uncertain world: A postdevelopment approach to climate change adaptation', co-authored with Katharine McKinnon and accepted for publication in *Geoforum*, addresses all of the research questions to consider postdevelopment theory and adaptation. Using examples from my field research, I argue that a postdevelopment approach to adaptation can provide a critical lens to scrutinise proposed adaptation actions by the

development sector and to see possible opportunities for action. This paper builds upon many of the chapters in this thesis by introducing a new theoretical perspective, which brings together various components of the thesis. For example, I explore how adaptation is being conceptualised and utilised in the development sector in addition to considering how local communities are already responding to environmental uncertainty. Postdevelopment provides a theoretical framework, that weaves together many of the questions, insights and ideas presented in this thesis. I argue for an approach to adaptation that is grounded in the local, conscious of climatic uncertainty and open to new opportunities and possibilities.

Table 1.2 List of papers and publication details

Chapter	Paper Title	Authors	Journal/ Publisher	Publication status
4	Climate change adaptation and disaster risk reduction: Contested spaces and emerging opportunities in development theory and practice	1. Philip Ireland	<i>Climate and Development</i>	Published (Oct 2010)
5	Climate Change Adaptation Exchanges: An exploration of the possibilities and risks	1. Philip Ireland	Cambridge University Press (book chapter)	Published (Dec 2010)
6	Climate change adaptation: Business-as-usual development or an emerging discourse for change?	1. Philip Ireland	<i>International Journal of Development Issues</i>	Published (July 2012)
7	Nepalgunj, the centre of the world: Local perceptions of environmental change and the roles of climate change adaptation actors	1. Philip Ireland	<i>Local Environment</i>	Published (Feb 2012)
8	The role of collective action in enhancing communities' adaptive capacity to environmental risk: An exploration of two case studies from Asia	1. Philip Ireland 2. Frank Thomalla	<i>PLOS Disasters</i>	Published (October 2011)
9	Strategic localism for an uncertain world: Postdevelopment and climate change adaptation	1. Philip Ireland 2. Katharine McKinnon	<i>Geoforum</i>	In Press (February 2013)

CHAPTER 2 – METHODOLOGY, PARTICIPANTS, FIELD SITES AND METHODS

2.1 Introduction

The research questions outlined in Chapter 1 call for a research design that is able to encounter and capture information across a range of different sites that are related to adaptation in the development sector. In this chapter I introduce and describe the research design. The majority of the discussion relates to the field research sites, however I also include methods for the desk research that involved exploring written materials such as journal articles and reports of development organisations. The research activities conducted for this research were approved by a comprehensive ethics review process of the Macquarie University Human Ethics committee (Appendix 6 is a copy of the human research ethics approval letter).

Throughout this chapter I also identify and explore similar studies that have been conducted in recent years. Environmental change in the developing world has become an increasingly prominent research topic across a range of disciplines. While it is not possible to discuss all of these projects in detail, I refer to a cross section of the studies that have informed the research design of this project. The studies that I reference include those that investigate vulnerability to environmental change (Acosta-Michlik and Espaldon 2008; Toni and Holanda 2008), community responses to natural hazards such as floods (Paul and Routray 2006; Eakin et al. 2010), adaptation to climate variability (Kelkar et al. 2008; Ziervogel et al. 2006) and local approaches to climate change adaptation (Acosta-Michlik et al. 2008; Blanco 2006). In addition to this chapter, several of the published papers in this thesis also explore similar research in each of their focused areas.

I begin this chapter by exploring the methodology behind this research. I understand methodology to be the underlying principles and philosophical perspectives that determined how I went about answering the research questions. In consideration of these guiding principles, I then move to describe how I selected the specific field sites and participants and outline each of these respectively. Research for this thesis was conducted at climate negotiations and at multiple sites in Nepal and Bangladesh. The participants include a range of actors who are engaged in the development sector and several local community groups. Finally, I outline the specific methods that I used in this

research, identifying how they were selected, their appropriateness for the research questions and the correlation to the different field sites.

2.2 Methodology

In this section I explore the three key theories that have influenced the way in which I have selected methods and conducted the research that is presented in this thesis. These provide the philosophical framework that informs how I answer the research questions, including the selection and utilisation of methods, field sites and participants. The importance of outlining my methodology is emphasised by Greckhamer and Koro-Ljungberg (2005) who argue that qualitative researchers must make their “epistemological background and theoretical perspective explicit” (p. 734). The three theories that have shaped the overarching methodology for this thesis are postcolonial geography, constructivist grounded theory and performative epistemology.

I have chosen these three particular theories as they provide suitable frameworks for considering the research design and have all made important contributions to contemporary research approaches. Here I describe each of these theories and identify why they are appropriate to the research approach presented in this thesis. It is important to note that I am not drawing entirely on any one of these theories. Rather, they each offer insights into research that I have considered and incorporated into my research design. In particular I focus upon how they each draw attention to the agency of the researcher in research processes, the problematic history of cross-cultural research and the inherent subjectivity of qualitative research. The specific methods that I refer to in this section are provided as examples and will be further justified and explained in the following section on methods. Throughout this chapter and the thesis I refer back to the three following methodological influences. In the conclusion (Chapter 10) I look back upon the research project, from the planning to the execution and analysis, and critically reflect upon the degree to which my research reflected these methodologies.

2.2.1 Postcolonial geography

Postcolonial geography considers the influence of colonial power on colonised and colonising people throughout time (Barnett 1997; Huggan 1989; Loomba 1998). In recent history colonial approaches to cross-cultural research had a tendency to dismiss the rights and knowledge of ‘others’ (Howitt and Jackson 1998; Howitt and Stevens

2005). For example, Smith's (1999) work highlighted the negative impact of non-indigenous research upon indigenous communities and argued that researchers need to have "a more critical understanding of the underlying assumptions, motivations and values which inform research" (p. 20). Methodological insights of postcolonial geography are particularly relevant to this research as all the field sites associated with the research for this thesis are intertwined with the colonial legacy. As a white male researcher from a wealthy developed country, my position in developing country contexts is bound in a complex and unjust history that should be named and addressed (Rose 1997). Postcolonial methodologies engage the historical legacy of colonial approaches to research by calling researchers to acknowledge and minimise their role in creating and sustaining inequitable power relationships (Howitt and Stevens 2005; Spivak 1996, 1998). In order to achieve this, postcolonialism draws attention to alternative ontologies and reconfigures how the researcher engages with research participants (Howitt and Suchet-Pearson 2006; Law and Urry 2004).

One way that I have engaged postcolonial methodologies in this research is by being conscious of my role in speaking 'with' participants rather than 'for' participants. A key influence on this approach is from the postcolonial theorist, Gayatri Spivak. She raised key questions around visibility and audibility of the participants of research who are outside the hegemonic power structure (Spivak 1998). In her chapter 'Can the subaltern speak?' Spivak (1998) suggests that when researchers speak 'for' the subaltern they reinforce inequitable power relations and risk silencing the subject. In a similar vein Hodge and Lester (2005) used a postcolonial lens to review the experiences of a young researcher who struggled to persuade indigenous communities to answer his research questions. This experience led them to reflect upon important questions around who research is done for and whose agenda is being served. They identified the subtle ways that researchers can impose their ideas and questions upon certain groups, akin to a colonial research approach (Hodge and Lester 2005). Their exploration also draws attention to the ease with which colonialism can seep into contemporary research approaches and the need for an ongoing and reflective engagement with all aspects of research. As a researcher in cross-cultural contexts I remained conscious of postcolonial critiques and engaged with the call for ongoing critical reflexivity throughout the field research, in my field diary and in conversations with others.

In the research for this thesis, considerations of postcolonial geography have impacted upon the selection of research methods and fieldwork conduct. As a researcher in cross-cultural contexts and as someone engaging with the topic of development, both of which carry colonial baggage, I have had to carefully reflect upon how I engage in the research process. Drawing upon the postcolonial literature as well as my own research experiences has compelled me to view my relationships with participants as a two-way flow of learning (McLean et al. 1997; Spivak 1996). In practice this involves the mutual sharing of ideas and knowledge, which contributes to the embodiment of more equitable relationships between researchers and participants. Hodge and Lester (2005) suggest that new “conceptual and explanatory possibilities” can develop from viewing knowledge construction in this way (p. 48). An example of where this approach can be facilitated in research is through the use of semi-structured interviews.

2.2.2 Constructivist grounded theory

Constructivist grounded theory is a methodological perspective that complements postcolonial geography. It is particularly suited to the qualitative research of this thesis as it draws attention to the inherent subjectivity of the researcher and invites a process of critical reflexivity in the research process. Echoing the statements of Greckhamer and Koro-Ljungberg (2005), I do not claim to be a “grounded theorist” nor do I draw only upon this methodology in my research (p. 732). Rather, this is a perspective that has been a shaping influence in how I conduct research that is evident in this thesis. This methodological framework combines the ideas of grounded theory (Glasner and Strauss 1967; Strauss 1987; Strauss and Corbin 1998) and constructivism (Guba and Lincoln 1989; Hayes and Oppenheim 1997). On grounded theory, Bowen (2006) states that it is an inductive research approach that “calls for the continual interplay between data collection and analysis during the research process” (p.2). Constructivist grounded theory builds upon this approach by challenging the notion of researchers as “distant experts” (Charmaz 2000, p. 513) and highlighting the subjective relationship between the researcher, participants and knowledge creation (Allen 2005). In this vein, Allen (2005) argues that researchers “must surrender efforts to interpret from a neutral or outside position” (p. 82) and suggest that it is not possible to have an entirely objective perspective as a researcher. Constructivist grounded theory offers a methodological approach that brings to the fore the notion of the researcher as an author who is engaged in the co-construction of experience and meaning with research participants

(Mills et al. 2006; Hayes and Oppenheim 1997). In practice, this methodological framework calls for flexible research methods that build in a process of critical reflection about the data that has been gathered and the research relationships (Greckhamer and Koro-Ljungberg 2005; Mills et al. 2006).

Constructivist grounded theory has also been the subject of long running debate around its precise form and manifestation. These debates demonstrate that there is no single way that constructivist grounded theory is utilised. For this research, I draw upon these debates and perspectives as they offer useful insights into how research can be designed and conducted. An example of one of the key debates is that there are different perspectives on how this methodology is related to the tradition of positivism in science (Crotty 1998; Greckhamer and Koro-Ljungberg 2005; Strauss and Corbin 1998). Positivism is a philosophical approach to science that emerged in the 1800s that was designed to distinguish science from metaphysics and religion through the use of empirical evidence, unitary method, theories and technical laws (Pratt 2000). The role of positivism in geography has long been contested with some theorists rejecting the approach entirely (Bowen 1979) and others suggesting that there remains a tacit acceptance of many positivist assumptions (Pratt 2000). Whilst Strauss and Corbin (1998) entirely reject the existence of positivism in grounded theory, Greckhamer and Koro-Ljungberg (2005) and Crotty (1998) suggest that there remain elements of positivism. Greckhamer and Koro-Ljungberg (2005) argue that grounded theory remains based on hypothesis and contains a certain level of objectivity and approximations of the truth. Another debated area in constructivist grounded theory relates to the treatment of academic literature (Mills et al. 2006). For traditional grounded theory Glassner (1992) suggests that there is no need to review literature as this may bias the researcher's interpretation of the data. In contrast, Strauss and Corbin (1998) contend that there is a use for literature as it can "stimulate our thinking about properties or dimensions that we can then use to examine the data in front of us" (p. 45).

In the research for this thesis, constructivist grounded theory impacted upon the selection and utilisation of several methods. This framework places emphasis on methods that can facilitate the co-construction of knowledge (Greckhamer and Koro-Ljungberg 2005; McLean et al. 1997). Put another way, Mills et al. (2006) suggest that knowledge co-construction is an outcome of the researcher's interpretation of

participants' stories, where the perspectives of both the researcher and research participant are present. In addition to keeping a field diary that provides a place for critical reflection, the method of semi-structured interviews is consistent with constructivist grounded theory as it enables the participant to have some control over the direction of the interview (Bowen 2006; Greckhamer and Koro-Ljungberg 2005). This method can assist in minimising the researcher's agenda and provide opportunities to amplify the participant's voice in the research process.

2.2.3 Performative epistemology

Performative epistemology is the third methodological influence that I draw upon for the research presented in this thesis. It has impacted upon the way that I understand my position as a researcher and conducted myself in the field in particular by highlighting the idea of researcher agency in the research process (Gibson-Graham 2008; Sedgewick 2008). This theoretical perspective suggests that researchers, through what they do, say and write, can unintentionally bring particular worlds into being over others (Gibson-Graham 2005, 2008). Put another way, researchers have powerful agency and can inadvertently reinforce certain truths over others. It recognises the role that performance (Butler 1993), through research practice and the creation of knowledge, plays in producing and reproducing particular ideas. The development sector contains many different ideas that are tied up in political, cultural and ideological positions. The concept of performative epistemology has helped me to further understand how researchers can unwittingly strengthen the power of certain ideas by seeing the world, and more specifically the research context, in particular ways.

Performative epistemology has its foundations in the concept of performativity (Butler 1993). Judith Butler is one of the key theorists in this field and explored how sexuality is constituted through performance and is produced by action on a day-to-day basis (Butler 1993). At the core of her argument is the idea that norms are reproduced consciously or unconsciously through a continual process of repetition and subsequent reinforcement. The notion of a performative epistemology takes this idea further. This theory suggests that humans produce a wide range of things, not just sexuality, through action such as research (Gibson-Graham 2008; Sedgwick 2003). Performative epistemology suggests that researchers, through their practice, can bring particular worlds into being over others through their choices regarding the type of research that

is done. Using this framework Gibson-Graham (2008) have identified that there are a variety of economic practices taking place that are hidden by many of the existing practices of researchers. For example, by continuing to comment upon capitalism as the dominant form of economic operation researchers are, in part, giving life to this discourse and concealing other alternatives (Gibson-Graham 2008). They argue that researchers have a responsibility to recognise the roles we play in performing particular worlds over others.

The insights of performative epistemology are particularly pertinent to research focused on the development sector. There are a range of competing worldviews at play as different development actors seek to frame 'poverty' and the development remedies for it. The theoretical framework of performative epistemology has helped me to understand how the way I conduct research has the potential to affirm what is already known or draw attention to new alternatives. Authors such as Gibson-Graham (2002, 2004, 2005, 2006, 2008) and McKinnon (2006, 2007) have influenced how I understand my role in the research process. Their work argues for research that is guided by a "distinctive ethical stance" (Gibson-Graham 2004, p. 4) and one that seeks to perceive practices and ideas that are perhaps outside the purview of dominant thought (Gibson-Graham 2008, p. 620). Drawing upon this perspective in my field research I found a wide range of activities that were taking place outside the formal economy or foci of development organisations. For example, I discuss an informal social network in Nepal that had formed out of a savings loan group to cooperatively purchase agricultural land for traditionally landless people. It is here that performative epistemology complements the other methodological perspectives by identifying the opportunities of research to identify hopeful and effective practices that are already occurring.

2.3 Field sites and participants

I now move to identify the field sites and the participants. I have chosen to discuss the participants and field sites together as they are interrelated for my Ph.D. research, as the following discussion will demonstrate. In this section I will first provide an overview of how I selected the sites and participants before I describe the participants and the specific field sites. Due to ethics considerations, I do not disclose the names of any individuals or their affiliated organisations.

2.3.1 Selecting field sites and participants

The conceptual framework and research questions of this thesis call for multi-sited research that includes local communities and is capable of gathering perspectives from a range of different stakeholders associated with the development sector and the subject of adaptation. As such, I allocated my time in the field between several different types of field sites with different types of development actors that are relevant to adaptation and the development sector. There are six field sites for this research that can be broken down into three categories. The first category is international climate negotiations at Copenhagen and Cancun. The second category is capital cities in developing countries vulnerable to climate change; Kathmandu in Nepal and Dhaka in Bangladesh. The third category is rural communities in developing countries vulnerable to climate change; Nepalganj in Nepal and Mongla in Bangladesh. Many studies in this field emphasise the need for these localised investigations in adaptation research (Acosta-Michlic et al. 2008; Blanco 2006; Ziervogel et al. 2006). The selection of the field sites and participants was driven by several overarching considerations including; how could I best address the research questions in line with the methodology, which field sites demonstrated the kinds of issues I wanted to investigate, where did I already have relationships and networks that I could draw upon and what could I feasibly do given the limitations of doctoral research. In addition, it is important to note that the research questions call for investigation at a range of different sites in accordance with a non-hierarchical view of scale that does not place the significance of any individual field site above another. I will now explore how and why I selected each of these sites and the participants. As I describe below, the way that participants were selected differed between the sites.

The international climate negotiations in Copenhagen and Cancun provided sites for me to engage a broad range of individuals working on adaptation in the development sector. At these negotiations the involvement of development organisations is substantial as there are many public events such as panels, forums and workshops that are focused on adaptation. These were ideal locations to recruit participants and observe a range of public events focused on the topic of adaptation. In addition, most development organisations also have a publicly accessible information booth attended by staff. At the international climate negotiations interview participants were selected on the basis of being involved in a public capacity either at their organisation's information booth or

presenting at a public workshop relating to adaptation and the development sector. I approached these potential participants and invited them to participate in the research following public events or while they were based at public information booths. Throughout the several weeks at the climate negotiations I approached every booth containing an organisation that worked in the fields of adaptation and development. Whilst I deemed this approach most appropriate and effective for that particular context it did have some limitations. For example, participants were more likely to be from large development organisations that had enough staff to occupy their booths. Many of the booths belonging to smaller organisations were often vacant. This method also resulted in the majority of interviews being from international NGOs as many representatives from government and supranational institutions (such as the World Bank) declined the invitation for an interview. These negotiations also provided an opportunity for me to engage development actors from many different countries in one place. Another motivating factor for me to utilise this site was the fact that I was already doing some separate contract work for International NGOs. Without this additional part-time employment covering some of my costs I would not have been able to attend these events and conduct Ph.D. research. With full knowledge and approval from the university ethics committee, my supervisors and the interview participants during these negotiations I engaged in both Ph.D. research and work obligations.

The research in Nepal and Bangladesh was conducted in two different types of locations. The capital cities enabled me to engage a range of actors from government and from the national offices of NGOs whilst the rural field sites provided the opportunity to gather perspectives from local communities and other development actors. Aalst et al. (2008) identify that risk and adaptation research solely based at the community level is limited by its focus on a small area. They identify the value of including regional and national level actors in order to gain additional sets of perspectives (Aalst 2008). I have also drawn upon this mix of participants due to the increasing recognition of the importance of different knowledges (Kelkar et al. 2008; Kasemir et al. 2003) in research considering socio environmental dimensions. Kasemir et al. (2003) suggest that both lay knowledge and expert knowledge are important components of environmental decision making. Spending time in Nepal and Bangladesh also enabled me to include participants who are engaged in adaptation and development but were not able to attend the international negotiations. These countries were also selected for this research because they are both

developing countries that are particularly vulnerable to climate change (IPCC 2007a). The literature has identified that developing countries are generally most vulnerable to climate change due to factors such as their geographic location, low institutional capacity and greater reliance upon climate sensitive sectors such as agriculture (Burton 2004; Nath and Behera 2011; World Bank 2010). The most recent IPCC (2012) report has further emphasised that climate change will likely lead to more extreme weather events such as storms, cyclones droughts and floods in many locations. As will be identified throughout this thesis both Nepal and Bangladesh are vulnerable to climate change impacts such as changing rainfall patterns, melting glaciers and extreme weather events (IPCC 2007a). A range of development actors in both countries are engaging with the subject of adaptation partly in response to these apparent vulnerabilities. Gathering data from local contexts in two different countries provided a more diverse set of data that could enable me to make broader claims in response to my research questions.

In accordance with the overarching methodology, the selection of the field sites in Nepal and Bangladesh was also influenced by existing relationships with stakeholders who are based in or are from these locations. As a researcher from outside these cross-cultural contexts I was very conscious of postcolonial perspectives, which are critical of the impact of non-indigenous researchers. I sought to minimise any imposition of my research agenda on the individuals and communities involved in this research. Woods (2006) affirms this type of approach and suggests that qualitative researchers need to be as unobtrusive as possible and minimise any disturbance to their research context. One way that I engaged this challenge was by always working alongside willing individuals who were familiar with these field sites, including the culture, language, religion and societal norms. In Nepal I conducted the field research with local NGO employees who served as a conduit to potential participants. Other studies, such as Blanco (2006) have recognised the important place of community-based organisations and NGOs in explorations of local adaptation to climate change. I established these connections with some assistance from my existing networks. These included locals and expatriates who had worked with international NGOs in this region. Similarly, in Bangladesh I travelled with local NGO staff with whom I had a pre-existing relationship through previous employment in development NGOs in Australia. The important role of these types of “key informants” has been acknowledged in recent research on environmental change in developing countries (Acosta-Michlik 2008; Paul and Routray

2010; Toni and Holanda 2008). The way that informants were purposefully selected in my research is similar to the approach used by Paul and Routray (2010) in Bangladesh on coping strategies. In both instances, my relationships with these individuals greatly assisted me in understanding the contexts in which I was working and in developing important relationships for my research. My utilisation of this network of relationships for my Ph.D. research was thoroughly considered and deemed appropriate by both my Ph.D. supervision team and the Macquarie University human research ethics committee.

