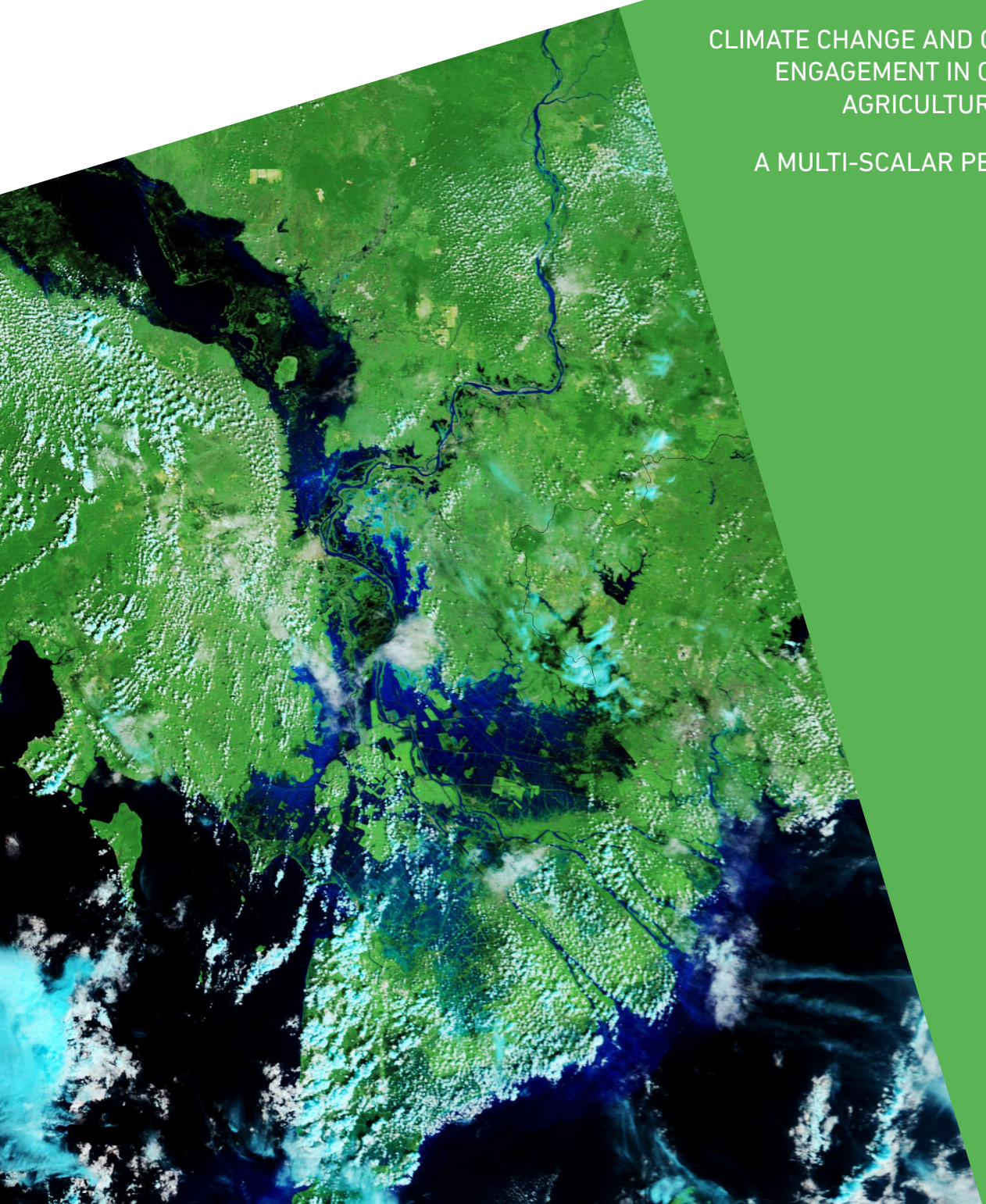
RESPONSIBLE ADAPTATION

CLIMATE CHANGE AND CORPORATE ENGAGEMENT IN CAMBODIA'S AGRICULTURAL SECTOR

A MULTI-SCALAR PERSPECTIVE



Cover: Satellite imagery showing heavy flooding in Southeast Asia, courtesy NASA

Responsible Adaptation

Climate change and corporate engagement in Cambodia's agricultural sector

A multi-scalar perspective

Verantwoorde Klimaatadaptatie

De rol van bedrijven in klimaatadaptatie in Cambodja's landbouwsector

Een perspectief vanuit verschillende schaalniveaus

(met een samenvatting in het Nederlands)

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CONTENTS

ABBREVIATIONS

AAAA	Addis Ababa Action Agenda
AADMER	ASEAN Agreement on Disaster Management and Emergency Response
ADB	Asian Development Bank
ASEAN	Association of South-East Asia Nations
B2B	Business to business
B2C	Business to consumer
BEE	Business enabling environment
CCCA	Cambodia Climate Change Alliance
CCD/ DCC	Climate Change Department of Cambodia
CDM	Clean Development Mechanism
CIF	Climate Investment Funds
COP	Conference of the Parties
CSR	Corporate Social Responsibility
DRR	Disaster Risk Reduction
ELC	Economic Land Concession
EU	European Union
FDI	Foreign Direct Investment
FPIC	Free Prior and Informed Consent
GCCA	Global Climate Change Alliance of the EU
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse gas
GNI	Gross National Income
GVC	Global Value Chain
INDC	Intended Nationally Determined Contributions
IPCC	Intergovernmental Panel on Climate Change
KHR	Cambodian Riel (currency)
L&D	Loss and damage
LDC	Least Developed Country
MAFF	Ministry of Agriculture, Forestry and Fisheries
MDB	Multi-lateral development bank
MoE	Ministry of Environment
MoWRAM	Ministry of Water Resource and Meteorology
NAPA	National Adaptation Programmes of Action for climate change
NCCC	National Climate Change Committee of Cambodia
NCDM	National Committee for Disaster Management
NCSD	National Council for Sustainable Development

(I)NDC	(Intended) Nationally Determined Contributions
NGO	Non-governmental organization
ODA	Official Development Assistance
OECD	Organization for Economic Cooperation and Development
OECD Guidelines	OECD Guidelines for Multinational Enterprises
PSSA	Private Sector Set-Aside
PPCR	Pilot Program for Climate Resilience
REDD	Reduce Emission from Deforestation and Degradation
RGC	Royal Government of Cambodia
SMEs	Small and medium-sized enterprises
SDGs	Sustainable Development Goals
REDD	Reduce Emission from Deforestation and Degradation
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNGP	United Nations Guiding Principles on Business and Human Rights
UNFCCC	United Nations Framework Convention on Climate Change
UNGC	United Nations Global Compact
US $	United States Dollar
VGGT	Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security

BOXES, FIGURES AND TABLES

ACKNOWLEDGMENTS

This long journey began in November 2004 during a sailboat delivery when I was floating free and just shy of the British West Indies on the Colombia 57 *Angelique*. After a particularly difficult night of equipment and inter-personal crew failures, I decided to quit my co-captain gig on the spot and finally enrol at my local community college, a lifelong but always somehow inconvenient—and as an American—expensive goal. Most people thought I was crazy. I was living in the Hawaiian rainforest, and getting paid to adventure to remote tropical islands and work on sailboats. I was *Living in Paradise* and *Living* that elusive *Dream*. No one in their right mind would pay to sit in a classroom taking exams or ferment in 95 percent humidity behind a computer for hours on end while the sun was shining, there was wind to sail, and waves to ride. Plus, I was 36 years old. Only the people who didn't know what to do with their lives went back to school. In a sense they were right, but back I went. This dissertation is just one result of this incredible expedition, and I am most indebted to those who helped me realize it.

Because my first love was literature, my first debt of gratitude goes to my teachers Renee Riley and Elisabeth Armstrong of the English Department at Maui Community College (MCC). Both of you went out of your way to support and guide me in thought and action. Your belief in me placed me in leadership roles within our small, palm-fringed campus as well as connected me to scholarship opportunities and internships with which to build my professional life. Elisabeth you also turned into a close friend.

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My life changed drastically once we decided to pack up the family, including three feral Hawaiian cats, so I could study in the Netherlands. This piece of my life—originally supposed to last only two years—has been the most challenging and has taken me outside of my comfort zone more than any ride on a massive Pacific Ocean swell. I spent most of my research time in rural Cambodia looking at the socio-economic impacts of land and resource grabbing. I am thus deeply indebted to every farmer as well as every NGO and government representative who took the time to tell their stories and support me, also in speaking Khmer.

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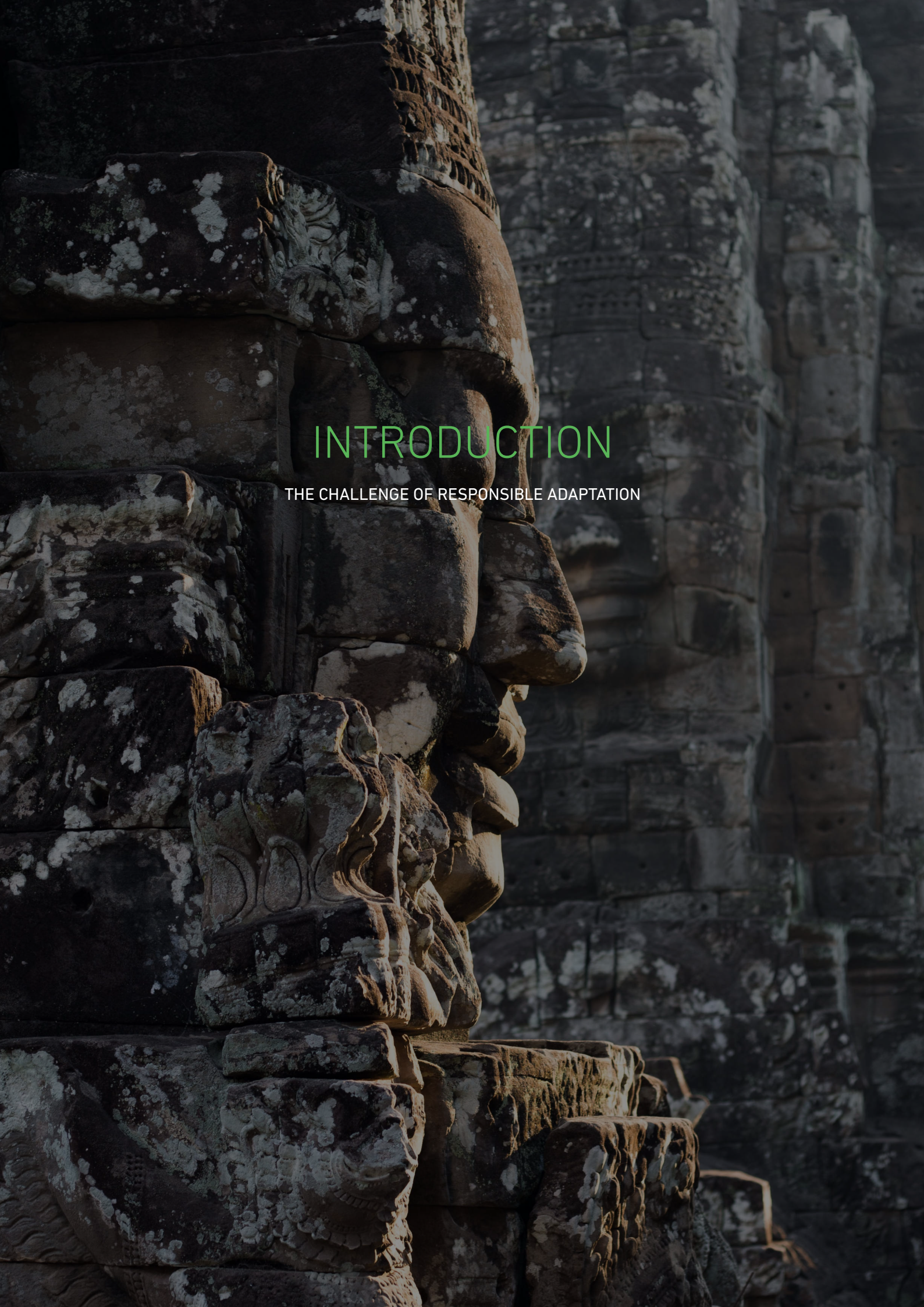
Netherlands. Thank you for unending love and support, and also for always fixing my computer in my most desperate moments and for listening to my devil's advocate arguments. We share a deep sense of adventure and social justice and you continue to remind me of what is right and where lines can be drawn, no regrets. Thank you for believing in my mad plans when it was the most difficult thing to do. We did it!

> *When you are in the middle of a story it isn't a story at all, but only a confusion; a dark roaring, a blindness, a wreckage of shattered glass and splintered wood; like a house in a whirlwind, or else a boat crushed by the icebergs or swept over the rapids, and all aboard powerless to stop it. It's only afterwards that it becomes anything like a story at all. When you are telling it, to yourself or to someone else. — Margaret Atwood, Alias Grace*

This is my Cambodian story. I hope others find value in its content.

Horst, September 2019



INTRODUCTION

THE CHALLENGE OF RESPONSIBLE ADAPTATION

1.0 GLOBAL CLIMATE CHANGE AND BUSINESS LEADERSHIP

Climate change is the most pressing problem of our time. With unprecedented consequences for the environment, society and economies, the private sector is increasingly expected to take a leading role in providing solutions, especially in developing countries where the impacts are most severe yet there is limited ability to respond. One of the first calls for business leadership emerged in 2005 at the 11th Conference of Parties (COP11), one of the yearly United Nations Climate Change Conferences held under the United Nations Framework Convention on Climate Change (UNFCCC). Here the private sector was identified as a key non-State player for resilience action in developing countries. Less than ten years later, Achim Steiner, former Executive Director of the United Nations Environmental Program (UNEP), upped the ante by tapping into some hard truths about the inclusive nature of climate risk and vulnerability. Business, also exposed, could either lead the way and evolve to profit within an increasingly Darwinian landscape, or perish. He stated:

> *Environmental change is accelerating and generating new and emerging challenges but also opportunities for business. Companies that face up to these realities are likely to be the ones that survive and indeed thrive in a rapidly evolving world where factors such as climate change and dwindling availability of natural resources will shape future patterns of profit and loss while driving new and smarter markets (United Nations Global Compact et al. 2013).*

As consensus on climate action remained elusive, business was once again rallied to the front lines just prior to COP21 through initiatives such as We Mean Business, a global climate change coalition which, headed in part by the World Business Council for Sustainable Development, is centered on catalyzing business leadership. It wasn't until 2017 however—and just two years after the Paris Agreement was signed—that the most visible progress came from business itself. In response to the Trump administration's announcement to renege on the Paris Agreement, corporations including Unilever, Goldman Sachs, The Dow Chemical Company, and even energy giants such as Shell, Exxon, ConocoPhillips and BP, publicly announced a sustained commitment to the climate deal and climate leadership. In fact, General Electric CEO Jeff Immelt proclaimed that climate action was now fully in the hands of business and that, "...Industry must now lead and not depend on government" [Immelt 2017].

Occupying a central position in the everyday operations of the world economy, business is an essential participant in the quest for sustainable climate change adaptation. However, business-led adaptation is a relatively new phenomenon and empirical evidence is generally lacking; what makes on-the-ground business-led adaptation action successful remains unknown. While Mees discussed 'responsible climate change adaptation,' this only dealt with the governance of adaptation and the division of responsibilities between the public and the private spheres in the developed urban context of Rotterdam, The Netherlands (Mees 2014). While business is promising climate change leadership, a critical view of these actions is necessary. This doctoral dissertation, based on the results of a three-year, multi-scalar study on business-led adaptation in Cambodia's agricultural sector, aims to contribute toward a better understanding of this growing but currently understudied field. Focus is placed on the for-profit private sector and in particular the role of corporations given their importance within global adaptation finance mechanisms. The study is based on the following premise: climate change adaptation deserves undivided attention. While climate change mitigation is important, it isn't enough for struggling communities; the challenge of responsible climate change action is equally about social and cultural values and perceptions as it is about greenhouse gas emissions.

The remaining sections of this first chapter outline the contours of my empirical journey into adaptation by presenting the global trends and challenges in climate change and global business and trade respectively, policy responses, and finally, the relationship between trade and development and the rising role of value chains. This in turn sets the stage for business-led adaptation in Cambodia's agricultural sector which often uses a value chain approach. The chapter ends with a description of the study's rationale, it's

multi-scalar approach and research questions.

1.0.1 CLIMATE CHANGE: THE URGENT AND UNPRECEDENTED DISASTER

Despite industry groups misrepresenting climate science to policy makers, spreading climate disinformation and sowing the seeds of doubt to stall climate action (Goldenberg 2013), the global scientific community has reached a consensus: human activities very likely are responsible for the build-up of carbon dioxide and other greenhouse gases in the atmosphere, and that this build-up accounts for average temperature increases across the globe (Solomon et al. 2007). In fact, scientists from National Aeronautics and Space Administration (NASA) and National Oceanic and Atmospheric Administration (NOAA) ranked 2014 as the warmest year since 1880 (Cole and McCarthy 2015). This record was later and significantly surpassed in 2015 (Brown, Cabbage, and McCarthy 2016) and again in the first half of 2016 where the average global temperature was 1.3 degrees Celsius above that of the late-19th century (Lynch 2016). 2016 also featured another major milestone for the world's climate. Although typically the month that the concentration of carbon dioxide in the atmosphere is at its minimum, the September 2015 Keller value at the Mauna Loa Observatory in Hawaii failed to drop below 400 parts per million[1] (ppm); 400 ppm is widely recognized to be the level at which dangerous and irreversible climate change can begin to occur and thus has been an important threshold in United Nations (UN) climate change negotiations. According to NASA and NOAA, 2018 was the fourth hottest year on record, a clear sign that the warming trend continues (NASA 2019).

This movement, signifying "unchartered territory at lightning speed," (UN 2015) has alarmed many. Climate change is considered to be a key global security challenge which threatens to lock states into 'fragility traps' characterized by increased social unrest and violent conflict (Prabhakar et al. 2016), leaving some to even describe what is happening as World War III (McKibben 2016).

Climate change science is well developed (Levin et al. 2012). Although some benefits such as increased crop yields are predicted, both human and natural systems face significant risks and irreversible damage unless greenhouse gas (GHG) emissions are severely reduced (IPCC 2007). Future effects are expected to be wide-ranging and include increased water stress and flooding, biodiversity loss, increased human health risks from disease and climatic conditions, bleached coral reefs, and the disappearance of species and glaciers, among others (Solomon et al. 2007; IPCC 2014); impacts are expected to be most severe in developing countries where economies are reliant on climate-sensitive resources (IPCC 2007b; Mendelsohn and Williams 2006). In fact, between 1970 and 2008, more than 95 percent of natural disaster fatalities occurred in developing countries (IPCC 2012). Shepherd et al. (2013) in particular highlight the 'distinct geography' of climate change and climate-related disasters. By 2030, the 49 most hazard-prone countries will house roughly 325 million extremely poor people, pointing to the real potential of climate change to not only undermine development gains, but its ability to 'derail' poverty eradication efforts (Shepherd et al. 2013). Decision makers first agreed that in order to avoid the worst socioeconomic impacts of climate change, the average global temperature must not rise more than 2 degrees Celsius (°C) above pre-industrial levels; the Cancún Agreements, a main outcome of the 2010 UN Climate Change Conference in Cancún, hold that this rise should not be above 1.5°C (UN 2011). At the 2016 COP in Paris, 196 governments agreed.

In order to stem the emissions flow, binding obligations for industrialized countries were first set forth under the UN Framework Convention on Climate Change (UNFCCC) Kyoto Protocol where 37 industrialized countries and the European Community committed to average emissions reductions of 5 percent against 1990 levels (UN 2014d). In the second commitment period from 2013 to 2020, GHG emissions are to be reduced to 18 percent below 1990 levels (UN 2014d). Yet despite the robust science, promises and proposed solutions, emissions are on the rise and the likelihood of sufficient and timely mitigation is beset

[1] This measurement indicates the number of molecules of CO2 for every million molecules of air. For more information, see The World Passes 400 PPM Threshold. Permanently [Accessed May 4, 2017].

by various social, psychological, and institutional barriers (Smith et al. 2011; Gardiner 2006). From a clean energy perspective, the potential for a future with reduced GHG emissions looks "bleak" (International Energy Agency 2012). Additionally, because carbon and other GHG emissions have a significant atmospheric shelf life, climate change is expected to continue regardless. Warming also takes time. Climate lag—or heating that is 'in the pipeline'— is a result of the thermal inertia of the oceans (Matthews and Caldeira 2008). Against dire predictions, rhetoric and political inertia, the global community has increasingly recognized the collective need to address global climate change (Anderson and Bows 2011; O'Hara 2009). Toward this end are three main policy responses: mitigation, adaptation, and loss and damage.

1.0.2 POLICY RESPONSES: MITIGATION, ADAPTATION, AND LOSS AND DAMAGE

Policy responses to climate change come from three main approaches: mitigation, adaptation, and loss and damage. Mitigation aims to reduce and prevent global warming through the reduction and stabilization of greenhouse gas emissions in the atmosphere (Schipper and Burton 2009) while adaptation encompasses actions to cope with and increase resilience against the impacts of global warming as well as take advantage of any opportunities that climate change may present (Eriksen et al. 2011; Adger et al. 2009). However, as these approaches have not been successfully addressed by the international climate change regime and because the adverse effects of climate change cannot be avoided through mitigation or adaptation alone, loss and damage (L&D), proposed since the start of the UNFCCC negotiations, has begun to receive more attention in the last few years. While definitions differ, L&D recognizes that major damages and losses have resulted and will continue to occur as a result of sudden or slow onset events (UNEP 2016b). In general, losses are not recoverable (such as human deaths or species extinctions) while damages can be repaired. The "Warsaw International Mechanism for Loss and Damage" (WIM) was created at COP19 in Warsaw, Poland to institutionalize the UNFCCC mechanism to deal with L&D in the most vulnerable countries (UN 2015). While the aim of mitigation, adaptation and L&D is distinctly different, each response is interlinked—mitigation efforts have direct implications for both adaptation and L&D, while adaptation holds implications for L&D. Moreover, country contexts play a role in relation to the degree with which the approaches are prioritized; developing countries such as Cambodia place adaptation before mitigation due to their low-emitter status as well as the more urgent need to deal with impacts (RGC 2015). More detailed information on Cambodia's approach, based on desk research and fieldwork, is presented in Chapters 3 and 4 .

Adaptation: The 'poor cousin'

At the global level, adaptation has generally taken a back seat to mitigation for several reasons (Kates 2000; Schipper and Burton 2009). First, much focus was placed on mitigation as it directly addresses the source of the problem: greenhouse gas emissions and the developed countries responsible for them. In addition, and although the most vulnerable countries were consistently lobbying for increased attention for adaptation, early critics claimed that a focus on adaptation was a red herring that could undermine mitigation efforts, reduce the urgency for action, and even provide the means for governments to vacillate in their response and so provide ammunition to vested fossil fuel interests and climate change sceptics. Finally, as the impacts of climate change were projected to occur in the future, adaptation was perceived as a premature response that should occur at a later stage. While in vogue in the mid-to late-90s, these perceptions gave way in 2001 as a result of emerging evidence that climate change was not only happening, it was accelerating and mitigation in itself would be insufficient to reduce the 'potentially catastrophic effects' on already marginalized groups (Adger 2001) in the Global South (Schipper and Burton 2009). As a result, adaptation funds were established during the Conference of the Parties (COP7) in Marrakesh, Morocco in 2001 to assist poorer countries in dealing with adverse impacts (Huq and Reid in Schipper and Burton 2009). At the 2007 United Nations Climate Change Conference, adaptation was again placed, at least at the policy level, on equal footing with mitigation, finance, and technology within the Bali Road Map and Bali Action Plan (UN 2014b). At the 2010 climate summit in Cancún, adaptation was awarded the same priority level as mitigation (UN 2014c). Finally, attention continued to ramp up in November 2015

in Paris at the Conference on the Parties to the UNFCCC, or COP21, whereby 195 countries endorsed adaptation goals (UNEP 2016a).

1.0.3 ECONOMIC INEQUALITY, CLIMATE FINANCE AND THE ADAPTATION GAP

Despite such recognition, the most impacted countries have not received sufficient financing to address pressing adaptation needs. Climate finance is the flow of public and private finance provided by a range of institutions to address mitigation and adaptation; as of 2015, Least Developed Countries (LDCs) received less than a third of available climate finance (Rai et al. 2015). In 2007, Desmond Tutu spoke of an 'adaptation apartheid' which he attributed to North-South power inequities that have left poorer countries with the impacts but not the necessary financial and technical support to address a problem richer countries created (UNDP 2007); in 2015, just 10 percent of people (about 3.5 billion) were responsible for 50 percent of total global emissions (Oxfam 2015).

Bird (2014) described international adaptation financing as the 'poor cousin' to significant investments made in national adaptation efforts in the North. Nakhooda (2014) provided similar evidence but added a legacy dimension: while climate change spending is on the rise, the amount of public finance that is put toward business-as-usual dwarfs the amount used for sustainable climate change action. For example, direct subsidies that support fossil fuel production and consumption (US $600 billion globally in 2012 with US $90 billion in OECD), effectively incentivize actions that make the problem worse. Other criticisms derive from business as usual being spun as innovative. For example, the Paris climate goals rely in large part on 'net-zero emissions' through mitigation technologies of 'carbon capture and storage,' or CCS. One technology endorsed by the IPCC in 2014, Bioenergy with Carbon Capture and Storage (BECCS), entails growing and then burning large amounts of grass and trees to generate electricity. When the biomass is burned, CO_2 emissions are captured and pumped into underground geological reservoirs for storage. This is despite long standing criticisms of bioenergy for its potential to drive up food prices, spur land grabs and degrade the environment (Zoomers 2010; Fargione et al. 2008; Borras, McMichael, and Scoones 2010). Research has also highlighted the impacts of geoengineering techniques and the damages on biodiversity through marine leakage and ocean acidification and land use change (Williamson and Bodle 2016) as well as the amount of resources needed for such technologies: one billion tons of carbon sequestration through BECCS based on switchgrass feedstock would require the conversion of roughly 218-990 million hectares of land or 14-65 times as much currently used to grow corn for ethanol in the United States; this in turn would increase evapotranspiration from converted lands by almost 50 percent. It would also require 1.6-7.4 trillion cubic meters of water each year and 17-79 million tons of fertilizer a year, an amount equal to 75 percent of global nitrogen fertilizer currently used (Smith and Torn 2013). Finally, as underground reservoirs for CO_2 storage include what was previously considered to be depleted oil wells where up to 60 percent of oil remains extractable,[2] BECCS extends oil well productivity and profitability through what is referred to as 'enhanced oil recovery.' Despite a body of evidence that suggests a clear need for precaution, CCS is viewed as carbon neutral and environmentally friendly, leading the former chair of the IPCC Rajendra Pachauri to state,[3] "With CCS it is entirely possible for fossil fuels to continue to be used on a large scale." This could be interpreted to be in direct opposition to the general principles of the UNFCCC found in the Preamble and especially Article 3 including the principle of equity (Article 3.1); the principle of common but differentiated responsibilities (Article 3.1); the precautionary principle and cost effectiveness (Article 3.3); and the right, and obligation, to promote sustainable development (Article 3.4). In addition, the Convention includes references to other important principles, such as common concern for humankind and awareness of the importance in terrestrial and marine ecosystems in terms of GHG sinks and reservoirs (Preamble) (UN 1992).

[2] To learn more about primary to tertiary oil extraction techniques, visit the US Department of Energy webpage Enhanced Oil Recovery [Accessed May 5, 2016].

[3] For more information, see The Guardian article IPCC: rapid carbon emission cuts vital to stop severe impact of climate change. [Accessed May 5, 2016].

Given this context it is perhaps no surprise that adaptation cost estimates are increasing. The UNEP (2016) defines an 'adaptation gap' as the difference between adaptation needs and the level of adaptation implemented; the adaptation finance gap is thus the difference between the costs of reaching an adaptation target and the amount of finance required and available to meet that target. Based on a 2010 World Bank global adaptation cost estimate (US $56-73 billion per annum for the period between 2010 and 2019), and in line with developing country Nationally Determined Contributions,[4] developed countries have committed to mobilizing US $100 billion per annum for both mitigation and adaptation from 2020, with increased commitment after 2025; this is currently estimated to fall two to three times short of adaptation needs and available international public finance. Moreover, although ODA increased 70 percent since the adoption of the Millennium Development Goals and was at its highest level in 2014 at US $137.2 billion, without additional public and private funds, the finance gap in developing countries is expected to grow significantly between 2030 and 2050. In fact, US $140 billion to US $300 billion is likely needed by 2030, while US $280 billion to US $500 billion is likely needed by 2050 (UNEP 2016b).

To address this gap, aggressive mitigation action and a significant increase in adaptation finance are deemed especially necessary (UNEP 2016a). While grants remain important, the role of the private sector is crucial. To increase private sector funding and engagement, a better understanding of private sector contribution as well as the establishment of policy frameworks and legislation is needed to incentivize private sector investment in adaptation. Finally, to address both adaptation and development gaps, increased focus needs to be placed on climate-resilient development (UNEP 2016a) most recently outlined in the Sustainable Development Goals.

1.0.4 CLIMATE CHANGE AND DEVELOPMENT

Climate change is the single biggest threat to development (UN 2018). This section of the book aims to place climate change and adaptation into perspective within the wider development field by providing the general context as well as some of the leading challenges.

Table 1.1 presents a snapshot of current development topics addressed and the non-binding commitments made in the Addis Ababa Action Agenda (AAAA) in July 2015 to fund the delivery of the Sustainable Development Goals, or SDGs; within the SDG framework, goal 13 sets out Climate Action (UN 2018). As the quantity or quality of investment needed is not clear in AAAA, the table also includes a breakdown of the estimated costs of different development challenges collected from a wider array of sources. While it is difficult to estimate costs as well as compare estimates across issues,[5] one thing is clear: development challenges are estimated to be expensive, and not strictly limited to climate change concerns.

However, despite recognition of the challenges ahead, political energy to address development needs remains low. The Agenda in particular has been criticized as empty rhetoric and for being devoid of any concrete actions or new commitments; it has also been viewed to prioritize private sector interests above pro-poor development. Nonetheless, common threads to emerge from all sources used to construct the table include the importance of mobilizing domestic resources and aligning private investment with sustainable development goals and therefore expanding the pool of capital through both public *and* private sector contributions. For example, ending hunger is estimated to require an additional 11 billion public dollars per year with an additional five billion expected to be generated from private sector engagement (Laborde et al. 2016). However, private sector contributions are not always an easy fit especially when it comes to development problems that fail to generate substantial revenues. Case in point: out-of-pocket

[4] To prepare for COP21 in Paris, parties to the UNFCCC prepared INDCs – or Intended Nationally Determined Contributions that outlined climate agendas and actions to be implemented post-2020 under the new climate agreement; the strongest focus on adaptation came from developing countries (UNEP 2016a).

[5] Comparing costs is problematic because of differing methodologies and assumptions used in needs assessment studies as well as potentially substantial overlaps between issues (such as social protection in relation to ending hunger or access to healthcare). While an in-depth analysis is beyond the scope of this study, Schmidt-Traub (2015) provides a comprehensive overview in relation to the SDGs.

Table 1.1. Financial commitments (non-binding) under the Addis Ababa Action Agenda and a breakdown of development challenges and their tentative costs

Funding source	Commitments (US $)	Timeline
Foreign aid	0.7 percent of GNI for ODA (the 0.7% target)	Reaffirmed; Undetermined
	0.15 to 0.20 percent of GNI for LDCs	
EU Aid	0.2 percent of GNI	By 2030
Industrialized countries (public and private)	100 billion for climate change mitigation	Reaffirmed; per year by 2020
Development challenge	**Spending needed (US $)**	**Timeline**
New Urban Agenda: Infrastructure	Additional 1 to 1.5 trillion (WEF 2016)[6]	Per year
Ending hunger	Additional 265 billion; 11 billion of public spending (Laborde et al. 2016)	Per year to 2030
SDGs	50-70 trillion (Madsbjerg n.d.)	Over the next decade
	Additional 343-360 billion for low income countries. Additional 900-944 billion for lower-middle income countries (Schmidt-Traub 2015, 9)	Up to 2030
Adaptation	56-73 billion (World Bank 2010)	Per year between 2010 and 2019
	140 billion to 300 billion (UNEP 2016a)	Up to 2030
	280 billion to 500 billion (UNEP 2016a)	Up to 2050
Mitigation	166 billion for renewable energy (Schmidt-Traub 2015)	Per year to 2030
	165 billion for energy efficiency (Schmidt-Traub 2015)	Per year to 2030
INDC implementation (all 48 countries)	93.7 billion for mitigation and adaptation (Rai et al. 2015)	Per year
Paris Climate Agreement	12 trillion (Madsbjerg n.d.)	Over 25 years
Loss & Damage	275 trillion (Hope 2009 as cited by Durand et al. 2016)	2000-2200 (200 years)

Compiled from UN's *Financing for Development*. [Accessed 11-18-2018].

health care expenditures in developing countries lead to a drastically lower utilization of health services; as a result, the private sector will contribute in no significant way toward reducing the financing gap that is estimated for the health SDG (Schmidt-Traub 2015). Nonetheless, given their greater share of available resources, innovative technology as well as their perceived efficiency, greater actionability and scalability potential, the private sector is promoted as being uniquely poised to take a leading role in resolving climate change problems—society's 'perfect moral storm' (Gardiner 2006). As corporate engagement in climate change is embedded within the multilateral trading system, a brief background discussion on the role of global trade in development is necessary.

The role of global trade

International trade is considered by many leading institutions to be an engine for development and

[6] Sourced from World Economic Forum webpage Infrastructure and Development. [Accessed 11-18-2018].

poverty reduction through job creation and the delivery of works, goods and services that bring economic prosperity where it is needed most. However, and especially in the context of climate change and global North-South relations that continue to be characterized by discussions of colonialism, economic inequality and backlash (see Box 1) and a clear need for stronger democracy and human rights approaches, focus is placed on shaping a multilateral trading system that is "universal, rules-based, open, transparent, predictable, inclusive, non-discriminatory and equitable under the WTO" (IATF on FfD 2016). This has continued to include traditional approaches to opening trade through negotiation and agreement between World Trade Organization (WTO) member states on the removal and reduction of trade barriers as well as enforcing agreements to ensure their effectiveness. However due to recent shifts in trade and trade policy, more emphasis is being placed on less-politically charged actions that 'level the playing field' to create a stable and predictable business environment that provides a clear view of opportunity, soothes investors and attracts investment.

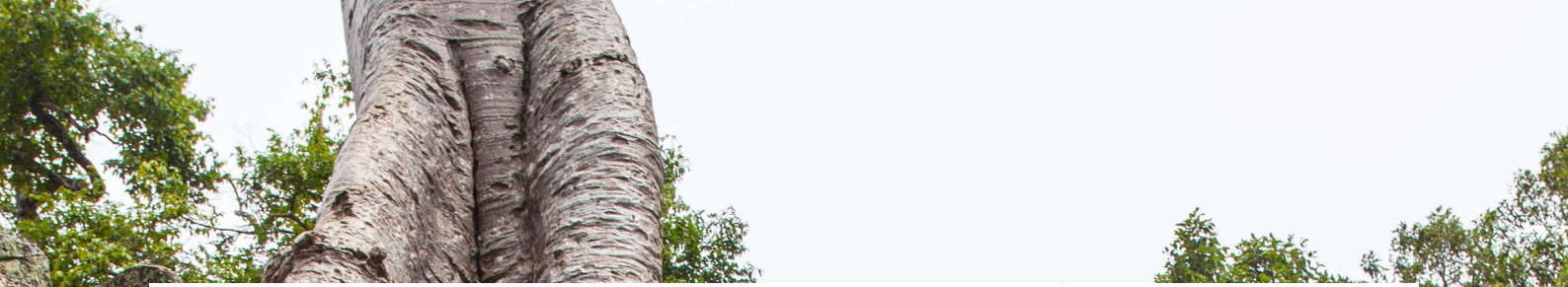
A shifting landscape: The rise of global value chains

Multilateral trade negotiations have historically focused on removing trade barriers in sectors or for specific products. One example, The Doha Round, launched in Doha, Qatar in November 2001, has focused on further widening trade opportunities especially for LDCs by reforming agricultural subsidies and improving developing country access to global export markets.[7] However, as negotiations have become less successful (The Doha Round deadlocked due to disagreements over agricultural subsidies) increased speculation circulated on the future of the WTO. This trade atmosphere has been further marked, after the 2008 crises and most recently reflected in the backlash against globalization and open borders in the United Kingdom and the United States, by 'protectionist tendencies' that seem to have taken a firmer hold (see Box 1.1).

Between 1990 and 2014, international trade in goods and services rose from US $4 trillion to roughly US $24 trillion. This rise was driven by the emergence of global value chains (GVCs) and especially South-South trade within the last decade; at US $5.5 trillion in 2014, this segment of global trade almost matched developed county trade (IATF on FfD 2016). Although GVCs have been a subject of attention for roughly two decades in the business, development, management and economics literature (Elms and Low 2013), international trade policy negotiators have only recently viewed GVCs, and especially the role of services which make up roughly half of world trade, as increasingly influential in determining growth opportunities (Elms and Low 2013; OECD, WTO, and World Bank Group 2014). Trade in goods is now intricately intertwined with cross-border investment, trade in services and the international movement of workers (Hanouz, Geiger, and Doherty 2014).

> *The global trade landscape has changed profoundly in the past decade — more profoundly, I suspect, than we fully understand... [one] result is the spread of globally-integrated production chains — in effect, global factories — as companies locate various stages of the production process in the most cost-efficient markets. In this process, expanding trade links with emerging economies are mirrored by expanding FDI links — as trade growth fuels investment and investment growth fuels trade. We still think in terms of Adam Smith's world of trade between nations, but in reality most trade now takes place within globe-spanning multinational companies and their suppliers.*
>
> Pascal Lamy (2010)

[7] Additional main areas under negotiation include Trade and Environment (including freer trade in environmental goods such as wind turbines and CCS technologies as well as improved collaboration and coherence in relation to multilateral environmental agreements and environmental rules); Trade and Development (including preferential treatment and waivers from the main WTO rules as well as Aid for Trade initiatives with donors). For a comprehensive overview, see the WTO webpage The Doha Round. [Accessed May 4, 2018].



Box 1.1. Global trade has a public relations problem

> *In some countries, there still is a majority of people that believe that opening trade is not good for the economy. Not many, and mostly today on the developed country side—not on the developing country side. In a way this is understandable. If you go and buy your food or your t-shirt [at] Tesco, Walmart, and you pay thirty percent less than 10 years ago, nobody's going to tell you that's thanks to opening trade and the WTO. If the food factory or the shirt factory next door closes because of let's say Chinese or Bangladeshi competition, people will know that it's about trade opening. So you have this political asymmetry, that there are much more winners than losers but the losers are more vocal than the winners … And it is a reality. There are losers. Many people will lose their jobs, in the Western world have lost their job, as a result of globalization and trade opening. The fact that many more have got a job, and usually a better job which is paying more. If you look at the European or US economy, export-oriented jobs are paid much better than import-oriented jobs.*
>
> Pascal Lamy, former Director General of the WTO (2012)

According to the WTO, international commodity trade statistics pervert the political debate surrounding the origin of trade imbalances which in turn leads to counterproductive decisions and misperceptions about the 'winners' and 'losers' of trade and globalization. Responding in part to developed countries protectionist tendencies and fears over emerging powers such as China, India and Brazil, the WTO's Made in the World Initiative (MiWi) aims for a paradigm shift in how trade is measured, analyzed and thus perceived (WTO 2011).

Rather than attribute the full commercial value of a product to the last country of origin, a more accurate measurement can be achieved through a geographic breakdown of value-added activities that occur in international value chains. Using the example of a Nokia mobile phone marked as 'Made in China,' hardware and management tasks comprised 80 percent of the total product value; over 50 of value is added in the European Union while North America and Asia account for 17 and 18 percent respectively (Ali-Yrkkö et al. 2011). Yet despite its minor role in employment and value added, many policy makers persist with a '2% assembly location' obsession and even though developed countries 'capture the lion's share' of globally-generated value added through services and intangibles such as intellectual property returns (Ali-Yrkkö et al. 2011). Rising levels of income inequality both within and between countries has also been linked to the growth of global production networks and the rents in GVCs related to intangible assets such as copyrights, branding and design (Gereffi 2014).

The implications of this paradigm shift are twofold: As many developing countries (such as those supplying raw commodities in North, Middle-East and Sub-Saharan Africa) are not located where a large proportion of GVCs operate (namely the Europe-North America-East Asia triangle),

trade gains have been unequally distributed; this has led trade proponents to focus on making trade growth inclusive (IATF on FfD 2016; OECD, WTO, and World Bank Group 2014; OECD and World Bank Group 2015). Second, as national trade policy has moved beyond tariff removal to become more complex (Hanouz, Geiger, and Doherty 2014), trade opening has turned to trade facilitation and 'unshackling supply chains' from more significant impediments 'at and after the border' (WEF 2013). This shift in focus is most recently reflected in the Trade Facilitation Agreement adopted at the Ninth WTO Ministerial Conference in Bali in December 2013 which aims at taking a holistic rather than conventionally fragmented, silo approach to trade by removing barriers found within the bigger piece of the trade pie: GVCs. In fact opening trade by making it more inclusive and addressing obstacles that hinder the expedient movement of goods is estimated to bring an estimated US $1 trillion in GDP gains to the global economy (Hanouz, Geiger, and Doherty 2014). For the WTO, as trade has become increasingly important to development strategies, development issues have become increasingly important for the multilateral trading system (Lamy 2010).

Leveraging trade for development

Since the 1980s, neo-liberal ideals including open markets, decentralization, and privatization have dominated development policy agendas and triggered processes of rapid social, political and economic transformation in the developing world. While free market economics were in part believed to be an effective counter-weight to Cold War socialist movements, the profound changes in economic policy were also a means to foster Foreign Direct Investment (FDI). A more recent discourse in development explicitly promotes the private sector as a primary development agent (Knott and Ellis 2009); this differs from the traditional policy agenda that continues to focus on improving the environment in which business operates (Byiers and Rosengren 2012). Murray and Overton (2016) bring this further through the term 'retro-liberalism' which describes the next phase of the aid regime that has evolved out of the post-global Financial Crisis world order. Here pure neoliberalism gives way to active government intervention in support of the private sector to facilitate and sustain private capital accumulation. Perhaps the most evident means to leverage trade for development occurs through the strategic use of national land policy and private sector investments in the agricultural sector for poverty alleviation; here foreign and domestic private sector actors are institutionally supported and facilitated by the state, through a macroeconomic policy imperative, to access land and natural resources. Because this has clear implications for business-led adaptation, various chapters in this dissertation unpack the issue from different angles.

The better business environment

Globalization and the opening of trade, lowered transport costs and an ICT revolution have allowed companies to spread the production of goods and services among different countries.[8] Theoretically this benefits companies, end consumers and a range of developing country actors from service and logistics providers to smallholder farmers. Companies and consumers save on costs while input suppliers can integrate into global supply chains without having to specialize in all areas of production (Stephenson 2016). Development foci is particularly placed on SMEs—small to medium enterprises—because SMEs not only sell products to multinational corporations, they play a greater role in local development as employers. In fact, SMEs, of which the majority in developing countries are owned and operated by women (Nichter and Goldmark 2009), account for 80 to 90 percent of total employment in developing countries (OECD, WTO, and World Bank Group 2014). From a GVC perspective, technology expands the frontiers of trade and in

[8] For an in-depth look at the rise of GVCs see Gereffi 2014.

turn the level of global interdependency; partnerships and cooperation between businesses[9] and among nations are more important than ever (Elms and Low 2013; OECD and World Bank Group 2015). As firms look to unbundle their production processes and compete globally in this context, developing countries aim for sustained economic growth as well as the ability to remain globally competitive to attract FDI. As GVCs are increasingly influential in determining future FDI and trade patterns, policy efforts are geared toward the creation of a conducive business environment that reduces business risks and costs (OECD, WTO, and World Bank Group 2014).

Unleashing the power of business

Businesses operate within a wider context that can either facilitate or hinder operations and the movement of products. From a supply chain perspective, barriers to business largely involve the 'task side' of trade and can be grouped into four key areas—market access, border administration, telecom and transport infrastructure, and the business environment where the regulatory framework and level of security can inflate or reduce both costs and risks (WEF 2013). This business environment encompasses a wide array of additional features from institutional arrangements that influence the way key actors operate to informal customs, behaviors and norms (DCED 2008) as well as the characteristics of geographical location and natural resource base, workforce education and skills, and the government's ability to mobilize and coordinate with labor and business organizations (USAID Microlinks n.d.). At a business level, the World Bank considers 11 areas important: the amount of time and cost involved in starting or dissolving a business as well as the ease and costs of handling construction permits, of accessing electricity, registering property, paying taxes, obtaining credit, enforcing contracts, as well as the level of protection that is afforded minority investors, cross-border trading and labor market regulation (World Bank 2017). Within policy and practice realms, an enabling business environment is seen as a core prerequisite to unleashing the economic growth, employment and income generation brought by the private sector. A robust business environment can also rein-in elite capture and unequal development that may occur in inadequately regulated markets. Donors and development agencies work toward business environment reforms to maximize the impacts business can bring to developing countries. Yet while tremendous efforts are dedicated toward unleashing the invisible hand of the market, the example of contract farming illustrates potential for less sustainable outcomes: the flow of agribusiness capital, the disintegration of the production process, and the essential 'balkanization of the labor force' (Scott 1983) has reduced firm costs and increased firm flexibility and control. However, farmers become subordinated to 'management' through a distinctive labor process that dispossesses commodity producers from decisions related to inputs, crops, labor and quality (Watts 1994 as cited by Rigg 2001). Rather than independent business people, this makes farmers 'little more than piece workers' (Rigg 2001). As addressed in empirical Chapter 6 in relation to the integration of smallholders into global value chains and climate change adaptation, this managerial pragmatism reins-in and depoliticizes development complexities (Edward and Tallontire 2009; Nelson and Tallontire 2014) to reduce business costs and risks. Thus the enabling environment extends to principles related to equity and justice such as local participation and empowerment (Tobin, Glenna, and Devaux 2016; Thomas and Twyman 2005).

Corporate-societal value: Private sector *for* development

Different from the traditional business and policy agenda that continues to focus on leveling the playing field by improving the business environment in developing countries, or 'private sector development,' a more recent discourse concerns the political and economic development of both developed and developing countries. This occurs in an increasingly competitive global arena and centers on donors and leveraging international business activity and finance through Official Development Assistance (ODA) to realize development goals, or 'private sector *for* development' (Byiers and Rosengren 2012). Table 2 briefly outlines the difference between each.

[9] Chapter 7 empirically examines the role of business organizations and business cooperation in Cambodia's capital city of Phnom Penh.

Table 1.2. Private sector engagement

	Private sector development	**Private sector *for* development**	
		Private sector *investment* for development	Private sector *finance* for development
Location	Domestic	Domestic/ International	International
Role of donors	Supporting the enhancement of the domestic business climate, credit etc.	Encouraging private sector actors to make investments in developing countries by offsetting certain risks	Leveraging private sector to provide finance to development efforts
Types of instrument	Challenge, equity and credit guarantee funds etc.	Challenge funds for Foreign Direct Investments, development-related grants and subsidies	Public-private partnerships, portfolio investment, private equity, private infrastructure funds etc.

Source: Byiers and Rosengren 2012

Businesses can bring diverse sources of funding to a cash-strapped country, community or NGO; they can also ensure State commitment and leverage government funds (Biagini and Miller 2013; Byiers and Rosengren 2012). Companies also can bring innovative approaches, skills, technologies and services and in turn reap the profits of climate change action (Biagini and Miller 2013; GEF 2012; Pauw and Pegels 2013; WEF 2008). Private sector engagement is also promoted as having the additional advantage of being more efficient and sustainable (WEF 2008; GEF 2012) as well as quickly scalable for maximum impact (United Nations 2013). This is considered to be a win-win for business; as new markets and potential profit angles emerge through climate-resilient goods and services, so do opportunities for enhancing corporate social responsibility (UN 2014a; CSR Asia 2011).

1.1 RESEARCH FRAMEWORK

1.1.1 RATIONALE

This study, drawing on mixed-methods research conducted over three years, explores the relationship between business and development by looking at corporate engagement in climate change adaptation in Cambodia's agricultural sector. Focus was placed here, as opposed to mitigation, as it is especially pertinent in the Global South. In fact, adaptation, long considered to be 'the overlooked cousin of greenhouse gas mitigation,' has been a tense subject at the global level yet remains a primary concern for developing countries hit hardest by climate change (Schipper 2006). Pro-poor business engagement in adaptation is also highly promoted yet under-researched (Vivid Economics 2015; Pauw and Pegels 2013; UN Global Compact & UNEP 2012).

Focus was placed on Cambodia given the nation's status as a Least Developed Country consistently ranked as especially vulnerable to the impacts of climate change. The agricultural sector is likewise particularly vulnerable (Pearce et al. 1996; McCarthy et al. 2001; Mendelsohn 2008). This heightened level of vulnerability is a pressing concern as the country and its predominantly rural and poor populace (ADB 2014) rely heavily on agriculture in terms of employment, sector growth, and contribution to GDP. In fact, more than 80 percent of the population depends on farming for sustaining their livelihoods, mostly through cultivating small plots of land for subsistence and small-scale commercial purposes (ADB 2014; Socheth 2013). Further motivation derived from the fact that agriculture, the private sector, and development are often united in Cambodia's policies and governance mechanisms (Mendelsohn 2008); the Royal Government of Cambodia systematically activates the private sector to contribute local to national level development outcomes and agriculture is frequently the mode with which to reduce poverty of poor rural smallholders

(Blanc and Kledal 2012; Tobin, Glenna, and Devaux 2016; Mancini 2013). For example, the 2014-2018 Climate Change Priorities Action Plan (CCPAP) focuses strongly on climate-smart agriculture, which is to be incorporated at the sub-national and community levels.

Finally, because Cambodia is often the focus and beneficiary of adaptation funds and programs, the study focused on a global adaptation financing mechanism managed by Climate Investment Funds (CIF) called the Pilot Program for Climate Resilience (PPCR). A leading mechanism propelling businesses to engage in resilience-building, PPCR aims to target those most impacted by climate change, as outlined in the following statement (CIF 2012b):

> *The highest result level desired by PPCR is the improvement of the lives of people who are most affected by climate variability and change. The success of the program will depend to a large extent on the scale of reaching out and providing particularly poor people with short-term options to deal with extreme climate-related events and to cope with long-term climatic changes. The transformation process entails a shift away from the "business-as-usual" to growth paths anchored in resilience to sustainably withstand and adapt to the effects of CV [climate vulnerability] and CC [climate change].*

The research investigated two clear-cut business interventions in Cambodia approved for funding under the Private Sector Set-Aside program (PSSA) within the PPCR. This was a necessity as the private sector is ubiquitous in many instances in adaptation interventions. In other words, business activities were observed (through the provision of technology and tools for example) but business actors and their respective roles and responsibilities are not usually defined. The PPCR in Cambodia however provided a clear-cut example of private sector engagement in adaptation. Here, easily identifiable *private companies* receive *public adaptation funds* to build the *adaptive capacity* of *climate vulnerable groups*. Because the business case studies selected for this research are directly related to the PPCR framework, more information on this funding mechanism is provided in the methodology section of this chapter. Chapter 2 additionally delves into Cambodia's context and provides more information to support the study's rationale.

Although the study involved one country, it arguably illustrates broader trends in climate change adaptation and business more generally.

1.1.2 RESEARCH QUESTIONS AND APPROACH

This study aimed to bring a deeper understanding of the problems and opportunities occurring at the grassroots to the global funding levels. It was based on extensive field work in Cambodia and was guided by the following central research question:

> *How, and to what extent, can the private sector contribute to sustainable climate change adaptation in Cambodia's agricultural sector?*

The research was designed to take a multi-scalar approach which would enable the perspectives of a range of actors at different levels to come forward. As the following sub-questions illustrate, investigation concentrated on four distinct but interrelated aspects of business-led adaptation in Cambodia. Table 1.3 provides a concise overview of the study's multi-scalar approach as well as the analytical aspects of the study at each level, whether micro, meso or macro.

The first step, focused on understanding the scope and character of Cambodia's adaptation landscape at the macro level, was guided by the following sub-question:

1. *What characteristics, including policies and practices, define the adaptation landscape of Cambodia's agricultural sector?*

The motivation behind this is simple: A wide range of development actors have been setting policy priorities, making key decisions, distributing funds and implementing adaptation programs to build the resilience of vulnerable sectors, and especially, poor farmers in Cambodia. The first sub-question, addressed in Chapters 3 and 4, investigated institutional narratives at the macro level from two angles: policy and practice. The first part addressed in Chapter 3 involved collecting and analyzing both climate change and development policy to uncover primary issues, the Cambodian government's objectives, and key actors. The second part of the investigation, addressed in Chapter 4, included the creation of an intervention database; a web search was used to track down and categorize discreet adaptation action in the country's agricultural sector. This mapping of policy and practice contributes to the Paris Agreement agenda to enhance progress by stocktaking and learning from adaptation policies, programs, and actions (UNFCCC 2015); it's also a precursor to the rest of the study. Understanding what adaptation means in policy and practice at the macro level situates the findings obtained elsewhere in the study.

After outlining the characteristics of Cambodia's adaptation landscape, the next investigation aimed to ground adaptation at the local, or micro, level. It was guided by the following question:

2. *How do rural farmers in Battambang Province experience climate change and how successful are the PPCR-endorsed businesses in improving their resilience?*

Chapters 5 and 6 are based on data collected at the local level in Battambang Province where the two business-led adaptation interventions of the PPCR were based. Understanding the circumstances of rural communities in this province is necessary if we aim to understand the ability of the private sector to help vulnerable communities deal with the challenges and implications of a warming planet.

Toward this end, Chapter 5 first delves into how climate change is locally experienced as well as the complexity of adaptation and resilience processes.[10] Chapter 6 then builds on this context in order to understand the ability of the PPCR-approved businesses to build local resilience. In particular, this chapter unpacks the relationship between business and community development, and specifically the use of market mechanisms to create favorable adaptive scenarios. While market logic has been promoted as efficient and pro-poor, it has also generated 'winners and losers' (O'Brien and Leichenko 2003) which raises concerns for smallholders and communities impacted by climate change. As resilience is a measure of the ability of individuals, households, and social groups to withstand and recover from shocks (IPCC 2007c) and is influenced in large part by access to resources and assets (Moser 1998; Dodman, Ayers, and Huq 2009), this study investigated intervention dynamics in relation to community-level processes of inclusion and exclusion (Tobin, Glenna, and Devaux 2016) and the implications for transformative adaptation as envisioned by the PPCR.

Moving away from the community level, the final aspect of the wider doctoral study addresses an understudied angle at the meso level: business leadership and climate change. Most research looks at climate change action at the local level and from the perspective of impacted groups; other possibilities and responses outside of the public and development sectors are more mysterious. Research sub-question three aims to lessen this gap through a unique inquiry, namely:

3. *What potential do Phnom Penh's business organizations have to act as climate change adaptation leaders?*

Chapter 7 sought to understand the business side of the equation. After all, business is encouraged to take the lead in sustainable development as well as in climate change action, and these institutions—including national and international business chambers and organizations—are already at the forefront in Cambo-

[10] This chapter has been adapted from a journal article that was co-authored with Dr. Femke van Noorloos of Utrecht University.

dia's business community. The final empirical chapter unpacks the prescribed leadership role given to the private sector through an investigation into business priorities and focus areas; levels of climate change awareness and action; the role of business organizations in national climate policy formation and implementation; capacities and needs; and partnerships.

Synthesizing the above paragraphs, Table 1.3 presents a concise overview of the study's multi-scalar (micro to macro) approach. With the findings of each sub-question considered, a meaningful discussion can begin to emerge on what is needed to achieve sustainable business-led adaptation.

Table 1.3. Overview of the study's multi-scalar approach

Research sub-question	Research objective	Analytical focus	Research method	Scale
1	Map Cambodia's adaptation landscape	Climate change and development policy in Cambodia	Mixed	Macro
		Adaptation interventions in Cambodia's agricultural sector		
2	Define local perceptions of, and experiences with, climate change	Rural farmers in Battambang Province	Qualitative	Micro
	Explore business-led adaptation action on the ground	Private sector adaptation funding mechanism (PPCR)	Qualitative	Macro & Micro
		Two business-led adaptation interventions in Battambang Province focused on high quality agricultural production and smallholder value chain integration		
3	Map Cambodia's business landscape; Understand private sector priorities and potential to contribute to climate action	Cambodia's general business environment	Mixed	Macro & Meso
		International and Cambodian business organizations and chambers		
		Local agribusiness owners		

1.1.3 METHODOLOGY

The research required an exploratory, inductive and mixed methods approach for two reasons. First, the topic of business-led adaptation is new and much information was difficult to locate or did not exist. Second, a holistic understanding of adaptation requires a combination of quantitative and rich data which reveal both the problems at hand but also uncover the range of perceptions which motivate diverse actors. This study holds that it is anathema to approach pro-poor and inclusive adaptation from a generalist perspective; this study strived to obtain contextual information to support logical generalizations rather than statistical ones. It aims to unite islands of experience and so support local findings with the wider literature on adaptation, inclusive development and business leadership.

Research design

The study, conceived in The Netherlands, began with an extensive review of the existing literature (both academic and industry). A reconnaissance stay in Cambodia was used to test and narrow the topic for relevancy. To further formulate research objectives and understand Cambodia's adaptation landscape, the first step was to create a database of hard and discreet adaptation interventions in the sector (as opposed for example to 'soft interventions' geared toward policy and advisory support). Through this initial approach three focus areas emerged: 1) the role of local knowledge, observations and needs within a top-down and largely expert-dominated and technocratic sphere; 2) the importance of responsible business practices and cross-sectoral partnerships for responsible adaptation; and 3) the important role of business organizations, as prominent, local business leaders, in enhancing the capacity of business to contribute to sustainable business practices and local development outcomes. Subsequent investigation included an analysis of both adaptation and development policy; the study also relies heavily on fieldwork as outlined in the next section.

Data collection and analysis

Empirical data, based on the initial scoping activities and the selection of the case studies, was collected during three fieldworks. Methods included in-depth interviews, focus group discussions, and participant observation conducted with representatives from more than 45 local to international organizations as well as over 100 farmers (both landless and landholding) residing within two districts and 11 villages in Battambang province (see Figure 1.1). In addition, in the city of Phnom Penh where business chambers and other business organizations are based, interviews and a quantitative survey was utilized to gather data from a total of 18 international and national business chambers and other types of organizations as well as seven open and willing business owners (see Appendix I). Because data collection methods were tailored to each research sub-question, more detailed descriptions of each approach are provided in the respective empirical chapters. Quantitative data were analyzed descriptively through the use of IBM SPSS Statistics 24. Qualitative data were coded and analyzed (alongside field notes) using QSR International's NVivo 11 qualitative data analysis software. Through exploring and interpreting patterns, emergent categories were organized into themes.