The way research participants were selected in Nepal and Bangladesh differed with respect to the capitals and the rural field site locations. In Kathmandu and Dhaka I sought potential participants by contacting development organisations that had publicised their interest in adaptation. I determined which organisations these were by accessing websites and discussions with development stakeholders in these countries. By contacting these organisations through their public channels, such as phone numbers and/or email addresses, I was able to gain permission to invite staff members whose work was related to climate change adaptation for an interview. In all these cases participants were fluent in English and I did not need to draw extensively upon my pre-existing networks. In the rural field sites my engagement with local organisations and community members was mediated through my pre-existing contacts based in these countries. These contacts had been made through my prior employment in the development sector. I deemed this an appropriate approach due to my limited understanding of the local language and culture. These local contacts mediated my time in the rural field sites and were the main avenue through which participants were selected and invited to participate. In the majority of cases, after local community groups and organisations were made familiar with my presence they invited me to attend pre-arranged meetings. This approach is consistent with postcolonial methodologies as I attempted to minimise the imposition of myself in the participants' locations. On four occasions for the rural research I initiated contact with potential participants outside my local contacts network. These participants were also regionally based employees of large development organisations that were working on issues related to climate change.

Finally, working through pre-existing networks in these locations enabled me to rapidly build rapport with research participants. I was able to both include research

participants with whom I already had a relationship and draw upon their networks for additional research participants. Working through these individuals enabled me to build trusting research relationships with a range of participants that would have been difficult to achieve on my own in the available time. The methodological perspectives of postcolonialism and constructivist grounded theory call for lengthy engagement with research field sites in order to develop meaningful relationships with research participants. The approach of drawing on existing networks helped me to overcome some of the challenges of developing rapport with participants in a relatively short period of time. The time that I spent in each of the research locations listed below was determined by balancing a range of factors including the research methodology, the research budget and the location of pre-existing relationships.

2.3.2 Copenhagen climate change negotiations (3 weeks)

The Copenhagen climate negotiations provided a central component of my data collection. It was the first field site that I engaged and it garnered eighteen interviews in addition to data gathered through other methods that will be explored in the next section. There was a very large assembly of actors from the development sector engaging with the subject of adaptation. There were many development organisation representatives who were there to represent, and in some cases present on, their organisation's work around adaptation. There were also several government representatives from developing countries who were involved in adaptation planning and implementation in their countries. The Copenhagen conference and other side conferences, such as the International Institute for Sustainable Development 'Development and Climate Days', ran over three weeks, which afforded me sufficient time to recruit research participants and to find convenient times to conduct interviews. Due to the high concentration of potential research participants I was able to recruit participants and conduct interviews in a relatively short period of time. In addition, there were a significant number of side events, including panel discussions, mini conferences, seminars and workshops relating to adaptation, which provided valuable data and convenient locations to meet potential participants.

Copenhagen also served as a useful location to develop relationships for subsequent fieldwork in Nepal and Bangladesh. For example, I met several government and development organisation representatives who invited me to reconnect with them in

Nepal and Bangladesh. These relationships resulted in a number of other helpful connections, for example with more senior government representatives in Nepal and Bangladesh. In several instances I was also able to set up meeting times and locations before I arrived in the country.

2.3.3 Nepal (6 weeks)

There were two key research sites in Nepal; Kathmandu and the regional town of Nepalganj (Chapter 7 provides further description of Nepalganj). Being the capital of Nepal, Kathmandu contains a high concentration of government and NGO actors who are designing adaptation programs. In my time there I was able to conduct eight interviews and attend several pre-organised events workshops and forums on adaptation. During my weeks in Kathmandu I was able to develop relationships with several NGOs that led to further connections for my fieldwork in and around Nepalganj.

The town of Nepalganj, Located in the Mid-Western district of Banke, is suitable for this research as it is vulnerable to the impacts of climate change and I had pre-existing contacts who had previously lived in this area. Recent years have produced a range of environmental challenges for this area, such as flooding and drought, that relate to the projected impacts of climate change (IPCC 2007a; Nepal Ministry of Environment 2010). Many of these impacts are related to changes in the Asian monsoon, the weather system that drives the climate of Nepal, and which is predicted to further change under climate change scenarios (Nepal Climate Vulnerability Study Team 2009; Shrestha et al. 1999). Nepalganj is also a town in which both my wife and her father have spent significant time. There are a number of small NGOs in this area, with which they had links, and which are responding to social, economic and environmental challenges faced by the local community. Fieldwork in Nepalganj was assisted by NGO staff with whom I had a prior relationship and who were very familiar with the area and the organisations involved. These pre-existing relationships were vital for quickly developing rapport with participants and a familiarity with the area. Despite the relatively short period of time in Nepal I was able to conduct fourteen interviews, ten focus groups and participant observation with three individuals. This was more than I had initially planned and was assisted by pre-existing relationships and thorough forward planning.

2.3.4 Bangladesh (3 weeks)

There were two key field sites for research in Bangladesh; the capital Dhaka and the regional town of Mongla. The research in Bangladesh followed a very similar pattern to that in Nepal. Time in the capital Dhaka was used to meet with NGO and government actors whilst time in the regional town was used to explore a specific local context. Mongla is located in the coastal Sundarbans of Bangladesh. The recent IPCC report (2012) identified that low-lying coastal deltas in Asia are one of the most vulnerable areas to climate change. This is due to a combination of pre-existing vulnerability to climate related events such as floods (Kunii 2002; Paul and Routray 2010) and projected climatic change including rising sea levels and more intense cyclones (IPCC 2012). The communities that I investigated in and around Mongla have been negatively impacted by recent extreme weather events, such as Cyclone Sidr in 2007 and Cyclone Aila in 2009. These events resulted in a range of impacts such as flooding, the destruction of infrastructure and the saline inundation of agricultural land. Research relationships with individuals and organisations in Mongla were facilitated through my pre-existing professional networks. The majority of my time in Bangladesh had been pre-planned which enabled me to conduct four interviews, six focus groups and participant observation with four people.

2.3.5 Cancun (2 weeks)

The Cancun climate conference provided a site for follow up research where I could further explore and test the ideas that had emerged over the course of the Ph.D. By the time of Cancun I had processed most of my field data from Copenhagen, Nepal and Bangladesh and had drafted several papers. My knowledge and understanding of the issues had developed since Copenhagen. For example, I was more familiar with the challenges and opportunities of local communities for which adaptation was being planned. This development of ideas will be further explored in the bridging sections. At Cancun I was able to test some of my findings around conceptualisations of adaptation and explore if and how the field had evolved. I attended a range of events on adaptation, such as panels, workshops and seminars that followed on from meetings in Copenhagen. In addition, I was able to conduct follow up interviews with three participants from Copenhagen and engage two new participants.

2.3.6 Description of participants

The research for this thesis engaged a range of different participants utilising three key methods. These methods are described in the following section and include semi-structured interviews, focus groups and participant observation. Due to ethics considerations, the names of individuals or their organisations are not disclosed in this thesis. As such, I only provide a broad categorisation of my participants. The table in the following section identifies how many of each participant type were engaged at each field site.

I conducted 39 semi-structured interviews (as identified above, 3 were repeated), lasting from 30 to 90 minutes each, across all the field sites. These participants, all engaged with the subject of adaptation in the development sector, are grouped into seven different categories:

- 4 NGO directors;
- 10 NGO practitioners (individuals who are involved in the planning and implementation of development activities);
- 7 NGO policy specialists (individuals who are engaged in development of and advocacy around policy);
- 3 researchers (individuals working for research institutes);
- 7 government officials at local and national levels; and
- 5 senior national government officials (individuals at senior advisor, head of department or Government Minister level).

I also conducted 10 focus groups in and around Nepalganj, Nepal, and 6 focus groups in and around Mongla, Bangladesh. These focus groups were composed entirely of local community members who were engaged in some capacity with local NGOs. Finally, I conducted participant observation with several key participants associated with my pre-existing networks which included two in Kathmandu, three in Nepalganj, two in Dhaka and two in and around Mongla. I should note that there are a few of instances in which certain participants were involved through more than one research method. For example, the majority of the participants who were subject to participant observation also provided semi-structured interviews.

2.4 Methods

I now move to outline the research methods that I used to collect and process data for this thesis. In particular I identify how I selected and utilised each of the methods, reflecting upon both methodological considerations and experiences in the field. Table 2.1 provides an overview of where each method was utilised and how many participants it involved. As has been noted previously, each of the papers in this thesis draw upon different combinations of these methods depending on the type of data they are presenting. In this section I provide an overview of all the methods that were drawn upon to address the research questions outlined in Chapter 1.

The methods that I utilise for this research are all qualitative as opposed to quantitative. Qualitative methods have been used extensively to explore the types of questions that this research is engaging. Most of the methods that I outline below have been used in research that explores adaptation and development. Some studies in this area have complemented their use of qualitative methods with quantitative methods, such as statistical analysis and agent based modelling (see Acosta-Michlik and Espaldon 2008 and Toni and Holanda 2008). I have not chosen this approach for my research questions as a range of other studies demonstrate that the use of qualitative methods alone is adequate for the types of research questions that this thesis is addressing (Eakin et al. 2010; Kelkar et al. 2008; Tyler et al. 2006).

Table 2.1 List of methods and field sites (brackets denote number of participants in each category and location)

	Semi-structured interviews	Focus groups	Participant observation	Field Diary	Secondary data collection	Seminar, forum and workshop observation
Copenhagen – COP15	✓ (18)			✓	✓	✓
Kathmandu, Nepal	✓ (8)		✓ (2)	✓	✓	✓
Nepalganj, Nepal	✓ (6)	✓ (10)	✓ (3)	✓	✓	
Dhaka, Bangladesh	✓ (3)		✓ (2)	✓	✓	✓
Mongla, Bangladesh	✓ (2)	✓ (6)	✓ (2)	✓	✓	
Cancun – COP16	✓ (5)			✓	✓	✓

2.4.1 Semi-structured interviews

Semi-structured interviews were the primary method used to gather participant perspectives on how adaptation is being conceptualised and utilised by actors in the development sector (see appendix 2 for the guiding interview questions). Interviews are one of the most commonly used methods in human geography fieldwork and consist of face-to-face interaction in order to gather qualitative data (Johnston 2000). In recent years, this qualitative method has been employed by a range of researchers to explore the perspectives of participants in environmental change research (Eakin et al. 2010; Kelkar et al. 2008; Paul and Routray 2010; Toni and Holanda 2008). For example, Eakin et al. (2010) in their study on responses to flood risk in the Upper Lerma Valley in Mexico conducted interviews with public officials, households impacted by floods and community leaders. Similarly, Paul and Routray (2010) utilised unstructured interviews with households and community leaders in research on flood coping strategies in Bangladesh.

For this research I selected the semi-structured, rather than structured or unstructured, approach. Each of these different approaches to interviewing has strengths and weaknesses. Structured interviews offer greater topical focus, however, this format has also been critiqued for reducing the scope for the interviewee to guide the agenda (Hannan 2007). Conversely, unstructured interviews provide great agency to the interviewee, yet can be inconsistent between participants and create data analysis difficulties (Hannan 2007; Woods 2006). Two key reasons guided the selection and use of semi-structured interviews in this research. Firstly, this method is consistent with the methodological approach of constructivist grounded theory by providing the participant greater control over the flow of the interaction (Bowen 2006; Mills, Bonner and Francis 2006). For example semi-structured interviews can produce a more conversational engagement when compared to structured interviews (Longhurst 2003). They can provide the participant with more freedom to raise and discuss new ideas that may not be implicit in the interview questions. In order to facilitate this type of exchange I included several interview questions that were open-ended. The second key reason that I utilised this method was due to its effectiveness in exploring the specific research questions, in particular around how development actors conceptualised adaptation and utilised adaptation concepts. The conversational tone engendered by the method of semi-structured interviews often resulted in what seemed to be open and critical

reflections from research participants. This benefit also created some challenges for correlating different participant responses that were focused on different aspects of the interview questions. These interviews were conducted with members of government, civil society, NGOs and local representatives as noted previously in the previous section that outlined details of the participants.

In order to develop the interview schedule, I conducted four pilot interviews with potential participants. Whilst I sought formal consent from these individuals, I have not included the data from these interviews as a part of my research data as the approach and specific questions were not consistent with the subsequent interviews. Conducting pilot interviews assisted me in refining both the content and structure of the interview schedule. The pilot interviews demonstrated to me that my initial set of interview questions were too complex and led to quite varied and confused responses from participants. In addition, I realised very quickly that I needed to establish a common vocabulary, beyond the words in the questions, that I could use consistently across all the interviews. I found that using different terms which I considered to be synonyms could elicit very different responses from participants. For example in the pilot interviews when I used the term development *industry* rather than development *sector* some participants took this to mean I had a more critical perspective on development and subsequently reflected this view. As a result of the pilot interview process, I simplified the research questions and found a consistent vocabulary, to utilise and draw upon in the semi-structured interviews.

2.4.2 Focus groups

I used the method of focus groups to investigate the research questions in the local communities in Nepal and Bangladesh. In accordance with the conceptual framework, the research design calls for the inclusion of local communities in order to understand how they are conceptualising adaptation and what actions they are undertaking to respond to challenges associated with the weather. This method is also commonly used in research on local responses to environmental change in conjunction with semi-structured interviews (Kelkar et al. 2008; Paul and Routray 2010; Toni and Holanda 2008). In their study on adaptation and climate variability in India, Kelkar et al. (2008) suggest that focus groups are an important method to elicit community perceptions about climate change. I selected focus groups as a method at these local sites for three

key reasons. Firstly, it is consistent with the methodological perspectives that call for cross-cultural sensitivity and appropriateness (Howitt and Suchet-Pearson 2006; Law and Urry 2004). Prior to going to these field sites I consulted with a number of individuals who have spent time in the research locations. They suggested that focus groups with pre-existing formations of people (such as savings and loans collectives) would be an appropriate and effective method as this would minimise disruption to peoples lives and community members would likely be more comfortable speaking in a group. Secondly, focus groups facilitated an open-ended engagement with research participants that provided them some control over the direction of the conversation and created space for their perspectives to emerge (Hopkins 2007; Pratt 2002). This approach is also a feature of the methodology and is similarly applied in the semi-structured interviews. Thirdly, focus groups enabled me to encounter perspectives from a greater number of individuals than one-on-one engagement would have allowed (Longhurst 2003). This benefit of focus groups also presents one of the key limitations of this method. Cooke and Kothari (2001) identify that group dynamics can result in the amplification of the perspectives of participants who are already powerful. Whilst it is not possible to entirely overcome this limitation, I have attempted to address it in my research design by accompanying it with other one-to-one methods (i.e. interviews), utilising trained local facilitators and by conducting some focus groups with only women in order to avoid gender-power dynamics. As noted in the section on participants, the vast majority of focus groups were comprised of local community members who were a part of pre-existing groups that were associated with local NGOs.

The guiding questions that I used in focus groups followed a different pathway to the semi-structured interviews with development actors. There could be no assumption that community members at the local field sites were familiar with the concept of adaptation or climate change, as opposed to development sector employees who were working specifically on this subject. As such, I designed guiding questions that did not overlay assumptions around knowledge of climate change and instead allowed these themes to emerge from the focus group (see appendixes 3, 4, and 5 for the focus group schedule in English, Nepali and Bangla). This approach is similar to that adopted by Kelkar et al. (2008) who suggest that rather than simply taking information from respondents, researchers should facilitate identification and understanding of issues by a community. Before asking specifically about knowledge of climate change I sought information from

the focus groups about challenges that their communities were facing and challenges associated with the weather to see if the topic of climate change naturally emerged. Appendix 3 provides an English version of the focus group question schedule. It demonstrates that I attempted to minimise my own research agenda by opening with several general questions that could enable groups to identify any perceived challenges that they face without an explicit focus on my research topic. The focus groups also sought information on research question three about how communities were responding to challenges associated with the weather.

I conducted focus groups in a range of different settings and with different groupings of community members. When I arrived in the field locations it became readily apparent that organising meetings myself would be very difficult and at points culturally inappropriate. I was also conscious of Cooke and Kothari's (2001) powerful critique of formulaic approaches to participatory research methods such as focus groups. They suggest that rigid and formulaic approaches to these types of research methods has operation limitations, can be culturally inappropriate and can inadvertently be seen to be controlling (Cooke and Kothari 2001). In all locations the key community contacts preferred me to accompany them to pre-arranged meetings, such as those of savings collectives, and then provided a space for me and my research assistant to conduct a focus group. Sometimes I would not know I was attending a group meeting until just before the event. Someone would come and invite me to a meeting and we would walk, cycle, rickshaw or ride a motorbike to a location. Sometimes there were five people and other times the numbers were closer to twenty. At each of these events I would be brought into the space, introduced by a local stakeholder and provided with time to facilitate a group discussion with local stakeholders acting as translators. The guiding questions were sufficiently broad and relevant to day-to-day realities. The discussions were often vibrant, engaging and highly informative. Whilst this way of working created some difficulty in planning my time and preparing for particular audiences, it is relatively consistent with postcolonial methodology whereby I am minimising the imposition of my priorities and timing on research participants.

Photo 2.1: A focus group near Mongla, Bangladesh. Participants are gathered in front of what used to be a fresh water pond, until a recent cyclone flooded it with salt (Philip Ireland, 2010)



Photo 2.2: A focus group in Nepalganj, Nepal. (Philip Ireland, 2010)



2.4.3 Participant observation

I selected the method of participant observation as a complement to the other methods that provided an additional layer of data and was consistent with the overarching methodology. Participant observation is one of the most commonly utilised qualitative methods when researching with local communities (Evans 1988; Spradley 1980). Woods (2006) suggests that participant observation offers a range of opportunities in research by providing the researcher first hand experience with their subjects and access to other potentially useful places, people and events. Conversely, this method has been identified as quite demanding on researchers (Woods 2006) and creating tension between the researcher's role as a researcher and as a participant (Evans 1988;

Spradley 1980). As noted previously in the section on participants, I conducted my research in Nepal and Bangladesh alongside individuals who were from, or had spent substantial time in, those contexts. These individuals often worked for or were associated with NGOs and assisted me as local guides, links to local NGOs and as translators. By seeking formal consent to use the method of participation observation I was able to engage in an extended dialogue with these participants around the research questions as we travelled and ate meals together. Acosta-Michlic et al. (2008) describe these types of participants as “key informants” and suggest that they are essential for gathering “rich knowledge” in new vulnerability research (p. 539). As I will detail below, this method assisted in a process of knowledge co-construction that was consistent with constructivist grounded theory. There were a total of nine participants with whom I employed this method (see table 2.1 for a breakdown of each site) for periods of time ranging from one day to two weeks.

Whilst the term ‘participant observation’ is technically appropriate for this method, I should note that I find that it inadequately reflects the relationships that fall into this category in my research. In practice, this method consisted of ongoing discussions of the data that was being collected through the research process, such as from focus groups and interviews. Other recent studies in this field have used different names for this type of approach such as “unstructured interviews with key informants” (Paul and Routray 2010, p. 492) or “key person interviews” (Kelkar et al. 2008, p. 568). In reality, these individuals were far more than just ‘observed’. They engaged with my research and actively contributed to both the data gathering and on the spot analysis. Often these participants would offer insights into how I should consider and analyse the information I was encountering from the local field sites. There were countless conversations as I travelled in rickshaws, buses and boats, and as I shared meals with these individuals. In many ways we were considering the research questions together through ongoing discussion together of the ideas emerging from the interviews and focus groups. These individuals helped me to understand the contexts I inhabited and the data I was encountering. This approach also reflects the overarching methodology such as where postcolonialism calls research relationships that reflect a two-way flow of learning (McLean et al. 1997; Spivak 1996) and constructivist grounded theory which challenges the notion of researchers as “distant experts” (Charmaz 2000, p. 513).

2.4.4 Observation of public events

The second type of observation that I conducted in this research was of public events that did not require formal consent. These events were predominantly at the climate negotiations, however, I was also able to attend two public events in Kathmandu and one in the regional town of Mongla in Bangladesh that involved discussion of climate change adaptation and development. During these public seminars, forums and workshops I took notes and occasionally asked questions. Observing these events had two key purposes. Firstly, I was able to observe and compare perspectives of development actors on adaptation that did not involve my direct input. This enabled me to gather additional perspectives on how adaptation is being conceptualised and utilised in the development sector for comparison to the data from the interviews. Secondly, using this method allowed me to hear the perspectives of development actors in a public setting that I was unable to interview due to time and availability constraints.

2.4.5 Field diary

I kept a field diary throughout the research to facilitate critical reflection upon the research process and to note down observations from the research data. One of the key reasons I selected this method was to provide a central space across the whole research process to keep track of my thoughts and reflections. This included consideration of how I was conducting myself in the field and interacting with participants. The use of this method for such critical reflection is consistent with all three of the methodological perspectives. For example, I used the field diary to consistently write about my agency and how I might be contributing to the exacerbation or diminishment of colonial power relations. On a more practical note, the field diary also assisted in the collection and analysis of data. I was not able to transcribe and code many of the interviews and focus groups for several months (they were audio recorded) after they were conducted due to the already busy schedule of the field research. The notes in the field diary provided temporal reflections upon these interactions and helped me to remember the context when processing the research data at a later date. This method assisted me in handling the complexity and volume of data that I was encountering each day.