Research ethics and positionality

Integral to data collection is the issue of research ethics and positionality. Research ethics shaped all aspects of the study. For example, steps were taken to avoid harm during data collection and when presenting the results. Ensuring participant welfare was based upon the principles of informed consent and voluntary participation, and each interaction allowed time for research participants to ask questions. Participant confidentiality and anonymity were also guiding principles; the identities of research participants are only known to the researcher and data has been securely stored in encrypted and password-protected cloud storage. Additionally, interviews were conducted so that the least amount of livelihood disruption

would occur, for example through convenience sampling and participant observation.

As an educated foreigner I was able to travel to remote places to successfully create spaces and collect voices that remain unheard or are often silenced. People openly welcomed me into their homes, to their dinner tables and into their agricultural fields. However, as an outsider discussing farming techniques and challenges, I was also often mistaken for a microfinance agent as well as a journalist; while discussions easily cleared any confusion among community members, this latter perception negatively affected the data collection process in some cases as I was regarded suspiciously by some of the private sector representatives and so denied interviews; this was especially the case with business representatives in Phnom Penh. Finally, my previous work in Cambodia exposed me to the effects of many human rights abuses inflicted by private sector actors on local farming communities. Through my country-wide research on land grabbing, I met numerous farmers who had been made completely destitute from the loss of their land holdings; some even spoke of selling their unborn children to wealthy families to earn money. Others were beaten, shot and imprisoned for standing up for their rights. This made a lasting impression on me and added a level of suspicion in my data collection process for Cambodia's largely free-range private sector. This experience also allowed me to ask better questions however, to understand the importance of farming to local communities, and the implications of harvest losses as well as the numerous socio-economic challenges characterizing rural settings that are of utmost importance for successful adaptation.

Case study selection: The PPCR and the Private Sector Set-Aside

Private sector engagement in local communities or in development is nothing new. In fact, in many parts of Cambodia, the private sector is usually one of the most active stakeholders; business representatives provide information and advice to farmers when selling agricultural inputs at the market. Microfinance representatives, who travel long distances by motorbike in search of loan clients, are in a similar informal advisory position. However, when looking for appropriate case studies for this research, the private sector nonetheless often seemed to be overlooked—a silent stakeholder—largely unmentioned and invisible in a domain nonetheless characterized by private sector agricultural tools and information, or infrastructure projects dedicated to enhancing adaptive capacity and resilience.

As a result, this study selected two clear-cut cases of planned business-led adaptation interventions from the Private Sector Set-Aside (PSSA) competitive round of funding that is part of the Pilot Program for Climate Resilience (PPCR). PPCR is one of four components of the multi-donor[11] Climate Investment Funds (CIF) which also includes the Clean Technology Fund (CTF), Forest Investment Program (FIP), and Scaling-Up Renewable Energy in Low Income Countries Program (SREP). PPCR, FIP and SREP are governed and funded under the Strategic Climate Fund (SCF) (CIF 2012a). Unlike other funds, CIF's sunset clause may negate replenishments and operations after establishment of a new UNFCCC financial architecture.[12] CIF funds, made available through multi-lateral development bank (MDB) partners, aim to align with MDB funding mechanisms and complement existing MDB programs.[13]

Within Phase 1 of this mechanism, a total of 18 highly vulnerable and least developed countries,[14] including nine small island nations, received funding to develop a Strategic Program for Climate Resilience (SPCR) investment plan for country-specific priorities and projects as well as capacity development to initiate such a plan. Under the scheme, pilot programs should 1) be country-led and based on identified priorities; 2) build upon ongoing country initiatives such as National Adaptation Programs of Action (NAPA); 3)

[11] Fund sources include Japan's Fast Start Finance and UK's International Climate Fund as well as donor countries including Australia, Canada, Denmark, Germany, Norway, Spain, and the United States.

[12] See paragraphs 56 - 58 of the Governance Framework for the Strategic Climate Fund (CIF 2008).

[13] Climate Investment Funds implementing partners include the World Bank (including the International Finance Cooperation), the African Development Bank, the Asian Development Bank, the Inter-American Development Bank and the European Bank for Reconstruction.

[14] In May 2015 the program was extended to include the countries of Bhutan, Ethiopia, Gambia, Honduras, Kyrgyzstan, Madagascar, Malawi, Philippines, Rwanda, and Uganda.

align with the Adaptation Fund and donor-funded activities; and 4) incentivize action for scaling up and transformational change.

Once the SPCR plan is complete, the SPCR is submitted for approval by the PPCR Sub-Committee. Once the SPCR is endorsed, each proposed project must clear funding approval once fully developed. In Phase 2, endorsed and approved projects are implemented through highly concessional finance that includes grants.[15] The fund supports a wide range of activities including national and regional efforts toward improved agricultural practices and food security, climate resilient water and sanitation infrastructure, weather data monitoring and analysis, and studies on climate resilience housing in coastal zones among others (PPCR n.d.).

In Cambodia, the government, along with the Asian Development Bank, World Bank group members, and other development partners drafted the country's SPCR investment plan. In 2011 the plan was endorsed; it included seven investment projects approved for US $86 million (up to US $50 million in grants and US $36 million in near-zero interest credits) (Royal 2013). Identified priorities included water management, agriculture, and rural infrastructure as well as capacity building to mainstream climate resilience into development planning (Royal 2013). According to Eric Sidgwick, Director of the ADB Cambodia Resident Office, Cambodia's SPCR mobilized "more than 400 million US dollars in funds and is among the most highly funded climate change resilience projects in Asia" (MoE 2013).

The PSSA aims to advance PPCR objectives and extend PPCR activities by focusing on innovative private sector engagement through 'highly concessional financing'[16] dispersed in two rounds of proposals. In addition, financed Set-Aside activities align with the goals outlined in the endorsed country SPCR.

This study focused on the only two businesses in Cambodia who were approved under the PSSA in Cambodia. This provided a clear-cut example of private sector engagement in adaptation: easily identifiable *private companies* are provided with *public adaptation funds* to build *local adaptive capacity* for *climate vulnerable groups*. As each of the PPCR-endorsed companies was based in Battambang, most of the empirical data derives from this province (see Figure 1.1). While the PPCR is explained in the following sections, more information on the businesses and the sample populations are provided in the analytical chapters of this book.

1.2 KEY DEFINITIONS

This study has relied on a few key definitions as well as a set of theories related to climate change adaptation that have emerged in the literature: 1) adaptation, including its key components of vulnerability and adaptive capacity as well as maladaptation; and 2) resilience, including its factors of exposure and sensitivity. The following paragraphs present the fundamentals of each concept which are applicable to the entire study; additional concepts and frameworks particularly relevant to the subject matter of each research question are elaborated upon in the respective empirical chapter.

1.2.1 PRO-POOR ADAPTATION

Climate change adaptation has long been considered a necessary component of poverty alleviation and

[15] For more information, see Climate Resilience PPCR [Accessed August 4, 2018].

[16] For additional information on PSSA access to competitive funding, see CIF Private Sector Set Asides. [Accessed August 4, 2018].

Figure 1.1. Map of Cambodia indicating research province and districts

Source: Utrecht University, Faculty of Geosciences, Cartographic Design

sustainable development (Kelly and Adger 2000; Smit and Pilifosova 2001; Schipper 2007). Actions for adaptation are a means to reduce vulnerability, to enhance resilience against climate change and climate variability or to recover from a shock (Adger et al. 2009); they may be anticipatory or reactive, spontaneous or planned and are undertaken by a range of actors, both public and private, at a variety of scales (IPCC 2007c; Füssel 2007; Adger and Vincent 2005a). Planned adaptation, the focus of this study, is the use of information to re-evaluate current and future action as well as to plan a deliberate response to changing or potentially changing conditions (Füssel 2007; IPCC 2007c).

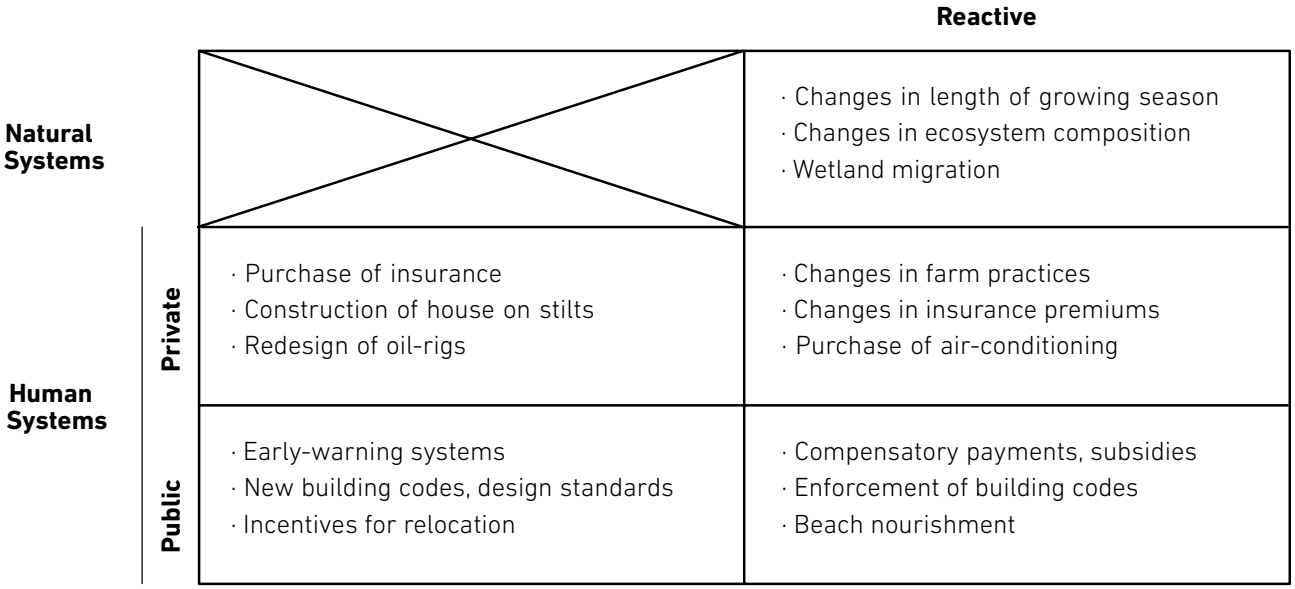
Figure 1.2 shows the various types of climate change adaptation with examples. Anticipatory, or proactive, adaptation occurs before impacts are observed while reactive adaptation is a response to the consequences of a particular event. The literature also makes a distinction between *autonomous*, or spontaneous, and *planned* adaptation; the former is an ongoing process that uses existing knowledge and technology to respond to climatic changes while planned adaptation, the focus of this study, is a deliberate response that mobilizes policies and institutions to strengthen or establish new conditions that are favorable for effective adaptation as well as investment in new technologies and infrastructure (IPCC 2007).

1.2.2 VULNERABILITY AND RESILIENCE

Key factors underlying successful climate change adaptation include vulnerability and resilience. While

the concept of vulnerability has been discussed from a range of perspectives from sustainable livelihoods to global environmental change among others, in the context of climate change it refers to the level of susceptibility to adverse effects with exposure, sensitivity and adaptive capacity as key factors (IPCC 2012; Adger and Vincent 2005a). Differing exposures, sensitivities, and abilities to cope with external stress translate into differing abilities to adapt both between and within communities (Leichenko and Silva 2014; IPCC 2007c; Adger and Vincent 2005a). Adaptive capacity is shaped, positively and negatively, by various elements in institutional, social and cultural contexts (Dow et al. 2013a; Leichenko and Silva 2014).

Figure 1.2. Types of adaptation with examples



Source: Klein 2003

As a biophysical condition as well as a social condition, vulnerability is dynamic (Adger and Kelly 1999) in that climate change places differential levels of stress on communities, affecting in particular those that are already struggling or engaging in risky livelihoods; these include communities and individuals that are resource-dependent and already experiencing development challenges such as poverty, conflict, and disease (Dodman, Ayers, and Huq 2009; Thomas and Twyman 2005). A key aspect of vulnerability is the potential for loss; because it depends on the values of the exposed group, unacceptable loss is subjective (Eakin and Luers, 2006 as cited by Barnett et al., 2008).

The inverse of vulnerability, resilience is a measure of the ability of individuals, households, and social groups to withstand and recover from shocks (IPCC 2007c) and is influenced in large part by access to resources and assets (Moser 1998; Dodman, Ayers, and Huq 2009).

As a multi-faceted process, successful adaptation is not an automatic result of high adaptive capacity alone (Yohe et al. 2007; Adger and Vincent 2005a), nor is it an automatic result of adaptation action as many influential factors are in play (Moser and Ekstrom 2010). Adaptation also cannot fully prevent the detrimental impacts of climate change (Füssel 2007). Moreover, a simple return to a pre-shock status has been seen by some researchers as *coping* rather than a heightened ability to defend against future shocks (Dodman, Ayers, and Huq 2009). For example, private actors are likely to respond to local and immediate climate impacts rather than to longer-term global phenomenon; as such, these responses arguably cannot be defined as adaptation (Grothmann and Patt 2005). Adaptation to climate change is complex, and there is not enough information to determine which initiatives advance adaptation over the long term (Magnan et al. 2016). Actions that ultimately have a harmful effect, whether on people, sectors, or other socio-ecological systems, are termed maladaptation (Magnan et al. 2016).

Given the close relationship between increased vulnerability, poverty and lack of assets (Moser and Satterthwaite 2008), pro-poor adaptation—or adaptation action that considers the needs and challenges of the poorest members of a community—is a key focus for academics, donors, development agencies, and governments; it is also the focus of this research. The manner in which a pro-poor intervention manifests on the ground, as well as the role of livelihood capitals, is discussed in-depth in Chapter 6.

1.2.3 PRIVATE SECTOR AND DEVELOPMENT

This dissertation places emphasis on the for-profit private sector and in particular the role of corporations given their importance in terms of business-led adaptation and global adaptation finance. The term 'smallholder' was viewed in the most pragmatic terms: although smallholder farmers comprise part of the private sector, the term is used to refer to rural producers operating at the household level for subsistence and small-scale market purposes as opposed to the aforementioned (multi-national) corporate actors in agriculture. The study also recognizes that smallholder families are dynamic units which also fill income, food, health, and energy needs through off-farm income as well as animal husbandry and gathered wild resources. Second, as the terms 'private sector' as well as 'private sector engagement' are used widely but often without clarification or shared meaning, Table 4 provides clarity in terms of the research. From the perspective of this study (and sustainable development in general), making an on-the-ground distinction between the latter two definitions, *private sector in development* and *private sector for development*, is key in terms of understanding the potential for positive local development impacts.

1.2.4 THE PRIVATE SECTOR SET-ASIDE AND DEVELOPMENT POLICY

Table 1.4. Defining the private sector and development

Term	Description
Private sector	Comprises the range of actors with a core profit mandate; includes farmers as well as micro, small, medium and large enterprises
Private sector development	Comprises the range of activities designed to create an enabling environment for private sector activities; carried out by financial institutions, the government, and development cooperation actors
Private sector *in* development	Comprises the range of private sector activities, both positive and negative, relating to the core and regular operations of a business that impact on society; ranges from product and service provision and job creation to environmental degradation
Private sector *for* development	Comprises the range of private sector activities that aim for positive development outcomes; ranges from creating inclusive value chains and operating through inclusive business models, leading development projects

Source: Adapted from Bella Et Al. 2013; White and Chacaltana 2002; White 2004; DCED 2008; DCED 2016; Byiers and Rosengren 2012

As discussed previously in *Case Study Selection* (section 2.3.4), the businesses selected for this study fell under the financing mechanism of the PSSA. As cohesion with National-level policy and practice is a core requirement of the PPCR, the research relies on the definitions and descriptions of 'vulnerable or marginalized groups' put forth in leading development policies in Cambodia including the National Adaptation Pro-

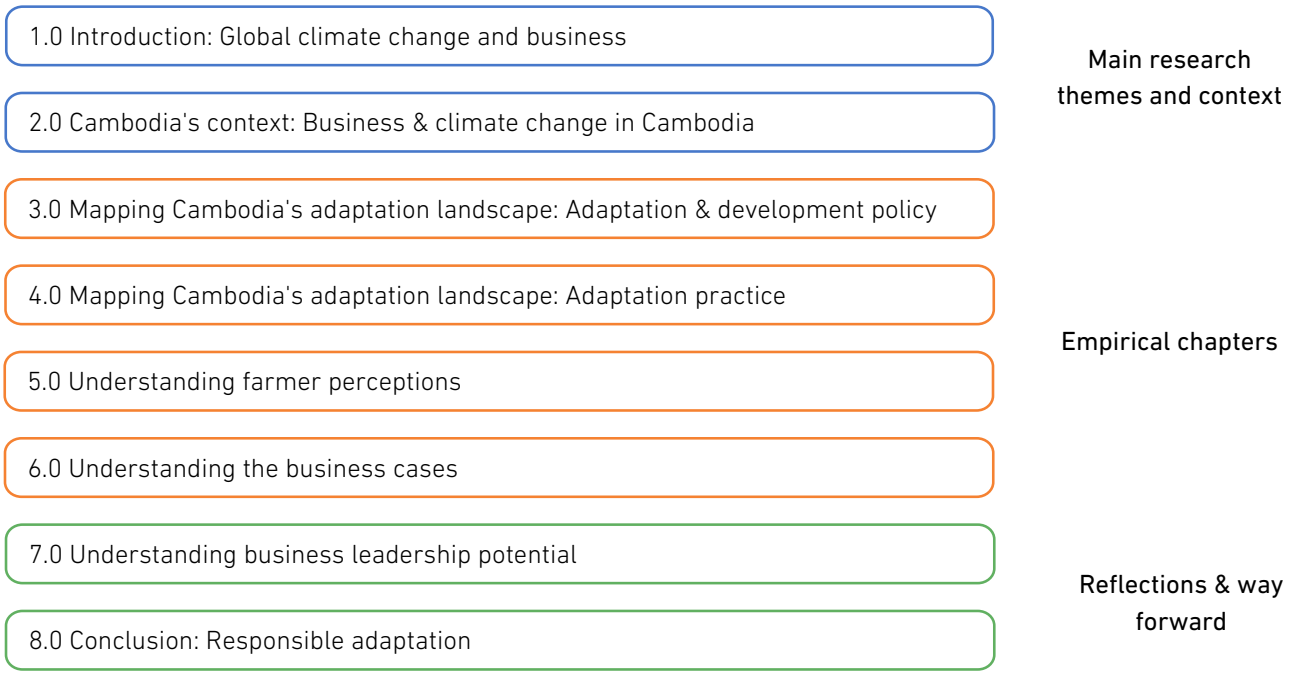
gram of Action (NAPA) (RGC 2006), Cambodia's Strategic Program for Climate Resilience (SPCR), and Cambodia Climate Change Strategic Plan 2014–2023 (CCCSP). As might be expected, vulnerable and marginalized groups receive explicit attention in these documents; key words used to describe these groups include 'most affected,' and 'the poor' (RGC 2006). Moreover, these groups are characterized by 'limited resources' and 'lack of preparedness to cope with climate risks and hazards' (CCCSP, 2013). Women stand out particularly in the CCCSP and the SPCR; women comprise the majority of the rural poor and so receive special attention. Indicators generally encompass the number or the percentage of famers, households or the total area of farms who adopt the technologies and practices in the programs.

Between the two rounds in 2013 and 2014, the fund 'set-aside' a total of US $75.4 million in concessional funds. This is to contribute toward innovative projects and programs where the private sector works to reduce exposure to climate risk and uncertainty through the core criteria. In this funding scheme, multilateral development banks play a key role by partnering with a private sector actor in submitting proposals. PPCR selected proposals on a competitive basis and based on the recommendations of an expert group. According to the MDB Private Sector Unit representative interviewed for this research, PPCR is a complementary fund the bank "can tap from time to time." The funds are complementary in that they are always attached to one of the bank's projects. While the MDB mostly deals with projects in infrastructure such as power and transport, a relatively new opportunity that the MDB is increasingly engaged in is agribusiness [MDB Interview 2, 01-28-15].

1.3 DISSERTATION OUTLINE

The remainder of this dissertation is structured as follows (Figure 1.3). Following this introduction, Chapter 2 first contextualizes the general climate change and business arena presented above by zeroing in on the particulars of each in Cambodia, including past climate trends, future climate scenarios, and predicted impacts against numerous social and environmental vulnerabilities. A general market overview is also provided to orient the reader to the country's business environment including key sectors and macroeconomic trends. Next, Chapter 3 through 7 present the empirical dimensions of the research. Here, standalone yet interrelated aspects of the research are based on different angles of adaptation as well as methodologies and samples, from the micro to the macro levels. Chapter 8 offers the Conclusion and an important normative aspect that honors my desire to reach beyond the academic realm: a set of business and policy recommendations for sustainable corporate engagement in climate change adaptation. After all, in his 1845 *Theses on Feuerbach,* Karl Marx (1969) states, "The philosophers have only interpreted the world, in various ways; the point, however, is to change it."

Figure 1.3. Structure of the book



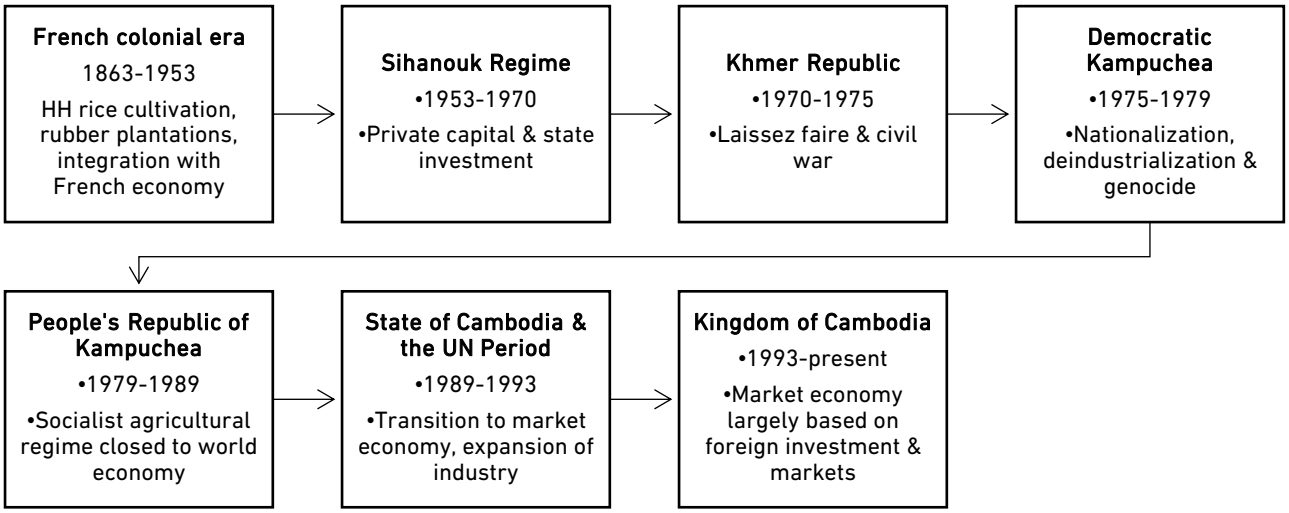
CAMBODIA

BUSINESS AND CLIMATE CHANGE IN THE KINGDOM

2.0 CAMBODIA'S BUSINESS LANDSCAPE: PAST, PRESENT AND FUTURE

Since the mid-1800s, Cambodia's business environment has been characterized by a series of marked economic and political shifts with land governance at the center. These shifts have run from the French colonial period (1863-1953)—which focused on household-based rice production, large rubber plantations and integration of Cambodia's market into the French market system—through socialist agrarian land reform and prolonged economic collapse between 1970 and 1982, until today with the present market economy based largely on foreign investment and foreign markets (Chhair and Ung 2015). A bird's eye view of Cambodia's socioeconomic evolution is captured in Figure 2.1 while Table 2.1 outlines some of the early markers of the transition from once-forbidden capitalism to global economic competitiveness.

Figure 2.1. Market evolution in Cambodia 1863-present



Source: Adapted from Chhair and Ung 2013

Throughout these ideologically-driven transitions, the country has seen the rapid collectivization and re-privatization of land and, in the late 1980s, the emergence of a land market. This latter development in particular signaled the collapse of the socialist agrarian model, its utopian and revolutionary promise replaced and increasingly attenuated through a pursuit of business with land and natural resource exploitation at its foundation. This chapter aims to illustrate that the country's development *and* climate resilience model remains strongly centered on land, natural resources and business leadership.

2.0.1 THE EVOLUTION IN DEPTH

For over two decades, Cambodia has experienced strong economic growth which is unusual for a developing country; the Kingdom currently ranks second in the region and just behind Vietnam (see Figure 2.2) (World Bank 2018). Worldwide, the country places sixth in a list of fastest economic growth rates as a result of an average rate of 7.6 percent in the period of 1994-2015 (World Bank 2017a). This growth resulted from the export of goods and services (namely garments and hospitality) as well as significant Official Development Assistance which reached US $970 million in 2014 and US $830 million in 2015. Economic growth has also been driven by one of the highest inflows of foreign direct investment (FDI) in the world: 7.9 percent of GDP on average in the 2005-2015 period (Emerging Markets Consulting 2017).

Further economic gains were made in 2015 when gross national income (GNI) per capita reached US$ 1,070 and the Kingdom attained lower-middle income status (this is according to World Bank classification; under the UN system, the country remains a Least Developed Country (LDC)) (World Bank 2017a).

Sustained growth is expected to continue into 2019 (World Bank 2018). Given this scenario, a discussion on Cambodia's economic evolution is incomplete without a discussion about its development effects. Two decades ago, poverty affected roughly 60 percent of the population. In 2014, 13.5 percent of the population was earning less than US $1.90 a day and so living below the national poverty line,[1] illustrating that growth has been coupled with a dramatic decline in poverty and improved living standards (World Bank 2017a; Marshall 2017). Looking beyond income paints a different picture however, especially when considering other factors such as generational poverty or the impact poor health can have on a household. The global Multidimensional Poverty Index (MPI) is an index of acute multidimensional poverty which, in addition to income, takes into account three dimensions of poverty a person can experience: health; education; and living standards. The MPI places Cambodia's National poverty rate at 35 percent with a stark variance between urban (7 percent) and rural (40 percent) poverty (Oxford Poverty and Human Development Initiative 2018).[2]

Table 2.1. Early markers of economic openness 1996-2004

1996	Most Favored Nation (MFN) status: United States
1997	Generalized System of Preferences (GSP): United States
1999	Bilateral textile agreement: Cambodia-United States
1999	Association of Southeast Asian Nations (ASEAN) membership
2001	Everything-but-Arms (EBA) agreement: European Union
2004	WTO membership

Source: Compiled from respective institutional websites

Although the country remains largely rural—in fact, at 80 percent the population is more rural now than before the Khmer Rouge period—the economy has shifted (World Bank 2017a). An overview of this shift and the country's current market landscape, including the most important sectors in terms of GDP share (Figure 2.3) is presented in detail in the following sections.

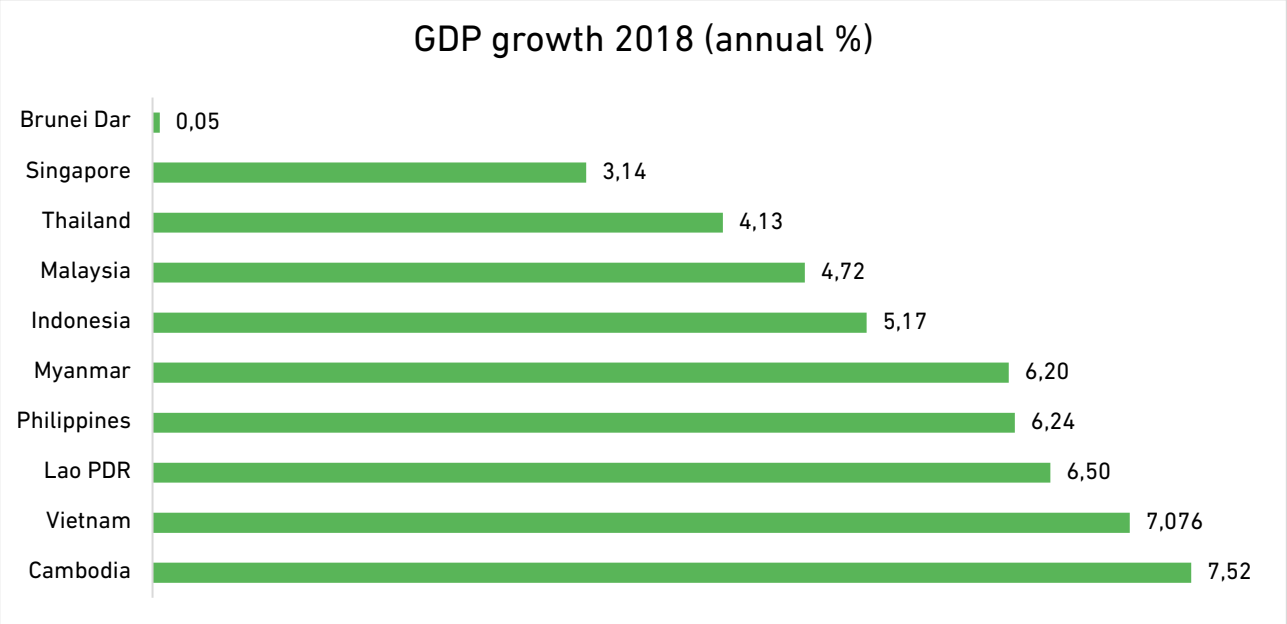
Cambodia's economy first moved beyond simple agricultural exports to the basic manufacturing of garments (run largely by expatriates), on to services related to tourism, to processed agricultural products such as milled rice (most millers are Cambodian) and finally, although it remains at a nascent stage, to a more advanced type of manufacture of machine components and electronics (Kelsell and Heng 2014). As in many other developing countries, the ultimate focus is to move beyond diversifying the economy toward the realization of higher value-added activities and adequately skilling and mobilizing workers, especially those who fall within the promising youth demographic. In 2017, Cambodia's population was one of the youngest in South East Asia with 31 percent of the population aged 14 and under and another one fifth of the populace between 15 and 24 years old (UNICEF 2018). Figure 2.2 shows a regional comparison in terms of GDP growth rates.

[1] The national poverty line is based on the cash equivalent required to consume roughly <2200 Kcals per adult each day (Marshall 2017).

[2] The launch of this new method and the corresponding figures for Cambodia were met with ire, leading the UNDP to reportedly apologize to the government. See: https://www.voacambodia.com/a/un-apologizes-to-end-row-with-cambodia-over-poverty-level-measurement/4607615.html [Accessed March 1, 2019].

Cambodia, hoping to graduate from LDC status by 2024, has a long-term vision to transition to an upper-middle-income country by 2030 and a high-income country by 2050 (UNICEF 2018). Relinquishing LDC status will affect the amount of ODA received as well as lucrative preferential trading schemes such as the Everything-but-Arms Agreement (EBA) with the EU,[3] which will be phased out; similar trade-related actions will likely be undertaken by the US. The agricultural sector in particular has benefitted from trading schemes such as the EBA—a portal to key overseas markets (World Bank 2015). In the stead of preferential status, FDI is expected to be the main driver of future growth, characterized by an increased economic role for China (Emerging Markets Consulting 2017). The next sections continue to outline characteristics of the Kingdom's economy from a sector perspective.

Figure 2.2. Regional comparison of GDP growth rates



Source: World Bank 2019

Structure of Cambodia's private sector

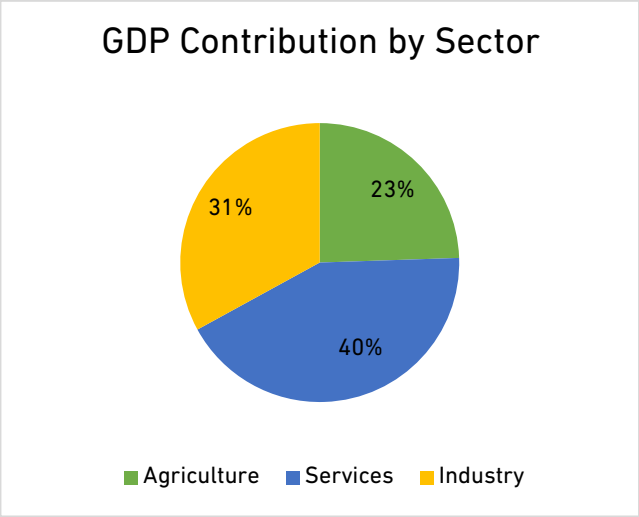
The country has few large, modern businesses and informal and small farms and enterprises dominate the private sector. According to the 2011 economic census, microenterprises, dealing mostly with vehicle-repair services and wholesale and retail trading, accounted for almost 98 percent of the roughly 500,000 enterprises (ADB 2014c). Large enterprises, representing less than one percent of businesses and 27 percent of total people engaged, operate primarily in garments, construction, tourism, light manufacturing, and agribusiness (see also Chapter 7 for more information on the companies operating in the country). As such, a frequently cited weakness of Cambodia's business landscape is the *missing middle*: just two percent of enterprises fall into the category of small and medium-sized enterprises (SMEs) (ADB 2014c).

2.0.2 CAMBODIA'S LEADING SECTORS

The Kingdom's economy today is driven by a set of core sectors (see figure 2.3). The textile and footwear sectors—and to some extent the tourism sector—are largely funded by FDI. While each is described in more detail in the following sections, most focus is placed on agriculture given its role in this research.

[3] On February 11, 2019, the EU launched a procedure to temporarily suspend the EBA after a fact-finding mission found evidence of "serious and systematic violations of core human rights and labor rights in Cambodia." See: http://europa.eu/rapid/press-release_IP-19-882_en.htm [Accessed March 1, 2019].

Figure 2.3. Cambodia's share of economic sectors in GDP (2017)



Source: The World Bank Group 2017

Textiles, apparel and footwear exports. During the first six months of 2017, exports of clothing and other textile products reached US$ 3.3 billion. Many companies[4] in the country supply major multinational brands such as Armani, H&M, Adidas, Gap, and Marks & Spencer, among others (Human Rights Watch 2015). The EU and the United Kingdom receive roughly 45 percent of total textiles and garments exports; the United States and Japan follow at 25 and 9 percent respectively. Footwear exports are growing and are largely destined for the EU; during the first six months of 2017 this was valued at US $ 0.5 billion (World Bank 2017a). However, improvements in productivity are modest and the country faces high logistics costs and stiff competition from low-wage countries in the region. For example, the minimum wage in Bangladesh—a major player which only reviews wage increases every five years—is roughly US $68 per month while Cambodia's has been rising quickly since 2013.[5] Compared to Bangladesh, Cambodian factory workers earned US$ 153 per month in 2017 with an expected increase to US $170 in 2018 (World Bank 2017a).

Construction. Due to increases in FDI, the construction sector more than doubled in 2016 compared to the previous year. In urban areas, most construction activity relates to the completion of modern high-rise building projects, both commercial and residential, which started several years ago.

Tourism. Tourist arrivals, deriving largely from the region, grew 12.8 percent in 2017 with China outpacing Vietnam as the number one group to visit the Kingdom, comprising 20 percent of total international visitors. The country aims to attract two million Chinese tourists by 2020 and has instituted the 'China Ready' initiative. However, limited accessibility, tourism infrastructure and facilities continue to restrict the diversification of destinations; Siem Reap's Angkor Wat temple complex remains the main attraction and receives 60 percent of international air arrivals (World Bank 2017b).

Agriculture. While agriculture has long been important to Cambodia's economy, its share of GPD shrank from 48 to 25 percent in just two decades with the garment sector taking most of the gains; the sector nonetheless supports 44 percent of total employment and 53 percent of rural employment (World Bank 2017b, 2015). According to the World Bank, the number of people engaged in agriculture is considered to be 'too many' (World Bank 2015). Despite its reduced share of GDP, the agricultural sector grew by roughly 5 percent annually between 2002 and 2012 and gross agricultural production during the same timeframe was one of the highest in the world at almost 10 percent (by comparison, the second-highest country was Lao PDR at 5.6 percent) (World Bank 2015). More recently, growth slowed to beneath 2 percent between 2013 and 2014. Crops comprise the largest subsector with vegetables the most profitable crop followed by cassava, maize, dry season rice, and wet season rice. Cambodia's rice production has been flat since 2013 however, for a few reasons: an increasingly competitive global rice market; falling global rice prices; bad

[4] A list of factories can be found at: https://betterwork.org/dev/wp-content/uploads/2018/05/Garment-Factories-List-.pdf [Accessed March 1, 2019].

[5] It is prudent to point out that many companies have not adhered to regulations and have poor working conditions. As a result of increased scrutiny, a now expired trade agreement between the United States and Cambodia, which aimed to provide Cambodia with better access to US markets in exchange for improved working conditions, resulted in a joint project between ILO and IFC in 2001 tasked with monitoring garment factory conditions (Human Rights Watch 2015). Furthermore, the Everything but Arms preferential trade agreement of the EU has been under increasing scrutiny as a result of human rights concerns with the EU launching a withdrawal process. See: Business and Human Rights Resource Centre: https://www.business-humanrights.org/en/eu-to-launch-withdrawal-process-of-trade-preferences-in-cambodia-over-rights-concerns-warns-myanmar-of-potential-similar-action [Accessed April 22, 2019]. See also McLinden Nuijen 2012.

weather; and a deceleration of land expansion that was the basis of previous gains (World Bank 2015). Rural households have been hard hit by continued low agricultural prices (World Bank 2017b).

Small traders and informal agro-enterprises form the majority of the agribusiness sector. In fact, formality (such as registration and accounting systems) is a feature of less than half of the agro-enterprises (World Bank 2015). The agro-processing industry especially is underdeveloped which means that as of 2015, almost all crops were exported unprocessed (World Bank 2015). The country's main exports include timber, rubber, and fish with rice, cassava and other cereals; most exports of cassava, maize, and vegetables take place via cross-border trade (World Bank 2015). The government has made steps to improve the situation through policies such as the 2010 "Promotion of Paddy Production and Rice Export" which aims to "transform Cambodia into a 'rice basket' and key milled rice-exporting country in the global market" which was supposed to reach a rice paddy surplus of more than four million tons and exports of at least one million tons of milled rice by 2015 (RGC 2010); these goals have not yet been met. Additionally, to stabilize agricultural prices—especially rice—a US$ 50 million low-interest fund was established to provide loans to rice millers so that they can purchase rice; an additional US$ 15 million is to be invested in rice storage and drying facilities (World Bank 2017b).

Market challenges

Cambodia faces significant market challenges including poor infrastructure and high energy and logistics costs, and under-developed human resources (World Bank 2017a). Most job creation currently occurs in the informal economy and is low-earning, and the incidence of poverty is still relatively high leaving the bulk of the population vulnerable (Muqtada and Ung 2013). In fact, a loss of just 1,200 riels per day—roughly US$ 0.30—is all it would take to revert the country's poverty rate to 40 percent (World Bank 2015). This is worrisome; the 'narrowness' of the economy makes it highly vulnerable to shocks—climate change is one significant source—and lauded socioeconomic progress fragile (OECD 2017).

The thin line separating a large chunk of Cambodia's population from poverty shows that the benefits of economic growth have not benefitted all. Despite impressive economic gains, the country still faces a series of significant and complex challenges, namely reducing multi-dimensional poverty and reaching the poorest and marginalized who live in remote areas. Geographical disparities in terms of monetary poverty rates range from roughly 15 percent in Phnom Penh to 37 percent in the rural north-east provinces (UNICEF 2018). Family separation and male deaths during the Khmer Rouge period have made female-headed households especially common yet women in general are systematically marginalized; they occupy less-secure positions within society due to negative social norms, practices and attitudes which result in inequitable power relations between wives and husbands for example with reduced decision-making power and ability to manage time and resources. Women thus have increased difficulty in accessing land and their plots are smaller on average (UNICEF 2018). Intersectionality with ethnicity, age, class and disability compounds the generally weaker position of women. For example, girls within female-headed households where no adult male is present are more likely to work; they earn less money than their male peers and are more likely to drop out of school than boys (Johnson-Welch 2010). As a result, agencies such as the International Labor Organization (ILO) look to create policy conditions for equitable economic growth that empowers the whole of Cambodia's population. According to the ILO, this requires, "major public and private investments in infrastructure, skills and vocational training, and other structural reforms" (Muqtada and Ung 2013).

While observers are quick to laud the Kingdom's sustained economic boom successes, others note that corruption and inequality have also been booming, which spells trouble for effective climate change adaptation and resilience. While the path of growth and investment is paved through political stability (Kelsell and Heng 2014), the country saw a series of political crises occurring in 1997, 1998, 2003-4, and 2013 (World Bank 2017a). Weak rule of law and an impotent regulatory framework is perhaps most evident in land management and administration in the Kingdom, especially important for climate change adapta-

tion and resilience. The next section describes this system and how land governance relates to doing business in Cambodia.

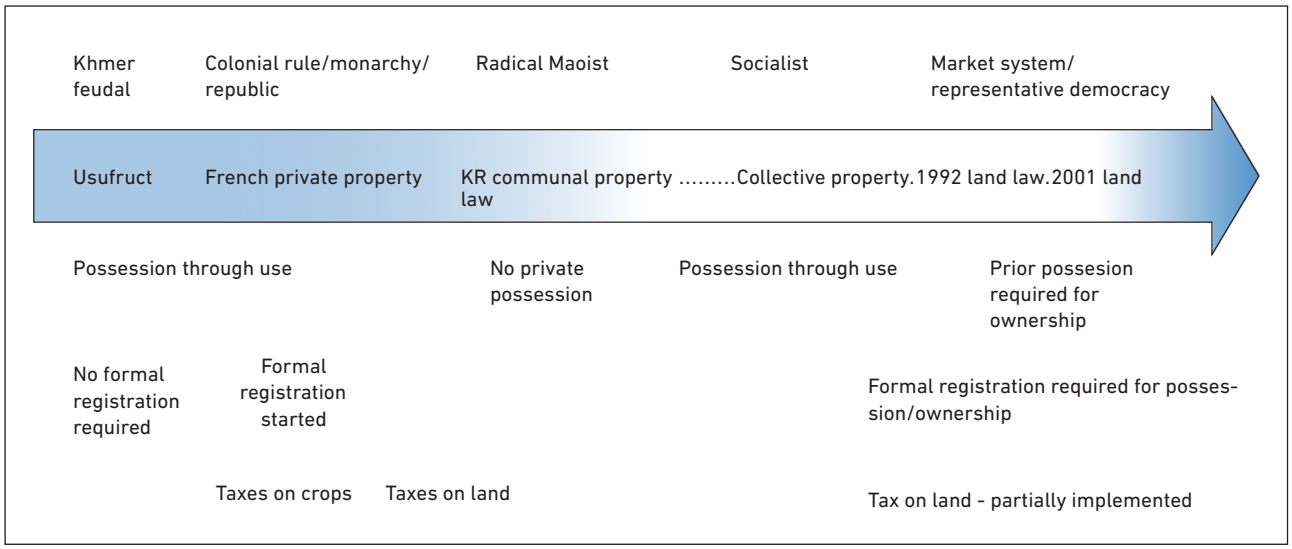
2.0.3 THE BUSINESS OF LAND IN CAMBODIA

As mentioned previously, Cambodia—and so its business environment—has been characterized by a series of marked economic and political shifts with a tug-of-war over land and natural resources at the center. This part of the dissertation provides the necessary backdrop to understanding the values, use and management of land and thus the various dimensions of land-based climate change adaptation. The following sections outline the history of land governance in the nation as well as the different ways land is classified and accessed by investors as well as the entities charged with land management. It points to the centrality of land in the everyday lives of most of Cambodia's population but also underscores the highly political nature of land and land access, very much at the top of the minds of rural smallholders as well as local elites, the Cambodian government and investors.

A brief history

As with other developing nations, market globalism has had a significant influence with direct implications for land and natural governance as well as current priorities and plans for climate change adaptation and resilience. Economic policy and larger market reforms began in the 80s—a paradigmatic shift that placed the country within the wider global agenda. Land has long been central to both Cambodia's development and politics, especially since the Khmer Rouge period, characterized by war, famine and forced displacement, 'against which much of the post-war period is often framed as a response' (Dwyer and Sokphea 2016).

Figure 2.4. Cambodia's land management regimes



Given the political legacy of the country, Cambodia's land tenure regimes are characterized by rapid socio-cultural change and significant discontinuity. During post-conflict reconstruction, land management systems were shaped by donors and the United Nations.

Adapted from Center et al, 2006: 3

Land tenure systems in Cambodia traditionally have been influenced by those holding political power (McLinden Nuijen 2012). Perhaps the most infamous historical period of the country is the Khmer Rouge Regime, under which land access and management changed drastically. During Pol Pot's rule (1976-1979), all land was collectivized (Sophal and Sarthi 2002 as cited by Üllenberg 2009). During this time, the government expropriated landowners, private ownership of land was outlawed and cadastral documents were destroyed; the reverberations of this ruthless pursuit of a classless agrarian society are felt to this day. As later attempts at reclaiming property were not recognized by the State, 1979 has been referred to as the 'zero hour' in the history of Cambodian land regimes (Zitelmann, 2005 as cited by Center for Advanced

Study and World Bank 2006). After the regime was deposed by the Vietnamese, displaced and starving Cambodians returned to their homes. Under damaged infrastructure, limited resources and threat of famine (Üllenberg 2009), agriculture and residential land was collectively organized under solidarity groups called *krom samaki* (Center for Advanced Study and World Bank 2006; Boreak 2000; Sar 2010). The collectives were based on the resources such as draft animals and land available in each area.

In 1989 post-war Cambodia, rapid economic liberalization was pursued to normalize trade and aid relations with the Western world after Soviet bloc support had disintegrated and the State was in crisis (Hughes 2007). Instruction No. 25 (1989) was the first decree to recognize private land rights. Shortly thereafter, Instruction No. 3 voided ownership rights before 1979 and claimed all land as State property (Boreak 2000). In addition, three categories of land were established: land for domicile allowed private ownership while land for cultivation only allowed Cambodians to manage, occupy and use land. The third category, land for concessions, did not entail private ownership rights. These agricultural parcels, greater than five hectares and reserved for future development, implied the right to possess, use and occupy. No. 3 also ended *krom samaki* and set the stage for the redistribution of collective, non-concession land (Sar 2010). Land was to be equitably redistributed by village chiefs on a 'first come first serve principle' according to the amount of available land and family size (Sar 2010; Üllenberg 2009). In addition, refugees and returnees from the Khmer Rouge or overseas would be allocated unoccupied housing and farming land if returning to a village. However, the process proved to be problematic; as land was allocated based upon family size, growing families soon found their plots insufficient (Üllenberg 2009). Moreover, local authorities captured the redistribution process whereby lots close to water resources and out of flood areas were given in a nepotist fashion to family members (van Acker 1999 as cited by Üllenberg 2009); lower quality parcels were allotted to less-favored residents (CCC et al., 2001 as cited by Center for Advanced Study and World Bank 2006).

In the 1990s, United Nations oversight and international reconstruction after prolonged conflict installed Western political and economic governance models. The revised 1992 Land Law was written and passed when the United Nations Transitional Authority governed the country. Amid continued conflict and political instability, it conferred ownership to the legal possessors of land as Cambodia's land market continued to emerge (Center for Advanced Study and World Bank 2006; Dwyer and Sokphea 2016). In less than ten years it would be viewed as inadequate and so was revised in 2001 to better respond to economic and political transitions and growth of the country's land market. Cambodia's political history, characterized by an externally brokered peace deal and subsequent shaky elections, lent itself to a power-sharing deal between the two main parties and their prime ministers to effectively cement "party-based competition for rents, especially around forestry, into the heart of government" (Kelsell and Heng 2014). This set the conditions within which Cambodia's stellar growth (as discussed above) would occur: *political settlement* combined with a *deals environment.* The first refers to the mix of bargains made between elites, both formal and informal, about the organization and exercise of power while the latter describes characteristics of the business environment (Kelsell and Heng 2014). Power-sharing included the divvying up of resources between national elites, a crucial component of Cambodia's post-conflict transition. For Zitelman (2005, cited by Center for Advanced Study and World Bank 2006), market logic replaced war logic:

> *In a way Cambodia has used the opportunities given by the global stress on privatization to integrate former enemies into a structure of wealth and power sharing based in elite cohabitation. [...] Political power at the center derives from the art of binding competing factions together. Warring factions are turned into competing factions.*

On paper at least, Cambodia today is a parliamentary representative democracy operating under a constitutional monarchy. King Norodom Sihamoni is Chief of State and hereditary head of government while Hun Sen is Prime Minister—since 1985. The government framework contains executive, legislative and judicial branches. As of March 2017, the country was divided into 25 provinces, 159 districts, 12 Khans, 26 cities, 1,409 communes and 14,383 villages.[6] Phnom Penh is the capital and serves as political, socio-economic and cultural center of the country. In 2002, the newly established commune council elections under decentralization reforms allowed local officials to be elected directly, although candidates must run on party tickets rather than as individuals. Some of the less-favorable consequences of this are discussed in the empirical chapters of this book.

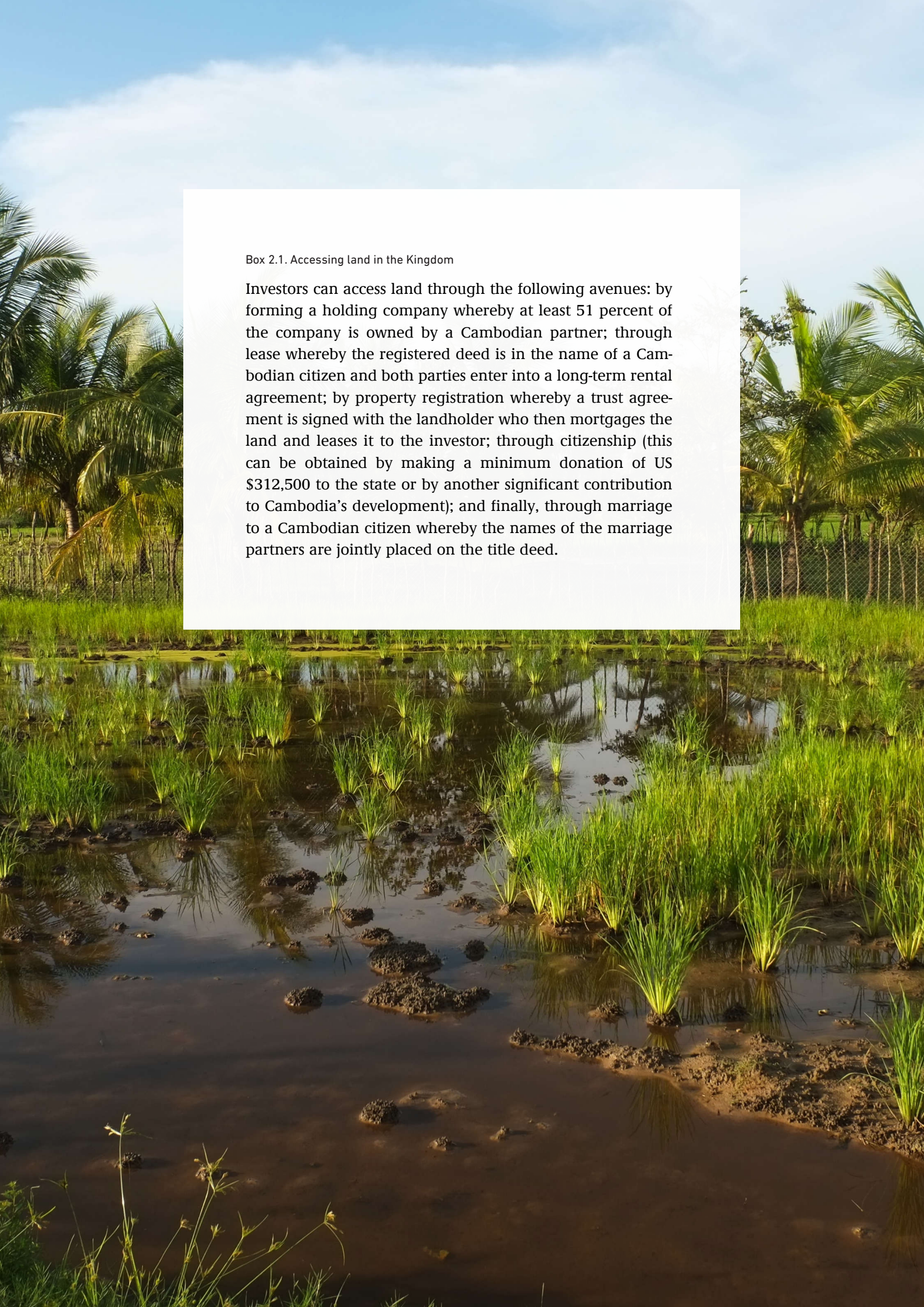
Table 2.2. Key land governance-related institutions

Institution	Mandate
Ministry of Land Management and Urban Planning and Construction	Governs and administers land management policies, cadastral affairs, land registration and the management of state public land; resolves land conflicts
Ministry of Agriculture, Forestry and Fisheries	Lead ministry for concessions on state private land
Ministry of Environment	Allocates Economic Land Concessions
Ministry of Rural Development	Coordinates and implements rural development projects and programs, including indigenous communal land registration
Council for Land Policy	Guides policy implementation

A current set of legal provisions characterizes the land governance framework in Cambodia. The constitution contains a number of principles which are further developed in the Land Law (2001) and other pieces of legislation and policy such as the Rectangular Strategy Phase III and the National Strategic Development Plan 2014-2018. The 2001 Land Law differs from the 1992 Land Law in that it extends private ownership rights to both agricultural and residential land; it also established a land titling system under a single authority and further developed a dispute resolution system (RGC 2001). The Law allows for three ownership groups: individuals, groups and the state. Article 14 classifies land into two categories: state public land and state private land. State public land holds a public interest such as, for example, roads, forest and rivers, and schools among others. State private land is all other land and can be privatized for full ownership. Collective ownership is conferred on both indigenous community and Buddhist monastery property (RGC 2001). While the Land Law remains in place, it was amended by the Civil Code in 2011.[7] Although the Land Law aims to provide security of tenure, tenure insecurity increased for those settling after 2001 as the conversion from rights of possession to rights of ownership is only recognized for land users who settled *prior* to August 2001, the effective date of the law. A range of more detailed sub-decrees, declarations (or prakahs) and decisions support the Land Law of 2001. For example, the 2005 Sub-Decree on State Land Management outlines the procedures and mechanisms for the identification, mapping, (re)classification, registration, allocation and management of State land. In addition, the 2002 Law on Forestry is the most important legislation to outline forest and forest resource management. The Law contains important elements such as Article 2 that allocates traditional user rights to communities for timber and non-timber products (RGC 2002). Other important laws include the 1996 Law on Environmental Protection and Natural Resource Management that requires Environmental Impact Assessments to be conducted on every project and by a procedure set out in the sub-decree. There is also a procedure, albeit weak, for public

[6] For details on boundaries and related legal documents, see the Gazetteer Database Online at: http://db.ncdd.gov.kh/gazetteer/view/index.castle [Accessed March 1, 2019].

[7] For a discussion on the Civil Code, please see East Asia Forum, February 16, 2012, 'The new Cambodian civil code,' by Dolores A. Donovan. Available at: http://www.eastasiaforum.org/2012/02/16/the-new-cambodian-civil-code/ [Accessed March 1, 2019].



Box 2.1. Accessing land in the Kingdom

Investors can access land through the following avenues: by forming a holding company whereby at least 51 percent of the company is owned by a Cambodian partner; through lease whereby the registered deed is in the name of a Cambodian citizen and both parties enter into a long-term rental agreement; by property registration whereby a trust agreement is signed with the landholder who then mortgages the land and leases it to the investor; through citizenship (this can be obtained by making a minimum donation of US $312,500 to the state or by another significant contribution to Cambodia's development); and finally, through marriage to a Cambodian citizen whereby the names of the marriage partners are jointly placed on the title deed.

participation and access to information (Royal, 1996). Finally, the 2003 Law on Amendment to the Law on Investment provides the legal framework for land governance within development projects. The use of land is permitted to foreign investors however ownership of land by must be vested with Cambodian citizens or entities (see Box 2.1) (RGC 2003).

Social dimensions of land

Socio-political factors also influence the manner in which land is accessed, maintained and used in the country. The first important factor is a system of patronage that has traditionally provided the rural populace with social and physical security. Despite being a 'continuous and central element of the Khmer social fabric,' it is currently 'challenged and transformed' under the pressure of political power and market liberalization (Diepart 2015). To outsiders, land administration under such a system is simply a, 'colorful array of institutions dealing with [land issues] ... in what seems to me a fairly uncoordinated manner' (German ambassador, quoted in Cambodia Daily, 2016 as cited by Dwyer and Sokphea 2016). Perhaps as a result of both development and governance implications, this system has recently been less-favorably aligned with neo-patrimonialism whereby formal governance mechanisms—including those outlined above—coincide with patron-clientism: local elites, including politicians and senior government and military officials, are businesspeople who use 'rational-legal state institutions' to advance personal commercial interests at the expense of the people (Milne 2015). In the 1990s, cronyism (and its related abuses and political negotiations between returning elites and constructors of the new state), was seen as a 'necessary evil' to stave off continued political instability, violence, and potential peasant insurrection (Hughes 2007). However, neo-patrimonialism transcends corruption as it is intricately linked to the state apparatus (Milne 2015). Dwyer and Sokphea (2016) provide an example: the official title *Oknya* is awarded, along with a range of privileges, to those who significantly contribute to Cambodia's development such as through large monetary donations (see Box 2.1); it was created by decree in 1994 to become 'an official pillar of state development policy' (Dwyer and Sokphea 2016).

Gender is another important organizing social aspect in Cambodia. In general, women do not share the same access to key well-being generators including education and paid employment; access to reproductive healthcare is also lacking (IFAD 2014). They also remain isolated from public decision-making and participation (Lilja 2006). Gender hierarchy additionally imbues land relations. While the constitution outlines full rights for women including equal rights to land and property, and the Land Law provides equal rights in land ownership, women are disproportionately affected by inequality in land holdings; landlessness; insecure tenancy; land conflicts; and urban land encroachment by squatters (Johnson-Welch 2010). Additionally, compared to men, women lack access to the factors of production. For example, women receive just 10 percent of agricultural extension services (ADB 2013). This is despite the fact that women are more active in agriculture than men and are especially important in terms of securing household food security; they represent 74 percent of the agricultural workforce and produce 80 percent of Cambodia's food (ADB 2013).