2.4.6 Collection of publicly available documents

Throughout the field research I physically collected publicly available materials of organisations in the development sector. This included material such as NGO reports,

government proposals, brochures, leaflets and filmed documentaries. Mills et al. (2006) refer to this “nontechnical” literature as a good potential source of data (p. 5). Strauss and Corbin (1998) suggest that these types of documents can also provide additional information about the contexts of research participants. I drew upon this method to assist in addressing question one on how adaptation is being conceptualised at different sites associated with the development sector. The climate negotiations were a particularly important location for this method as numerous organisations have stalls with freely available materials. This complemented the other methods by providing a wealth of additional information on how adaptation is being conceptualised. I have used these materials in a variety of ways including as references throughout the thesis, as material to corroborate the statements of some participants about their organisations and as further reading on the topic of adaptation.

2.4.7 Literature review

Many of the papers in this thesis draw upon exploratory reviews of the literature. I have selected this method primarily to address research question one which calls for an investigation of how adaptation is being conceptualised at a range of different sites associated with the development sector. The academic literature is an important site that impacts upon the development sector through such avenues as creating new knowledge related to development, reviewing development practice and providing theoretical insights. There are a number of academic journals that are aimed at both theorists and practitioners in the development sector. Examples that I draw upon in this thesis include *Climate and Development*, *Global Environmental Change*, *The Journal of Development Studies* and the *International Journal of Development Issues*. The way that this method is reflected in each paper differs according to the requirements of each particular journal. It should be noted that some constructivist grounded theorists critique reviewing literature and suggest that it may bias the researcher’s interpretation of the data (Glassner 1992). As noted in the section on methodology, I accord with the countervailing view of Strauss and Corbin (1998) who suggest that reviewing literature can help stimulate researchers’ reflections on data in positive ways.

2.4.8 Data analysis: Coding, inductive analysis and NVivo

In order to analyse the data that was collected from my research I adopted a number of specific methods and tools. Throughout the research and for several months afterwards

I transcribed recorded excerpts from interviews, focus groups and workshops and converted written notes from the field diary into electronic form. I entered the data into the analysis program 'NVivo' where I could perform coding and analysis. Other research in this area has also used this program. For example Eakin et al. (2010) used this program to analyse their interviews from Mexico in order to develop an understanding of the perception of what causes floods. This program enabled me to deal with a large volume of data and in particular to collate relevant components for consideration. I drew upon a number of categories to code the research data. Coding was guided by both the interview questions, for example bringing together all the answers to the question 'how do you define adaptation?', and through the method of inductive analysis. This approach resulted in categories both being imposed on the data through the guiding interview questions and others emerging from the analysis. The analysis of Eakin et al. (2010) adopted a similar approach and focused on respondents' views of institutional adaptive capacity and the causes of flood. Inductive analysis involves the inductive construction of categories and it is often used in conjunction with the constructivist grounded theory (Bowen 2006; Greckhamar and Koro-Ljungberg 2005). This approach is informed by earlier theorists such as Patton (1980) and Bryman (1994) who suggest that key research themes should emerge from the data rather than being imposed upon it. Whilst the overarching research design does not exclusively fit within a constructivist grounded theory approach, there were a number of themes that emerged through the use of inductive analysis in the data analysis process. For example, a theme that emerged via the inductive analysis is the role of neoliberalism in approaches to adaptation. I did not ask specific questions on economic perspectives and did not anticipate the emergence of this theme. However, a significant number of participants raised this idea thus leading to the creation of a new coding category and further reflection on this theme in other materials such as the secondary data.

The published papers contained within this thesis draw on different sets of this data corresponding to the focus of the paper. For example, Chapter 6 draws upon the coded data from the semi-structured interviews to explore common themes and trends identified by participants. Using the data in a slightly different way, Chapter 7 identifies the percentage of times certain responses emerged from the focus groups. Some of the papers also draw upon notations from the field diary to describe examples of some specific activities.

The process of entering data, coding and analysis was a key driver in refining my research questions and planning for journal articles. As I composed the thesis papers and engaged with new literature, I continually came back to the research questions and the data in a process of reanalysis and reinterpretation. This dynamic and iterative research process is evident throughout the papers and is demonstrated as I explore different theoretical perspectives and sets of data. This approach reflects the overarching methodology of constructivist grounded theory that calls for continual interplay between data analysis and the collection of new data.

2.5 Conclusion

In this chapter I have described each of the different field sites for this research and the associated methodology, participants and methods. The methodological foundations of this research have guided me to approach the research in a way that; 1) recognises the negative historical legacy of colonialism and my place in it, 2) acknowledges my own subjectivities and 3) seeks to privilege the voices of participants. In synergy with these perspectives I have chosen field sites that are suitable for addressing the research questions and participants that are connected to my pre-existing networks wherever possible. This has assisted in facilitating open and honest communication that has enriched the data collection. In reflection, the practical constraints of conducting research across multiple field sites during a Ph.D. timeframe limited the extent to which I could apply these methodologies.

Investigation of these field sites is accompanied by desk research at a number of other types of sites including academic literature and published documents of development organisations. In each of the papers that follow (Chapter 4 through to Chapter 9) I draw upon different sets of data gathered from this research in order to address the research questions. Due to the nature of a thesis by publication, in each of these papers I only describe the research component that is relevant to that paper. In line with the direction of editors and reviewers of the different journals in which they have been published, the methodology and methods are presented in varying levels of depth. In the conclusion to this thesis (Chapter 10) I explore some of the challenges and limitations of this research design.

CHAPTER 3 – A BRIEF HISTORY OF DEVELOPMENT AID

3.1 Introduction

The contemporary development sector has its foundations in a history that has been subject to wide ranging critique. An understanding of this history provides important context for exploring the different ways that the development sector is engaging with the subject of adaptation. The aims and questions for the research presented in this thesis have been informed by critical debates on development (Escobar 1992; Esteva 1992; Pieterse 2010; Sachs 2010) that are mindful of the negative impacts of past development activities (Chambers 1983, 1997; Ferguson 1990; Shiva 1993; Verhoeven 2010) and cautious of new development efforts (Escobar 1995; McKinnon 2006, 2007; Sidaway 2007). The purpose of this chapter is twofold. Firstly, it further establishes the critiques of post World War Two development aid, paying particular attention to the critical perspectives that inform the research aims. Of note, this exploration identifies the potential for negative impacts on communities resulting from adaptation efforts of the development sector. Secondly, this chapter provides a background to several key theories that have impacted upon development policy and practice, and are referred to throughout the thesis. The papers of this thesis, whilst focused on various aspects of adaptation, all intersect with long-standing debates about development aid. The material presented here enriches many of the published papers that follow by providing additional information and analysis that is not possible to cover in the papers. In this chapter I also identify several examples that emerge throughout the thesis that foreground how past approaches to development relate to contemporary conceptualisations of adaptation.

Development aid is widely contested and has been substantially critiqued over many decades. A range of literature asserts that there are significant problems with the foundations of development aid and with the practices of the contemporary development sector (De Beer and Swanepoel 2000; Djankov, Montalvo and Reynal-Quernol 2008; Glennie 2008; Hubbard and Duggan 2009; Pieterse 2010; Sachs 2010; Willis 2005). Pieterse (2010) for example has written extensively on development and claims that it is a field in flux that is tied up in a crisis of ideologies and a crisis of paradigms. A simple example of the disparity within the development sector is that some view development as being primarily about economic growth (World Bank 2010) whereas others see it primarily as being about autonomy or freedom (Sen 1981, 1989).

Watts (2000b) suggests that development is one of the “most complex” words in the English language and that the history of meanings and corresponding practices are “unstable and labile” (p. 166). This characterisation is reflected within the development sector in which there is a diverse range of perceptions among individuals and organisations as to the purpose of development (Esteva 1992; Sachs 2010). I contend that the way adaptation is conceptualised and utilised in the development sector reflects the broader context of contestation in development.

In this chapter I explore several of the key historical influences and theories that have shaped the contemporary development sector. These are colonialism, modernisation, developmentalism, neoliberalism, alternative development and postdevelopment. It should be noted that there is considerable overlap between these topics and they do not represent a neat progression of ideas over time. Throughout this chapter and this thesis I explore how the planning and implementation of adaptation is rooted in the history of development aid. We begin this discussion with colonialism.

3.2 Colonialism

The era of colonialism is one of the most significant historical influences upon the foundations of development aid. Colonialism can be defined as the political control of peoples and territories by foreign states (Bernstein 2000). The colonial era commenced around the 15th century with the expansion of European powers into the continents of Africa and Asia.² Colonialism was generally associated with the search for, and expropriation of, wealth such as gold and slaves. The territorial expansion associated with colonialism facilitated uneven development on a global scale as a small number of nation states dominated other peoples and lands (Watts 2000a). Hobsbawm (1987) estimates that at the turn of the last century one quarter of the world’s land mass was distributed between six colonial powers. The configuration of colonial power changed significantly after World War Two as a period of decolonisation resulted in independence for most nations. Whilst no major development organisation in the post World War Two era would associate itself with colonialism, many theorists (Esteva 1992; Escobar 1992; Sachs 2010; Pieterse 2010) have related the practices and motivation of colonialism to development aid in the 20th century.

² It should be noted that whilst European-led colonialism has had the most widespread and long lasting impact, there are a range of earlier examples where societies exerted dominance over others. Examples include the Aztec, Inca and Mongol empires. (Willis 2005).

There are many legacies of colonialism that have had a significant impact upon the formulations and critiques of development. In the decades following 1945, colonial perspectives had an influence upon the formation of new political and economic theories such as modernisation (Bauer 1976; Frank 1969; Rodney 1981). As I will explore in the sections that follow, many of these major theories enabled subservient linkages established in the colonial era to continue. An example of such a linkage was the continued flow of raw materials from developing countries to developed countries where there would be value adding through manufacturing for example (Pieterse 2010; Willis 2005). The literature has documented a range of features of contemporary development that have their foundations in colonialism. This includes the discursive construction of the 'Third World' (Escobar 1995), the continued social and cultural dominance of the 'West' (Willis 2005, pp. 18-24) and the imposition of development economics on developing countries (Pieterse 2010, pp. 6-7). These all have connections to colonial perspectives of hierarchical and subservient relations between peoples and countries.

The linkages of colonialism to modern development are particularly pertinent to the background and content of this thesis. The research aims and questions are grounded in a critical perspective of development aid that is cautious about the potential impact of future development efforts. Reflecting this foundation, in several of the research interviews participants suggested that development donors were imposing the concept of adaptation on their small organisations and that this was akin to a colonial approach to development. That is, they felt like they were being pressured to adopt the development priorities of Western development donors in a way that devalued their knowledge and autonomy. These insights will be further discussed in papers of this thesis, particularly Chapter 6, and raise important questions around how the utilisation of the new concept of adaptation may perpetuate development relations that reflect colonialism. I now move to consider modernisation theory, which provides an example of how colonialism continued to impact post World War Two development practices despite being formally renounced.

3.3 Modernisation

Modernisation theory is a perspective on social, economic and political change, which has had a significant impact upon development aid. As several chapters of this thesis will

demonstrate, some development organisations are conceptualising adaptation within a modernist paradigm. Modernisation theory dates back to the 19th century and is tied to significant historical shifts such as the industrialization of Europe, the rise of the United States and the spread of the world market. Modernisation theory emerged as a key theoretical influence upon development aid in the wake of World War Two. It is defined as a process of social and economic change whereby countries adopt the characteristics of expansive, growth oriented and apparently more advanced societies (Lee 2000, p. 516). The landmark text of this theoretical perspective is Walt Rostow's 'The stages of economic growth' (1960), in which he outlines five discrete evolutionary stages of economic development. In this model the first stage of modernisation is the 'traditional society' and the final stage is the 'Age of high mass consumption'.

The modernisation approach to development assumes that countries are on a linear pathway moving from 'undeveloped' to 'developed'. In this framework, modernisation extends to many different aspects of society including economic growth, market relations, urbanisation, the nuclear family, individualisation and democratisation (Pieterse 2010). It is based on the Eurocentric assumptions that all countries should follow the development pathway of 'western' nations (Hobsbawm 1979; Willis 2005) particularly in relation to economic growth (Adams 1995). As a result of these assumptions, modernisation theory has also been critiqued for ignoring or devaluing the pre-existing history, culture, social norms and environmental relations of subject societies (Lee 2000).

Despite robust critiques, many of the ideas associated with modernisation continue to influence the policies and practices of the development sector, particularly around the assumption of economic growth (Adams 1995; Esteva 2010; Pieterse 2010; Sachs 2010). As this thesis will show, the influence of modernisation is extending to conceptualisations of climate change adaptation. A notable example that emerges in this thesis is based upon the views of the World Bank. In the recent World Bank *World Development Report* (2010) responses to climate change, including adaptation, are framed within the assumption that economic growth should be a natural outcome of development. This is evidenced by statements such as "climate policy [including adaptation] cannot be framed as a choice between growth and climate change. In fact, climate-smart policies are those that enhance development, reduce vulnerability, and

finance the transition to low-carbon growth paths” (World Bank 2010, p. viii). The idea that development should naturally support economic growth is an example of an assumption that is challenged by other approaches to development.

3.4 Developmentalism

As modernisation was increasingly critiqued in 1960s, the new framing of ‘development’ emerged in its place. Following the reconstruction of Europe through the Marshall Plan³, Western nations began to explore other avenues for involvement in Africa, Asia and South America (Rodney 1981; Willis 2005). Pieterse (2010) suggests that modernisation “lost its appeal” in the mainstream due to factors such as declining US hegemony, the Vietnam War and new sociological theories (p. 25). Developmentalism provided a reframing of modernisation that appeared more neutral than previous formulations of social change that focused singularly upon economic development (Pieterse 2010). Reflecting this shift, in 1960 development became a central theme for the United Nations as it launched its ‘development decades’, which would last until the year 2000 (Jackson 2007). The development decades focused on a range of measurable development objectives for development countries such as achieving a minimum of 5 per cent annual growth in national income and eliminating illiteracy, hunger and disease (Jackson 2007). Developmentalism manifested through a range of development interventions into the ‘Third World’ to reduce apparent poverty and underdevelopment (Escobar 1992).

Critiques of developmentalism have focused on how this approach has created a perception of underdevelopment that contributed to an exacerbation of inequitable colonial relationships. Nanda Shrestha grew up in Nepal, which is a research site of this thesis. He provides a powerful first hand reflection upon the construction of these powerful concepts, stating:

“to my innocent mind, poverty looked natural, something that nobody could do anything about...it never seemed threatening or dehumanising. So, poor and hungry I certainly was. But underdeveloped? I never thought – nor did anybody else – that being poor meant being ‘underdeveloped’ and lacking human dignity. True,

³ A US Government project to provide financial assistance to Western Europe for rebuilding infrastructure after World War Two. Willis (2005) estimates that between 1948 and 1952 approximately US\$17 billion was transferred, which represented 2-3% of US GNP at the time (p. 38).

there is no comfort and glory in poverty, but the whole concept of development (or underdevelopment) was totally alien to me and perhaps most other Nepalese" (Shrestha 1995, p. 268)

This reflection highlights how developmentalism imposed new categories on communities that did not necessarily reflect the views of those who were being categorised. Pieterse (2010) echoes this critique to suggest that the developmentalist approach, similar to modernisation, constructs and imposes an artificial logic around how social, political and economic change should occur. He suggests that developmentalism constructs truth from the point of view of the centre of power where "those who deem themselves furthest along its course claim privileged knowledge of the direction of change" (Pieterse 2010, p. 19). Dependency theorists extend this analysis to argue that development interventions can actually produce inequitable dependencies and exacerbate poverty (Amin 1974; Rodney 1981). Andre Gunder Frank termed this the "development of underdevelopment" (1967) whereby he suggested that development had taken on the characteristics of colonialism under a different name. For example, the binaries of primitive and civilised, traditional and modern have been replaced with developed and underdeveloped. Bazin (1987) reflects upon this idea in a different way and suggests that people in developing countries were first told to believe in God by spiritual confessors and now are told to believe in science by development advisors.

Building upon these critiques of developmentalism, many theorists argue that development aid in the 21st century simply tweaks at the edges of a fundamentally problematic paradigm (Escobar 1995; Esteva 1992; Sachs 2010). This critical perspective is particularly pertinent to this thesis as I am considering how adaptation is conceptualised and utilised in the development sector. One possibility is that adaptation efforts may reinforce problematic developmentalist paradigms through the imposition of western ideas, organisations and approaches on communities. Shrestha reflects upon how these paradigms may be sustained over time and states:

"We learned how to seize the currents of international development, propelled by the World Bank, USAID, and other prominent development agencies. We turn their fads into overriding national concerns,...When they were concerned about deforestation... we suddenly discovered our deforestation" (Shrestha 1995, p. 277).

Whilst these words were penned over 17 years ago, the critiques remain pertinent today. Is adaptation a new development current that is being propelled by development agencies? Are people in Nepal and other developing countries suddenly discovering their need for adaptation? Is adaptation being conceptualised and utilised within a problematic development paradigm? Throughout this thesis I have remained mindful of these critical questions as they also relate to the research background and aims outlined in Chapter 1.

3.5 Neoliberalism

I now move to consider the theory of neoliberalism. This economic and political perspective has had a significant impact on contemporary development policy and practice. In this thesis I also suggest that this theoretical perspective may be impacting upon the conceptualisation and utilisation of adaptation. Neoliberalism refers to a set of ideas that coalesce around the assertion that the market, rather than the Nation State, should be the central pillar of social, economic and political organisation (Smith 1776; Friedman 1962; Hayak 1981).

Neoliberalism garnered significant momentum in the development sector in association with the rise of the New Right during the early 1980s era of Thatcher and Reagan. Development institutions, in particular Multi-Lateral Development banks (Willis 2005), provided development loans to developing countries under the condition that they adopted a set of free market policies. These included measures such as fiscal austerity, privatisation, trade liberalization, currency devaluation and deregulation (De Beer and Swanepoel; 2000).⁴ The long-term impact of these policies remains contested (Ferguson 2009; Pieterse 2010) with core critiques drawing attention to the apparent discountenance of social and political contexts (Willis 2005, p. 48), the exacerbation of inequality (De Beer and Swanepoel 2000), harm of the environment and increases in exposure to natural hazards (Cannon and Muller-Mahn 2010).

Despite these critiques, neoliberalism remains an influential theory in the development sector and is reflected in the types of activities and approaches that are being associated with adaptation. I shall briefly explore two examples that emerge in this thesis and

⁴ It should be noted that the World Bank has not always advocated for neoliberal policies. For example, during the 1970s it promoted policies of growth and redistribution (Pieterse 2010, p.213)

demonstrate this point. Firstly, many institutions argue that the private sector should drive approaches to adaptation. The World Bank (2010) suggests that to meet climate change and development goals there needs to be significant increases in private sector investment. Similarly a report by the United Nations Environment Program (UNEP) and others emphasises the core role of the private sector in adaptation whilst highlighting the need for economic growth and private sector competitiveness (Karbassi et al. 2011, p. 5). Secondly, The World Bank (2010) emphasises the important role of the market, redirecting agricultural subsidies and removing distortionary price signals in responding to climate change. Demonstrating the contested nature of these adaptation pathways, the NGO Practical Action argues that local adaptive capacity to climate change may be degraded by the removal of agricultural subsidies and price guarantees that support the crops of local communities (Ensor and Berger 2009, pp. 17-18). In a similar vein, Cannon and Muller-Mahn (2010) suggest that neoliberalism may not be appropriate in determining approaches to adaptation and argue that it “is the absolute necessity to distinguish development [including adaptation] from economic growth” (p. 624). These examples demonstrate how different perspectives on development can result in divergent approaches to adaptation. This further highlights the need for investigation of how development actors are conceptualising adaptation and how they are utilising the concept in the work of the development sector.

3.6 Alternative development

Alternative development theory came to the fore in the 1980s out of a plethora of critiques of mainstream development approaches and the emergence of new development practices. Throughout the research for this thesis many participants utilised this term when talking about the types of activities they associate with adaptation. At its base, alternative development differs from mainstream approaches by drawing upon different agents, methods, objectives and values for development that are centred upon grassroots communities (Pieterse 2010). In practice, alternative development focuses on activities such as strengthening civil society, gender empowerment, sustainable livelihoods and participation (Brohman 1996; Pieterse 2010).

One of the central debates in the alternative development literature is whether it is a counterpoint to mainstream development (Hettne 1990, 2008; Friberg and Hettne

1985) or whether it is an evolution – the next step - in mainstream development (Pieterse 2010; Klugman 2010; Sachs 2010). Friberg and Hettne (1985) draw attention to ecological movements in the early 1980s to argue that these provided a genuine challenge and alternative to mainstream development, which aimed for “control, growth and efficiency” (p. 235). However, others point out that while alternative development brought about some key changes for some development actors, such as the way they view agency, the state and the market, it is still grounded in the assumptions of developmentalism (Pieterse 2010). For example, research by McKinnon (2007) suggests that alternative development participatory approaches can result in the maintenance of uneven power relations between “participants” and “outside professionals” (p. 776). Whilst there is no doubt that alternative development resulted in significant changes to the policies and practices associated with parts of the development sector, discussion of what is alternative and what is mainstream is contestable.