2.0.4 LAND-BASED INVESTMENTS & ELCS

The Land Law also aims to facilitate Cambodia's participation in the global economy as well as agricultural productivity and diversity through the land concession system and the promotion and development of business models that capitalize on the country's natural resources (Dwyer and Sokphea 2016). Various laws and polies encourage agribusiness investments through tax incentives and other beneficial conditions (CDC as cited by Socheth 2013); Table 2.3 outlines the criteria businesses must meet to be eligible for the incentives.

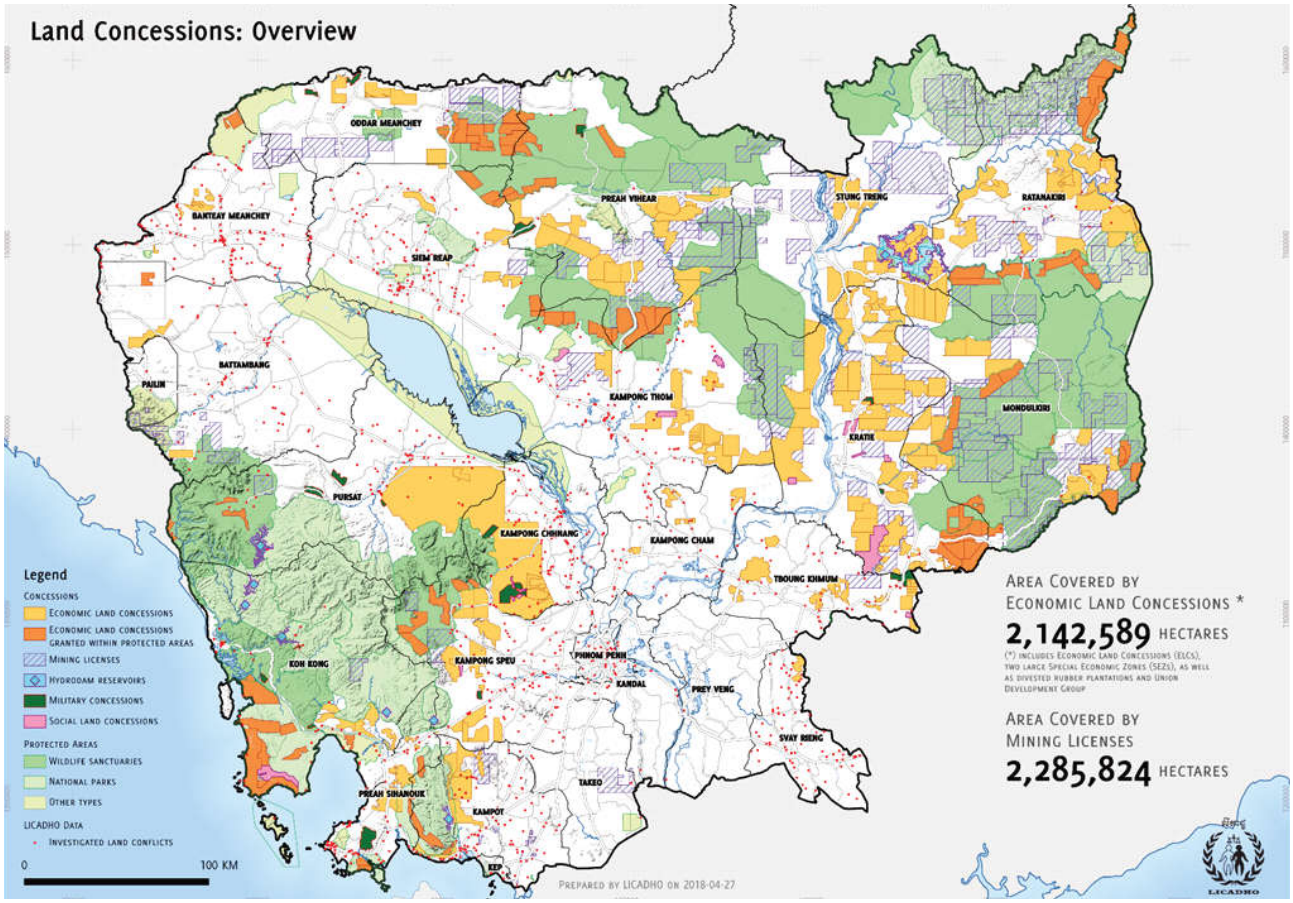
With formal titling often absent and legal barriers to foreign ownership of land in place, the government has proceeded along the lines of neighboring countries and promoted land leases (specifically Economic Land Concessions, or ELCs) that do not require permanent land transfers to the private sector (World Bank

Table 2.3. Eligible agribusiness activities

Agricultural Production	Quantity	Timber and Tree Plantation	Quantity
Paddy Farming	>1,000 ha	Timber Plantation	>1,000 ha
Cash Crops	>500 ha	Tree Plantation	>200 ha
Vegetables	>50 ha		
Livestock Production		**Wild Animal Farm**	
Cattle Husbandry	>1,000 ha	Wild Animal Husbandry	>100 head
Dairy Farm	>100 cows	Wild Bird Husbandry	>500 head
Poultry Farm	>10,000 head	Wild Reptile Husbandry	1,000 head
Aquatic Production			
Freshwater Aquaculture Farm	>5 ha	Other agriculture and agro-industry related investment activities as stipulated in the relevant law	
Seawater Aquaculture Farm	>10 ha		

Source: CDC as cited by Socheth 2013

Figure 2.5. ELC overview 2013



Source: LICADHO, 2013 available at: http://www.licadho-cambodia.org/land_concessions/ [Accessed March 1, 2019].

[8] ELCs are not considered further in the research as the two companies under study used a contract farming model. However, an understanding of ELCs is fundamental to understanding Cambodia's context where there is increasing competition over and inequitable access to land and natural resources. The topic of ELCs has additionally featured prominently in the debates surrounding land, land-based investments, the private sector and the links to human rights abuses; this continues to influence public perceptions surrounding the value of business-led development, especially the agricultural sector.

2002). In fact, promoting ELCs as a way to sustain economic growth and reduce poverty forms one of the key tenets of the Rectangular Strategy (Side 1: Improving Agricultural Productivity and Diversification) where priority is given to agro-industries (RGC 2013e). With a 'huge abundance of land,' Cambodia seeks to attract foreign investors to help modernize technology, improve business and increase agricultural productivity through partnerships with smallholders (Üllenberg 2009). This practice is not new—concessionaires were granted land for large rubber plantations during the French colonial period (Slocomb 2007)—however they were reinstated in the early 1990s after prolonged civil war and as the country transitioned to a market economy (Neef, Touch, and Chiengthong 2013).[8] In the 2000s, over two million (hectares) ha of land was allocated under the concession process to private companies (Dwyer and Sokphea 2016). By 2013, 14 percent of the country (or 2.6 million ha) was allocated to ELCs (Forest Trends 2015i). While land was distributed 'almost equally' at the beginning of privatization in 1989, Cambodia came to have the highest inequity in land distribution in Southeast Asia (Loehr 2010). Landlessness has been on the rise, and a significant percentage of the rural population are without access to land as a result of population growth but also because of development projects—including road construction, new industrial zones, resource concessions and land grabbing (ADB 2013). Figure 2.5 illustrates the wide geographical distribution of ELCs as of 2013.

While the government promotes ELCs as benefiting Cambodia, they have in many cases led to disappointing results so the practice has been increasingly challenged on a number of fronts. First, there has been a lack of compliance to and enforcement of regulations (Üllenberg 2009) and a general lack of transparency in the highly-contested concession process. ELCs have been criticized for being environmentally unsustainable as a contributor to land concentration and degradation; land under ELC pretext is often used to harvest and sell valuable timber (Milne 2015), linking agribusiness investments and development with the highly sensitive topic of deforestation in Cambodia. ELCs are meant to benefit the rural poor, but numerous and high-profile cases of violent displacement of local communities and land encroachment show the unsustainable effects of these concessions (for an in-depth study of dispossesion from industrial sugar production see: McLinden Nuijen 2012; McLinden Nuijen et al., 2014). In fact, a general lack of respect for basic human rights has been most closely associated with the ELC process and private companies, making land conflict endemic in many rural areas (Dwyer and Sokphea 2016). Local communities often lack redress mechanisms for human rights violations and conflicts often result in protesters and other government critics being killed, harmed, threatened and imprisoned without fair trial. According to Hughes (2007), the selective assassination of activists, human rights defenders and political opponents has been key for the ruling party to maintain political control. The use of force through the police and military is often used to evict families from their lands (McLinden Nuijen 2012). Other rights consistently violated in ELC conflicts involve media freedoms, freedom of expression and freedom of assembly. The Judiciary, often used to strong-arm political agendas and enable land grabbers, is criticized for being corrupt and incompetent (McLinden Nuijen 2012; Human Rights Watch 2013).[9] In fact, Venezuela was the only country to fare worse on all eight factors in the World Justice Projects' Rule of Law Index (The World Justice Project 2018).

Prior to elections where land rights featured prominently and after the release of a critical report by the United Nations Special Rapporteur on Human Rights in Cambodia, the government launched a three-pronged program for 'deep' land governance reform. This latest reform included a moratorium on new land concessions; a rural land titling program to cover previously excluded areas; and a review of existing

[8] ELCs are not considered further in the research as the two companies under study used a contract farming model. However, an understanding of ELCs is fundamental to understanding Cambodia's context where there is increasing competition over and inequitable access to land and natural resources. The topic of ELCs has additionally featured prominently in the debates surrounding land, land-based investments, the private sector and the links to human rights abuses; this continues to influence public perceptions surrounding the value of business-led development, especially the agricultural sector.

[9] Despite democratic claims and being signatories to important human rights treaties, Cambodia maintains, yet simultaneously denies, its poor record in human rights. See https://www.phnompenhpost.com/national/un-envoy-states-slam-cambodia-rights [Accessed August 4, 2018].

concessions (Dwyer and Sokphea 2016). Yet despite reforms, donors and other development partners have found it increasingly difficult to justify the provision of development support. In 2011 the World Bank suspended new funding as the evictions of 3,000 families from the Boeng Kak neighbourhood of Phnom Penh for a high-ranking government official's real estate project did not align with bank policies.[10] The Asian Development Bank started a review process over its performance in a bank-financed railway project that had deteriorated the living conditions of households (Human Rights Watch 2013); in 2015, the bank announced that no additional funding would be provided to complete the project. The country also lost the support of Finland, Denmark, and Canada; Germany withdrew after more than 20 years of assistance toward pro-poor reforms in the country's land sector.[11]

Just weeks after Germany's withdrawal was made public, the government announced in 2016 a redistribution of over one million ha to poor families. This was additional to earlier reform efforts which resulted in over one million ha of land being titled by youth volunteers by the end of 2014; a significant portion was reportedly taken from corporate actors who were awarded ELCs (Dwyer and Sokphea 2016). Nonetheless, the continued lack of transparency in land governance, legal ambiguities, and a worsening environment for the protection of human rights continue to undermine sustainable development in Cambodia. The government's hands-off, and in many cases indulgent, handling of private sector elites—especially Cambodian agribusiness tycoons—places it at odds with donors. It also undermines the public's trust in—and so the legitimacy and arguably the effectiveness of—the private sector, particularly in rural areas. This will no doubt negatively influence the potential of business-led adaptation in Cambodia.

2.1 CAMBODIA AND CLIMATE CHANGE: A COUNTRY AT RISK

Cambodia has been consistently ranked as one of the most at-risk countries for the impacts of climate change (OECD 2017; Kreft et al. 2014; Thoeun 2015)[12] with the agricultural sector particularly hard hit by erratic rainfall, floods, droughts, pests, disease, strong winds and storms (RGC 2013d). The country is also considered to be one of the most disaster-prone in South East Asia. Cambodia's exposure to disasters, both in number and intensity, has increased over the past two decades; floods in particular have become more frequent and intense. In 1996, floods damaged 50,000 houses, 600,000 ha of crops and impacted 1.3 million people (Kutiyawichai et al. 2015). More recently, flooding in 2013 affected a total of 1.8 million people in 20 provinces; 168 people died, over 31,000 families were evacuated, and roughly 63,000 ha of transplanted rice was destroyed (NCDM as cited by Government of Cambodia 2013). Between 1998 and 2002, flooding accounted for almost 70 percent of rice production losses (rice is a key household staple and important export crop) while 20 percent resulted from drought (World Bank 2011). It is now clear that climate change is associated with significant losses and damages to lives, livelihoods, property and infrastructure, which in turn diverts important resources away from development in an already difficult development context. As such, the issue is high on the policy and action agendas of the Cambodian government as well as development partners (RGC 2013d). To unpack the situation and set up the following empirical chapters of the book, this section presents key climate characteristics, some of the changes that are predicted to occur, as well as some of the complex environmental and social factors that enhance vulnerability and reduce adaptive capacity in the Kingdom.

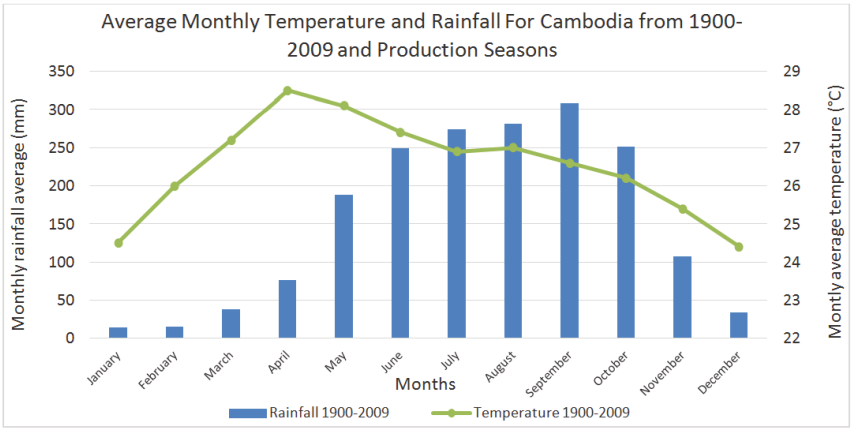
[10] The funding freeze was lifted when US $130 million in concessional loans was approved in May 2016. See: The Cambodia Daily, May 19, 2016. Available at: https://www.cambodiadaily.com/news/world-bank-to-vote-on-ending-punitive-5-year-funding-freeze-112778/. [Accessed August 4, 2018].

[11] The Cambodia Daily, February 4, 2016. Available at: https://www.cambodiadaily.com/news/in-frustration-germany-ends-land-rights-work-107406/. [Accessed August 4, 2018].

[12] Cambodia's level of vulnerability has been discussed elsewhere. In 2014, Maplecroft identified the country as the eighth most vulnerable to the economic impacts of climate change. See: http://reliefweb.int/sites/reliefweb.int/files/resources/Climate_Change_Vulnerability_Index_%202014_Map.pdf. [Accessed August 4, 2018]. In addition, Cambodia's economy and creditworthiness was rated in 2014 to be the most vulnerable to the impacts of climate change by Standard & Poor's: http://www.phnompenhpost.com/business/cambodia-most-vulnerable-climate-change-study.

2.1.1 CLIMATE PROFILE

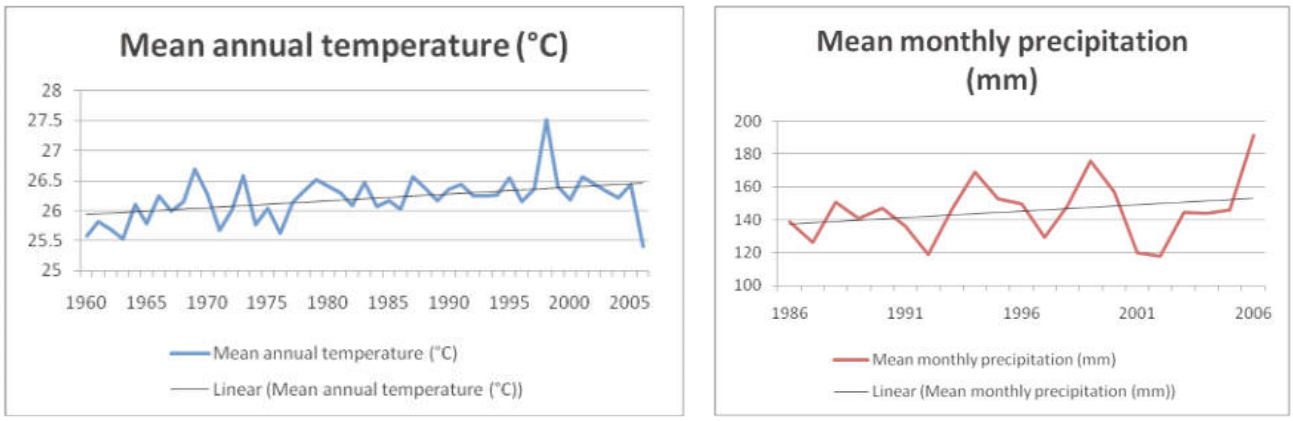
Figure 2.6. Rainfall and temperature 1900-2009



Source: The World Bank Group 2017

Cambodia's weather is driven by a tropical monsoon climate which features a wet and a dry season. The rainy season, from May to October, is governed by southwest winds which bring 90 percent of the country's annual precipitation; between 1994 and 2004 annual rainfall fluctuated between 1,400 mm and 1,970 mm per year with considerable variation depending on the location (lowland areas: 1,000 mm to 1,700 mm; highland areas: 1,000 mm to 2,700 mm; coastal areas: 1,000 mm to 3,000 mm). In the last decade however, less than 600 mm has reached some inland areas while 3,800 mm fell in coastal areas (Ministry of Environment 2015).

Figure 2.7. Temperature and recipitation means 1960-2005



Source: Mekong River Commission 2010

The dry season lasts from November to April where the northeast monsoon first brings drier and cooler air from November to March (in rural areas, this is a third, 'cold' season) and then hotter air in April and May when drought commonly occurs. Strong winds are problematic for rice farmers between November and January. While the maximum and minimum mean temperatures are 28C and 22C respectively, temperatures before the rainy season often exceed 32C and can surpass 38C (Ministry of Environment 2015). Figure 2.6 presents both rainfall and temperature trends occurring between 1900 and 2009 while figure 2.7 depicts both the mean annual temperature (left) and mean monthly precipitation (right). Climate data shows that since 1960, Cambodia's mean annual surface temperature has risen roughly 0.8C; the number of hot days and especially hot nights has also increased while the number of cold days and cold nights has decreased (Thoeun 2015).

2.1.2 FUTURE SCENARIOS

While forecasting the future impacts of climate change at national and regional scales is difficult (Thoeun 2015), climate change is observed in the Mekong region as changes in climatic and hydrological parameters related to both regular weather patterns (including daily, seasonal and annual) and irregular extreme events; rainfall and runoff, temperatures, sea level and tidal fluctuations, and extreme events including

floods, drought and storms are the main influences (Mekong River Commission (MRC) 2010). In other words, different simulations in the Lower Mekong Basin have shown that projected climate change includes a longer and drier dry season; a delayed but wetter rainy season; and increased temperatures (International Centre for Environmental Management (ICEM) 2014). This includes increases in rainfall extremes between the wet and dry seasons, with some areas experiencing lengthier dry periods, increased summer monsoon season rainfall and runoff, more intense tropical storms and flooding especially in low-lying coastal areas. Coastal predictions include a sea level rise of 16 cm by 2030 and up to 45 cm by 2070 (Preston 2006 as cited by MRC 2010). In a more recent report, annual daily maximum temperatures are expected to rise by 2 to 4 C.

2.1.3 IMPACTS

The scenarios above are expected to lead to a host of direct and indirect physical, social and economic impacts ranging from sea level rise and changes in water regimes to migration and food prices (International Centre for Environmental Management (ICEM) 2014). Increased variability of rainfall will significantly impact ground and surface waters to undermine irrigation and potable water supplies while flooding threatens both road and water supply infrastructure. The Mekong River system, including important wetlands, is also sensitive to changes in hydrological regimes. Cambodia's economy derives in large part from the Tonle Sap Lake; it is also the country's main source of protein and extremely important regionally in terms of food production (Ziv et al. 2012; FAO 2016a). This is worrisome as 25 percent of Cambodia's population is already food deprived (USAID 2014). Sea level rise also threatens communities located in parts of the Mekong flood plain as well as those in proximity of roughly 450 kilometers of coastline. More flooding especially in low-lying areas will waterlog crops (ICEM 2014); with lowland rice, soybean, and cassava impacted. Large rice yield decreases can result from just a difference of 1°C due to fewer grains being formed (Sheehy et al., 2006 as cited by ICEM, 2014). Rice yields will decline by 0.6 tons per ha per 1°C increase in average temperature (World Bank 2011 as cited by ICEM 2014). Livestock losses such as of chickens, cattle, and buffalo will result from increased exposure to disease and floods. Enhanced or extended drought will impact critical fisheries habitat such as refuge pools for migratory fish as well as water quality in aquaculture ponds. Heat stress during the dry season will impact the productivity of NTFPs such as false cardamom, wild orchid, and rattan. These impacts to agriculture and the reduced availability of fertile land are expected to lead to food shortages as well as reduced household incomes. Climate change thus has significant economic, poverty reduction and development ramifications; each is made worse by the country's development context.

Figure 2.8. Small forest temple

Source: Author

2.1.4 VULNERABILITY IN CAMBODIA

In addition to the observed and expected biophysical changes including irregular water and temperature regimes and the increased occurrence of extreme events, it is important to also understand that Cambodia's vulnerability—and thus adaptive capacity and ultimately its resilience—is heightened by various social and environmental challenges. As Cambodia is a post-conflict and developing country, climate-related impacts are worsened by insufficient infrastructure, institutional capacity, technologies and tools. Factors of high vulnerability, and thus low adaptive capacity at the national level include a lack of hydrological monitoring sites and forecast mechanisms as well as climate information and weather data (including data from Department of Meteorology stations); reliable disaster control; and public finance.[13] Prolonged political volatility—characterized by human rights abuses and unabashed corruption at high government levels—has also led to a trust deficit in many facets of Cambodian society from trade (Hill and Menon 2014a; World Bank and Asian Development Bank 2015) to community cohesion and intra-village relationships.[14] Decades of armed conflict and civil strife as well as economic liberalization and aid influxes have exacerbated current inequalities (Hughes 2007) or created new ones. One endearing legacy that continues to undermine sustainable development is that Cambodia's long-lived majorities have tended to rule rather than to govern; access to healthcare, education, safe water and electricity remains out of reach for many. Climate change is particularly challenging for socially vulnerable and marginalized groups—including youth, the elderly, the physically challenged, women and indigenous groups—who are resource-poor, lack food security and rely on climate-sensitive livelihoods such as farming (RGC 2013d). Women, who are crucial in terms of household and livelihood security, are especially vulnerable; women do not share the same access to key well-being generators including education, paid employment, and access to and rights over land; access to reproductive healthcare is also lacking (IFAD 2014). While the private sector is viewed to be the engine of development, inclusiveness is not generally a characteristic as communities lack access to information, technology and markets.

Cambodia's heightened vulnerability to climate change also results from environmental problems including biodiversity loss, land degradation as well as deforestation, which despite forestry reforms, remains high. While forests covered 73 percent of Cambodia in 1965, this was reduced to just 59 percent by 2006 (FAO 2010). Major drivers of deforestation include: land use change as a result of an increasing population; Foreign Direct Investment from Southeast Asia; commercial logging; and illegal logging which is responsible for up to 94 percent of total deforestation (FAO 2010). Figure 2.9 illustrates the drastic change in forest cover near the border of Kampong Thom and Kampong Cham Provinces between 2000 and 2015.

While forests are important given their role in climate and water regulation, soil erosion and water purification, the loss of forests is also of particular concern for local communities (see Chapter 5) as they have traditionally provided core livelihood resources including non-timber forest products such as honey, mushrooms, fruits, meat, medicines, and beeswax (McLinden Nuijen 2012). Forests are also significant in terms of culture and spirituality (see Figure 2.8). This was discussed especially by women in the research who pray to forest deities for good fortune in the face of increasing worries over climate change impacts and reduced wellbeing. One woman[15] taking part in the research explained:

> *People pray to the big trees and the small hills. There are special spirits there. Before there was more forest, so now there is an impact on our lives. This is logical, it is science. But it might also be that the Spirit is angry. The trees are cut down and this is where Naktha, the tree spirit, lives. The Spirit has no place to live once the tree is cut down. No home. The tree angel has no home. It could be like this.*

[13] Between 2009 and 2011, 86 percent of climate-related expenditures were estimated to derive from external sources (ADB 2014a).

[14] Information obtained from interviews and focus group discussions from 2014 and 2015 fieldworks.

[15] Female, age 45, Samroang village, Banan District, June 4, 2015 FGD.

Figure 2.9. Forest cover in 2000 (top) and 2015 (bottom) near the border of Kampong Thom and Kampong Cham Provinces

Source: NASA Earth Observatory, 2017. Cambodia's Forests are Dissappearing. https://earthobservatory.nasa.gov/IOTD/view.php?id=89413. Accessed March 9, 2017.

2.2 CONCLUSION

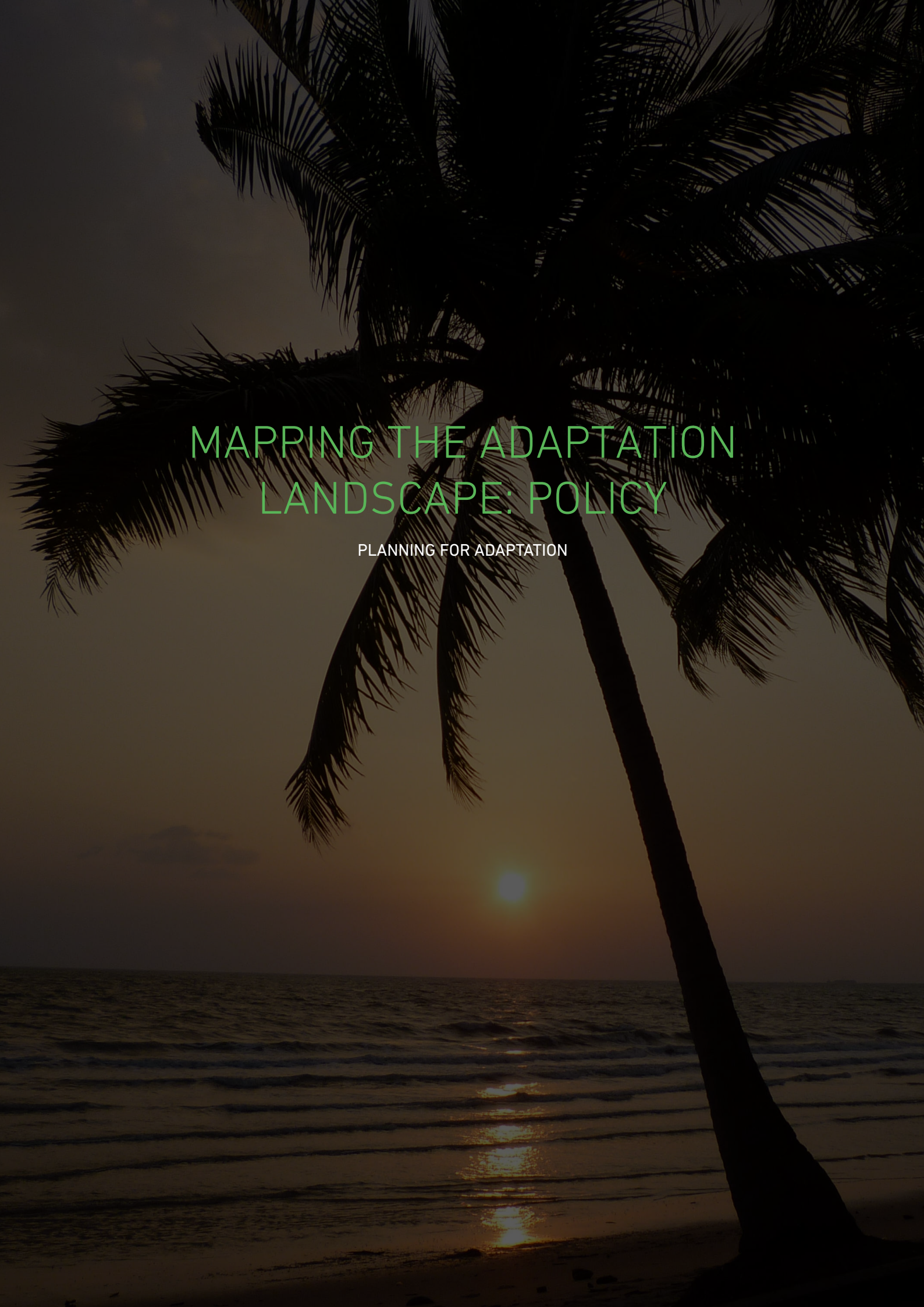
Continuing to narrow down on the contextual information necessary to understand the study, Chapter 2 has presented a general overview of Cambodia's business and climate change landscape. The chapter first provides an historical overview by describing the series of marked economic and political shifts experienced since the French colonial period which was followed by prolonged economic collapse and the present market economy based largely on foreign investment and foreign markets. This evolution saw the transition from once-forbidden capitalism to global economic competitiveness and the development of a land market and a land governance architecture increasingly situated toward the private sector and FDI. The latter, pointing to Cambodia's favorable view of the private sector in development, is also relevant to the country's approach to adaptation. Key sectors currently driving the economy include export garments, construction, tourism services and, although its importance has diminished in terms of GDP—but not in terms of employment—agriculture. In this sector, crops comprise the largest subsector with vegetables the most profitable crop.