The alternative development paradigm is particularly pertinent to this thesis as it is often associated with current development NGOs (Drabek 1987; Pieterse 2010), which are key actors in the development sector. Many of the approaches to adaptation by NGOs that are explored in this thesis, such as those of Oxfam (Pettengell 2010) and Care International (Daze et al. 2009) fall loosely into the category of alternative development. On several occasions during the research for this thesis participants created a distinction between alternative development approaches to adaptation and mainstream development approaches to adaptation. Several participants saw the emerging focus upon adaptation in the development sector as an opportunity to strengthen what they considered to be alternative development practices and move away from what they considered to be mainstream development practices.

3.7 Postdevelopment

Postdevelopment represents the most recent major shift in thought and action around development aid and the development sector. As I identified in the Introduction (Chapter 1), postdevelopment is a key theoretical perspective that is drawn upon throughout the thesis, and in particular in Chapter 9 which is titled ‘Strategic localism for an uncertain world: A postdevelopment approach to climate change adaptation’. Rather than a cohesive body of work, postdevelopment is a field of debate that contains

a set of shared concerns and interests about the role of development aid in the world. It is a recent tradition of theory and practice that seeks to challenge many of the assumptions of developmentalism and to propose alternatives to development (Gibson-Graham 2005; McKinnon 2007; Sidaway 2007). Rather than seeking to codify a new development paradigm, such as alternative development, postdevelopment seeks to understand what has been missed by existing development paradigms and what opportunities may emerge from viewing development contexts, agents and practices differently. In this vein, two key postdevelopment theorists Gibson-Graham describe postdevelopment as:

“a way of thinking and practice that is generative, experimental, uncertain, hopeful, and yet fully grounded in an understanding of the material and discursive violences and promises of the long history of development interventions” (2005, p. 6).

This statement captures the key tension in postdevelopment perspectives between the need for mindful interrogation of all development aid and openness to new perspectives and possibilities. In Chapter 9 I suggest that postdevelopment offers a perspective that is particularly useful for the emerging adaptation efforts as it provides a framework to both critically investigate proposed adaptation activities and see new opportunities for communities to engage adaptation processes.

Postdevelopment draws upon long-standing critiques of development and seeks to identify new possibilities bedded in diverse practices of communities that are already present. It questions the assumptions of development aid by drawing attention to negative impacts such as ecological damage (Sidaway 2007; Shiva 1993), expanding state power (Ferguson 1990) and the imposition of imagined categories such as ‘Third World’ (Escobar 1995). Postdevelopment theory challenges the embedded assumptions of development, such as those around progress and economic growth. It draws upon postcolonial analysis to examine how colonial relations of inequity and oppression have been re-legitimised through the language and mechanisms of development. For example, Sidaway suggests that “colonial discourses of race, progress and civilisation are reworked into the language of development” (Sidaway 2007, p. 346). Postdevelopment invokes a critical awareness and mindfulness of claims to truth, knowledge and power in development. This point forms part of the disjuncture between alternative development and postdevelopment. Alternative development attempts to codify universally

applicable approaches to development that remain embedded in moral claims to justice whereas postdevelopment suggests that no development claims can be posited as innately true. Put another way, alternative development tends to be grounded in a similar problematisation of poverty of previous development framings and seeks to understand how development approaches could be better (Pieterse 2010), whereas postdevelopment questions the assumptions of all development aid framings and seeks to understand how it continues to be sustained in the world (Esteva 1992; Escobar 1995a; McKinnon 2006), including through alternative development for example. The points of tension between these two theories are also reflected in my own analysis and presentation the data of this thesis. I identify these tensions throughout the thesis and provide a substantive reflection in the conclusion (Chapter 10). In this thesis I draw upon postdevelopment perspectives as a critical lens on how adaptation is being conceptualised and utilised in the development sector. In particular I explore how adaptation may be enabling the repetition of negative development practices or perhaps as Gibson-Graham (2008) suggest, how it is generating new hopeful practices.

3.8 Conclusion

There are two key points that I take forward from this chapter. Firstly, there are many potent critiques of development aid in the post World War Two period. The research aims and questions of this thesis are grounded in a critical understanding of development history and its key historical influences and theories. Secondly, the ways that the development sector is engaging with the subject of adaptation is tied to broader claims and debates in development. The development sector that is planning and implementing adaptation contains a range of different organisations, such as multi-lateral development banks (World Bank 2010), bilateral aid organisations (Ausaid 2012) and NGOs (Ensor and Berger 2009; Pettengell 2010), that are inclined towards different theories presented in this chapter.

Before moving into the papers I would like to note that this thesis as a whole does not fit neatly into one particular school of development thought. In several places the content represents a tension between alternative development and postdevelopment (alternatives *to* development). As I have considered the implications of the findings presented in this thesis for effective, appropriate and sustainable adaptation, I have made claims that fit into both schools of thought. At points I make arguments around

how the development sector could more effectively engage the theme of adaptation. In this vein the language that I use suggests that I am attempting to codify development approaches that could be implemented universally. Postdevelopment perspectives contest this approach to argue that no development claims can be innately true or universally applicable. Rather, postdevelopment suggests that everything is ideological and political, and that there is no 'right' approach to development questions. These two perspectives on development are woven throughout the thesis as I wrestle with understanding the pathway forward for adaptation in the development sector. I further reflect how my views have been challenged by my research in the bridging sections and conclusion.

CHAPTER 4. ‘Climate change adaptation and disaster risk reduction: Contested spaces and emerging opportunities in development theory and practice’

Publication details:

Ireland, P. (2010) Climate change adaptation and disaster risk reduction: Contested spaces and emerging opportunities in development theory and practice, *Climate and Development*, 2, 332-345.

An earlier iteration of this paper was:

Ireland, P. (2009) Climate change adaptation and disaster risk reduction: Contested spaces and emerging opportunities in development theory and practice, *Global Environmental Change and Human Security Synthesis Conference*, University of Oslo, June 2009. (oral presentation and conference paper)

Link to previous chapter

This chapter contains the first paper of the thesis and it commences the exploration of how adaptation is being conceptualised in the academic literature and by some development organisations. Where Chapter 3 explored key historical influences and theories of the contemporary development sector, this chapter provides an introduction to conceptualisations associated with adaptation. Both chapters provide background that is relevant to the remainder of the thesis, however Chapter 4 is also written in a format for publication and makes an argument on how adaptation should be approached. It is the first paper I composed and shows the beginning of my Ph.D. research. Whilst this order of these papers does not reflect the chronological learning process, it is appropriate for the flow of the thesis as I am moving from a general overview of several ways that adaptation is being conceptualised to focus on a specific example

Contribution to thesis

Chapter 4		
Research question(s)	Focus sites (and associated methods)	Conclusions
1. How is adaptation conceptualised at several different sites associated with the development sector?	-Adaptation and disaster risk reduction academic literature (literature review) -Literature of development organisations that are engaging the subject of adaptation (literature review and secondary data collection)	Q1. –One way that adaptation is being conceptualised is through the pre-existing development approach of disaster risk reduction

This paper responds to the first research question and demonstrates that a major way that adaptation is being conceptualised is through the pre-existing development approach of DRR. This literature suggests that there are many similarities between these two approaches and that DRR should be one of the first steps or key components of adaptation. I draw upon this evidence to suggest that there is uncertainty in the literature around how adaptation should be conceptualised, including what actions should be understood as adaptation. I also argue that the emerging focus upon adaptation in the development sector may offer an opportunity to rethink why communities are vulnerable to climate change and the possible actions that may contribute to adaptation processes. In several of the papers that follow I further explore the idea of rethinking development aid through the lens of adaptation.

This paper was the first that I composed and reflects how my thinking has evolved throughout the course of my Ph.D. For example, in this paper I suggest that there is an 'adaptation discourse' whereas in Chapter 6, I suggest that there are multiple 'adaptation discourses'. This change was primarily brought about through my interviews with development actors (largely presented in Chapter 6) during the field research. I found that there are multiple adaptation discourses that were being used in a range of different ways. Over the subsequent months and years of study after publishing this paper I encountered other literature that in retrospect I would have included. These include early discussions about the human dimensions of natural hazards (see Burton et al. 1968; Kates 1971; Mitchell et al. 1989) and further literature on natural hazards and Disaster Risk Reduction (see Blaikie et al. 1994; White et al. 2004; Wisner et al. 2004). This reflection relates to the dynamic research process of a Ph.D. that I further discuss in the conclusion to the thesis.

Audience

The journal *Climate and Development* focuses on issues that arise when climate variability, climate change and climate policy are considered alongside development needs, impacts and priorities. This paper has been composed for a diverse set of development actors who are familiar with the key ideas associated with climate change adaptation, disaster risk reduction and development. Similar to the previous paper, I have published in this journal in order to contribute to the process of rethinking adaptation and development amongst individuals who are engaged in practice as well as the theory. It provides this audience with an overview of the literature on adaptation and DRR and also raises questions around how adaptation is being conceptualised.

Pages 75-88 of this thesis have been removed as they contain published material. Please refer to the following citation for details of the article contained in these pages.

Ireland, P. E. (2010). Climate change adaptation and disaster risk reduction: Contested spaces and emerging opportunities in development theory and practice. *Climate and Development*, 2(4), 332-345.

DOI: <https://doi.org/10.3763/cdev.2010.0053>

CHAPTER 5. ‘Climate change adaptation exchanges: An exploration of the possibilities and risks’

Publication details:

Ireland, P. (2011). Climate Change Adaptation Exchanges: An Exploration of the Possibilities and Risks. In R. P. Buckley (Ed.), *Debt-for-Development Exchanges*. New York: Cambridge University Press.

An earlier iteration of this paper was:
Ireland, P. (2010). Climate change adaptation as debt relief: An exploration of new opportunities and risks in vulnerability reduction, *Debt-for-Development Colloquium*, University of New South Wales, Sydney, March 2010.

Link to previous chapter

This chapter expands upon the exploration of how adaptation is being conceptualised presented in chapter 4 to demonstrate how different conceptualisations of adaptation could result in very different activities being funded. I draw upon the conceptualisations of adaptation as a continuum of different activities, an idea that was raised in both of the previous chapters. This chapter also follows on from a specific question that was raised in Chapter 4 around the idea of how debt relief could be considered in approaches to adaptation. This paper was first presented at a colloquium on debt for development exchanges at the University of New South Wales, in March 2010. This followed on from the presentation of the paper that forms Chapter 4 at the GECHS conference (details included in Chapter 4 bridging section). Following the colloquium I was invited to submit a chapter for review by a number of academics and practitioners that was subsequently accepted for an edited book on debt for development exchanges.

Contribution to thesis

Chapter 5		
Research question(s)	Focus sites (and associated methods)	Conclusions
1. How is adaptation conceptualised at several different sites associated with the development sector?	-Development funding literatures (literature review and workshop observation) -adaptation academic literature (literature review)	Q1. Adaptation can be conceptualised as a continuum of activities ranging from those that address general vulnerability to those that confront specific climate change impacts

This chapter further addresses research question one to demonstrate the ways in which adaptation is being conceptualised as a continuum of activities, with actions to respond to specific climate change impacts on one end, and actions to reduce general

vulnerability at the other. I identify three different types of actions that could be funded as adaptation through debt for adaptation exchanges. These are actions that respond to specific climate change impacts (such as glacial lake outburst floods), actions that support climate vulnerable sectors (such as water) and actions that support general public services. In addition to contributing new analysis for adaptation financing to an ongoing debate, this chapter demonstrates how very broad conceptualisations of adaptation could lead to a range of different actions being funded.

This chapter was also composed at the beginning of my Ph.D. candidature and the ideas presented here reflect my early explorations of this particular subject area. As with the previous chapter, there is literature that I encountered prior to publishing this paper that in retrospect I would have liked to include. In particular I would have referenced additional literature relating to justice and equity in approaches to adaptation (see Paavola 2005, 2008; Paavola and Adger 2002, 2006). In addition, it is important to note that, while the tone of this chapter is often propositional, it is important to emphasise that in this thesis I am not presenting an argument of what precisely adaptation should be conceptualised as. Rather, I am demonstrating how contemporary conceptualisations could be utilised by the development sector.

Audience

The edited book that contains this chapter has been composed for an audience interested in debt for development exchanges and adaptation. In particular it is aimed at academics and public servants who are seeking to understand how to implement new forms of exchanges. Whilst climate change and environmental issues emerge at several other places in the book, this is not its primary focus. I published in this particular book as the chapter raises many critical questions for the target audience to consider when engaging the topic of adaptation and debt-for-development exchanges. Since publishing this chapter, the idea of debt for adaptation exchanges has been raised as a serious consideration in other forums, including the UNFCCC Adaptation Fund, as the development sector tries to find new ways to generate funding for adaptation.

Pages 91-104 of this thesis have been removed as they contain published material. Please refer to the following citation for details of the article contained in these pages.

Ireland, P. (2011). Climate Change Adaptation Exchanges: An Exploration of the Possibilities and Risks. In R. Buckley (Ed.), *Debt-for-Development Exchanges: History and New Applications* (pp. 223-235). Cambridge: Cambridge University Press.

DOI: [10.1017/CBO9780511977374.019](https://doi.org/10.1017/CBO9780511977374.019)

CHAPTER 6. ‘Climate change adaptation: Business-as-usual aid and development or an emerging discourse for change?’

Publication details:

Ireland, P. (2012) Climate change adaptation: Business-as-usual development or an emerging discourse for change? *International Journal of Development Issues*, 11 (2), 92-110.

Link to previous chapter

This chapter is the first of four that addresses the research questions by drawing on data from the field sites. This paper adds to the exploration of adaptation conceptualisations in the previous three chapters by exploring the views of development actors, such as employees of development organisations and government representatives, who are engaging with the subject of adaptation in their work. It also is the first chapter that substantively considers research question two (included in the table below). The purpose of the analysis in this chapter is to understand in greater depth how the concept of adaptation is being conceptualised and utilised by actors in the development sector and to identify challenges and opportunities for effective adaptation in the future.

Contribution to thesis

Chapter 6		
Research question(s)	Focus sites (and associated methods)	Conclusions
1. How is adaptation conceptualised at several different sites associated with the development sector?	-Development actors from Copenhagen climate conference (semi-structured interviews and observation of public events)	Q1. Adaptation is conceptualised in many different ways by development actors that link it to a wide range of pre-existing development aid approaches
2. How is the concept of adaptation being utilised by development actors at different sites in the development process?	-Development actors from Kathmandu, Nepal (semi-structured interviews, participant observation and observation of public events) -Development actors from Dhaka, Bangladesh (semi-structured interviews and participant observation)	Q2. The concept of adaptation is being utilised in at least two different ways; to support pre-existing development actions that may be unrelated to adaptation and as an idea to question the role of development aid

This chapter demonstrates that adaptation is being conceptualised in different ways amongst development actors, and that these different conceptualisations are being used to support pre-existing development practices and also to question assumptions of development aid. This chapter is focused upon research questions one and two and uses

the semi-structured interviews with development actors conducted in the field sites of Copenhagen, Nepal and Bangladesh. I identify that development actors are conceptualising adaptation in at least five different ways; reducing general risk, coping with specific climate change impacts, improving knowledge of climate change, livelihood diversification and as the natural outcome of good development.

By drawing upon critical development literatures that use the notion of discourse, I explore how participants are utilising adaptation discourses in least two different ways. Firstly, adaptation is being used to enable the repetition of past development practices that may not actually be appropriate for adaptation processes. The renaming of pre-existing development programs as adaptation is one example that I identify in the paper to make this point. Secondly, I identify that development actors may be using adaptation discourses as a tool to critique existing development and consider alternatives. Some development actors see adaptation as a 'turning point' in development and suggest that it is an opportunity to move away from long-critiqued development paradigms such as modernisation and developmentalism.

As noted in the bridging section for Chapter 4, this Chapter reflects a change in the way I consider discourse. Here I refer to multiple adaptation discourses rather than a single adaptation discourse. This came about in response to encountering and reflecting upon the many views of research participants.

Audience

The *International Journal of Development Issues* is an interdisciplinary journal that presents wide range of viewpoints on development. I have chosen to publish this article in this particular journal for two key reasons. Firstly, it is a development journal that enables me to reach an audience of development theorists that may not necessarily be familiar with the increasingly important topic of adaptation. This is the only article I have published in a journal that is solely focused on development. Secondly, this article is making a substantial comment on development as well as adaptation and I wanted to place it within ongoing development debates.

Pages 107-125 of this thesis have been removed as they contain published material. Please refer to the following citation for details of the article contained in these pages.

Ireland, P. (2012). Climate change adaptation: business-as-usual aid and development or an emerging discourse for change? *International Journal of Development Issues*, 11(2), 92-100.

DOI: [10.1108/14468951211241100](https://doi.org/10.1108/14468951211241100)

CHAPTER 7. ‘Nepalganj, the centre of the world: Local perceptions of environmental change and the roles of climate change adaptation actors’

Publication details:

Ireland, P. (2012) Nepalganj, the centre of the world: Local perceptions of environmental change and the roles of climate change adaptation actors, *Local Environment*, 17 (2), 187-201.

An earlier iteration of this paper was:
Ireland, P. (2012) Climate change, An issue of the elites? Rethinking adaptation through the eyes of the most vulnerable in Nepal, *International Climate Change Adaptation Conference*, Gold Coast, Australia. June 29 - July 1, 2010. (oral presentation and conference paper)

Link to the previous chapter

This chapter moves us to a different site in the development landscape to consider the perspectives of local community members. Where Chapter 6 explored the views of development actors engaged in the planning and implementation of adaptation projects, this paper engages a set of development ‘subjects’ who may be at the receiving end of adaptation efforts of the development sector. A number of international development organisations based in Nepal, and Nepalganj, are currently planning adaptation projects. The views of community members that are presented in this paper provide a different perspective to those presented in the previous chapters as they are largely unfamiliar with the concept of climate change.

Contribution to thesis

Chapter 7		
Research question(s)	Focus sites (and associated methods)	Conclusions
1. How is adaptation conceptualised at several different sites associated with the development sector, including local communities in the developing world?	Nepalganj, Nepal (focus groups, semi-structured interviews, and participant observation)	Q1. Local communities, which may be the subject of adaptation efforts, may be unfamiliar and disassociated with the concepts of climate change and adaptation.
3. How are some local communities already responding to challenges associated with the climate?		Q3. Local communities may be already employing a range of practices that contribute to adaptation processes

This chapter focuses on research questions one and three and explores the role of the development sector in adaptation in local communities. I use research from the field site of Nepalganj, which is vulnerable to the impacts of climate change, to explore how community members perceive environmental change and how they are responding to challenges associated with the climate. As identified in the methods section of Chapter 2, the reason that this paper uses a broader framing of environmental change rather than solely adaptation or climate change, is that I could not assume that there would be knowledge of these concepts in local communities. I identify that whilst the community is vulnerable to climate change many community members are not familiar with the concept of climate change or adaptation and have a negative view of large development organisations. I argue that these community perceptions should be key considerations in the planning, implementation and communication of adaptation by the development sector.

I conclude by drawing attention to the potential of local organisations and community groups to enhance adaptive capacity through the facilitation of local government advocacy and collective action. These insights demonstrate that the long-term success of adaptation actions may depend upon the ability and willingness of development actors to comprehend the perceptions and priorities of local communities and also to build upon existing capacity and actions of communities. The following chapter (Chapter 8) builds upon these findings to examine in greater detail the potential role of collective action in adaptation.

Audience

Local Environment is a journal that focuses on local environmental, justice and sustainability policy, politics and action. Its target audience is academics and practitioners who seek to move society towards 'just sustainability'. I have chosen to publish this article in this particular journal due to the importance of adaptation to local justice and sustainability debates. Climate change and adaptation are likely to become increasingly significant considerations for local communities around the world. The research presented in this paper draws attention to important considerations around how local communities perceive environmental change and the potential challenges for the planning and implementation of adaptation by the development sector

Photos related to paper content

Photo 7.1 A vegetable garden that was developed with the support of the women's savings and loans collective, Nepalganj, Nepal. This garden was established to improve food security for several local families who had failed to secure work as farm laborors due to a poor growing season (Philip Ireland, 2010)



Photo 7.2 An example of a polluted and blocked drain in Nepalganj, Nepal. In recent years Nepalganj has experianced increased flooding from intense rain events and poor infrastructure to deal with runoff (Philip Ireland, 2010)



Pages 129-143 of this thesis have been removed as they contain published material. Please refer to the following citation for details of the article contained in these pages.

Ireland, P. (2012). Nepalganj, the centre of the world: local perceptions of environmental change and the roles of climate-change adaptation actors. *Local Environment*, 17(2), 187-201.

DOI: [10.1080/13549839.2012.660907](https://doi.org/10.1080/13549839.2012.660907)

CHAPTER 8 - 'The role of collective action in enhancing communities' adaptive capacity to environmental risk: An exploration of two case studies from Asia'

Publication Details:

Ireland, P. and Thomalla, F. (2011) The role of collective action in enhancing communities' adaptive capacity to environmental risk: An exploration of two case studies from Asia, *PLoS Currents: Disasters* (3).

An earlier iteration of this paper was:

Ireland, P. and Thomalla, F. (2009) The role of collective action in enhancing adaptive capacity to climate change, *Amsterdam Conference of Adaptive Governance*, Amsterdam, December 2-4, 2009. (Also presented at Marie Curie Ph.D. winter school, Amsterdam, November 23-December 1, 2009).

Link to the previous chapter

The paper presented in this chapter continues the investigation of the previous chapter to further demonstrate that collective action is an important component of an adaptation process in some local communities. One of the conclusions of Chapter 7 was that locally based collective action may be useful in enhancing the adaptive capacity of some communities that face risks from environmental change. Chapter 8 draws upon this observation as its starting point and explores how collective action may enhance adaptive capacity and what are the enabling and constraining factors. This paper also adds to the previous chapters by introducing new data from a separate study of communities responding to environmental risk in Thailand. This research is drawn from the work of my principal supervisor, Dr Frank Thomalla, and provides an opportunity to explore some of the claims of my research by drawing upon a different context. Frank Thomalla has been undertaking research on social vulnerability and resilience for over 13 years and has considerable insights into disaster risk reduction and adaptation. In this paper I am able to compare the different characteristics of collective action from my own field sites with those observed in Frank Thomalla's research contexts.

Contribution to thesis

Chapter 8		
Research question(s)	Focus sites (and associated methods)	Conclusions
3. How are some local communities already responding to challenges associated with the climate?	-Nepalgunj, Nepal (focus groups, semi-structured interviews and participant observation) -Krabi Province, Thailand (data drawn from other research)	Q3. -Local communities are already responding to environmental changes and risks through collective action -Collective action and social networks can contribute to the enhancement of adaptive capacity and should be considered in the development sector's approach to adaptation

In this paper we address research question three by exploring how communities are responding to present environmental risks, and further demonstrate that collective action and social networks may be key components of adaptation processes. Using the examples of women’s collectives in Nepal and community based disaster risk management in Thailand, we find that collective action plays an important role in enhancing adaptive capacity. We also identify a number of specific enabling and constraining factors. For example, we observe that enhanced social networks are a key outcome of collective action that supports adaptive capacity. For example, social networks enhance collaboration in times of environmental stress and could enable communities to disseminate new environmental information for the purposes of future planning. We also identify that the mandate, capacity and structure of local government can influence upon the effectiveness of collective action and associated enhancement of adaptive capacity. This chapter adds to Chapter 7 by further building an evidence base that demonstrates collective action and social networks are important components in enhancing adaptive capacity. These examples also contribute to the overarching thesis findings that suggest there are nascent practices already in communities that should be further considered by actors within the development sector.

Audience

PloS Disasters is a peer-reviewed journal that considers anthropogenic and natural disasters, including human impacts and responses. We have chosen to publish in this journal as it is open access and therefore has the capacity to reach a much wider audience of theorists and practitioners on this important topic. In particular, publishing about adaptation in a journal focused on disasters draws attention to the linkages and applications of various disaster response and preparedness theories.

Photos related to paper content

Photo 8.1 A newly built mushroom house on a jointly purchased piece of land. This womens collectived saved money together to perchase land and build a mushroom house. The mushrooms are used a sustinance for the womens collective and can be sold for income.
(Philip Ireland, 2010)



Photo 8.2 A vegetable garden of one of the women’s collectives, Nepalganj, Nepal. (Philip Ireland, 2010)





PLOS Currents. 2011 October 24; 3: RRN1279.

doi: [10.1371/currents.RRN1279](https://doi.org/10.1371/currents.RRN1279)

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PMCID: PMC3202516

The Role of Collective Action in Enhancing Communities' Adaptive Capacity to Environmental Risk: An Exploration of Two Case Studies from Asia

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Abstract

Background

In this paper we examine the role of collective action in assisting rural communities to cope with and adapt to environmental risks in Nepalgunj, Nepal and Krabi Province, Thailand. Drawing upon two case studies, we explore the role of collective action in building adaptive capacity, paying particular attention to the role of social networks.

Methods

Data for this paper was gathered using a range of different methods across the two different studies. In Nepal semi-structured interviews were conducted with a range of stakeholders in addition to participant observation and secondary data collection. In Thailand the researchers utilised a vulnerability assessment, participatory multi-stakeholder assessment, a detailed case study and an online dialogue.

Findings

We make three key observations: firstly, collective action plays a significant role in enhancing adaptive capacity and hence should be more strongly considered in the development of climate change adaptation strategies; secondly, social networks are a particularly important component of collective action for the building of adaptive capacity; and thirdly, the mandate, capacity, and structure of local government agencies can influence the effectiveness of collective action, both positively and negatively.

Conclusions

We argue that there is an urgent need for further consideration of the different forms of collective action within community-based disaster risk management and climate change adaptation.

1. Introduction

As the concern over dangerous climate change impacts has intensified in recent years there has been a growing focus on adaptation in both developing and developed countries. A significant number of development institutions, including Multilateral Development Banks, bilateral agencies and International Non-Governmental organisations (NGOs) are engaging in this emerging field. Climate change presents a wide range of significant new challenges for communities across the world including rising sea levels, changing weather patterns and a greater intensity and frequency of climate related hazards. Early approaches to climate change adaptation have drawn upon a range of existing strategies [1],[2], particularly Disaster Risk Reduction (DRR) [3],[4]. It has been widely recognised by theorists and practitioners alike that many pre-existing approaches to preparing for and coping with environmental risks are likely to be useful in enhancing adaptive capacity to climate change [5],[2],[6]. In this paper we draw upon two different case studies from Asia to explore the potential role of collective action at the community level in enhancing adaptive capacity to environmental changes and risks, including climate change.

The concept of collective action has long been a consideration in development theory and practice [7],[8],[9] and has also emerged in discussions on climate change adaptation [1]. Definitions of collective action generally assert that it involves a group of people that voluntarily engage in a common action to pursue a shared interest [10],[11]. It can take the form of resource mobilisation, activity coordination, information sharing or the development of institutions (Poteete and Ostrom (2004). Poteete and Ostrom (p.216) [8] call for more research that identifies the factors that facilitate or hinder collective action. In relation to climate change, Adger [1] argues that collective action is at the core of adaptation decisions related to the management of resources associated with agriculture, forestry and other resource dependant livelihoods. Whilst it is evident that collective action can act as an enabler for climate change adaptation [1],[6] its precise role in enhancing adaptive capacity in communities remains unclear.

Adaptive capacity is one of the key concepts within the field of climate change adaptation. The IPCC defines adaptive capacity as the “ability of a system to adjust to climate change (including climate variability and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences” (p.72) [12]. Within the literature adaptive capacity has been primarily examined through the concepts of thresholds and coping ranges [13]. Smit and Wandel frame these terms as “conditions that a system can deal with, accommodate, adapt to and recover from” (p. 287)[14]. Other theorists have explored which factors enhance or reduce adaptive capacity such as social and physical drivers [15] and governance

systems [6]. Whilst Adger argues that collective action may play a role in enhancing adaptive capacity he calls for more case specific research at various scales (p. 400)[1]. Recent research on this topic includes Toni and Holanda's [16] study of the effect of land tenure on droughts in north-eastern Brazil. They found that farmers involved in common property pasturelands as opposed to private pasturelands, were on average less vulnerable to climate variations due to more diversified management and husbandry systems. Similarly Jodha [17] found that the integration of mountain communities from the Himalayas into the mainstream market economy, away from a collectivised one, has negatively affected traditional adaptive capacity to climate extremes. For example integration had contributed to the disappearance of indigenous knowledge systems and collective risk sharing arrangements that had been "safeguarding against vulnerability" (p. 36)[17]. In this paper we employ two different case studies from Asia to further explore how collective action affects adaptive capacity in these communities. In our analysis we pay particular attention to the role of social networks and the interaction of collective action with local governance.

Social networks are defined as links or relationships between households, communities and institutions of governance that facilitate the flow of material and non-material resources [18],[19]. Only limited research has been conducted on the role of social networks in the enhancement of adaptive capacity to climate change. For example, Tompkins and Adger [20] explored co-management of coastal resources in Trinidad and Tobago to suggest that collective action opens up new lines of community communication and facilitates increased influence on government. They argue that this can enhance the adaptive capacity of the community by increasing the number of resources that are available to communities[20]. Similarly, Ensor and Berger [21] suggest that local social networks can offer marginalised groups an opportunity to develop adaptive strategies. In our exploration of social networks we also draw upon Adger's [1] theories on bonding and networking social capital (p. 389). Social capital refers to the key components social organisation, such as trust norms and networks, which facilitate collective action and enhance economic performance [22],[23]. According to Adger [1], bonding social capital refers to relationships of kinship and friendship whereas networking social capital pertains to relationships beyond the immediate group and can involve actors at different levels in the community, such as government.

2. Methods

We draw on data collected in two different Asian case studies on collective action in the context of environmental changes and risks. The first case study is concerned with the establishment and functioning of women's collectives in the rural town of Nepalganj in Nepal. Data for this case study was gathered during doctoral research of the first author. This included five weeks of field research in Nepal during 2010

and interviews conducted with Australian NGO employees [24],[25] who had been involved with the women's collectives during 2009. Semi-structured interviews were utilised as the primary method and were conducted with eleven local and international development actors including NGO employees, local government representatives and members of women's collectives. Due to the relatively small size of Nepalganj, these participants were selected based upon their involvement with the women's collectives. Semi-structured interviews enabled a flexible exchange that sought to privilege the participants voice. This approach is consistent with post-colonial methodology whereby knowledge construction can operate as a two way low of learning. Other methods that were utilised were participant observation, field diary and secondary data collection.

The second case study focuses on community based disaster risk management and early warning system development in Krabi Province, Thailand. Insights for this case study were derived from several projects the second author has been involved in between 2005 and 2009 that related to the sustainable recovery and resilience building after the 2004 Indian Ocean Tsunami. This research included a vulnerability assessment of Thai tourist destination communities [26]; a participatory multi-stakeholder assessment of early warning system - community linkages [27]; a detailed case study of community disaster preparedness and early warning in Krabi Province, Thailand [28]; and a global Online Dialogue on Early Warning [29].

Key similarities between the two case studies are that they both focus on rural communities, both are located in Asia, and both are current examples of communities faced with environmental risks. A key difference is that the case study from Thailand is concerned with coastal hazards (particularly tsunamis) whereas the case study from Nepal focuses weather related hazards such as flash flooding and droughts. They hence address different environmental risks. However, while a tsunami is not a consequence of climate change, its impacts along the coast can be compared to the impacts of other coastal hazards that are related to climate change, such as tropical cyclones and severe storms. Another difference is that the case studies are located in different countries with different languages, cultures, religions and governance systems. By focusing on these two case studies we are able to undertake a comparative analysis of factors enhancing and hindering collective action and to make broader observations that are likely to be relevant outside the specific situations and contexts of these communities. All the research that is presented in this paper was approved by the relevant institutions ethics processes and committees.

3. Women's collectives in Nepalganj, Nepal

3.1 The context of the collectives

We now consider the first case study that involves a group of women's collectives

that engage in a range of activities aimed at reducing vulnerability to a range of social and environmental risks. The collectives are located near the town of Nepalganj in the Banke district of the Terai of Nepal in the Karnali Basin approximately 8km from the Indian boarder. Over the past 15 years, Nepalganj has experienced considerable socio-economic changes including rapid urbanisation and population increases. These are to a large extent the result of regional conflicts and changing work migration patterns [25]. The majority of the participants of these women's collectives are low caste urban poor women without a regular income. Nepalganj's climate is controlled by the Asian monsoon. In this region climate change is expected to impact the Asian monsoon by increasing interannual variability [12]. This in turn is likely to manifest in decreased rainfall during the winter, an unpredictable start date to the monsoon rains, and less frequent and more intense monsoon rainfall [12].

The women's collectives in Nepalganj were initially formed through the facilitation of a local NGO. Between 1998 and 2005, female community members from certain sections of the town of Nepalganj were invited by a Nepali NGO to participate in a group action process. This participatory development method encouraged the women to think about the challenges they faced and potential solutions. The women identified many issues relating to the weather and climate, particularly the impacts of floods and droughts on their livelihoods. For example, in recent years there has been less agricultural work available due failed crops and the late onset of the monsoon and related cultivation processes. The result of this group process was the formation of collectives that supported a range of activities aimed at reducing vulnerability to these environmental risks. These include: savings and loans schemes that made available finance as a buffer in times of hardship such as drought, collective agriculture initiatives that provided food to the group members and collective business enterprises, such as a mushroom farm, that provided additional streams of income. All these actions increased the resources that the group members could draw upon in general, and during times of environmental shocks and surprises.

3.2 Functioning of the collectives

The collectives functioned initially with a relatively uniform operational structure. The facilitators were employed by a local NGO and they led the initial formation and functioning of the groups. Each collective consisted of 6 to 35 members. Over time the collectives elected a leader and an assistant leader from within their group. These leaders would then be responsible for organising the collective in their geographical area. The NGO facilitator would serve as a resource and guide for the group with a gradually diminishing presence. The facilitators would attend group meetings for the first few years and assist by taking minutes and developing the skills of other group members. As the number of collectives increased, regional committees were established, in coordination with the facilitating NGO, and these

were attended and run by the leaders of the local collectives. These committees provided additional coordination and links between the groups and increased their capacity to engage issues on a different scale, such as regional health care, and facilitate larger projects such as raised cement roadways. The regional committees provided an additional level of social network that enhanced networking social capital.

One of the main functions of the collectives was to establish and manage a credit and saving scheme. This capital available for loans was raised and managed by the members themselves. The NGO acted as a facilitator of the process rather than a source of credit. Meetings were held regularly to administer loans and repayments. Money for the group was raised by its members in the form of savings with a low interest rate. This could be loaned by individuals or drawn upon for the purpose of group projects when necessary. Through a consensus decision making system groups autonomously decided on the priorities for expenditure of these funds. Examples of this include the financing of labor for the installation of donated toilets and loans to those in the group who needed the assistance most urgently [24]. As the collectives became more established they increasingly began to lobby local government representatives to provide better services to the community.

3.3 Contribution to adaptive capacity

This case study illustrates four important contributions of collective action to the strengthening of adaptive capacity. First, collective action facilitated the establishment and strengthening of social networks. These networks serve as communication channels for new knowledge relating to environmental changes and risks, planning processes, and emergency information during times of environmental stress and hazards. One development actor involved in the project stated: *“the development of new relationships and networks among the participants was just as valuable as the practical, or tangible, outcomes of the project”*. Given the uncertainties of climate predictions and the range of potential surprises faced by communities, networks that can rapidly disseminate new and updated information are crucial in enabling effective adaptation responses. Secondly, collective action improved the economic resources of the members of the women’s collectives. By increasing the resources of the participants, the vulnerability of the participating individuals and communities was reduced. A savings scheme created a financial reserve that individuals could draw on in times of hardship. In terms of climate risks, these funds were sometimes used to help people after a crop had failed due to adverse weather conditions. The capacity to adapt to uncertain environmental risks was also enhanced by the micro-credit and savings scheme. The administration, ownership and management of this scheme was organised by the collectives. The joint operation of these saving schemes by the collective is likely to further strengthen social networks.

Collective action can also provide a space for community members to voice, discuss and solve problems. This is the third contribution of collective action to adaptive capacity we identify from this case study. The group action process facilitated the identification of both the problems and solutions. The ability to downscale modeled climate change projections to regional and local scales remains limited to-date but in many cases adaptation responses will nevertheless need to be identified and implemented by local actors. The development of more robust decision making frameworks enhances the capacity of local actors to adapt to a range of environmental changes and risks. Finally, collective action contributes to individual and collective empowerment that can establish and strengthen relationships with local government actors and lead to stronger advocacy. Many of the members of the women's collectives noted that they and their families felt more confident in the community as a result of their participation in the collectives. Because of this empowerment members of the collectives felt more confident to meet with local government officials and to request better community services, such as improved access to clean drinking water and the cleaning of drains. This empowerment is a manifestation of what Adger [1] defines as the networking capital form of collective action.

3.4 Interaction of women's collectives with local governance processes

In general people in the community, and members of the collectives, did not trust the government due to widespread and long-term issues of corruption. An NGO actor noted *"it is generally understood by Nepalis that government is corrupt and filled with nepotism"*. This situation has been exacerbated by the absence of local elections in recent years due to regional conflicts and instability in the national government. However, despite these issues we identified several notable examples of positive interaction between the collectives and local government actors.

Being a part of a collective enabled their members to engage in advocacy with their local government. All members of the collectives were part of the marginalised section of the community as a result of a range of intersecting factors such as landlessness, gender and unemployment. The government engaged in only a very limited way with this demographic for a range of cultural and social reasons, including the legacy of the caste system and differing religious backgrounds. The members of the collectives expressed that on their own they felt voiceless and that they were initially reluctant to approach the government. Through the initial group action process many of the collectives decided that some of the challenges they were facing should be addressed by the government. For example, inadequate and blocked public drains frequently resulted in local flooding during monsoonal rains. Many of the collectives hence started to lobby the government to provide better services. Members of the collectives reported that they felt more confident to talk to their local government officials to request funds and services as a result of the

collective process. After several years these actions resulted in a range of tangible positive outcomes including improved drainage systems, roads and the provision of additional land for agriculture. Several members reported that as their sense of empowerment increased, their perception of themselves changed and they became bolder. Collective action challenged the experience of disconnection between communities and local government.

3.5 Enabling and constraining factors of collective action

We now identify enabling and constraining factors for collective action in Nepalganj. Factors that enabled the continuing functioning and growth of collectives included a long-term commitment from the local NGO, the capacity of key actors, and the development of social networks. The long-term support of the local NGO provided secure employment to the local facilitators and enabled the program to develop and improve methods over time. Hancock [25] argues that the level of commitment of facilitators and group leaders provided a long-term and committed engagement with the communities that ultimately precipitated the formation of the collectives. Many participants observed that the development of social relationships between members of the collectives and to other collectives both strengthened the continuing functioning and the formation of new collectives [24],[25] The enhancement of social networks in the community enabled the collectives to include more participants and to help a larger number of people. Some of the collectives also extended their services to men.

A range of constraining factors limited the success of the collectives. These mostly pertain to culture, religion, politics, governance, capacity, and resource availability. In some cases, different religious and political views and affiliations hampered the relationships between collectives and the wider community and local government actors. For example, Worboys [25] reports that some government representatives refused to acknowledge or meet with some collectives because their members were affiliated with a different religion or a different political party. A patriarchal system within the society provided an impediment for some women being able to participate in the collectives. Gender also created a barrier for some women in trying to meet with male government staff. Members of some collectives reported that certain government representatives refused to meet with them unless they were accompanied by men. One local government employee reported that he had lost social status by interacting with the women collective (p. 40)[25]. Finally, an overall lack of available resources, both individually and from local government, provided a consistent challenge for many of the collectives. In addition to scarce financial resources Hancock [24] noted that low levels of literacy sometimes created difficulty in recording savings and loans and day-to-day challenges such as sickness and poor access to healthcare reduced attendance at meetings.

4. Community-Based Disaster Risk Management in Krabi Province, Thailand

4.1 *The context of the collectives*

Krabi is one of the southern provinces of Thailand and is located along the Andaman Sea. The Andaman Coast was the most severely affected area of Thailand by the 2004 Indian Ocean Tsunami. The tsunami devastated the provinces of Phang-Nga, Krabi, Phuket, Trang, Satun, and Ranong [30]. In Krabi Province, Phi Phi Island was the worst damaged, and, in particular, the main tourist areas of Ton Sai Bay and Loh Dalum Bay [31]. At least 2,000 people are presumed dead [32],[33] and 15,812 people were directly affected [30]. Following the 2004 tsunami, community-based disaster risk management activities in Krabi Province were initiated by a range of international, national and local organisations, and by the communities themselves. Much of the work of international and national NGOs and government authorities has so far focused on communities that were devastated by the tsunami, and some communities that are perceived as highly vulnerable to future events.

4.2 *Functioning of the collective action*

Community-based disaster risk management is frequently organised through disaster preparedness committees in which people act as unpaid volunteers for the greater good of the community. For example, the Thai arm of CARE International, the Raks Thai Foundation stated that it is important to implement projects in communities that are already organised [27]. The idea to work in organised communities relates to the notion that it is useful to recognise and build on existing strengths within communities and to work with people that are already actively engaged at the local level. For this reason and because it is difficult to initiate and sustain a new committee for disaster risk management, many NGOs work with existing committees, such as funeral or loan committees. These kinds of committees exist to support members with small loans during times of hardship.