Cambodia's economic strategy continues to orient outward which exposes it to global competition, with the example of Bangladesh's garment industry showing some of the challenges. Issues of competitiveness also emerge within the agricultural sector. Despite policy ambitions, rice production has been flat due to an increasingly competitive global rice market as well as falling global rice prices; bad weather; and a deceleration of land expansion. Rural households continue to be hard hit by low agricultural prices which has direct implications for taking a global value chain approach to building climate change adaptation. Moreover, the country has few large, modern businesses and informal and small farms and enterprises dominate the private sector. The agro-processing industry especially is underdeveloped and almost all crops were exported to neighboring countries in unprocessed form. Focus is thus placed on modernizing the sector and diversifying the economy, but with some institutions such as the ILO placing emphasis on a more equitable distribution of benefits. This is because, despite decades of stellar and sustained economic growth and significant development gains, vulnerability and rising inequality are key features. Women in particular do not share the same access to key well-being generators.

This research concerns land-based investments, both of businesses and smallholders. To provide insight into all relevant issues, the chapter also therefore includes a discussion of Cambodia's land governance framework. Land has long been central to both Cambodia's development and politics and it is land management and administration where weak rule of law and an impotent regulatory framework has perhaps been most evident in contemporary times. Political transitions and a mix of bargains made between elites, including the divvying up of resources, became a crucial component of Cambodia's post-conflict transition. The chapter illustrates that Economic Land Concessions have received significant scrutiny in this regard. Although ELCs are designed to facilitate Cambodia's participation in the global economy and development of business models that capitalize on the country's natural resources, numerous social and environmental consequences have resulted including deforestation, the violent displacement of local communities and human rights violations. Another consequence has been the loss of support from Finland, Denmark, Canada and Germany. Bad apples spoil the whole barrel. The government's hands-off, and in many cases indulgent, handling of private sector elites—especially Cambodian agribusiness tycoons—not only places it at odds with donors, it undermines the legitimacy and arguably the effectiveness of the private sector as a whole, particularly in rural areas.

Each of these challenges worsens the prospects for adaptation and resilience building whether at the local or the national level, especially when taking a closer look at the country's climate change scenario. Although the country is disaster prone, Cambodia's exposure to disasters, both in number and intensity, has increased; floods in particular have become more frequent and intense. Climate data shows that temperatures are on the rise; the number of hot days and especially hot nights has increased while the number of cold days and cold nights has decreased. More regular weather patterns and extreme events are giving way to irregular rainfall and runoff, temperatures, sea level and tidal fluctuations as well as more extreme

floods, drought and storms. As a result, a host of direct and indirect physical, social and economic impacts—ranging from sea level rise and changes in water regimes to migration and food prices—are expected to occur with significant economic and development ramifications. As Cambodia is a post-conflict and developing country, climate change will likely amplify and compound the country's problems that are additionally embedded in a host of social and environmental vulnerabilities. These include poverty, insufficient infrastructure, lacking institutional capacity, technologies and tools as well as biodiversity loss, land degradation and deforestation.



MAPPING THE ADAPTATION LANDSCAPE: POLICY

PLANNING FOR ADAPTATION

3.0 MAPPING POLICY: PLANNING FOR ADAPTATION

Previous sections of this book have introduced Cambodia's context and the various challenges that the country faces when it comes to effectively dealing with climate change impacts. They include general poverty, vulnerability and environmental challenges as well as financial, capacity and technical hurdles. In response to these challenges, and with more attention and available funds for adaptation, a diverse range of actors have rolled out various plans and programs. The Cambodian Government has prioritized adaptation at the national and sub-national levels and climate change is being mainstreamed into existing policies, strategies and budgets. As part of the UNFCCC process, the country submitted its Second National Communication that outlines Cambodia's commitments to the Convention. Meanwhile, the government, donors, practitioners and businesses are designing and implementing a variety of adaptation interventions on the ground. Based on this it is clear that climate change action is underway in the Kingdom. Nonetheless, while information abounds, little attention has been given to comprehensive or critical overviews of the country's adaptation landscape; information is often siloed, piecemeal and dispersed across various channels and thus difficult to access. The following two chapters complement the research by providing a holistic overview of adaptation priorities and intervention trends that is currently missing, but crucial toward understanding the resilience project in Cambodia. Based on primary and secondary data sources, this chapter focuses on core policies, actors and institutions to understand how vulnerability is defined and how resilience is to be achieved; the often-hyped role of the private sector is also deconstructed. After a brief description of the study's methods, the chapter presents matters related to the country's core policies, financing mechanisms and institutions. After synthesizing the leading policy threads, the chapter ends with a reflection on the findings and a summary.

3.1 THE MEANS OF MAPPING

This aspect of the study focused on adaptation planning and policy to understand how adaptation is framed, the kinds of actors, key threats and targeted communities involved, and the solutions and tools that aim to build resilience. The questions guiding the study were straightforward: Who is doing what, how is it to be done, and for whom? Answers were obtained through desk research and in-depth interviews with a range of climate change specialists in Cambodia. See Appendix I (Key Informant Interviews), Appendix II (Intervention Database Sources) and Appendix III (Key Events) to find more detailed information about these aspects of the study. Overviews of Cambodia's key climate change institutions and the core climate change-related policies and documents are also provided in Appendix V.

Policy documents were acquired online or during interviews with members of government in Phnom Penh. The policy analysis was designed to provide insight into leading policy goals, objectives, and solutions, how terms are conceptualized (including 'vulnerability,' 'vulnerable groups,' and 'resiliency') as well as the level and type of private sector involvement. In general, 'policy' herein applies to the range of documents used by the Cambodian Government to outline vision, values, objectives, strategies, desired outcomes and key stakeholders in addressing climate change-related issues. In many cases, climate change policy was observed to overlap with development policy, and vice versa; as such, both have been included in the analysis if they held especially direct linkages to adaptation planning and action. This chapter also benefits from data collected during fieldwork in Phnom Penh. Twenty-seven in-depth interviews were conducted with 20 men and seven women. These research participants included project staff, representatives from private consultancies, universities, the United Nations (UN) Development Program, UN Women, NGOs, as well as senior government staff from the Ministry of Women's Affairs, the Ministry of Environment, the Department of Agricultural Extension, and the Cambodian Climate Change Alliance.

3.2 THE VIEW FROM ABOVE

3.2.1 FIRST, A PRIMER

Before delving into the analysis of Cambodia's national policy environment, it is useful to outline climate change policy in general. Policy responses currently come from two main approaches: mitigation and adaptation (Füssel and Klein 2006). Mitigation aims to reduce and prevent global warming while adaptation encompasses actions to cope with and increase resilience to the impacts while taking advantage of the opportunities that climate change may present (Füssel and Klein 2006; Eriksen et al. 2011). Adaptation, applying to both human and non-human systems, is both a short and long-term consideration mitigated by geographical, institutional, cultural, political, ecological, and socio-economic factors that shape human-environment interaction. In other words, it is a holistic, local response to a global phenomenon. Table 3.1 outlines key differences between mitigation and adaptation.

Table 3.1. Key differences between mitigation and adaptation

Characteristics of mitigation and adaptation		
	Mitigation of climate change	**Adaptation** to climate change
Benefited systems	All systems	Selected systems
Scale of effect	Global	Local to regional
Life time	Centuries	Years to centuries
Lead time	Decades	Immediate to decades
Effectiveness	Certain	Generally less certain
Ancillary benefits	Sometimes	Mostly
Polluter pays	Typically yes	Not necessarily
Payer benefits	Only little	Almost fully
Monitoring	Relatively easy	More difficult

Source: Füssel and Klein, 2006

Based on the characteristics of each, it becomes clear that climate change policy objectives will differ in many cases. For example, mitigation policy might outline goals in relation to energy and energy security, pollution control and GHG emissions reductions and thus link to renewable energy infrastructure and options, industry, and transportation among others. Adaptation policy on the other hand will outline objectives to address the impacts of future climate change; this may include building capacity by raising awareness, by supporting research, or by identifying the most vulnerable sectors and segments of the population. The transport sector for example will require the adaptation of current systems and practices (e.g., the location of roads based on sea level rise or the increased risk of land subsidence as a result of drought). However, any conceptual clarity made between mitigation and adaptation is not meant to isolate the different fields or undermine their interrelatedness. In fact, it is important to keep this connectedness in mind when considering the climate change institutions, policies and priorities presented in the next sections.

3.2.2 CAMBODIA'S INSTITUTIONAL SETTING

Given the level of Cambodia's vulnerability to the consequences of a warming planet, the issue of climate change has been placed high on the nation's agenda and mainstreaming resilience into policies and planning has become a priority (Am et al. 2013a). Cambodia ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1995 and the Kyoto Protocol in 2002, which entered into force in February 2005. In addition, the country has designated various institutions, often with the assistance of donors and development institutions, to take charge over climate change issues in the country; these are

discussed briefly below while a comprehensive table is provided in Appendix V.

The first institution to be formed was the National Committee for Disaster Management (NCDM), an inter-ministerial body tasked with developing and coordinating emergency plans and responses. The NCDM also operates through Provincial, District, and Commune Committees and Village Groups for disaster management at their respective levels through technical and financial support from the NCDM and NGOs (Sam 2015). In 2003, the Cambodia Climate Change Office (CCCO) (which transitioned to the Climate Change Department (CCD) in 2009), was established to draft plans and policies, assess new adaptation and mitigation technologies, to build capacity and raise awareness, and coordinate UNFCCC implementation. The CCD continues to serve as the Secretariat of NCCC and Focal Point for the UNFCCC, the IPCC, the Kyoto Protocol, and the CDM. The CCD also coordinates technical working groups to address important climate change themes; groups are inter-ministerial and specialized in sectors. In 2006, the National Climate Change Committee (NCCC) was tasked to coordinate and monitor the implementation of policies, strategies, legal instruments, plans and programs. The National Council for Sustainable Development (NCSD) replaced and took over the functions of the NCCC in 2015 to focus on and improve the coordination of activities and to promote a comprehensive response. Supporting documents have been developed and include the Climate Change Financing Framework, the Cambodian Climate Change Strategic Plan 2014-2023 (discussed below), and the Sectoral Climate Change Action Plans which, at the time of data collection, were being formulated; Phase 1 and 2 will address adaptation while Phase 3 will deal with mitigation [Phnom Penh interview, 03-01-14]. Finally, the National Council on Green Growth (NCGG) was established in 2012 to advance inclusive green growth to orient the Cambodian economy towards a greener development paradigm that balances economic, environmental, and social values as outlined in the National Policy on Green Growth and the Green Growth Roadmap.

In addition to the Ministry of Environment (MoE), other ministries and their respective departments play key roles in sub-national plans and activities related to climate change. The Ministry of Health (MoH) plays an important and cross-cutting role in climate change adaptation; the MoH is guided by the Second Health Sector Strategic Plan 2008-2015 which stands out for its pro-poor principles such as social health protection, pro-poor financing systems and attention to the needs of vulnerable groups including women, children, the poor and minorities. The plan also identifies equity and the insufficient monitoring of the private sector as key health issues (RGC 2008). The Ministry of Rural Development is a key participant in the NCCC and CCTT and directly receives funding from the Pilot Program for Climate Resilience (PPCR). The Ministry is also the executing agency in adaptation projects such as the Rural Roads Improvement Project funded in part by a US$ 5.4 million grant from the Nordic Development Fund. The Ministry of Agriculture, Forestry and Fisheries (MAFF), with its Department of Agriculture Extension, is a strategic ministry in terms of development and climate resilience; MAFF also operates the Royal University of Agriculture. The Ministry of Planning provided the national framework for NAPA integration and also plays a key role in the national monitoring and evaluation system and provides technical guidance to line ministries. Ministries also remain responsible for statistical data collection and management in their respective areas; the National Institute of Statistics (NIS) also maintains databases (including the commune databases) and collects data through regular, national-level surveys (Am et al. 2013a). Finally, CARDI, or the Cambodian Agricultural Research and Development Institute is a semi-autonomous government research institute. Established in 1999, CARDI assists the government with rural development objectives in relation to sustainable agricultural and economic development and food security, in part through research and the delivery of technology for poverty alleviation and higher living standards.

3.2.3 CLIMATE CHANGE FINANCE

Despite its relative infancy, international climate change adaptation financing has mobilized US $7.2 billion for developing countries through eleven separate funding mechanisms (USAID 2016). In Cambodia, funding derives from various sources including international donors, multilateral climate funds and development organizations as well as the Cambodian government. Table 3.2 outlines the characteristics of cli-

Table 3.2. Climate change funding matrix

Administrator	Fund	Year est.	Focus	Arms	Total funding (US$)
Global Environment Facility (GEF)	Special Climate Change Fund	2002	Adaptation (but also capacity-building and technology transfer) in all developing country parties to the UNFCCC; intended to catalyse & leverage additional finance from bilateral and multilateral sources	SCCF-A-adaptation	289.9M
				SCCF-B–technology transfer	
	Least Developed Countries Fund	2002	Adaptation to address the special needs of the 51 Least Developed Countries		1B
	GEF Trust Fund	1992	Adaptation, Mitigation (general)		5.2B
	GEF Small Grants Program	1992	Community Based Adaptation, Mitigation		111M
Climate Investment Funds (CIF)	Clean Technology Fund	2008	Mitigation		5.1B deposited
	Strategic Climate Fund	2008	Adaptation, Mitigation (REDD)	Pilot Program for Climate Resilience	1.1B
				Forest Investment Program	528M
				Scaling up Renewable Energy Program	528M deposited
Adaptation Fund Board	Adaptation Fund	2001/2009	The financial mechanism to the Kyoto Protocol; Adaptation funds for localized and concrete climate adaptation and resilience activities capped at US$10 million		77M*
UNDP	UN-REDD Program	2008	Mitigation (REDD)		51M
European Commission	Global Climate Change Alliance (GCCA)	2007	Adaptation, Mitigation (general & REDD); relies on funding from the EU budget, the European Development Fund and contributions from several EU Member States		50.5M
Green Climate Fund	GCF Board	2015	Adaptation, Mitigation (general & REDD)		10.3B**

Source: Compiled from individual fund websites, Climate Funds Update (http://www.climatefundsupdate.org/data/the-funds-v2), and Soanes et al. 2017.

* Funds contributed in 2015 by the Governments of Germany, Italy, Luxembourg, Sweden and the Walloon Region of Belgium.

** In pledged resources; 1.5 billion approved as of December 2016.

mate funds relevant for Cambodia.

Funds from bilateral and multilateral initiatives have been mobilized for both adaptation and mitigation in Cambodia; up to the year 2013 this amounted to US $655 million (Pheakdey 2013). The majority of the money (71 percent) is concentrated among three sectors: agriculture, water and irrigation (41 percent), transport and infrastructure (16 percent) and disaster management (14 percent) (Pheakdey 2013). When looking at adaptation financing in isolation, as of mid-2016 Cambodia had mobilized roughly US $166 million from multilateral climate funds; this is considerably higher than neighboring Laos (US $25 million), Vietnam (US $21 million), and Thailand (US $1 million) (DAI 2016).

Between 2009 and 2011, 86 percent of climate-related expenditures was estimated to derive from external sources (ADB 2014a). Multidonor funding stems from the Adaptation Fund, Climate Investment Funds (CIFs), and Global Environment Facility (GEF) and the United Nations Development Fund (UNDP). Bilateral funds come from donors such as the European Union (EU), Swedish International Development Agency (SIDA), Danish International Development Agency (DANIDA), Japan, and the United States Agency for International Development (USAID). The private sector is viewed to hold the largest funding potential; two-thirds of global climate finance comes from this sector.

Additionally, a number of climate change programs have been established including the Cambodia Climate Change Alliance (CCCA), the PPCR (one focus of investigation in this research), and Reducing Emissions from Deforestation and Forest Degradation Plus (REDD+); programs related to adaptation are discussed in more detail in the next chapter. The majority of capacity-building activities were supported by Japan, Korea, the Netherlands, Denmark, UNDP, UNEP, ADB, EU, World Bank and other NGOs (Ministry of Environment 2015). Supported by various funding streams, the country has been mainstreaming climate change into current policies and developing new strategies. The next section discusses the most important policy documents and their priorities.

3.2.4 POLICY PRIORITIES IN CAMBODIA

The foundation of climate strategy and action is outlined in the country's policy documents. Climate policies are important because they are designed to contain the basic elements of any climate change action at the national level. They are also the tools with which global conventions and agreements may be implemented. As stated previously, strategic climate change action increasingly overlaps with development policy; both policy types are included in the table presented in Appendix V. The analysis is not meant to be a comprehensive evaluation of the country's policy framework, however core policies related to climate change and agriculture have been included in the analysis to identify how vulnerability is defined, and which tools and strategies are promoted for building resilience, and how the private sector is to contribute.

Before presenting the findings from the analysis, it is important to first orient to the country's context. In 2000, Cambodia emitted roughly 48,000 GgCO2e (gigatons of equivalent carbon dioxide); land use change and forestry (49 percent) and agriculture (44 percent) were the leading sources of emissions. Nonetheless, as removal was just above that figure, Cambodia was a net sink country (GSSD 2015). Emissions however are expected to continue to rise over the next decades as a result of sustained rapid growth and development (GSSD 2015). For example, GHG emissions from the transport sector alone are expected to increase by 27 percent annually (RGC 2013b). Nonetheless, due to this current low emissions profile, the government has placed much more emphasis on adaptation strategies and action as opposed to mitigation. This was confirmed by an evaluator for the MoE and the CCCA who stated, "Most money in Cambodia goes toward adaptation because Cambodia is vulnerable to climate change. Reducing carbon is not as important because emissions are not high here." [Phnom Penh interview, 03-01-14]. At the time of data collection, only two projects in Cambodia were dedicated to mitigation: REDD in Oddar Meanchey and Mondol Kiri While Appendix V, provides an overview of Cambodia's policy landscape, a selection of its characteristics are discussed in more detail in the next section.

Two development policies are central in Cambodia: The Rectangular Strategy for Growth, Employment, Equity and Efficiency 2013–2018 (hereafter referred to as the RS) and the National Strategic Development Plan 2014–2018 (NSDP). These policies prioritize accelerated economic growth through a focus on agriculture, private sector development and employment, infrastructure as well as human resources; the government aims to become an upper-middle income country by 2030 and a high-income country by 2050 through an average annual economic growth rate of 7 percent. This growth is meant to be 'sustainable, inclusive, equitable and resilient to shocks' and reached through specific measures that 'promote the rule of law, respect for human rights including freedom and dignity as well as a multiparty liberal democracy to secure a stable political and security environment conducive to long-term development' (RGC 2014). National development goals have also aligned with global goals including Cambodia's MDGs (CMDGs).[1] The post-MDG development agenda includes the pursuit of under-achieved MDG goals which include poverty (CMDG1); basic education (CMDG2); gender (CMDG3); environmental sustainability (CMDG7); and demining (CMDG9) (Sivhuoch and Sreang 2015; RGC 2013e).

The objectives contained in these central documents are to extend to sectoral and local planning levels and are backed up by the Strategic Framework for Decentralization and Deconcentration, the National Poverty Reduction Strategy, and the National Social Protection Strategy for the Poor and Vulnerable. Agriculture is a third priority area in the RS and is addressed in the Agriculture Sector Strategic Development Plan 2014-2018 (ASSDP). This plan elaborates the government's medium-term vision related to the most important sector for climate change and development as found in the following figures: in total, 3.1 million ha are dedicated to 1.9 million agricultural landholdings (at an average of 1.6 ha per farming household) with 85 percent of households in 2013 engaged in some form of agriculture, livestock or fisheries activity. Thus, the sector will continue to be promoted in order to support economic growth, equity, food security, and rural economy development.

ASSDP, led by the Ministry of Agriculture, Forestry and Fisheries, is based on changes in scope and pace which are needed to transform the sector from one based on extensive production and the expanded use of land and other natural resources to one of modern, intensive and diversified production. This latter scenario relies primarily on: agricultural cooperatives, partnerships with the private sector and contract farming; extension services increasingly supplied by the private sector and the targeting of farms with commercial potential; research and development to improve seeds; diversification through higher-value production of rice and other commercial crops; livestock production; export and trade facilitation including the construction of local infrastructure and the formulation and adjustment of the legal framework for seed and other inputs; and human resource management with women and children key focal points. This latter focal point is because women comprise the majority of the rural poor while 75 percent of the 1.5 million child laborers in the country work in agriculture. Many of them—around 430,000—have dropped out of school while another 400,000 have not been given the opportunity to study (Kingdom of Cambodia 2015). Finally, it is interesting to note that 'climate change' is referred to only once in the 2006-2010 Plan but appears roughly 90 times in ASDP 2014-2018, one signal of the increasing institutionalization of climate change at the national level which started in 2006 with the establishment of the National Climate Change Committee.

The National Social Protection Strategy for the Poor and Vulnerable, whose design was led by the Council for Agricultural and Rural Development (CARD), is dedicated to operationalizing the priorities identified in the RS and the NSDP. The strategy defines the terms related to social protection as well as the scope of policy and activities which aim to alleviate poverty and protect individuals, households and communities against financial, economic and social risks. Protection is to occur through interventions that range from social insurance and labor market policies to social safety nets and welfare services. Perhaps not surprisingly, the strategy is unique in its attention to 'special vulnerable groups' which include orphans, the elderly, single women with children, veterans, people with disabilities or living with chronic illness (e.g.,

[1] For reference, an outline of Cambodia's MDGs is available here: http://www.mop.gov.kh/Home/CMDGs/tabid/156/Default.aspx.

HIV, TB) as well as the landless; it is also unique in its its recognition of informal or traditional aspects of society, namely social safety nets which are currently being undermined by increased livelihood competition and common resource depletion (RGC 2011). Along with economic and financial crises, climate change is identified as a source of increased livelihood vulnerability and food insecurity through the impacts of flood and drought. Adaptation is mentioned only once however in terms of Public Works Programs and the establishment and rehabilitation of village infrastructure and climate change mitigation and adaptation work.

Finally, the Policy on Green Growth 2013 and the National Green Growth Roadmap 2009, particularly ambitious given the development context of the country, propose a number of win-win-win possibilities that contribute to a coordinated, regional response and build upon the foundations of the RS and NSDP to unite economic, environmental, and societal values. The Roadmap was developed with the technical assistance of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) with the financial support of the Government of the Republic of Korea through the Korean International Cooperation Agency (KOICA). The inter-Ministerial Green Growth Working Group (GGWG), established in 2009, is responsible for formulating its policies and raising awareness at ministerial levels. Green Growth, as promoted in both documents, aims to attract financing assistance flows, green technology, and foreign investors; the strategy also rests upon a number of principles including stable, accountable and transparent democratic governance characterized by openness, freedom of expression, rule of law, equity and social order. This framework is considered crucial towards ensuring macro-economic stability, creating and maintaining key infrastructure, and providing a conducive climate for the 'job-creating private sector' to develop and flourish as well as essential social services for human capital formation. Threats to sustainable growth are grouped under population growth; poverty; legal and policy frameworks; and environmental pressures. These threats are to be addressed through short-, medium- and long-term interventions that span the provision of financial incentives for sectoral greening of the private sector to the establishment of eco-villages; rural community resilience is viewed to occur through index-based insurance schemes and microfinancing. The Roadmap additionally focuses on seven objectives related to increased access as these are wide ranging but include increased access to food security, sustainable land use as well as better mobility through sustainable road and water transport systems. The agricultural sector is highlighted as 'a politically sensitive sector' which is affected by 'virtually the whole array of distortions, including– trade protectionism, perverse subsidies, wastage of water, unsustainable farming practices, and overuse of harmful chemicals' (Kingdom of Cambodia 2009).

In terms of dedicated climate change policy, NAPA has constituted an early and core approach since 2006. Designed for Least Developed Countries (LDCs), the National Adaptation Programmes of Action (NAPAs) form part of the UNFCCC process whereby LDCs identify and coordinate priority activities to respond to immediate adaptation needs and the implementation of projects designed to reduce the social and economic costs of climate change. Climate hazards targeted in Cambodia's NAPA include flooding, drought, windstorms, salt water intrusion, coastal inundation and storm surge. Through its projects covering water resources, agriculture, rural development and health, NAPA aligns with the priority areas and objectives of both the RS as well as the NSDP. Each in turn is underpinned by the Strategic National Action Plan for Disaster Risk Reduction (SNAP) 2014–2018. Until recently, most focus in terms of climate-related policy was placed on post-disaster emergency relief at the expense of preemptive policies and action (RGC 2006). Given the severity of impacts—estimated by Harmeling et al. (2012) to tally a GDP loss of 3.1 percent—mainstreaming climate change into policy became a top priority through the Cambodia Climate Change Strategic Plan (CCCSP). Led by the Ministry of the Environment and supported by the Cambodia Climate Change Alliance (CCCA), the CCCSP is the first comprehensive national policy document to address climate change in the areas of adaptation, GHG mitigation, and low-carbon development. Emphasis is placed on building institutional capacity and science-based knowledge to project impacts, and especially community level resilience building and production skills. Providing the umbrella framework for mitigation and adaptation, and in alignment with Green Growth objectives, it envisions Cambodia developing "towards a green, low-carbon, climate-resilient, equitable, sustainable and knowledge-based society" (RGC 2013c). The pri-

vate sector contribution is envisioned in the areas of PPPs, community-based adaptation, and the expected tools and technology. The document is notable in its mention of Corporate Social Responsibility (CSR): to promote "adaptive social protection and participatory approaches in reducing loss and damage due to climate change," the MoE is tasked with enhancing PPP and CSR (RGC 2013c). In fact, as climate change impacts likely will undermine development, CCCSP was designed to facilitate the integration of climate change resilience into development planning, including the NSDP, through eight strategic objectives where partnerships and the role of the private sector feature prominently. Additional supporting documents include eight sector-specific Climate Change Strategic Plans and Cambodia's Second National Communication under the UNFCCC. This latter document, prepared to fulfil Cambodia's commitments to the Convention, contains information about the country's major sources of greenhouse gas emissions and sinks, vulnerability and adaptation options, as well as the mitigation measures implemented.

3.3 DISTILLING CAMBODIA'S POLICY

The policy analysis conducted for this chapter brought key discourses and related priorities to the surface. First, Cambodian policy is frequently framed in post-conflict terms, and a significant portion of progress over the past few decades is measured against the country's war-torn past marked by poverty and political instability. The 'out of the rubble and ashes' rhetoric is often used to deflect attention away from human rights abuses and other government failures. For example, a recent report by ASEAN Parliamentarians for Human Rights (published on March 14, 2017) dared to point out the escalating persecution of opposition parties and parliamentarians. In response, Keo Remy, the head of the Cambodian Human Rights Committee, stated that rather than offering such criticism, Prime Minister Hun Sen instead deserved a Nobel Peace Prize for, "rescuing the country from Pol Pot and subduing the Khmer Rouge through his win-win policy." He also added, "When it comes to human rights, it depends on the tradition, culture and economic situation of people in the country."[2] In stark contrast to such rights evaluators, the government now considers the country an 'island of peace' that attracts over three million tourists each year, holds free and fair elections as a multiparty liberal democracy, exports food, and is governed by the rule of law, despite recent challenges brought by the global financial crisis and economic slowdown as well as "threats to national sovereignty and territorial integrity and repeated natural disasters" (RGC 2013e).

Across policy documents, common normative claims include equality, human rights, justice, health, capabilities, and well-being while key policy pillars are growth, employment, equity and efficiency. An especially prominent national priority is sustained economic development. Framed in economic terms, sustainable development is thus achieved by "promoting economic growth, creating jobs, [the] equitable distribution of the fruits of growth, and ensuring effectiveness of public institutions and management of resources" (RGC 2013e). That Asia is an attractive investment destination and market for consumer goods presents a "golden opportunity" for Cambodia; efforts are to be directed at creating a favorable environment to attract both domestic and foreign private sector investments for "vibrant industrial expansion" and strengthening and promoting fast growth in the service sector. The country's policy gaze appears to be largely outward and global, and focused on creating a modern and international image and reputation. Here a robust and global market competitiveness remains reasonably bounded by the hard line of national sovereignty that is tempered by the soft sophistication of equity and cooperation; continued international integration is to occur through for example World Trade Organization membership and participation in ASEAN and UN peacekeeping operations. The end goal: to become an upper-middle income country by 2030. Key to "high and sustained economic development" is the country's youth in meeting labor market demand as well as state budget investments, official development cooperation financing and private investment inflows. The latter, through increased industrial and trade linkages, will expand export markets and deepen physical and institutional connectivity with regional and intra-regional production networks

[2] See: https://www.cambodiadaily.com/morenews/give-hun-sen-a-nobel-peace-prize-government-human-rights-head-says-127139/ [Accessed April 17, 2017].

and supply chains.