Motivations for participation in a disaster preparedness committee are many and varied. In many coastal communities a principal source of motivation for investing in such a committee is a high awareness of coastal hazards due to the high loss of life during the 2004 tsunami. Another motivation is strongly linked to failures of formal governance responses at the local and a lack of trust in the commitment and capability of government authorities to provide effective disaster risk management. For example, in the tourism communities of Krabi Province emergency aid relief did not reach all eligible recipients; funding was insufficient and available funds were often misappropriated due to corruption and nepotism at the local level [34]. Tensions between communities and local government authorities exist also because of other unresolved issues, such as the use of illegal fishing gear and practices in

some communities. Concerns over livelihoods are another important driving force for engaging in community-based disaster preparedness activities. Many communities do not have an interest in disaster risk management per se, but are willing to engage in these activities if they also lead to livelihood improvement.

Collective actions focus on the enhancement of disaster awareness and preparedness of community members and tourists, capacity building for disaster risk management and early warning, and the mobilisation of support from local government and NGOs. Disaster preparedness activities include the collection and dissemination of existing information; the identification of hazards, potential impacts, high-risk areas, safe areas, evacuation routes and those most vulnerable to hazards; the development of public awareness campaigns and school programmes; the preparation of emergency plans; and early warning and evacuation exercises. Activities aimed at capacity building include the recruitment and training of volunteers in emergency response activities such as search and rescue and first aid skills and the development of alternative warning dissemination infrastructure and procedures.

Support for community-based collective action is mobilised in different ways. One mechanism is established social networks with community-based organisations (CBOs) in neighbouring communities. Another mechanism that is becoming increasingly popular with some NGOs is micro-credit schemes. For example, the Raks Thai Foundation uses a Revolving Loan Fund² as an initial entry point for engaging with communities.

Important examples of collective action in Thailand include the "Mister Tuan-Pai" ("Mr Early Warning") project at the national level, the Save the Andaman Network (SAN) at the sub-national regional level and the "One Tambon One Search and Rescue Team (OTOS) at the local level. The "Mister Tuan-Pai" project was established under the Disaster Prevention and Mitigation Office (PDPMO) to recruit volunteers to monitor flash flood hazards using rainfall gauges and to provide early warnings to villages in areas at risk. SAN is an informal network of NGOs and CBOs that was established in response to a perceived lack of coordination by the international NGOs in post-tsunami recovery. OTOS was established by the Department of Disaster Prevention and Mitigation (DDPM), the Department of Local Administration, the Health Insurance Office, the Office of Health Promotion and Support Fund, and the Thai Red Cross to 1) ensure the safety of life, and rapid and efficient search and rescue operations; 2) establish efficient search and rescue teams at every Province, District and Tambon (Sub-district) in the country; 3) enhance the capacity and efficiency of search and rescue teams through technical training and drills; 4) build up the self-confidence of search and rescue teams; and 5) provide first aid treatment and rapid transfer to the appropriate medical establishment. OTOS is under the administration of the Local Administration Organisation, responsible for controlling traffic during evacuations.

4.3 Contribution to adaptive capacity

The insights derived from the participatory assessment of early warning system – community linkages [27] show that stakeholder agency and collective action are important elements of the adaptive capacity of communities. Building capacity to cope with environmental (as well as socio-economic) shocks and surprises is an important step towards adapting to climate change. An important aspect of adaptive capacity is what people can do to help themselves through collective action.

The evidence from Krabi Province suggests that local government agencies in some cases lack the capacity to support collective action and can therefore represent a considerable barrier. This is an important governance issue that is also relevant in the context of adaptation projects. Recently, progress has been made in two areas: the first one is a transition in the approach of many governments and NGOs from a focus on post-disaster emergency response to addressing longer-term development that links disaster risk reduction with livelihoods, natural resource management and poverty reduction efforts. The second is the integration of disaster risk reduction and climate change adaptation. This is a subject of considerable current debate but a number of synergies have been put forward by various authors (see e.g., [2],[3],[4]). We argue that in addition to these two integrative steps, adaptive capacity could be enhanced by better defining and coordinating the roles and responsibilities of government, NGO and private sector actors because this would remove tensions, competition and the duplication of efforts.

In the online dialogue on early warning [29] responses on the theme ‘technology versus community’ indicated that efforts to strengthen disaster risk reduction and early warning are heavily biased towards technology. There is an urgent need to go beyond such technological approaches and to recognise the importance of investing in the capacities of communities by developing and better utilising social networks. The role of social networks has not been recognised sufficiently in the current debate despite it’s potential as an important part of future disaster risk reduction and climate change adaptation strategies. While response capability depends largely on the community’s own capacity to manage risks, the engagement of government and NGO actors to inspire and support collective action is crucial.

This case study demonstrates that community-based action is positioned in the context of multiple needs and interests and that there is a challenge in coordinating multiple stakeholder agendas. Community-based disaster risk management, therefore, needs to be integrated in strategies that address wider community priorities, such as improving and diversifying livelihoods and building capacity for community-based natural resource management. Addressing these concerns helps to build adaptive capacity to climate change because the underlying causes of vulnerability to shocks and surprises are reduced.

4.4 Interactions with local governance processes and other organisations

In many cases, there is a lack of financial and staff capacity for disaster risk management activities at the lower levels of government. Many stakeholders shared a general concern over a lack of human resources, knowledge, experience and skills relating to disaster risk management and a lack of government initiative from sub-national authorities. Contributing to the lack of capacities at sub-national levels are high staff turn-over and a lack of political will to engage in disaster risk management due to many other responsibilities and the prioritisation of other issues that are considered more important. There is also a lack of trust amongst the public in government institutions due to poor public services provision and to corruption. In Khao Lak and Phi Phi Island Calgaro et al. found that “emergency aid relief did not reach all eligible recipients” and the “available funds were often misappropriated due to corruption and nepotism operating at the local level” (p. 47)[34]. Many communities therefore have very little trust in the government’s commitment and capacity to develop effective disaster risk reduction strategies.

Additional challenges exist in the collaboration and communication between government and other stakeholders, such as universities, NGOs and CBOs and the private sector. Local government representatives are not trained to facilitate processes to engage with communities. NGOs tend to be much better at communicating with communities and have well-established methods. However, some local government authorities are reluctant to facilitate NGO initiatives in communities because they don’t want to relinquish authority to the NGOs. Despite this, NGOs often play an important role in supporting communities to initiate planning for community-based disaster risk management, to engage with the local government, to access information and guidance, and to receive financial support.

4.5 Key enabling and constraining factors

There were a number of factors that enabled collective action. Our research demonstrates that strong leaders with good social networks are an important enabling factor for community-based disaster risk management. Leaders include those who may not have a formal position but who nevertheless have influence in their communities [29]. For example, in the village of Koh Panyee, the Rescue Team draws on experience from the village health committee that was already well established. The chairman of the health committee has a key role in the Rescue Team, because he is perceived as competent due to his university education and computer skills [35]. Religious leaders can play an important role in building disaster preparedness because they can disseminate information on hazards and disaster preparedness initiatives in their services.

Many young people volunteer their time to these activities because of incentives

such as free services such as health care, training in language and other skills that are beneficial for seeking employment and advancing careers. Volunteering also enhances social status and supports political advancement through local electorates in Tambon Administrative Organisations. Participation and ownership of procedures and early warning systems by the community is also an important enabling factor.

Another enabling factor is the integration of disaster risk management into strategies that address wider community priorities, such as improving and diversifying livelihoods and building capacity for community-based natural resource management. In our experience in Krabi Province, the ‘framing’ of activities is crucial in the process of partnership building and bringing people onboard, where the approach has to be expressed in terms that are relevant for the partners.

We observed a range of barriers to collective action on disaster risk management in Krabi Province. Because of limited resources and capacities of sub-national government actors, the different priorities and lack of political will of some local authorities, and insufficient coordination between local government and NGO actors[28],[34], local government frequently represent a barrier to collective action.

While community leaders often play a critical role in enabling and facilitating action within their communities they can also hamper collective action. For example, some village leaders show no interest in disaster risk management despite interest of the community and this can create conflict and may lead to isolation from NGO and government activities. In Thailand, the village headman plays an important role because he is elected as a representative of the central government and he is elected for life. The political context at the community level is therefore strongly shaped by the politics at the national level and there have been cases of bribery and allocation of funds to relatives of the headman.

A lack of resources at the local level negatively affects the ability of committees to act and to induce positive change in their communities. Volunteers also often lack authority. For example, many young volunteers don’t feel comfortable telling older people what to do and many older people do not take them seriously. Many CBOs have limited legal status and are not recognised by government authorities as legitimate stakeholders in disaster risk reduction and early warning system planning and implementation processes. Whilst there is an increasing emphasis on participatory planning, participatory practices have not yet been mainstreamed into humanitarian action[36],[37].

In some communities affected by the 2004 tsunami, the importance of disaster

preparedness is not fully understood because there is no history of disasters. The Thai philosophy of life “Mai Pen Rai” (English equivalent “Not to worry” or “Never mind”) could be interpreted as complacency. In Muslim society, religious and cultural beliefs about predetermined destiny (fatalism) are often difficult to overcome.

Some government authorities are concerned about the negative image disaster preparedness activities might shed on tourism communities as safe and pristine destinations. The value of community-based disaster risk management and community empowerment is contested; sometimes it is difficult to convince people that investing in disaster risk management is as important as investing in livelihoods and that activities might create co-benefits for both.

Despite the dedication of volunteers, there is concern about the longer-term sustainability of disaster preparedness efforts that rely to a large extent on volunteerism because even volunteers require basic financial support for operational logistics such as transport, food, and compensation for the loss of income. The high turnover of volunteers and the need to continuously recruit and train new people puts a considerable strain on organisational capacities.

Guidance for community-based disaster risk management is not always available to communities or directly useful in the local environmental and socio-economic context of a particular community. In Ban Tha Klong, Thailand, the village committee described that the government provides information and seminars on tsunamis, landslides, and sea-level rise but that there was a lack of access to information on natural resource management and experience, good practice and technical guidance on disaster risk reduction. Several villages committees told us that in order to plan disaster risk management activities, they require detailed information about the community, including infrastructure, population distribution and density, location of vulnerable social groups, geographical maps of the terrain, disaster areas, and tourism areas. These data are usually held by government authorities and requests from village committees to obtain such information are not always successful. However, one could question whether such data-driven planning is useful for local action.

5. Discussion

The case studies presented in this paper build upon the literature to explore how collective action enhances adaptive capacity. Whilst both are context specific and deal with different issues they both involve collective action in response to environmental changes and risks amongst rural communities in developing countries. It is groups such as these that are particularly vulnerable to climate change and are hence in need of local level adaptation responses. In this section we provide an overview of the case studies and investigate two emerging themes. We

consider the role of social networks as a critical component of collective action that enhances adaptive capacity and explore the impact of government institutions in supporting and hampering collective action.

Table 1 - Summary table of key attributes of collective action in the two case studies

Table 1.		
	Women's collectives	Disaster committees
What was the context?	A poor and marginalised section of the community in a rural town in Nepal	Rural coastal communities in Krabi Province, Thailand, affected by 2004 tsunami
How did the collective action emerge?	NGO facilitated the formation and initial running of self-help women collectives	Initiated by a wide range of international, national and local organisations, and the communities themselves; frequently built on existing committees
What was the motivation?	The NGO had a mandate for development and the women involved sought to better their material context	Concern over future coastal hazards, perceived lack of action of the government, and concerns over livelihood security
What were the activities of the collective action?	<ul style="list-style-type: none"> -Group savings -Budgeting -Sustainable business loans, -Advocacy to government, -Organisation for group projects 	<ul style="list-style-type: none"> -Enhancement of disaster preparedness of the community -Capacity building for disaster risk reduction and early warning, -Mobilisation of support from local government and NGOs
Contribution to adaptive capacity	<ul style="list-style-type: none"> -enhances social networks for information dissemination -improves access to finances -provides a space to discuss and address new issues, such as climate change -facilitates individual empowerment through group action 	<ul style="list-style-type: none"> -addresses underlying causes of vulnerability -builds capacity to cope with shocks -links disaster risk reduction with livelihoods, natural resource management, poverty reduction -integrates disaster risk reduction and climate change adaptation. -helps to better define and coordinate different actors
Relationship with local government	<ul style="list-style-type: none"> -Widespread mistrust amongst the community of government -Significant issues around mandate, structure and capacity -Established collectives lobbied their local councilors with relative levels of success 	<ul style="list-style-type: none"> -Lack of trust amongst communities in government institutions -Lack of human resources, knowledge, experience and skills relating to disaster risk reduction and a lack of government initiative from sub-national authorities, -Challenges in the collaboration and communication between government and other stakeholders
What were the constraining factors?	<ul style="list-style-type: none"> -Gender conflicts -Cultural and religious conflicts -Lack of resources at all levels -Political and social disempowerment -context of poverty 	<ul style="list-style-type: none"> -Lack of experience and awareness of hazards. -Religious and cultural beliefs about destiny -Lack of support from political and religious leaders. -Lack of resources. -Lack of information and guidance.
What are the enabling factors?	<ul style="list-style-type: none"> -The commitment of individual actors, -Long-term funding commitment from international donors -Good staffing -Robust social networks 	<ul style="list-style-type: none"> -Incentives that are beneficial for employment -Existing social networks -Support from political and religious leaders -Integration with other priorities.

The critical importance of social networks to the process of adaptation to climate change is supported through our case study observations. In both case studies the development of social networks was an important factor in enhancing adaptive capacity. In Nepalganj the women's collectives provided a platform that enabled and facilitated social networking. Utilising Adger's [1] ideas, the collectives both enhanced bonding capital within the community and cultivated networking capital with local government actors through the process of advocacy. However, it should be noted that it is difficult to differentiate between these two forms of social capital as the relationships are rarely characterised by one category but instead exist in a complex web of interactions. For example, in Nepalganj an advocacy relationship with a government representative subsequently developed into a friendship. In this instance the process of acting collectively cultivated enhanced social networks. Similarly, in the context of the disaster preparedness committees, social networks are a crucial feature of collective action. The importance of collective action and the associated social networking is recognised by one of the participants of the Online Dialogue for Early Warning: "*community organisation is more important than investing in high-tech solutions*" (see also [29]). Thomalla et al [27] argue that effective disaster risk management depends upon strong personalities and good social networks. Adger notes that "*the social dynamics of adaptive capacity are defined by the ability to act collectively*" (p. 396)[1].

The case studies presented here also contribute new insights into our understanding of the characteristics that enable or hinder collective action at the community level. We observe that social networks and collective action remains largely informal in nature - it is not integrated into and therefore not supported by the formal governance system. Larsen et al. [38] argue that this occurs despite the considerable progress made in institutionalising international and national formal governance structures for disaster risk reduction in the public sector. The findings contrast with the observations of Adger [1] and Ensor and Berger [21] that a community's network produces an open and productive relationship with government. Agrawal [39] and Pototee and Ostrom [8] emphasise the importance of local institutions in both the cultivation and long-term effectiveness of collective action. In examining the interactions between community action groups and local government we find that local government actors, rather than enabling collective action, tended to hamper the ability of communities to realise their full potential. On the other hand, collective action can play an important role in strengthening local government and making it more accountable through increased scrutiny.

Local government may constrain collective action and hence inhibit adaptation to climate change. The most notable issues hampering collective action are corruption and nepotism, a lack of financial and staff capacity, ineffective and poorly-coordinated governance structure, diverging priorities and a lack of political will of

local leaders, strained relations with NGOs and communities, and correspondingly considerable distrust of communities amongst government officials. In both case studies, stakeholders emphasise the importance of strong and motivated individuals with good social networks who take leadership of the common cause. A comment that represents the view was made by a development practitioner in Nepalganj who stated: *“leaders play a critical role in enabling or constraining [community action]”*.

The case studies show that collective action is not always compatible with the local governance system. In Krabi Province, one research participant noted that *“collective action is outside the scope and experience of local government”*; another stated *“government doesn’t have the capacity to facilitate collective action because they have not been trained with the skills”* (p. 12) [35]. Many current approaches to disaster risk reduction continue to lack integration with sub-national and national governance structures. Progress in coordination and integration of different government, NGO and community actors needs to be made if the various levels of government are going to be tasked with the development and implementation of disaster risk reduction and adaptation strategies.

6. Conclusion

The evidence presented in this paper indicates that collective action has a significant role to play in enhancing the adaptive capacity of communities to environmental changes and risks, including climate change. This both reinforces and builds upon the claims made by Adger [1], Eakin et al. [6] and Johda [17]. Further, this paper shows that social networks are an important component of collective action that contributes to adaptive capacity. Finally, the case studies demonstrate that a more robust nexus of relationships occurs if collective action builds upon existing social networks and is supported by formal governance structures and processes.

This research highlights the importance of local government – community interactions in supporting or hampering collective action. Having competent and committed individuals in local governance processes that have access to adequate human and financial resources is a strong enabler of effective action at the community level. Equally important are the role and influence of certain interest groups, and the existing barriers due to limited resources and capacities, different priorities and approaches, distrust and tensions, and a lack of coordination of local government, NGO and private sector actors.

Despite its demonstrated importance in reducing vulnerability and building adaptive capacity to environmental changes and risks, we have shown that collective action occurs largely within informal social networks and governance structures. These informal governance structures, supported by communities and NGOs, frequently

exist in parallel with formal governance structures. There is an apparent need to reconcile informal and formal governance because the current disconnect causes tensions and conflicts between different stakeholders engaged in disaster risk reduction and climate change adaptation. These conflicts hamper the establishment of ethically acceptable processes in which the underlying vulnerabilities of communities can be effectively addressed. This tension between formal and informal governance raises the question of how we recognise and support the building of adaptive capacity that occurs in informal spheres.

The relationships between local government actors and local collectives also warrant further investigation: More research needs to be undertaken to understand how institutions can best support community-based adaptation. Do the principles of collective action contradict the culture and assumptions of contemporary governance? Brooks suggests that it is the vested political and economic relationships that “*determine the nature of the adaptation context*” (p. 12)[40]. Similarly, Ensor and Berger identify issues of governance and empowerment as key and state: “*these political and institutional challenges are at the heart of community based adaptation*” (p. 6)[21]. We agree with Moser’s [41] argument that we need a greater understanding of the opportunities, barriers and limits to adaptation through a critical analyses of the socio-economic and political power dynamics that underpin vulnerability and adaptive capacity. Because collective action has an important role to play in enhancing the adaptive capacity of communities, we must carefully consider the potential interactions of community-led adaptation strategies with existing governance structures in order to strengthen community efforts and to avoid ineffective programs and wasted resources.

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CHAPTER 9. ‘Strategic localism for an uncertain world: A postdevelopment approach to climate change adaptation’

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Link to previous chapter

The paper presented in this chapter addresses all three of the research questions together and argues that postdevelopment perspectives can contribute to a rethinking of adaptation in the broader context of rethinking development. I draw explicitly upon postdevelopment theory as a lens of analysis to build upon the findings in Chapter 6, on how development organisations are conceptualising and utilising adaptation, and upon Chapters 7 and 8 that consider action at the local level, to propose an approach for the development sector’s engagement with the subject of adaptation. This chapter also adds to the thesis by further profiling some of the examples of local action from the field sites in rural Nepal and providing further research evidence from new examples from field sites in Bangladesh.

Contribution to thesis

Chapter 9		
Research question(s)	Focus sites (and associated methods)	Conclusions
1. How is adaptation conceptualised at several different sites associated with the development sector, including local communities in the developing world?	-Literature of development organisations that are engaging adaptation (literature review) -Nepalgunj, Nepal (focus groups, semi-structured interviews and participant observation)	Q1. Some development organisations conceptualise adaptation within an economic growth-centred paradigm
2. How is the concept of adaptation being utilised by development actors at different sites in the development process?	-Mongla, Bangladesh (focus groups, semi-structured interviews and participant observation)	Q2. Some development organisations are reframing pre-existing development practices, such as the promotion of free markets, as contributions to adaptation
3. How are some local communities already responding to challenges associated with the climate?		Q3. Local communities are responding to environmental uncertainty in diverse ways that should inform approaches to adaptation

This paper uses postdevelopment theory as a lens to explore how adaptation is being conceptualised and utilised by several organisation in the development sector, including the World Bank, and contrasts this to perspectives and actions in several local communities. This paper is co-authored with Dr Katharine McKinnon who is my co-

supervisor. She has extensive experience researching development actors and had written widely on the topic of postdevelopment.

In this paper we argue that some emerging approaches to adaptation are embedded in particular development ideologies and agendas. In the case of the World Bank's World Development Report, we explore how adaptation is framed in terms of pre-existing development paradigms, such as economic modernisation, and activities such as those associated with the Green Revolution. The insights of this chapter complement Chapter 6 by identifying that the way adaptation is being conceptualised and utilised by some development organisations reflects an ongoing imperative for certain types of development, more than by a consideration of the unique challenges of climate change.

We also draw upon postdevelopment perspectives to consider other ways that adaptation could be supported. We present a number of examples of how communities in Nepal and Bangladesh are already responding to challenges associated with environmental change. Some of the examples presented in this paper have also been drawn upon in the previous two chapters such as the women's collectives in Nepalganj. These examples contribute to the findings of this thesis under research question three to suggest that there may already be action happening at the local level that supports adaptation processes. We argue that development actors need to move beyond accepted development doctrines in order to respond to the uniquely unknowable consequences of climate change and learn from nascent practices already present in local communities.