3.3.1 RISK, VULNERABILITY AND CONCOMITANT REMEDIES

Policies outline dimensions of risk and vulnerability to varying degrees and cover both natural and human systems. Not surprisingly, poverty is a leading vulnerability and again, as a result of neoliberal market orientation, much focus is placed on high economic growth as the core remedy. This line can be traced back to reforms that began in the 80s—a paradigmatic shift that placed the country within the wider global agenda. In the 1990s and after prolonged conflict, UN oversight and international reconstruction installed Western political and economic governance models after which inflows of ODA and FDI started to arrive. Under the embrace of market globalism, the country placed itself within an international trade regime wherein leading actors perceive trade as an effective development mechanism. Here, competition at all levels as well as regional and global integration and compliance become defining features. Underlining this level of low development is the need for trade infrastructure, both hard and soft, such as roads and legal and institutional reforms. While risks are recognized in terms of climate change, they are not central in the Rectangular Strategy (RS) nor the National Strategic Development Plan (NSDP). For example, the RS outlines nine major challenges facing the country; eight relate primarily to economic growth and poverty reduction. The contentious topics of forestry and land are very much related to climate change, risk and vulnerability especially for the country's rural population, yet are only mentioned briefly in terms of the government's in-depth reforms in the forestry sector and a land titling program that is considered necessary for rural development. In comparison, the NSDP outlines seven challenges, with only one referring to 'environmental issues' from the perspective of classic natural resource management (a characteristic which features frequently in the Kingdom's policies). As such, climate change is not mentioned specifically in either list of policy challenges even though most policy is updated every four years. Where climate change is mentioned, it is juxtaposed against a country transcending its current low-wealth status, a kind of temporary state. Furthermore, despite the main objective of sustained economic growth and the private sector being the 'locomotive' of development, market globalism for a developing country is considered to be a double-edged sword in the documents. For example, financial vulnerability in the NSDP derives from global financial and economic uncertainty and other downsides to international market reliance and integration. It is also pointed out that the expected transition to a low-middle income country means a reduction in the country's ability to benefit from grants.

As far as sectoral vulnerability, the CCCSP identifies water resources, forestry, fisheries, tourism and agriculture to be the most vulnerable (RGC 2013c) while the Second National Communication also includes coastal zones and human health. Specific solutions include approaches based on natural resources, information and economics. For example, enhancing biodiversity, community-based adaptation, eco-toursim and Protected Areas emerge as key focal points. In one instance, strategies aim for more and better-protected forests due to expected longer dry periods in the northeast and southwest. For coastal zones, protection and improvement of mangrove forests and planting windbreakers are also considered as are long-life climate-proof infrastructural developments. In general, adaptation programs for climate related health issues are aimed at reducing the transmission of, and deaths related to, malaria through improvements in wastewater infrastructure and access to health facilities among others. Development policy outlines that adapting to financial risks will require internal and external resources for public sector investments (to be raised at market rates) and resources to be used more efficiently, another example of action being framed in economic efficiency terms. Additional economic solutions are to occur via 'Green Growth.' Toward this end, two institutions related to Green Growth were established in 2012: The National Council on Green Growth (NCGG) and the General Secretariat for Green Growth (GSGG). Green Growth strategy is outlined in the National Policy on Green Development and the National Strategic Plan on Green Development 2013-2030 (RGC 2013f). Examples from this trajectory include the UN-REDD+ for carbon credit and renewable energy generation, especially the development of 'eco-friendly' energy sources such as hydropower. Short-term efforts focus on improving climate risk management and community livelihoods. Using climate information, increasing water use efficiency and creating additional sources of income are additional measures

identified. On the other hand, the manner with which the aforementioned sustainability principles shall be realized remains undefined and as a result come across mostly as window dressing.

While the agricultural sector is seen as especially at risk to the impacts of climate change, the arena and rural economy development in general are top tools to reduce the vulnerability of a large segment of the population; each also provides the means to strengthen the business environment and to attract domestic and foreign private investments for macro-economic stability and economic competitiveness (RGC 2013e). In the RS for example, the first side of the triangle is maintaining the targeted agricultural growth of five percent per annum, echoed in the ASSDP 2014-2018 which outlines the manner in which this growth will be achieved, namely through increased agricultural productivity (especially rice), diversification and commercialization. Specific tasks to modernize agriculture include investments in irrigation infrastructure, agro-industry, new technology and modern inputs such as seeds and the production of a range of high value products including milled fragrant and organic rice, rubber, cashew nuts, corn, sesame, and pepper. However, according to a respondent who worked as an evaluator at the Ministry of the Environment and CCCA, this often clashes with the priorities of local farmers: "Traditional seed is not as productive as the new varieties, but it is profitable. In terms of flavor and health, people want to keep their own rice. It's low cost, low input, low productivity—but high profit. This rice comes from their ancestors, but the government tells them to stop growing it" [Phnom Penh interview, March 1, 2014]. Compared to the production of traditional varieties sold at the local market, high-value rice production usually entails GMOs and elevated levels of inputs including fertilizer and pesticides as well as more time and labor [Phnom Penh interview, March 1, 2014]. This is quite in opposition to sustainability tenets outlined in policy such as organic production, sustainable land use, and reduced chemicals use. Moreover farmers generally face significant risks already and so do not want to gamble with a new crop at the market [Phnom Penh interview, February 28, 2014]. Dany et al. (2015) additionally observed a penchant for technological solutions. In their study on research and climate policy in Cambodia, policy makers were especially interested and willing to take on research results such as those related to new drought and flood-resistant rice varieties as they do not infringe upon sensitive topics such as land and forest concessions. This 'tech fix' was observed in other aspects of the current study; Chapter 6 delves deeper into some of the ways in which this approach does not necessarily enhance the resilience of agriculturalists, and can even undermine it.

As far as vulnerable groups, the RS pays special attention to those particularly vulnerable to poverty, such as women, children, the elderly and disabled, veterans, and indigenous peoples. The National Social Protection Strategy for the Poor and Vulnerable also makes clear references to especially vulnerable groups including veterans and victims of violence among others. However increased or intersectional vulnerabilities and dynamic livelihood strategies (such as circular migration) are generally not accounted for especially in climate change and agriculture policy documents although the sector consists of more than farming landholders, and the most vulnerable groups are those without access to land. The absence of related terms such as 'landless,' 'migrant' or 'migration' implies that farmers are viewed as generally stationary, the elderly do not farm, or that that landless and day laborers do not rely on the agriculture sector for resilience-building opportunities. In the core climate change and agricultural policy documents, vulnerable groups come across as simple fringe elements adorning the larger objective: trade. In the case of farmers, they, and their low-tech agricultural systems, are used both as a means to describe *obstacles to* as well as the *means for* growth; farmers are to bootstrap their own way out of poverty and the way to the state's 2030 objectives. Despite being currently outmoded and thus ill-formed, they are the source of untapped potential—change agents-in-waiting—for macroeconomic resilience making and GDP growth. This leap from what often comes across in policy as obsolete to modern agricultural production is perceived to be the means to reach the most stubborn pockets of poverty. Even more confounding is that the reasons this market activity has not led to expected development gains for all people is inexplicable and in need of more detailed analysis and additional research (RGC 2013c). Reducing risks and strengthening resilience requires a rounded analysis of the challenges, but much focus in terms of agriculture is placed on how the sector should be rather than what it is. Given the trends in the country and the region, climate change adaptation strategies must not only be cross-sectoral, they must also address the entire sector, not just those

with land holdings or with stationary livelihoods. Increasing attention may be in the works in one area however as rural migration data was reportedly being collected in Samlout District [Sung commune interview, 10-06-15, female, age 44].

3.3.2 THE CENTRAL ROLE OF THE PRIVATE SECTOR

Given that a market framework has been used to structure Cambodia's planned development since the early 2000s, it would not be unexpected for policy to actively promote the private sector. The RS considers the private sector to be the 'engine of growth' (RGC 2013e); engagement is promoted for both urban and rural areas; investments can develop the rural economy, reduce the urban-rural gap, improve livelihoods, and reduce rural to urban migration as well as job seeking abroad. Green Growth provides numerous options for the private sector to flourish through better business while Cambodia's Second National Communication foresees engagement particularly through mitigation investments in mini and micro hydro; CDM projects; solar grid power, solar home systems, and solar lanterns; wind water pumping; charcoal briquettes from agricultural waste; electricity generation through rice husks; fuel wood efficient technologies; cement heat and power systems, combined electricity and cooling (HVAC) projects; and methane recovery. To overcome obstacles and facilitate and incentivize private sector action, including low awareness and limited investment finance, donor and carbon finance will need to be available, information will need to be disseminated, and banks will need to be linked with the private sector (GSSD 2015).

In the ASSDP, businesses are expected to increasingly deliver in partnerships and services, whereby contract farming is a central mechanism. Extension service provision is also to be transitioned largely from public to private hands. According to a lead representative of the Department of Agricultural Extension, Ministry of Agriculture, Forestry and Fisheries:

> *The public sector needs the development partner, the private sector, but also a way to share responsibility. Nobody has money, the public sector needs help with ability, with technology, sharing responsibility. It's the same in other parts of the government. Even the prime minister said in his speech recently, the private sector has contributed a lot of work, a lot of activity, to benefit the public sector [...] The new way of working gives the private sector direct access to the communities. The government has been sort of removed from the position of middleman. [Phnom Penh interview 09-26-14, male].*

According to the government representative, these partnerships are generally guided by the partnering institution's organizational and operational logic. Partnerships in turn are formalized through agreements which are output based. When asked about power relations between poor and remote communities and strategic government partnerships with the private sector, he stated, 'There is no power at the local community level to determine project objectives. There is more voice—but it is not a strong voice [Phnom Penh interview 09-26-14]. Thus, it becomes clear that while policy plays homage to tenets of sustainable development including equity, human rights and dignity in broad terms, operational focus goes to mobilizing partners and funds to modernize people and systems who are currently viewed as largely unable to compete regionally and globally.

Business engagement is also formalized in the ASSDP through the Rice Exporter Federation which was established in 2012 in partnership with the government to promote rice exports, in large part through Group-9 of Working Group on Rice under the Government-Private Sector Forum (G-PSF). Established in 1999 and chaired by the Prime Minister, the G-PSF mandate is to enhance the participation of the private sector in development and strengthen the relationship between the government and the private sector through dialogue on issues of trade and investment; to prepare for the annual meeting, ten Working Groups meet monthly or bi-monthly. As such, the Forum provides an official platform for addressing business concerns as well as finding alternative policy options and recommendations (RGC 2013e). Business organizations view this as an important mechanism for addressing business bottlenecks and gaps, advancing and satisfying business needs, and to varying degrees, influencing policy.

The platform features ten thematic working groups (see Table 3.3), each co-chaired by a Minister of the Royal Government and an elected private sector representative, which meet regularly throughout the year;

Table 3.3. G-PSF Working Groups

Private Sector Working Groups			
1	Agriculture and Agro-industry	6	Transport and Infrastructure
2	Tourism	7	Export Processing and Trade Facilitation
3	Manufacturing and Small and Medium Enterprises and Services	8	Industrial Relations
4	Law, Tax and Governance	9	Rice
5	Banking and Financial Services	10	Power and Mining Resources

Source: Author analysis

issues unable to be resolved by the working groups are dealt with at the G-PSF Plenary Session held once a year. The G-PSF Secretariat is the Council for the Development of Cambodia (CDC) while the Cambodia Chamber of Commerce ensures the coordination of the various Working Groups (Sisombat 2009).

However, the extent to which this consultation mechanism encompasses climate change matters is questionable given the statement of a business representative interviewed for the last chapter of this dissertation: "The ag working group doesn't talk about climate change" [05-18-15]. This implies that much attention is placed on mainstreaming climate change into policy, but the concurrent mainstreaming of actors is missing. However, in general, and given the urgency of climate change, moving beyond a simple mainstreaming—where global warming is simply brought under the wing of business-as-usual governance—is paramount for timely action.

These last, and clear cut, examples of private sector inclusion raise another issue. While civil society is also assigned a role in Cambodia policy and strategy, especially in terms of services provision, non-governmental organizations (NGOs)—especially those dealing with legal rights, human rights and advocacy – are often seen as the opposition and have limited influence on government strategy and policy. While laws are passed to unleash and facilitate the private sector contribution, civil society is increasingly leashed through bans on peaceful assemblies, restricted freedom of speech, and imprisonment among other means (United Nations Human Rights Council 2014). One recent and especially controversial example is the 2015 'NGO law,' formally referred to as the Law on Associations and NGOs (LANGO), which has spurred greater scrutiny of NGO activities by local authorities, has been used a means to break up NGO meetings and trainings as well as used to suspend or shut down NGOs who reportedly violate Article 24, the "political neutrality" clause of LANGO. One prominent example is the US State Department-funded National Democratic Institute; all its foreign staff were expelled from the Kingdom by the Cambodian Foreign Ministry, a move that "prompted the US Embassy to fire back at the ministry for itself violating the NGO Law."[3] The bad blood between civil society and the government appears to go both ways. According to a research participant, "NGOs are also part of the problem... they won't work with the government" [Phnom Penh interview, 04-03-14].

[3] See: http://www.phnompenhpost.com/national/ministry-shutters-ndi-lango-violations-us-embassy-hits-back

3.4 REFLECTIONS ON POLICY: ADAPTATION OR ECONOMIC DEVELOPMENT?

Sound climate policies—and solid climate governance—are essential toward overcoming the difficulties brought with climate change as well as those related to implementing the current binding agreements under the UNFCCC. In turn, policy positions, statements, practices, and outcomes are fundamentally based on value judgements (Mayers and Bass 1999). In Cambodia, significant value is placed on GDP growth. The expression of values in policy is not necessarily detrimental; the objectives outlined in the Global Goals provide a good example of socially-beneficial values purposely aiming to guide policy and action. Moreover, Green Growth can generate the necessary resources needed to realize societal objectives that are central to resilience making including education, health, and employment, among others. Adaptation itself creates space for numerous values and, unlike global mitigation efforts, it occurs at local or regional scales. This grassroots element can make success less dependent on the actions, and perhaps values, of others.

Nonetheless, the relative ease with which adaptation overlaps with much of the wider objectives of development—increasingly shaped by global forces—also means that the concept is at risk to be bent, stretched or shrunk to fit a purpose. In Cambodia, the government's ambition is to become an upper-middle income country by 2030 and a high-income country by 2050 through an average annual economic growth rate of 7 percent; the existing policy framework is generally utilized to realize National-level development goals of the NSDP through an economic approach that aims to leverage the private sector and unfettering markets while simultaneously reduce household-level constraints, many of which involve rural communities and what are viewed to be underutilized resources. Climate change policy is explicitly tied to these objectives so much that, "efforts to address climate change cannot be separated from economic development and poverty alleviation" (RGC 2013c). Two leading policy documents, the RS and the ASSDP 2014-2018, explicitly place, front and center, a sustained agricultural growth rate of five percent per annum through increased agricultural productivity, diversification and commercialization; this is to require *inter alia* investments in high-value agro-industry and rural road and irrigation infrastructure. From the database of interventions created for this research (the analysis of which is discussed in the next chapter), this specific development pathway was especially evident in the large-scale ADB projects which represent a rough total of US $375 million out of the total US $590 million. For example, the US $79 million PPCR project, *Climate resilience of rural infrastructure in Kampong Cham province* (part of the Rural Roads Improvement Project), aimed to address general climate threats through the rehabilitation of 1,200 km of roads which would result in a safer and cost-effective rural road network with all-year access to markets and other social services. The government generally sees these projects favourably because, according to a GHG mitigation specialist who worked as a policy strategist at the Ministry of Public Works and Transport:

> *... it's about priorities. Money goes to the military, but also to roads and other infrastructure because these provide visible, tangible projects to show voters. Politicians must tow party lines to get more votes. The ruling party needs to get more votes from rural people. [Phnom Penh interview, 03-03-14].*

While this intervention plays well into local politics, strengthens the trade network of the country, and more reliable road networks certainly account for numerous non-climate needs, only the least vulnerable farmers will benefit from road access if the foundations of rural vulnerability are not addressed and adaptation is bent to fit politics and trade. Likewise, high-value rice production may align with the interests of business and wealthier commercial farmers (albeit with serious limitations, see Chapter 6), but if adaptation is largely viewed through a narrow economic lens, the needs of many farmers are neglected. In both examples, business as usual and trickledown adaptation are signalled, bringing into question the weight of resilience objectives for the less-powerful, and the primacy of local adaptation in relation to outward-looking economic development.

The government is also actively and simultaneously developing the agricultural sector for the textile, apparel and footwear industries as raw materials (such as cotton and rubber) are currently imported. Yet in the high-risk low-development and climate change context of Cambodia, the promotion of a single crop such as rice, cotton or rubber may not be best for enhanced resilience. Concerns abound in relation to crop price fluctuations, global market dependency and smallholder capacity and narrowing of income sources as well as reduced food security, and land grabs (see Chapter 6 as well as Ahrends et al., 2015; Fox and Castella, 2013). For some time, Cambodia's growth has relied in large part—and will continue, at least into the foreseeable future—on natural resources. This use of natural resources, and the subsequent degradation of the environment, have been seen as necessary. According to the RGC, "forests were one of the few real resources which the country possessed in the commercial sense; consequently, deforestation began[4] (RGC 2013a). As a result, the increasing modernization and commercialization of the agricultural sector is coupled with land use change and the conversion of protected zones into plantations and other large-scale agriculture projects through economic land concessions highlighting the fact that traditional farming is not the sole extensification culprit. For instance, over 70 percent of the total 75,000 ha comprising the Snoul Wildlife Sanctuary was cleared for rubber between 2009 and 2013 (Boyle et al., 2013 as cited by Warren-Thomas et al., 2015). Rising rubber prices led the government to include rubber plantations in development strategy so that investors are encouraged to invest in the country's raw materials and to 'bring the Kingdom up to speed with "developed nations."'[5] Perhaps it is not surprising then that the rate of Cambodian tree loss largely corresponds with fluctuations in the global price of rubber (Grogan et al. 2015). In fact rubber plantations in particular are tied to land conversion, increased deforestation, and livelihood impacts (Dararath, Top, and Lic 2011). As sustained high economic growth goals are vested in the environment, this policy objective undermines other resilience objectives also outlined in policy and connected to biodiversity and forests preservation. As reliance on natural resources is a key determinant of vulnerability, it also undermines local livelihood strategies that build resilience. This may also undermine reputable FDI—a primary government prerogative—as the proliferation of such practices has branded Cambodia 'the worst of the worst' environmental offenders in the region (Hsu et al., 2016). One interviewee, who worked at the Ministry of Public Works and Transport as a policy strategist, noted that reputable private sector actors will not invest in Cambodia because of corruption while, "bad businesses will pay money to conduct their business. They will participate in the corruption [Phnom Penh Interview, 03-03-14].

Another disturbing example comes from priorities outlined in climate change policy itself. As a low-emissions and Least Developed Country, Cambodia is most occupied with adaptation to climate change. However mitigation opportunities are viewed to be useful in realizing sustainable development goals, especially in relation to climate-resilient, 'Green Growth' (RGC 2013b). In an attempt to transfer mitigation technology to the country, 11 Clean Development Mechanism (CDM) projects were approved as of 2015 and included mostly private sector-led initiatives in energy with 40 percent of registered projects in hydropower (GSSD 2015). In the context of climate change this is somewhat concerning for a few reasons. Each of the six countries that the Mekong River flows through have intensified interest in hydropower development. This interest has resulted from carbon emissions concerns but also because of increases in power demand and international energy market price volatility. Hydropower is also seen as a 'green' development mechanism and a means to reduce poverty and contribute to climate resilience (RGC 2013b). Along rather different lines, Strategic Objective 3 in the Cambodia Climate Change Strategic Plan (2014-2023) aims to "Ensure climate resilience of critical ecosystems, biodiversity, protected areas and cultural heritage sites," including the Mekong River and the Tonle Sap Lake, in part given the fact that the lives and livelihoods of the most vulnerable groups are entangled in a web of related natural resources (Royal Government of Cambodia 2013). In fact, 60 million people live in the Lower Mekong Basin; 40 percent live within a 15-km corridor along the Mekong River, and the majority within 5 km of the main stream.[6] As a

[4] This attitude was also observed first-hand in the field; one district leader wanted to cut down the native forest for development and simply replant it.

[5] See: http://www.phnompenhpost.com/national/cambodia-logs-top-spot

[6] For more information see: https://www.giz.de/en/worldwide/14435.html; http://www.mrcmekong.org/topics/people/

result of these socio-spatial and natural resource characteristics of the country, hydropower has shown to negatively impact the livelihoods of vulnerable groups and the environment (Ziv et al. 2012; WCD 2000; Richter et al. 2010; Pearse-Smith 2012). Thus, hydropower development has become a defining issue in the region—not only a particularly contentious regional transboundary water management problem, but an especially problematic development issue in Cambodia highlighting a mismatch between country-level development in relation to business opportunities in mitigation and on-the-ground adaptation needs of local communities. This dissonance is observed elsewhere: According to the country's Second National Communication under the UNFCCC, "The transfer of adaptation technologies to Cambodia is equally, if not more, important than the transfer of mitigation technologies, given Cambodia's vulnerability to the impacts of climate change" (GSSD 2015). In spite of this importance, the Communication dedicates several paragraphs to the transfer of mitigation technologies and only one to adaptation (GSSD, 2015). The term 'social conflict' occurs just once in the document in relation to agroforestry (GSSD 2015). Similarly, the Green Growth Roadmap points out that the agricultural sector is 'a politically sensitive sector' but only lists a range of what might be considered 'politically-safe' problems such as subsidies, water waste, and unsustainable farming practices and overuse of harmful chemicals at the local level. There is no mention of other types of unsustainable practices, for instance related to Economic Land Concessions (ELCs). Likewise, deforestation is labeled only a threat to environmental quantity and quality which results in, for example, reduced carbon sinks and biodiversity; the social (i.e., livelihood) factors and implications are missing.

These policy incoherencies came up in the conversations with research participants in Phnom Penh. Because the government has pushed very hard on economic growth, Green Growth for example is a good concept to focus on. However, according to one interviewee:

> *No one takes it seriously outside of a few technocrats who were working on it. The policy just happened overnight; it took about one week. They copied and pasted the text from other countries. They wrote the policy overnight because one person is friends with the Minister. Only if you work on it do you think it's important. [Phnom Penh interview, 03-01-14].*

And while climate change and green growth go hand-in-hand and reinforce each other, each division under the MoE works independently: 'They're told to work together but they don't. They are working and focusing on their own projects. This is because climate change is more practical, and it has more attention and resources. They see the impact of climate change, the donor gives money' [Phnom Penh interview, 03-01-14]. Another respondent agreed: "Cambodia sees an opportunity in signing the Kyoto Protocol because it means money. The policy values are coming from the IPCC, UNDP and donors. For example, the Ministry of Women's Affairs was set up after gender became a hot issue. Climate change is the same [Phnom Penh interview, 03-03-14].

These examples not only point to clashing government priorities and strategies, they illustrate a removal of targeted action from the other half of the resilience equation: vulnerability and adaptation. If too many parameters are not well specified and supporting policies are not systematically implemented, such as the RS, the National Social Protection Strategy for the Poor and Vulnerable and the Second Health Sector Strategic Plan 2008-2015—which stand out for their pro-poor principles—then it becomes clear which objectives the government really represents in spite of the real-world needs of the majority of Cambodia's population. If policy objectives work primarily to stimulate economic growth, evaluation will look primarily into the performance indicators of 'economic growth' and adaptation truly becomes another kind of fit-for-purpose endeavor that neglects socioeconomic values and needs as well as the distributional side-effects, many of which have—and will likely continue—to undermine resilience. Economic growth has resulted in clear gains, but policies that feature a minimal role of the state with the rest left to the market need to give way to those that "harness global forces for development and steer a course towards the promise rather than the peril" (UNU-WIDER 2016).

3.5 CONCLUSION

This chapter, the first of two chapters dedicated to mapping Cambodia's adaptation landscape from both a policy and practice perspective, clarified the government's position on risk and vulnerability as well as key objectives, players and solutions through an analysis of core climate change and development policies. It began with a primer on the characteristics and differences between mitigation and adaptation, an important distinction as policy objectives often overlap but also differ in many cases. The next section then turned to the first analysis of the mapping exercise which draws from a range of sources to understand the institutions leading the charge against climate change in the Kingdom. Here, newer institutions such as the National Climate Change Committee (established in 2006) and the Climate Change Technical Team (established in 2009) are joining forces with already established organizations such as the Ministry of Agriculture, Forestry and Fisheries and the Department of Agriculture Extension which have been taking leading roles for the agricultural sector since the mid-90s.

Supporting climate change institutions and action are various sources of funding which derive from international donors, multilateral climate funds and development organizations as well as the Cambodian government. As of 2016, and in comparison to neighboring Thailand, Lao PDR and Vietnam, Cambodia had mobilized the largest share of finance to establish a number of climate change programs including the Cambodia Climate Change Alliance and REDD+ as well as the PPCR, the focus of investigation in Chapter 6 of this doctoral dissertation. In order to understand the government's position on risk, vulnerability, key players and solutions, attention then fell on the core climate change and development policies where clear overlap exists.

Based on primary and secondary data, the policy analysis revealed that characteristics of vulnerability are assigned to both natural and human systems with poverty a main obstacle and agriculture, water resources, forestry, fisheries, tourism, coastal zones and human health the most vulnerable sectors. Vulnerable groups range from 'the poor,' and agricultural households to women, children, the physically disabled as well as the elderly and veterans; these groups feature more prominently in development policies such as the Rectangular Strategy, the policy on social protection and the Second Health Sector Strategic Plan 2008-2015.

Agriculture is a priority sector in terms of development and climate change, with poverty alleviation, agricultural modernization and ultimately economic growth leading objectives. For the agricultural sector as well as development of the national economy, resilience remedies are paired with agricultural modernization and rural economy development through domestic and foreign business investment, which in turn contributes to macroeconomic growth and global competitiveness. Part and parcel are partnerships with the private sector whereby dedicated mechanisms for engagement include contract farming and an increasing leadership role in the provision of extension services. Business actors are also assigned a fundamental and leading role in the agricultural sector through mechanisms such as the the Government-Private Sector Forum (G-PSF). The chapter concluded with a reflection on points of the analysis, namely the range of values scattered throughout both development and climate policy. Here, a hierarchy emerges: sustainability values such as accountability and equity remain undefined and elusive and so serve mostly as window dressing while values which underpin GDP-centric growth are prioritized despite their unsustainable need for natural resources. Similarly, the concept of adaptation overlaps with much of the wider objectives of economic development which is increasingly shaped by global forces; whether for trade or politics, adaptation as a development objective is at risk of being bent, stretched or shrunk to fit a purpose. Although adaptation technology is recognized as equally, if not more, important than the transfer of mitigation technologies, 'useful' sustainable development goals, especially in relation to climate-resilient, 'Green Growth,' advance actions in hydropower development at the expense of people and the environment. Economic growth has resulted in clear gains as Chapter 2 has shown, but policies that feature a minimal role of the state—with the rest left to the market—need to give way for the promise of resilience, not peril.

MAPPING THE ADAPTATION LANDSCAPE: PRACTICE

UNDERSTANDING ADAPTATION INTERVENTIONS

4.0 MAPPING PRACTICE: INTERVENTIONS FOR ADAPTATION

It is well recognized that substantial environmental and societal risks are associated with anthropogenic climate change, and climate change financing and policy as discussed in the previous chapter are dedicated to finding sustainable and pro-poor solutions. Part of this response includes designing and implementing a range of interventions. Termed 'planned adaptation,' actors use information to reevaluate current and future action in order to plan a deliberate response to changing or potentially changing conditions (Füssel and Klein 2006; IPCC 2007c). These actions also aim to reduce global climate change risks and capitalize on the opportunities (Füssel 2007; IPCC 2007; Adger et al. 2009). The general motivation behind planned adaptation interventions stems from the fact that the reduction of GHG emissions is a slow and lengthy process that requires major changes to society and the global economy and is in many cases a political endeavour. On the other hand, vulnerable groups and ecosystems, already dealing with the effects of climate change, must address urgent and immediate needs now, often with the assistance of others. Given their highly vulnerable status, these groups are unable to adapt on their own for a variety of reasons, many of which are explored in depth in Chapters 2, 5 and 6. This chapter connects the policy realm, addressed in the previous chapter, to the practice realm by presenting the findings obtained from a critical assessment of 86 hard and discrete adaptation interventions in Cambodia's agricultural sector. The study was guided by the following questions: Which climate stressors, groups and livelihoods are prioritized in interventions, and does this align with the policy perspective presented in Chapter 3? After a brief note on the methodology, the following sections contain findings related to intervention characteristics. The chapter ends with a reflection on the findings and a conclusion.

4.1 METHODOLOGY

The database, comprised of 86 interventions, was constructed with information obtained primarily from English internet sources. In most cases, data were collected from webpages, adaptation platforms and especially project factsheets which were published on project websites. Various online sources were used (such as the websites of UNDP Cambodia and the Cambodian Climate Change Department) as well as those found through Google Search. Additional examples of internet sources used to construct the database are available in Appendix II.

To limit the scope and assist with analysis, only discrete, hard adaptation interventions in the agricultural sector were considered. Following the definition put forth by McGray et al. (2007), the primary objective of a discrete adaptation intervention is adaptation to climate change where, "from the beginning, implementers and funders of these efforts have climate change in mind." In other words, only interventions labeled as adaptation, funded with adaptation money, and illustrating concrete, on-the-ground 'hard' adaptation objectives and activities were selected. 'Hard' is defined as dedicated and tangible, for example tools such as climate-resilient seeds or irrigation infrastructure used to combat the effects of drought. The assessment focused on project characteristics such as level of intervention, project stakeholders and key beneficiaries, amounts and types of funding, and key threats addressed. Special attention was also paid to exclusionary characteristics of interventions and sources of potential conflict such as may occur with a change in land use patterns, the introduction of new resources such as tools or infrastructure or if land acquisition or resettlement was required to realize adaptation intervention objectives. Table 4.1 outlines the full parameters of analysis.

The study also benefited from twenty-seven in-depth interviews conducted with 20 men and seven women. Research participants worked in the areas of climate change and development as project staff or with private consultancies, universities, the United Nations (UN) Development Program, UN Women, and NGOs. Additionally, the study also included the insights of a range of government representatives from the Ministry of Women's Affairs, the Ministry of Environment, the Department of Agricultural Extension, and the Cambodian Climate Change Alliance. Appendix I provides more details.