Audience

Geoforum is an interdisciplinary journal that is concerned with the organisation of economic, political, social and environmental systems through space and time. It has a focus on theorisation related to human geography and primarily engages an academic audience. We have chosen to publish this article in this particular journal as the concept of adaptation, and many of the ideas in this thesis, intersect with the discipline of geography. Human geographers are an important audience for this relatively new topic and have the potential to make significant contributions to theorisation in this field. Publishing in *Geoforum* has enabled me to further engage some of the debates in geography, such as postdevelopment, and present the ideas of Katharine and myself to a new audience.

Photos related to paper content (others are included in the article)

Photo 9.1 Clay pots ready to be installed into local houses in Mongla, Bangladesh. These pots, made of local clay, are embedded in the walls and floors of local houses and are used for storage of dry goods, such as rice, or water. During flooding they can be very simply sealed over and reopened after the flood has passed to provide emergency sustenance. (Philip Ireland, 2010)



Photo 9.2 A section of raised road in Nepalganj, Nepal. In response to local flooding a small womens collective effectively lobbied local government for materials to build a raised road in their community. This road assists in drainage of rain water away from their homes and provides a raised area for livestock during times of flood. (Philip Ireland, 2010)



Pages 172-180 of this thesis have been removed as they contain published material. Please refer to the following citation for details of the article contained in these pages.

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CHAPTER 10 – CONCLUSION

10.1 Introduction

This thesis has explored how adaptation to climate change is being conceptualised and utilised at a range of different sites associated with the development sector. It has identified a number of key challenges and opportunities for adaptation in the developing world to be effective, appropriate and sustainable. The findings of this thesis come together to suggest that the future policies and practices associated with adaptation need to be approached cautiously by the development sector, in a way that is mindful of repeating the long critiqued practices of development aid, conscious of the existing perceptions of local communities and open to seeing new possibilities from what is already occurring in local communities. In the introduction I identified three overarching contextual considerations that formed the basis of the research aims and questions. Firstly, the literature clearly identifies that climate change poses serious threats to many communities in developing countries and that some form of adaptation to climate change will be required in the future. Secondly, the subject of adaptation has emerged as a new focus of the development sector and is associated with a growing volume of available finance. In coming years the development sector is set to design and implement a range of activities under the name of ‘adaptation’. Finally, the impacts of development aid since World War Two have been significantly critiqued and these critiques raise questions around how the development sector will plan and implement adaptation in the developing world.

Before moving to synthesise the thesis findings for each of the research questions I will first review the key topics and contributions of each paper in the order that they have been presented in the thesis. Chapters 4 and 5 focused on and explored two specific ways that adaptation is being conceptualised; through DRR and as a continuum of activities. Chapter 4 demonstrated the linkages between adaptation and DRR to demonstrate one way that adaptation is being linked to pre-existing approaches to development aid. In Chapter 5 I explored how adaptation is also being conceptualised as a continuum of different activities, where actions that respond to specific climate change impacts are on one end and those that address general vulnerability at the other. This chapter demonstrated how very broad and flexible conceptualisations of adaptation could result in a range of different actions being funding as adaptation. Building upon

the desk based research of these first three chapters, the thesis then moved to consider conceptualisations and utilisations of adaptation that emerged from the fieldwork component of the Ph.D. Chapter 6 explored semi-structured interviews with development actors to show that the new focus on adaptation is being utilised in a number of different ways, including to implement well critiqued business-as-usual development practices and also to call for broader change in development aid. Chapter 7 complemented this investigation by drawing upon focus groups from the local community of Nepalganj, Nepal. This chapter questioned the role of the development sector and suggested that local stakeholders, such as government and local NGOs, are best placed to communicate and engage the new concepts of climate change and adaptation. In Chapter 8 I built upon the conclusions of Chapter 7 by further exploring how collective action in local communities, including the enhancement of social networks, could make a significant contribution to a process of adaptation. Drawing together findings on all the research questions, Chapter 9 explicitly used the theoretical framework of postdevelopment to argue that adaptation should be engaged by the development sector in a way that is conscious of critiques of development aid, open to seeing new opportunities, grounded in local communities and mindful of uncertainty.

In this concluding chapter I begin by synthesising the findings of the papers under each research question (11.2). This is followed by a summary of the key overarching thesis contributions (11.3). I then move to provide several critical reflections upon key aspects of the research, including the conceptual framework, methodology, issues associated with a thesis by publication, and the rapidly evolving nature of the field of adaptation research (11.4). To conclude, I identify opportunities for future research (11.5).

10.2 Findings for the research questions

I have addressed the aims of this thesis, to explore how adaptation is being conceptualised and utilised in the development sector and to identify the challenges and opportunities for effective adaptation, by answering three key research questions. I derived these questions from the research aims by drawing upon a conceptual framework that included a critical geography of scale, the tradition of transdisciplinarity and postdevelopment perspectives. Each of the publications presented in chapters 4 to 9 has explored these questions in varying ways by focusing on different sites that are associated with adaptation and the development sector.

10.2.1 Research Question 1 - How is adaptation conceptualised at different sites associated with the development sector, including local communities in the developing world?

This research question directly addresses the first part of the research aims. By drawing upon a non-hierarchical view of scale, I have investigated how adaptation is being conceptualised at a number of different sites. I argue that there are many divergent conceptualisations of adaptation and that these different conceptualisations are being linked to a range of development activities that pre-date considerations of adaptation. In this section I begin by focusing upon key conceptualisations of adaptation that I have explored in this thesis before moving to consider the perspectives of development actors. I conclude my reflections on this research question by discussing the finding that some communities at the local level are not familiar with the concepts of adaptation or climate change and the potential implications for the adaptation activity of the development sector.

This thesis has demonstrated that adaptation is conceptualised in the literature and by development organisations in a range of different, and at points contradictory, ways. Chapter 4 focused on how adaptation is being conceptualised in relation to DRR. I drew upon the literature to demonstrate that there are a range of theoretical and practical linkages between adaptation and DRR. I extended these findings to suggest that there is uncertainty in how adaptation is being conceptualised and that there are opportunities to consider the underlying causes of vulnerability to climate change when considering adaptation strategies. In Chapter 5 I explored the conceptualisation of adaptation as a spectrum of activities, where addressing specific climate change impacts lie at one end and addressing general vulnerability is at the other. In this analysis I presented a number of models that demonstrated how different conceptualisations of adaptation could be utilised in different ways for different types of funding arrangements. Across Chapters 4 and 5 it is evident that the different conceptualisations of adaptation link it to many different possible development aid activities.

Similar findings were also reflected by the perspectives of development actors engaged in the field of development aid and adaptation. In Chapter 6, 'Climate change adaptation: Business-as-usual development or an emerging discourse for change' I categorised the ways in which 35 development actors conceptualised adaptation. From the semi-

structured interviews I identified a range of different definitions that could be placed into six different categories; improving knowledge, reducing risk, improving livelihoods, coping with impacts, planning and infrastructure and good development. Whilst these different categories are interrelated, the vast majority of participants framed adaptation within one of these categorisations. For example, under 'improving knowledge', several NGO actors suggested that adaptation is about educating the community to understand the potential climatic changes they face. Within the categorisation of 'coping with impacts' participants focused on actions that are reactive whilst under 'planning and infrastructure' participants focused on pre-emptive actions. These include activities such as the construction of sea walls and urban planning. The most dominant theme that emerged was around the assertion that adaptation is just 'good development'. Under this category the participants suggested that adaptation is not a new idea or approach, rather it is a component of or natural outcome of 'good development'. It was evident that this categorisation had different meanings for different participants depending on their understanding of what 'good development' was. Across all the six categories it is evident that many development actors are conceptualising adaptation through existing approaches to development aid. The findings of several papers in this thesis come together to suggest that many of the actions being proposed as adaptation are being driven by an ongoing imperative for certain types of development, rather than by a consideration of the unique challenges of climate change.

The final finding under the first research question relates to the existing practices and perceptions of local communities. I demonstrated that some local communities, which are vulnerable to the impacts of climate change, may be unfamiliar with the concepts of climate change or adaptation and that this has implications for the planning and implementation of adaptation by the development sector. Chapter 7 drew upon data from focus groups in Nepalganj and demonstrated that whilst community members were concerned about a number of weather related challenges, they largely considered them as anomalies rather than as part of long-term environmental change for which they would need to make permanent adjustments. In addition, this research showed that many community members were generally distrustful of international NGOs in their community due to negative past experiences such as a lack of consultation around the construction of toilets. It is communities like Nepalganj - those that are vulnerable to the impacts of climate change and in developing countries - that will likely be the subject of

adaptation efforts by the development sector. How local communities perceive climate change and development actors should be central considerations for the development sector. In the planning and implementation of adaptation, significant attention needs to be given to the priorities and existing capacities of local communities. As the findings under question three demonstrate, there are a range of ways through which local communities are responding to environmental challenges related to climate change that could provide the guidance for adaptation efforts. However, at present, the range of divergent conceptualisations of adaptation may result in it becoming a catch-all term with diminished meaning when it should in fact be very important in light of anthropogenic climate change projections.

10.2.2 Research Question 2 - How is the concept of adaptation being utilised by development actors at different sites associated with the development sector?

Under research question two I sought to identify how development actors are using their conceptualisation of adaptation in their day-to-day work. Research question two complements research question one by providing a different lens of analysis. That is, when I use the term utilisation I am referring to how development actors are applying their conceptualisation of adaptation in practice, such as in a funding proposal or physical project. I draw upon the research findings to show that the concept of adaptation is being utilised, both actively and passively, amongst some development actors to garner funding, meet donor requirements, further particular development agendas and imagine new ways of doing development differently.

Chapter 6 - 'Climate change adaptation: Business-as-usual development or an emerging discourse for change' - is the primary chapter that demonstrates how adaptation discourses are being used to further pre-existing development agendas. In this paper development actors explained how they 'rebadge' and 'rename' activities as adaptation because it is perceived as more 'sexy', can 'capture the imagination of the donors' and results in 'more money'. It was evident that some development actors are taking advantage of the flexible conceptualisations of adaptation in order to attain funding for a range of pre-existing activities, that may not actually relate to or result in adaptation to climate change. This assertion was also expressed by several of the development actors in this research. A few participants at different sites raised serious concerns around the way adaptation is being appropriated into pre-existing work with very little

consideration of the new challenges that are presented by climate change such as permanent changes to environmental thresholds. They suggested that the new focus on adaptation in development aid is an imposition of development aid donors and that in some cases this is disempowering small local organisations that are unable to utilise the concept of adaptation in their current work or proposals. The type of hierarchical relations that are reflected in this example have been a subject of development critiques for many decades. Whilst there is no doubt that adaptation will be an important concept for communities into the future, this research demonstrates that the ways the development sector is engaging with this subject may replicate problematic approaches to development.

Documents published by development organisations reveal other ways that the subject of adaptation is being used to promote long-held perspectives on development aid. In Chapters 6 and 9 I showed how the World Bank and Oxfam are promoting seemingly opposing approaches to adaptation in developing country agriculture. For example, the World Bank identifies chemically intensive high yielding methods associated with the Green Revolution as potential adaptation while Oxfam posits organic agriculture as an adaptation strategy. This example demonstrates how the absence of a common understanding of adaptation can result in divergent approaches to adaptation. This raises questions around whether or not these actions will actually assist in adaptation for communities that are vulnerable to climate change. I further demonstrated this point in Chapter 9, on postdevelopment and adaptation, in which I drew upon the example of the World Bank's 'World Development Report'. I showed how approaches consistent with neoliberalism, such as privatisation, economic growth and removal of subsidies, are being framed as contributions to adaptation. In many cases these are the same policies that the World Bank has been pursuing for decades, well before adaptation became a prominent concept for the development sector. One of the findings of this thesis is that the concept of adaptation is being appropriated into many of the long-standing perspectives and approaches of development organisations.

The investigation in Chapter 6 of how the concept of adaptation is being utilised also revealed that it is being linked to the need for broader change in the development sector away from 'business-as-usual'. Chapter 6 showed that many development actors are utilising adaptation discourses to support what they perceive as alternative approaches

to development such as participation and sustainable livelihoods. Some of the participants viewed the increasing attention around the subject of adaptation as an opportunity to rethink the purpose and function of development aid and the development sector. In these examples, adaptation was less about a set of specific actions or development approaches and more about a broader rationale that could promote change in the policy and practice of development aid.

The findings for research question two also raise concerns about the future of adaptation efforts by the development sector. It is evident that various conceptualisations of adaptation are being utilised to support pre-existing development approaches that reflect the predispositions of development actors. Actions that are justified in the name of adaptation may result in maladaptation and undermine possibilities of adapting in the future. In addition, this thesis identified that the ways adaptation is being conceptualised and utilised may have implications for broader development discourses. Adaptation to climate change provides a new impetus for development aid that may be used to justify the continued involvement of the development sector in the developing world. Chapter 6 demonstrated that development actors are utilising their conceptualisations of adaptation to reframe the need for a range of development activities. The findings of this thesis contribute to postdevelopment literature (Ferguson 1990; Gibson-Graham 2005; Sidaway 2007) by using the example of adaptation to show how new concepts can be used to sustain, reshape and legitimise development aid. Furthermore, the analysis of adaptation and the development sector produced in this thesis adds to the body of literature that argues there is a need for critical rethinking about the role of the development sector in the 21st century (Escobar 1992; Esteva 1992; Sachs 2010).

10.2.3 Research Question 3 - How are some local communities already responding to challenges associated with the climate?

Research question three is focused on the second part of the research aims: to identify challenges and opportunities for effective adaptation by focusing upon local communities. This question has been designed in accordance with postdevelopment perspectives that seek to value diverse practices in local communities, a non-hierarchical perspective of scale that critiques how local sites have been obscured via traditional scale logics and recent adaptation literature (Acosta-Michlic et al. 2008; IPCC

2012; Leary et al. 2008) which identifies a gap in knowledge about these types of sites. Where the first two research questions are primarily aimed at development actors working in the development sector and government, this question is focused upon communities that are vulnerable to climate change.

Across the local community sites investigated in this thesis, there are diverse actions being employed to reduce vulnerability to a range of environmental challenges. Many of these environmental challenges are related to climate and weather patterns, such as heavy precipitation and storms, and are likely to intensify under the projected impacts of climate change (IPCC 2007a, 2007b, 2012). Chapter 4 identified that many communities remain vulnerable to current climate variability even before one considers climate change projections. Approaches to adaptation should be informed and influenced by the existing perceptions and practices of local communities. For example Chapters 7 and 8 explored how local women's collectives are responding to challenges associated with the climate in Nepalganj, Nepal. Actions included raising the walkways between their houses to help them cope with flooding and combining some of their savings to purchase land to grow some of their own food in response to a shortage of work and income. In Nepalganj, Nepal, savings and loans collectives have begun to also collaborate as disaster assistance networks to help them prepare for and cope with severe storms and floods. In the examples from Bangladesh presented in Chapter 9, I showed how after several years of intense storms and cyclones some local NGOs are trialling new methods to better survive these types of extreme events. These actions include revegetating roadsides, reducing local deforestation, saving local seeds, developing floating vegetable gardens and building clay pots into the walls of new homes to save basic food and water for times of need.

As climate change is a global threat local actions such as these are easy to dismiss. Small communities are often obscured by hierarchical conceptualisations of scale and an international development sector that often has an imperative to spend large sums of money. Chapter 9 proposed a postdevelopment approach to adaptation that is able to scrutinise how the development sector is engaging the subject of adaptation and provides a framework to see nascent possibilities unfolding in multiple locations. I argued that it is at the local level that new kinds of donor approaches may be found that support the diverse practices of local communities as they respond in their own

particular ways to the threat of climate change. The approach I propose, that of 'strategic localism', is different to alternative development in that it is not attempting to scale up a universal model for adaptation that can be rolled out in multiple localities. Rather it is about the development sector seeing a diversity of possibilities for adaptation in new ways that are not constrained by pre-existing approaches to development.

10.3 Key research findings and research implications

Here I consider the combined implications of the findings under research questions one, two and three and focus upon the potential challenges and opportunities for appropriate, sustainable and effective adaptation in the future. In light of the projected impacts of climate change, it is clear that many communities in developing countries will need to undergo adaptation processes. However, this thesis casts doubt on many of the ways that the development sector is engaging the subject of adaptation and presents some alternative possibilities. As noted in the introduction, these findings also contribute to a wealth of research that has been produced simultaneously to this Ph.D. In particular, there has been a growing body of work on informing, monitoring and evaluating adaptation efforts in the development aid sector (see: Arnell 2011; Lamhauge et al. 2012; Liverman 2011; Spearman and McGray 2011). Despite identifying many important lessons, these reports and academic papers continue to draw attention to the ongoing "uncertainties and complexities of climate change adaptation" (Spearman and McGray 2011, p. 3) and that the requirements for adaptation will likely be different to previous development efforts (Arnell 2011). The papers of this thesis have provided many critical contributions that sit alongside this evolving research program. Here I draw together the key research findings, reflecting on the thesis as a whole, to make five key observations and identify what may be needed to advance adaptation and achieve positive change.

1. The range of divergent conceptualisations of adaptation may result in it becoming a confused and empty concept when it is in fact very important. It is clear that many communities will need to adapt to anthropogenic climate change into the future. As such, adaptation is an important concept that is relevant to the wellbeing of many communities around the world. However as the papers in this thesis have shown, adaptation is being conceptualised in a wide range of different, and at points contradictory ways. If adaptation can have such a wide variety of divergent meanings,

ultimately it may mean very little. There is a need for improved clarity as to what adaptation is, and how it should be implemented. It is not necessary that all development actors define adaptation in exactly the same way, however, there is a need for commonly understood boundaries of adaptation in the development sector. This thesis has demonstrated that the current flexibility in conceptualisations of adaptation may enable it to be used to support a range of divergent development aid activities. Adaptation is an on-going and flexible process that should reduce exposure to climate change while taking into account environmental uncertainty and contextual factors such as social vulnerability.

2. The way that adaptation is being utilised by some development actors may undermine possibilities for effective adaptation in the future. As the conceptualisations of adaptation are widely varied amongst development actors, activities that may not actually relate to adaptation may be funded and implemented in its name. Whilst the research presented in this thesis did not seek to rule on whether or not particular actions qualified as adaptation, it did identify that different organisations and individuals are utilising the concept to pursue conflicting approaches that cannot simultaneously be effective. Chapters 4, 6 and 9 suggested that adaptation efforts of the development sector may result in maladaptation in communities or lead to increased vulnerability in the future. Funding adaptation activities now that have not been thoroughly and critically considered may result in perverse outcomes and take away opportunities for funding real adaptation at a later stage.

3. The ways that adaptation is being conceptualised and utilised may perpetuate well-critiqued approaches to development. An overarching contribution of this thesis is to identify that adaptation is tied up in many of the pre-existing complexities of development aid. For example, Chapters 6 and 7 show that adaptation may be being imposed on communities and small NGOs when it may not actually align with existing community priorities. The imposition of aid donor priorities on communities has been criticised and linked to colonial approaches to development (Escobar 1995; Shrestha 1995). Reflecting these critiques, one participant suggested that adaptation is donor driven rather than beneficiary driven. Adaptation to climate change risks becoming yet another development goal that is misaligned with the priorities of communities and implemented ineffectively. This point also ties into the potent critique of Pieterse (2010)

who suggests that the development sector continually produces new discourses and fashions in order to conceal the low success rate of development interventions and thereby maintain itself. The recent increasing emphasis on adaptation has the potential to divert attention from previous development failures and to facilitate funding for new development programs that may follow similar patterns. In light of the large volumes of funding that are available for adaptation, this thesis has explored how adaptation may be both repeating and perpetuating well-critiqued approaches to development.

4. The ways that adaptation is being conceptualised and utilised also suggests that it may be an impetus for broader change in development. In contrast with the previous point, Chapters 4, 6 and 9 also identified how the emerging focus upon adaptation may provide an opportunity to continue a process of rethinking development. These insights emerge from the literature as well as the perspectives of participants. In Chapter 4 I suggested that the emerging focus on adaptation to climate change opens up avenues to explore how and why communities are vulnerable. Climate change presents a new impetus to understand and address the underlying causes of vulnerability, such as international trade agreements and national debt, factors beyond the auspices of the development sector. In Chapter 6 I documented the perspectives from a range of development actors who suggested that adaptation is an opportunity to rethink development and move away from 'business-as-usual' approaches. Postdevelopment theorists argue that all development aid should be subject to critical analysis and mindful interrogation. Evidence in this thesis suggests that the new focus on adaptation to climate change may be providing an avenue for rethinking development and that there are possibilities for positive change in the development sector. These include the cultivation of different relations between 'donors' and 'subjects' and a deeper appreciation among actors in the development sector of what local communities are already doing in response to environmental challenges, even when this may not align with pre-conceptions of how development should happen.

5. There are many activities already happening at the local level that present opportunities for adaptation. Climate change is unfolding differently in localities across the developing world that will require many different adaptation processes. In this thesis I have shown that adaptation policy and practice is often being shaped by pre-existing ideas, ideologies and agendas in development rather than the uniquely local

challenges of climate change. In Chapters 7, 8 and 9 I identified a number of diverse actions and processes already happening in different sites in the developing world that present opportunities for adaptation. Some of the features that cut across these actions that present opportunities for learning include collective action, building social capital and locally based advocacy. Future adaptation efforts by the development sector need to be built upon the needs, priorities and capacities of local communities. If the development sector is to contribute to effective adaptation across the world it must move uneasily into the subject of adaptation to climate change - without the certainty that any particular approach is the 'right' one - and with openness to see and support the diverse practices of local communities as they respond to environmental uncertainty. Whilst this approach to adaptation is informed by postdevelopment perspectives I depart from postdevelopment by suggesting that there is a need for commonly understood boundaries of what adaptation can mean within the development sector. Commonly understood boundaries will inevitably posit some limits on what local actions can be supported as adaptation processes by the development sector, but also minimise the potential for a range of pre-existing and ideologically driven development aid efforts to be labelled and funded as adaptation. I contend that there is a necessary and dynamic tension that development actors need to grapple with between supporting previously unseen opportunities and limiting the potential for adaptation to become a catch-all concept that can be used to mobilise financing for any development aid activity. This approach could limit the incidence of maladaptation and the repetition of problematic aspects of development aid. In the following section I continue to reflect on this tension of the thesis.

10.4 Research reflections

I now move to provide a number of reflections on this thesis and my Ph.D. candidature. This section builds upon the reflections contained within the unpublished sections of the thesis, including material from the preface, introduction and bridging sections. I begin by discussing aspects of the conceptual framework, with sections on postdevelopment and non-hierarchical scale. I then provide a critical reflection on the selection and use of methodology and methods for the thesis. The second half of this section considers three key limitations of this thesis including the breadth of thesis content, the form of a thesis by publications and the rapidly evolving nature of the research area. Rather than

discussing well-known limitations to a Ph.D., such as limited funding and working alone, here I focus upon three limitations particular to this thesis.

10.4.1 Postdevelopment

Throughout the research process the data that I encountered challenged my views on alternative development and postdevelopment. As a result, there is evidence within this thesis of movement in my own position on development aid. At the commencement of my candidature I was sympathetic with conceptualisations of adaptation that linked it to various alternative development approaches. This is evidenced by the findings of Chapter 5 that discussed the linkages between DRR and adaptation. However, as I considered data that I collected from interviews with development actors I found that many alternative development approaches were still situated within problematic development paradigms. As identified in Chapter 10 there are subtle, yet significant differences between alternative development and postdevelopment perspectives. Whilst both these theories are critical of post World War Two development efforts and seek to value the diversity of local perspectives, alternative development attempts to codify practices that can be implemented universally while postdevelopment posits that no development claims can be innately true. For postdevelopment theorists all development is bound within certain politics and thus it must always be approached with caution. The ways I have explored possible pathways forward for adaptation have moved between these two perspectives. Papers that I composed towards the beginning of my candidature, namely Chapters 5 and 6, tended more towards making universalising claims. One such example is in Chapter 5 when I state that adaptation must be closely linked with sustainable development and that the development community has an imperative to act on climate change. As my Ph.D. research progressed I encountered data from the field and I became more sympathetic to postdevelopment perspectives. This shift is represented in Chapter 9, the final paper that I composed on a postdevelopment approach to adaptation.

In reflection I feel that the shift in my views is largely as a result of my exploration of the perspectives of development sector employees. Regardless of which alternative development method was proposed as adaptation, be it sustainable livelihoods or participation, it was often still positioned within the assumption that development aid (and the development sector) is necessary for developing countries. This relates back to

the critiques of developmentalism that suggest new approaches and trends in development simply tweak at the edges of a fundamentally problematic paradigm (Escobar 1995; Esteva 1992; Sachs 2010). My observations in Chapter 7 led me to the conclusion that many of the development organisations that I engaged with during this research, regardless of their ideological leaning, were using adaptation in some way to further their preferred approaches to development. These insights demonstrated that for some of the research participants the solutions to the new challenge of adaptation were already known, and were shaped by pre-existing assumptions around the problems and remedies of development aid. This type of mindset, which was present in the papers of this thesis, impedes the cultivation of spaces to rethink development and see new possibilities for adaptation. Many of the arguments presented in this thesis suggest that it is exactly this kind of rethinking that will be required in the face of the challenges of climate change and adaptation. Ultimately, the findings of this thesis represent a dynamic tension between postdevelopment and alternative development approaches. As identified in the previous section, I contend that there is a need for uneasiness in the development sector's approach to adaptation that is open to previously unseen possibilities, but that this also should be shaped by commonly understood boundaries as to what adaptation can mean across the development sector.

10.4.2 Non-hierarchical scale and sites

Throughout the research I also found that my perspectives on non-hierarchical scale and sites were challenged and have subsequently evolved as a result of encountering the research field and new literature. Through the process of forming the research questions for this thesis I drew upon a non-hierarchical view of scale that recognises different scales, such as the 'global' and the 'local' as interrelated (Schatzki 2002), multi-directional (Howitt 1993) and simultaneous (Howitt 1998). Throughout the research and in writing the papers I sought to sidestep the dominant perspective that privileges certain scales, such as the global, over others. I applied this theoretical framework by using the concept of sites. I explored a number of different sites across the development sector from the documents of development organisations to senior government representatives to local communities. In reflection, a number of the papers, as standalone pieces, do implicitly privilege certain sites over others. I found that as I engaged each site throughout the research I was inclined to see that particular site as more significant than others. I found myself viewing other sites through the prism of the

site in which I was located. This is most apparent in Chapters 8 and 9, which explore local communities in Nepal. In writing these papers I felt inclined to privilege the significance of local community sites over others, such as global negotiations, thus risking the establishment of an alternative hierarchy with its own hegemonic assumptions. My reflections here on scale also intersect with my reflections on postdevelopment and alternative development. Alternative development tends to prioritise local communities as the most significant scale in development whereas postdevelopment focuses on the significance of multiple sites, including local communities, that are interconnected and exist simultaneously.

The findings of this thesis support a non-hierarchical perspective of scale to engage the challenges of climate change and adaptation in the developing world. My experiences in this research reinforce the value of the multi-sited research as it is an approach that brings to the fore a range of different perspectives. Within the development sector, the effectiveness of adaptation will be shaped by interconnections and interactions across a range of different sites that include communities in the developing world, the conference halls of donors, academic literature, NGO meeting rooms and the reports of development organisations. However as this thesis shows, emerging approaches to adaptation by the development sector risk neglecting important considerations of local communities by defaulting to well-critiqued business-as-usual development practices. As the exploration of each research question showed, all the sites from this research are significant and interconnected when considering future pathways for adaptation.

10.4.3 Methodology

In final reflection upon the research as a whole I believe there are a number of weaknesses in how field research reflected the methodological perspectives that I selected. As my Ph.D. candidature progressed my understanding of methodology and methods developed as I encountered additional literature and gained experience in the field. Throughout the thesis postcolonial geography, constructivist grounded theory and performative epistemology are only ever framed as ‘influences’ on my research design that I have ‘drawn upon’. I have also avoided claiming that I have comprehensively adopted “postcolonial” or “constructivist grounded” approaches. However, in hindsight I believe there are additional measures I could have adopted in my research design to better reflect these methodological perspectives.

The core of my reflection on methodology relates to the amount of time that I spent researching in the field in Nepal and Bangladesh. Additional time in these locations would have enabled me to better incorporate the perspectives of postcolonial geography and constructivist grounded theory by developing stronger relationships with participants and conducting additional sessions with participants. As I identified in Chapter 2, postcolonial geography is highly critical of research that is extractive in nature and embodies inequitable power relationships (Howitt and Stevens 2005; Spivak 1996, 1998). Whilst I did attempt to address these concerns by researching alongside local stakeholders, using more open research methods (such as semi-structured interviews) and being culturally aware in my conduct, a relatively short period of time in the field (3-6 weeks in each location) could be critiqued as extractive in nature. The amount of time I spent in the field also limited my application of constructivist grounded theory. Whilst I did utilise open-ended research methods that allowed participants to discuss their priorities, I did not identify the broad research topic with participants. If I were to conduct a similar study again, I would incorporate a much longer amount of time embedded in a field site at the beginning of my research so that this experience could inform the broad research topic and the research methods.

10.4.4 Thesis by publication

The thesis by publication format has a number of strengths, particularly early exposure to peer review, yet also poses a number of limitations. I found three key limitations to conducting a Ph.D. in this format. Firstly, the content of each paper or book chapter in this thesis has been reviewed and edited by different people for different publications with different disciplinary foci. As individual works, the peer review process has generally enhanced the papers, however, as chapters in an integrated thesis this can result in disruption to a planned narrative. The peer review process can call for any number of changes to content, tone, language, literature and terminology that can have a noticeable impact on an integrated body of work such as a thesis. Several of the published papers in this thesis have been substantially modified to meet the requirements of certain journals.

Secondly, publishing in a range of different journals has made it particularly challenging to consistently communicate methodology and methods. In general, the editorial process resulted in the need for trimming these sections. As such, the way in which I have

positioned myself in the research is at points inconsistent due to the requirements of each journal. I have attempted to address this by including a substantial methodology and methods section in Chapter 2 and through the utilisation of bridging sections.

Thirdly, timing of the review and publication processes was inconsistent and unpredictable. For example one of my papers was in review for over a year and was then not accepted thereby prompting a rework. This kind of process has resulted in some papers being revised many times throughout the entire Ph.D. research process while others have been composed, reviewed and published in a short time frame. Due to the dynamic process of a Ph.D. this means that each paper reflects my thinking at a certain point that is not necessarily consistent with the order of the papers within the thesis. Whilst there is broad synergy between these contributions, there are a number of minor differences that reflect progression in my views on certain issues. The previous sections demonstrated this point in relation to postdevelopment perspectives and non-hierarchical perspectives of scale. These issues associated with a thesis by publication are impossible to entirely overcome. I have therefore worked to minimise their impact through both the substantive introduction and bridging sections.

10.4.5 Breadth of thesis content

The papers in this thesis have engaged with a wide range of research topics. This is evidenced by the utilisation of a diverse set of literatures across the papers, such as discourse, perceptions, postdevelopment, collective action and disaster risk reduction, and the varied journals of publication. Whilst I set out on this Ph.D. with transdisciplinarity in mind, the content that I have covered has been more widespread than I initially anticipated. This has presented a number of opportunities and challenges for this thesis. Firstly, I have had to engage a wide range of literatures to understand and write about the range of themes in my papers. Secondly, I have had to approach a range of different journals to publish my work, each with different disciplinary foci, from social science to environmental science to development studies. Editing the content of these articles to suit these diverse audiences, including reviewers, presented some difficulties. For example, there were very different expectations around which literatures I should cite, how I should talk about methodology and methods and what constitutes a contribution to knowledge. Despite these difficulties I feel that a transdisciplinary approach to the research questions of this thesis remains appropriate. The challenges of

climate change and adaptation are pertinent to many different sites that benefit from a spectrum of disciplinary perspectives.

10.4.6 Rapidly evolving area of research

Finally, I consider the rapidly evolving nature of climate change adaptation research. Over the four years that I have been exploring this topic, the field has changed and evolved. This is evidenced by a range of reports and literature that are referenced throughout the thesis that have been published during the course of my research (publications dated 2008, 2009, 2010, 2011 and 2012). For example, there has been a growing body of work on the linkages between adaptation and development (for example: Clark 2012 and Sietz et al. 2011) and on the effective monitoring and evaluation of adaptation efforts in the development sector (for example: Lamhauge et al. 2012; Spearman and McGray 2011). The findings of this thesis complement this other research by providing additional sets of reflections and suggestions on how adaptation can be sustainable, appropriate and effective. In addition, it should be noted that I have been a small part of this progression of knowledge by presenting research and publishing during this time. For example, since 2009 when I composed and submitted Chapter 5, 'Climate change adaptation and disaster risk reduction: Contested spaces and emerging opportunities in development theory and practice' there have been a number of new publications that have also explored this theme. For example Mercer (2010) published an article titled 'Disaster Risk Reduction or Climate Change Adaptation: Are We Reinventing the Wheel?' The speed at which new materials and publications are being produced created a significant challenge for this thesis, particularly due to the fact I was exploring contemporary conceptualisations and utilisations of adaptation. This area of research continues to evolve and there are many opportunities for further research.

10.5 Further research

The findings in this thesis raise many questions for further research in adaptation and development. The limitations of a Ph.D. in time and scope inevitably result in many unexplored potential lines of inquiry. In this final section I outline a future research agenda in two parts. I will firstly explore questions emerging from my specific field research before moving to consider broader questions for the future of adaptation and development.

There are many possibilities for further research in the field sites of Nepal and Bangladesh. Revisiting these field sites and conducting similar focus groups and interviews could provide useful longitudinal observations. For example, have there been any more significant climatic events? Have perceptions of climate change changed in these communities? What has been the result of efforts to reduce vulnerability, particularly those implemented without knowledge of climate change? Have any specific adaptation projects commenced in the area? What are they and how do they reduce vulnerability to climate change? Have they been successful or appropriate? Why? In addition to exploring longitudinal shifts, there are a number of themes that emerged in the initial research that warrant further investigation.

Throughout the data presented in this thesis important questions have emerged around the role of gender and culture in adaptation. The lens of women's collectives in Nepalganj for example revealed a number of interesting observations that I simply did not have the space to discuss. The themes of gender and culture frequently emerged in the interviews and focus groups. For example, some of the women's collectives were starting to selectively include men in their groups due to the need for additional labour in the construction of collective assets and for assistance in attaining meetings with local government representatives who are also male. In addition, it was clear that responses to environmental vulnerability were being, in part, shaped and impacted by cultural considerations. For example, one of the collectives had to raise additional finances to build a fence around its vegetable gardens to keep certain cows from damaging produce. A fence was deemed necessary, as the collective members were afraid to touch or move these cows. They believed that the cows carried the spirits of community members who had died. How culture and gender shape the adaptive actions of community members is a crucial consideration for future adaptation efforts.

Moving beyond these specific research contexts there is a clear need for ongoing research around how adaptation projects are funded, implemented, monitored and evaluated. We are witnessing a rapid increase in the number of adaptation projects due to increasing availability of funding. Whilst acknowledging the risks identified in previous sections, these initial projects should be able to provide significant learning opportunities in a range of areas. These include inquiries into how the development sector is approaching this theme. Who is receiving funding? Who are the beneficiaries?

What are the outcomes of adaptation? How do you measure whether a particular adaptation project is successful or not? Rigorous scrutiny over the next few years is crucial in order to determine the appropriateness, effectiveness and sustainability of adaptation approaches of the development sector.

Finally, it is clear that there needs to be ongoing scrutiny and critical analysis of the broad fields of development aid and adaptation. This thesis has identified a number of problematic trends of development that may be being replicated in the name of adaptation. Many of these trends are tied up in ideas, ideologies and paradigms dating back to colonialism. The ways that adaptation is unfolding in the development sector must be carefully scrutinised in order to avoid the shortcomings of the past and open the way for alternative possibilities. The growing focus upon adaptation to climate change in the development sector presents an opportunity and a responsibility to development theorists, practitioners and activists alike.

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Note: This list refers to chapters 1,2,3 and 10 only, as the papers comprising chapters 4 through 9 contain their own reference lists within them.

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APPENDIX 1. Example of information and consent form for interviews and focus groups
Information and Consent form

Adaptation to climate change: development practices and perceptions

You are invited to participate in a study of the practices and perceptions of adaptation to climate change. The study has two main purposes. The first is to investigate strategies being employed by aid and development organisations to build resilience in the face of environmental and social uncertainty in order to better inform climate change adaptation frameworks. The second purpose is to explore how different people at different levels in the development process understand climate change adaptation.

The study is being conducted by Philip Ireland, Department of Human Geography, Macquarie University, Sydney, Australia phone +61409717618, email philip.ireland@mq.edu.au. This research is being conducted to meet the requirements of a Ph.D under the supervision of Frank Thomalla, phone +61298509670, email frank.thomalla@mq.edu.au of the Department of Human Geography.

If you decide to participate, you will be asked for an interview and/or be invited to be involved in focus group. Each task will only occur once and will take up to an hour in which I will obtain information about your knowledge and perception of climate change adaptation. If you give permission, I will use an audio recorder for the sole purpose of transcription. The recording will be kept in a safe file and your name and contact details will not be attached to it. There are no anticipated risks or discomforts associated with this research. There will be no payment or remuneration for your participation.

Any information or personal details gathered in the course of the study are confidential. The information gathered may be used in the PhD thesis, research reports and subsequent publications. No individual will be identified in any dissemination of the results. Only my supervisors and myself will have access to the original transcripts and notes made during the research. A summary of the results of the data can be made available to you on request by contacting Philip Ireland using the contact details provided above.

Participation in this study is entirely voluntary: you are not obliged to participate and if you decide to participate, you are free to withdraw at any time without having to give a reason and without consequence.

Please tick the box if you consent to the following activities:

1. I consent to the researcher Philip Ireland using direct quotes from me anonymously

☐

2. I consent to the use of audio recording equipment for the purposes of transcription.

☐

I, *(participant's name)* have read *(or, where appropriate, have had read to me)* and understand the information above and any questions I have asked have been answered to my satisfaction. I agree to participate in this research, knowing that I can withdraw from further participation in the research at any time without consequence. I have been given a copy of this form to keep.

Participant's Name:

Participant's Signature: _____ Date:

Investigator's Name:

Investigator's Signature: _____ Date:

The ethical aspects of this study have been approved by the Macquarie University Ethics Review Committee (Human Research). If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Ethics Review Committee through the Director, Research Ethics (telephone +6129850 7854; email ethics@mq.edu.au) or [local contact details were included here]. Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

APPENDIX 2. Guiding questions for semi-structured interviews

1. Are you familiar with any climate change adaptation projects in the developing world?

Could you describe a couple of examples for me?

2. How do you define adaptation to climate change

1. Do you think there is a difference between climate change adaptation and development?

Why/Why not?

2. How do you think climate change adaptation financing frameworks should function?

3. How do you think climate change adaptation should be implemented?

4. What do you think the role of the following actors associated with the development sector should have in climate change adaptation a) the nation state b) Non Government

Organisations c) Multi lateral development banks? d) the private sector e) other development actors?

5. Is there anything else you would like to add?

APPENDIX 3. Guiding questions for focus groups (English)

1. What are the challenges that you face in your community?
2. Are there any challenges related to the weather?
3. Are you doing anything, either individually or as a community to respond to these weather related challenges?
4. Are you familiar with the idea of climate change?
5. Have you had any interaction with government, NGOs and/or development organisations? Could you describe these interactions for us?
6. Are you involved in any local groups and/or collectives? What do you do in these groups?
7. In your experience what has been successful and unsuccessful for these groups?

APPENDIX 4. Guiding questions for focus groups (Nepali)

1. What are the challenges that you face in your community?

तपाईंको समुदायमा सबभन्दा ठुलो समस्या के के छन्?

2. Are there any challenges related to the weather?

केहि समस्याहरु हावापानी सम्बन्धित छन्?

3. Are you doing anything, either individually or as a community to respond to these weather related challenges?

भ्याक्तिगत रुपमा समुधायिक रुपमा यी हावापानी सम्बन्धित समस्याहरुलाई के के योजना बनाउनुभएको छन्?

4. Are you familiar with the idea of climate change?

हावापानिलाई परिवर्तन आउने कुरा को बारेमा सुन्नुभएको छन्?

5. Have you had any interaction with government, NGOs and/or development organisations? Could you describe these interactions for us?

केहि राष्ट्रिय अन्तरास्ट्रिय कि विकास सम्बन्धित संस्थाहरु संग कुरा काम गर्नुभएको छ? गर्नुभयो भने कुन कुन किसिमको कुरा?

6. Are you involved in any local groups and/or collectives? What do you do in these groups?

समुहमा बस्नुहुन्छा? समुहमा के के गर्नुहुन्छा?

7. In your experience what has been successful and unsuccessful for these groups?

तपाईंहरुको अनुभावमा समूहको काममा के के कुरा सफल असफल थियो?

APPENDIX 5. Guiding questions for focus groups (Bangladeshi)

Questions are translated into Bengali Language and written in Bengali Version

- ১। আপনি সমাজে কি কি বাধার সম্মুখীন হন?
- ২। আবহাওয়া বিষয়ক কোন বাধার সম্মুখীন হন নাকি?
- ৩। আপনি নিজে বা দলগতভাবে আবহাওয়া খাপখাওয়ানোর বিষয় কিছু করছেন কি?
- ৪। আপনি জলবায়ু পরিবর্তন ধারণার সাথে পরিচিত কিনা?
- ৫। সরকার, এনজিও/উন্নয়ন সংস্থার সাথে কোন যোগাযোগ আছে কিনা?
যোগাযোগ বিষয়ে/যোগাযোগ সম্পর্কিত বিষয় বর্ণনা করুন।
- ৬। আপনি কি কোন স্থানীয় দলের সাথে সম্পৃক্ত? আপনি ঐ দলে কি করেন?
- ৭। আপনার ধারণায় কৃতকার্যতা ও অকৃতকার্যতা কি বর্ণনা করুন।

Appendix 6 (or pages 220-221) removed from Open Access version as they may contain sensitive/confidential content.