Table 4.1. Intervention analysis parameters

Level of implementation (village, province, etc.)	Adaptation tools promoted
Key threats	Project duration
Key objectives	Funding (funders, financing types & total budgets)
Groups targeted (gender, especially vulnerable)	Partners
Key focal points (e.g., water; energy; health)	(Potential for) private sector involvement

Source: Author analysis

This part of the research reveals quite a bit of information however the assessment does not claim to be a 'complete guide' to discrete adaptation projects in Cambodia for a number of reasons. First, climate change adaptation in the country is a continually evolving arena. Second, the research depended on the availability of information, and in many cases key information was missing or vague. Extensive tracking down of information was not possible due to time constraints. Despite these limitations, the dataset captures the diversity of efforts in Cambodia's agricultural sector and can help us to understand the priorities of the government and other leading actors; it also provides a general indication of the various actors and approaches that characterize Cambodia's adaptation landscape. Toward this end, the next sections present the study's findings which address a range of intervention characteristics. The chapter ends with a reflection on the findings and a conclusion.

4.2 FINDINGS

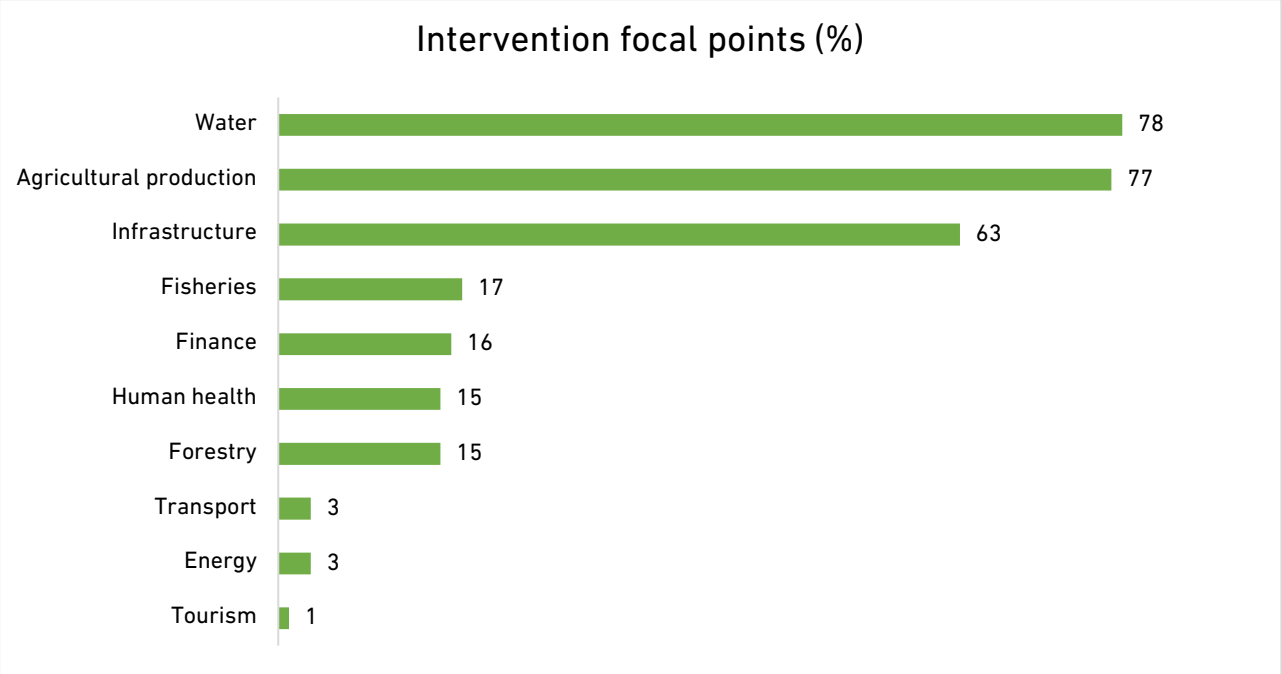
4.2.1 GENERAL CHARACTERISTICS

The database analysis illustrates a wide range of projects that are geographically dispersed; interventions focus on large areas such as provinces and districts as well as individual villages. Additionally, the USAID-funded *Community Adaptation Initiatives in Kampong Thom, Cambodia* project is part of ARCC, a larger regional project implemented in Thailand, Vietnam, Cambodia and Lao PDR. Interventions are bounded by start and end dates: start dates range from 2009 to 2015 and range in duration from 11 to 78 months. The shortest projects, 42 in total, are those under the CCBAP; 55 percent of these are only 11 to 12 months in length. The longest projects, seven in total, are PPCR related. While PPCR timeframes are vague in three cases, known durations range from 72 to 78 months. Additional longer projects of 24 to 60 months in duration are funded by the LDCF, the CCCA-TF, the Mekong River Commission, the UN Adaptation Fund, and USAID.

Intervention size is also wide ranging: some interventions are funded by small grants and target as few as 20 farmers while larger projects target thousands of households and cover different districts and sectors. Due to the amount of missing information, in most cases the total number of people targeted is unknown. For example, while one intervention explicitly states that it targets 1,957 farming families and women, another targets 'coastal communities' without a clear indication of numbers. Nonetheless, projects are implemented at all levels (from village to national) and are undertaken in the agricultural sector to address a range of needs related to: agricultural (crop and livestock) production, water, energy, infrastructure, human health, tourism, transport, finance, fisheries, and forestry. Projects generally feature more than one focal point to address overlapping areas and needs. For example, an intervention addressing human health may also feature a water strategy that employs solar energy pumps. Table 4.2 provides a set of examples related to the relationship between intervention focal points, climate threat addressed and activities. Figure 4.1 complements this through a quantitative overview which shows that water features in 78% of the 86 interventions followed by agricultural production (77%) and infrastructure (63%); energy (3%), transport (3%) and tourism (1%) receive less attention.

Analysis further revealed that the studied interventions are either stand alone or part of a larger umbrella program which includes: NAPA; the PPCR; Cambodia Community Based Adaptation Program (CCBAP); Cambodia Climate Change Alliance (Phase I and II); the Climate Change and Adaptation Initiative (CCAI); and the USAID Mekong ARCC project. This last program is an example of a regional initiative carried out in the Lower Mekong Basin and implemented by DAI in partnership with the International Centre for Environmental Management, World Resources Institute, International Union for Conservation of Nature, World Wildlife Fund, and Asian Management and Development Institute. Table 4.3 outlines some of the characteristics of these programs.

Figure 4.1. Areas of intervention focus



Source: Author analysis

4.2.2 INTERVENTION OBJECTIVES AND TARGETED GROUPS

The analysis reveals that intervention objectives are wide ranging and aim to address key threats including rainfall shortages, drought and floods, storm surge, salinity, erratic rainfall, intense rainfall and flooding, windstorms, increased temperatures, and pests. In some cases, the key climate threat was not identifiable in the respective document and was described as 'general', or as 'extreme events.' Non-climate issues are also targeted including food security and land and forest degradation for example.

The means to address these threats include the provision of women's empowerment initiatives, bolstering human development, reducing poverty or addressing capability shortages such as through livelihood diversification, literacy promotion, and projects that address health. Many of these activities are capacity-building activities that strengthen individuals' abilities to take action. In one intervention, the capability fostered is the ability to 'cope,' or take short-term action to ward off immediate risk from climatic events through the construction of safe routes to use to survive a storm and saving enough food to survive a drought. The database illustrates that only four interventions specifically address market issues including raising awareness on market prices, integrating farming and market systems, and connecting rural populations to markets through road rehabilitation. The latter example comes from one PPCR intervention which aimed to strengthen rural road networks with the expectation that this will assist rural communities with increased market access and so adapt to the effects of a changing climate. Other projects, especially those falling under the CCBAP or the UNEP Adaptation Fund, appear to be much more holistic by mixing a mix of 'green' environmental approaches with social approaches. For instance, the CCBAP-funded *Building Adaptive Capacity and Ecosystem Resilience to Floods and Droughts in Indigenous and Minority Communities*

Table 4.2. Examples of planned adaptation activities

Focal point	Climate threat addressed	Activities
Agricultural production	Natural disasters	Improving access to information on natural disasters and commodity prices for ethnic minority women
	Drought	Promoting home gardening
	Drought; erratic rainfall	Introducing drought or flood resistant rice strains for improved production; combatting soil degradation and water shortages
	Drought	Establishing farmer cooperatives
	Drought; heat; erratic rainfall	Promoting integrated fish culture and vegetable production at the household level to combat e.g., poor soil
Water	Rainfall shortage	Promoting rainwater harvesting and water storage technologies to decrease food insecurity
	Drought; heat; erratic rainfall	Establishing water user or reservoir management groups
Energy	Floods; droughts; extreme weather events	Building solar pump systems for community ponds and wells
Infrastructure	Drought	Rehabilitating irrigation canals, including contractor procurement
Human health	Drought	Expanding solar-powered piped water system
	Drought; heat; erratic rainfall	Improving food security through increased agricultural production
Tourism	Drought; heat; erratic rainfall	Strengthening community eco-tourism management committee
		Developing alternative livelihoods and income
Transport	General	Improving or rehabilitating road networks through paving and all-year access
		Improving the Ministry of Public Works and Transport's road asset management capabilities through an enhanced axle load control program
Finance	Climate variability	Establishing community savings and loan groups
Fisheries	Higher temperatures; drought; changes in river flow patterns	Establishing Community Fisheries Committees
	Drought; floods; windstorms	Raising awareness of aquatic resource conservation and protection
Forestry	Drought; floods	Addressing forest degradation by improving natural resources and food security

Source: Author analysis

Table 4.3. Examples of umbrella projects

Name	Funded by	Aim	Duration	Location	Focus area	Total budget (US$ millions)
Cambodia Climate Change Alliance I	GCCA; UNDP; Sweden; Denmark	Strengthening the governance of climate change; Orienting public and private, domestic and external resources in support of the CCCSP vision; Developing human and technological capital for the climate change response	2009-2014	Nation wide	Environment and energy	10.9
Cambodia Climate Change Alliance II	Sweden; UNDP; EU; Royal Government of Cambodia (in-kind)		2014-2019	Nation wide		13.2
USAID Mekong Adaptation and Resilience to Climate Change (ARCC)	USAID Regional Development Mission for Asia	Identifying impacts and assisting vulnerable rural populations in ecologically sensitive areas to adapt	2011-2016	Thailand, Vietnam, Cambodia and Lao PDR	Water resources, agricultural and aquatic systems, livestock, ecosystems, and livelihood options	9.4
Cambodia Community Based Adaptation Program (CCBAP)	UNDP/Global Environment Fund Small Grants Programme (Sweden; AusAid; UNDP)	Reducing the vulnerability of Cambodia's agricultural sector to climate induced changes in water resources availability; enhancing community resilience; mainstreaming climate change in commune development planning	2015-2015	450 vulnerable communities in flood-/drought prone areas of Cambodia	Water resources and agriculture	4.5

Source: Author analysis

focused on local biodiversity conservation and aquatic agricultural production as well as training communities in participatory research and communication to collect information and share knowledge to build local institutions. One example, *Enhancing Climate Resilience of Rural Communities Living in Protected Areas of Cambodia* focuses falls under the UNEP Adaptation Fund and focused on communities living in Protected Areas and eco-agriculture, NTFP generation, forest restoration and patrols, and home gardens.

The interventions additionally targeted a wide variety of institutions, groups and even the environment, described as 'ecosystems.' Human targets included government agencies; district officials; local institutions; coastal and rural communities; road users; water user committees; households; the poor; indigenous groups including ethnic Cham and Vietnamese; farmers; local fishermen; women; the elderly; children; students; the physically challenged; and the private sector, including engineering firms and private contractors. In relation to this latter group, four interventions aim to benefit private sector actors through general statements such as, 'build the climate resilience of Cambodia's agricultural private sector' to more

concrete actions such as developing the legal framework for quality seed production. Additionally, women were a listed as a target group in 44 percent of interventions, the majority of which were funded under the Cambodia Community Based Adaptation Program (CCBAP). Where gender is a factor, objectives range from 'improve gender equality' or 'increase capacity of public sector staff in gender and climate change issues' to less-specific aims such as 'increase food productivity of 120 families in target villages' where women form part of a target group. In some cases, the demographic of 'women' is somewhat vague as in 'rural' or 'ethnic minority' women while others target women in even more broad terms through a household percentage. Finally, children, the elderly and the physically challenged are considered especially vulnerable groups but do not emerge as leading target groups in the intervention dataset. When mentioned, these groups are disaggregated from the wider target population in numeric form only or are inferred through the name of the NGO, for example Help Age International and Children Development Association.

4.2.3 ADAPTATION TOOLS

Closely related to objectives, the dataset also reveals a variety of tools for livelihood and community support which can be categorized into different types and range from financial to managerial and health-related (Figure 4.4). Because interventions differ widely in their objectives, it naturally follows that they will also differ in tools. For example, one NAPA intervention, *Safer Water Supplies for Rural Communities,* outlines a budget of US $5,000,000 for the construction of 500 wells, 100 ponds and the provision of 10,000 locally-made water filters over three years. The objective was to improve access to safe water and reduce poverty and water-related diseases. Another example involving human health comes from the *Food security improvement through climate resilient agriculture practices* intervention under the CCBAP whereby the main objective was to combat the effects of drought and secure access to sufficient food. With a budget of roughly US $64,000 (of which nearly 50,000 came from a grant) and a duration of 16 months, the intervention focused on drought resistant agricultural practices (including irrigation and System of Rice Intensifi-

Table 4.4. Tools promoted

Type of tool	Example
Financial	Microfinance; savings and loan mechanisms; trust funds for innovation projects
Infrastructural	Reservoirs; dikes; canals; sluice gates; ponds; wells; bioengineered sea barriers and mangrove nursery; drip irrigation; (elevated) roads; routes to safe areas; aquaculture ponds; wind breaks
Knowledge/ awareness	Small business development and advisory services; Trainings on: gender; sanitation; loan/ finance management and administration; health impacts
Managerial	Water committees; water user groups; land use zoning; conservation groups
Health/ well-being	Water filters; community flood hazard and response maps; life rafts
Agricultural	Drought-resistant rice; seedlings; fish; rice banks
Techniques	Composting; SRI; integrated farming; soil conservation; climate resistant livestock systems; cement ring aquaculture; Climate Smart Agriculture; ecosystem-based adaptation; conservation agriculture; turbid water treatment; wild fish conservation

Source: Author analysis

cation techniques), integrated home gardening, and raising awareness on the health and environmental impacts of chemical and pesticide application.

In addition, various techniques are promoted, at least on paper, to enhance climate resiliency at the household and community levels by building robust systems. These include techniques for soil conservation, composting, or animal husbandry as well as natural resource management practices such as the rehabilitation of degraded forests and coastal mangrove areas. In addition, interventions often couple these actions with managerial and capacity-building efforts which frequently entail institution-building familiar to the development community. Examples include the establishment of savings groups or water user associations as well as trainings in small business or household accounts management. Perhaps the most expected tools involve agricultural infrastructure such as dikes, reservoirs and canals, although other types are evident including rainfall harvesting units and ponds and solar water pumps. Table 4.4 outlines a range of tools for each tool type. As with the focal areas mentioned above, interventions feature more than one tool.

4.2.4 FUNDING

The database additionally illustrates that various funders, types of funding and sums of money are involved. Funders include PPCR, the Government of Cambodia, the Mekong River Commission, UNDP GEF Small Grants Fund, CCCA Trust Fund (CCCA-TF), UNEP Adaptation Fund, and the Least Developed Countries Fund. Other funding institutions include the Asian Development Bank (through the ADB Loan Fund and the Technical Assistance Special Fund) which is a significant player as well as Australia, Korea, USAID, SIDA and Agence Française de Développement. Smaller funding entities include Commune Sangkat Fund and the Rufford Small Grants Foundation. Table 4.5 outlines funding characteristics obtained from the database.

Projects are guided by their funding mechanisms. For example, the GEF Small Grants Programme only funds NGOs and CBOs in the fund's key areas of concern while NAPA projects fall under the Least Developed Countries Fund. Some funds are capped at US $50,000 (such as Cambodia Community Based Adaptation Program) while others (such as those that involve ADB) appear to be based on cost estimates. Project funds derive in many cases from a few different mechanisms and funders may participate in more than one project or funding mechanism. For example, a project may be jointly funded by CCCA Trust Fund, the UN Capital Development Fund (UNCDF) and SIDA. SIDA also contributed to Phase II of the "Local Governments and Climate Change Project" (a total contribution of US $930,000) as well as numerous projects supported by the Small Grants Programme.

At the lowest end, US $7,450 was provided through a grant from Rufford Small Grants Foundation to raise awareness and generate additional household incomes through integrated family-scale fish culture and vegetable production; the project ran for one year and was based on demonstration sites for 15 villagers, of which four are women. A second stage grant of US $7,400 was awarded the following year for similar activities and benefitted 20 villagers, of which nine are women. At the highest end, a project within the PPCR funding framework aimed at risks related to flood and drought; the intervention, *Climate Proofing of Agricultural Infrastructure and Business-focused Adaptation*, has a total budget of roughly US $88 million: a US $4.5 million grant, a US $465,000 preparation grant, a US $5 million concessional loan and an expected co-financing component of roughly US $78 million. Its aim is to increase the productivity and net incomes of rice value chain stakeholders through an improved policy environment and climate resilient investments.

Other projects also involve co-financing. For example, a PPCR intervention may have only US $10,000 in grants or loans, but claims to leverage other resources in cash or in kind from other actors. The means of calculation is not made clear in most cases. While it is beyond the scope of the study to define co-financing procedures across all funding actors and mechanisms, in the context of the LDCF, co-financing is the por-

tion of existing development project resources from which a proposed adaptation project will build; co-financing is a declared commitment from relevant co-financiers that is used to demonstrate that proposed adaptation activities are "securely anchored in existing (previously financed) development activities" (Least Developed Countries Expert Group, 2012). Co-financing includes taxes and duties from the Cambodian government or community contributions in cash or in-kind contributions of labor. For example, one intervention using community based adaptation funded through a US $39,000 grant from GEF Small Grants Programme features co-financing of US $23,500 in cash and US $10,500 in-kind. Overall, co-financing from 80 percent of projects totals US $389 million; concessional loans from four projects total US $26 million; and grants from roughly 80 percent of projects total US$52.6 million. Finally, six projects (five ADB/PPCR and one NAPA project) also feature a project preparation grant totalling US $2.9 million, bringing the total grant amount to roughly US $55.5 million.

Table 4.5. Funding characteristics

Funder	Type of funds	Funding range (US$)	Project co-financing range (US$)
PPCR	Loans	4 - 7 million	19 - 77.9 million
	Grants	4.5 - 9 million	
ADB	Loans		55 million
	Grants	19 million	–
Royal Government of Cambodia			8.33 million
LDCF	Grants	5.2 million	25.7 million
CCCA Trust Fund	Grants	145,500 - 300,000	13,000 - 103,000
SIDA	Grants	930,000	2,000 - 8.5 million
Global Environment Fund Small Grants Programme	Grants	18,000 - 50,000	2,000 - 5.6 million
Rufford Small Grants Foundation	Grants	7,400 - 7,500	Not specified
UNEP Adaptation Fund	Grants	4.9 million	Not specified
USAID	Not specified	9.4 million (across four countries)	Not specified

Source: Author analysis

4.2.5 PARTNERSHIPS FOR IMPLEMENTATION

Just as projects are jointly financed, the analysis revealed they are also implemented through partnerships. Particularly present is the Cambodian government through its various ministries and departments including MOWRAM, Ministry of Environment, MAFF, MRD, Ministry of Economy and Finance and the Ministry of Public Works and Transport. Government-related entities including the Royal University of Agriculture and the Cambodia National Mekong Committee are also present, but to a lesser extent. NGOs are also at the forefront, especially in the CCBAP. Here NGOs and partnerships are diverse, such as the CCBAP intervention led by the Association of Buddhists for Environment (ABE). This NGO partnered with SIDA to repair a section of a dike to irrigate rice, increase access to drought resilient rice varieties, build local capacity for a reservoir management committee, and establish three rice banks. Other primary organizations in adaptation interventions are community groups related to village support, fisheries or agricultural production.

Finally, the fact that various adaptation tools are involved in the interventions implies a private sector role, however in the majority of cases this role is not made explicit. One notable exception is projects involving ADB. For example—and in addition to the companies investigated at a deeper level in the field work and discussed in Chapter 6—the *Climate Proofing of Agricultural Infrastructure and Business-focused Adaptation* project aims to increase productivity and net incomes of stakeholders along the rice value chain. The intervention involves five local engineering firms; 29 private contractors (five led by female entrepreneurs); ten local firms participating in providing advisory services to rice millers; 15 local input suppliers; three local financial institutions; and three local marketing agencies. Activities include technical and financial capacity building of mill managers and operators as well as facilitating access to credit by farmers, traders and millers. In addition to these findings, the database illustrates that although partners are explicitly stated in factsheets and other project documents, deeper investigation is needed to discern levels of responsibility or how responsibility is distributed.

4.3 REFLECTIONS ON PRACTICE

4.3.1 ADAPTATION OR DEVELOPMENT?

An initial observation during the construction of the dataset was the difficulty in some cases to quickly identify whether a project was a climate change project or not, even if it has received climate change funding. This issue also emerged during the policy analysis where it was often difficult to draw hard and fast lines between development policy and climate change (adaptation) policy in a developing country context where poverty is a dominant consideration. This is reflective of a longstanding debate that has persisted over the difference between climate change adaptation interventions and traditional development. The distinction is important in finance circles as climate change funding mechanisms are dedicated to financing climate action. For example, the Green Climate Fund (GCF) only finances activities related to climate protection and adaptation. Climate protection addresses GHG emissions, whether their reduction or the environment's ability to absorb them—a fairly straightforward classification. The latter however is more difficult to identify; not only do definitions of adaptation differ, many interventions combine classical development objectives with climate resilience objectives (Weischer and Wetzel 2017). Clearly this cut-and-dry separation of actions is less understandable to other stakeholders. According to an expert who works in both climate change and development, climate change is an intersectional issue that cuts across all other issues [Phnom Penh interview, 03-01-14]. This issue also emerged during the analysis of Cambodia's policy where climate change strategy and resilience directly link to poverty alleviation, a classical development objective as higher levels of development clearly contribute to enhanced resilience; vulnerability, whether of a household or a community, derives in large part from structural underdevelopment and social barriers to adaptation, as discussed in Chapter 5.

Nonetheless, the UNFCCC considers funding for adaptation to be the additional cost of an action that would otherwise not be necessary in the absence of climate change—anything else is considered regular development (Least Developed Countries Expert Group, 2012) with dedicated funding mechanisms already in place. So, for funding mechanisms like the GCF, dike construction to prevent the impacts of rising sea levels falls clearly under the banner of eligible 'adaptation' action deserving of climate funds while social support measures such as direct payments for income diversification fall under ineligible 'development.' If the rules of adaptation (see North 1991) are primarily dictated by the polity which shapes and brings forth climate change funding mechanisms, 'development' actions are deemed problematic even if they essentially address the roots of vulnerability of the poorest community members. Nonetheless, for some donors, the use of scarce climate funds for classical development initiatives is not only inappropriate, it may make climate financing too expensive—unless monies are bilateral funds that can count toward a donor's contribution to climate finance efforts via 'Rio markers' (Junghans et al. 2012; Michaelowa and Michaelowa 2011). With this scoring, the politics of adaptation become obvious as donors become more generous in terms of their own bilateral funding and "all of a sudden very many projects become adapta-

tion projects" (Weischer and Wetzel 2017). This led Weischer and Wetzel (2017) to ask: "Does resilience building make more sense for infrastructure than for the poorest population groups?" Moreover, they point out that adaptation to climate change, "cannot be solved alone with very costly dikes, wells and shelters." Structural measures, such as those that address the discrimination against (and thus the concomitant heightened vulnerability of) marginalized groups are also necessary and can contribute to increased adaptive capacity despite being labelled 'classical development' (Weischer and Wetzel 2017).

This issue, and its implications, became directly evident while constructing the dataset. For the sake of analysis, divisions were made between climate change interventions and those with no clear adaptation component (even if it was indicated in the title). It soon became clear that this was a messy endeavour that certainly relied on the type of funding but also the quality of an intervention's description; large differences in the type, quality and amount of information presented (and thus available) hindered the ability to gain a clear understanding; there appeared to be a lack of reporting standards and institutions and actors varied widely in the manner in which they conveyed project activities, objectives and outcomes. The implications of financial categorization become clear: if an intervention with a strong biodiversity component fails to adequately convey adaptation actions—for example the proposal is poorly worded or proposed actions fall too closely to 'development'—consequences in terms of resilience are disregarded and the intervention is relegated to the development pile even though Cambodian communities rely heavily on their natural resource base. On paper, interventions with tangible adaptation components (e.g., a sea wall or irrigation ditch) will always 'count' despite the importance of actions that address social barriers standing in the way of resilience which have a much higher potential to lead to systemic transformation. 'Hard' interventions can de-task the state by carving a clear path for private sector contributions and profit generation. However, these approaches are only as good as the systems they are embedded within and so are less able to reach the groups most vulnerable to detrimental climate impacts.

4.3.2 WELCOME TO THE ADAPTATION JUNGLE

One of the limitations frequently cited in the literature is that not much is known about local scenarios and adaptation. Once the development or climate change hurdle was cleared, deeper inquiry revealed that while quite a bit of adaptation information exists, an undue amount of persistence is required to uncover it. In many clear cases of adaptation action, key project information was difficult to locate and also unnecessarily complex. This was also observed in a study conducted by Dany et al. (2015) who commented on the manner in which climate change information is generated, communicated, and used:

> *The information is scattered and not well organized. It is just like we have ingredients to cook but in some instances they were insufficiently cooked or improperly cooked thus the food were not of reasonable quality, while in other instances, they were cooked but foods were not marketed enough. For example, there was a study to map (index) climate vulnerabilities of 710 communes, but there has been lack of communication to make use of the information, especially in policy and planning development.*

This study also found that information was often 'improperly cooked.' Important information was incomplete or contradictory and many websites and project 'factsheets' lacked specific information about hard start and end dates, project duration, location, stage of implementation and other important project parameters such as type of funding and number and types of beneficiaries. For example, the only source of information easily found for one intervention, *Strengthening of Community Disaster Preparedness and Response Capacity,* was the rather broad NAPA document. Furthermore, the document describes the project as mostly focused on how to respond to emergency situations rather than actions to achieve climate change adaptation. Another example comes from the final assessment document (which in itself is a rare example) of the *Local Governments and Climate Change Project* funded by the Cambodia Climate Change Alliance Trust Fund, UNCDF, and SIDA; it mentions no funding amounts. Finally, interventions were often vague on strategy and safeguards and where outcomes related to gender or other especially vulnerable groups, in many cases these were simply disaggregated in number from the total target population; the

impact of such action is therefore open to question. More complete information in general would facilitate a better understanding of a project's aims, costs, and interlinkages with other policy areas. However, it is important to note that while institutions such as the ADB have the means to write and disseminate high-quality proposals and reports, most smaller NGOs may not. For example, project descriptions often lacked fundamental information such as location and duration, number of beneficiaries, or the specific climate threat addressed.

The lack of information was a product of other factors. For example, smaller projects were often the most holistic—and from the perspective of this author, most interesting—but often suffered from insufficient visibility while information related to bigger projects with different funding and implementing institutions were quite visible but unnecessarily complex and riddled with jargon. Projects may be embedded within other larger projects making specific intervention information hard to find. Lengthy approval processes (specifically observed in the ADB projects and spanning years in the PPCR cases), meant in some cases that information was lost or difficult to track down, or even possibly (but unknowingly) outdated. Lengthy paper trails and incomplete or contradicting information disguised project status as well as any changes in project objectives, locations, funding mechanisms and beneficiaries. Updates were not often posted on project websites but are rather hidden in a document forest; attempts to clarify intervention characteristics and processes were made by email and phone but in many cases were unsuccessful as a result of changes in contact information, project staff or simply the lack of response. Moreover, websites may not be up to date and even prominent institutions such as GEF had important pages that contained insecure or dead links which hinders the ability to gain but also share information. Transparency and the ability to use the knowledge generated would also increase if project information was easier to understand. This is especially problematic in relation to financial and bank jargon which in many cases detracts from clarity and increases the amount of effort needed to find and understand pertinent information as further research is needed to demystify esoteric terms. Clear planning and policy on climate change information would certainly be useful however one interviewee stated, "Most projects focus on adaptation, they assess the adaptation potential of a local population. But the government doesn't use this information. There is no clear policy, no clear plan [Phnom Penh interview, 03-03-14].

4.3.3 PARTICIPATION AND OWNERSHIP

Some of the implications of global climate change finance were discussed above. Again, most climate change adaptation funding comes from external sources such as international development organizations and donors who can set the rules of adaptation. This becomes additionally problematic if looking at participation and ownership This section of the chapter highlights the restricted ability of various actors, at both the national and local levels, to claim space within, and thus derive direct benefits of, adaptation action. Areas of reflection include: Money mandates, the scope of vulnerable groups, and private sector.

The one who pays the piper calls the tune

Adaptation money comes with a mandate. This 'piper syndrome' was summed up by one respondent who stated:

> *The one with the money decides the action, so it is disconnected, ad hoc action, project by project even though climate change is a long-term problem. When a donor gives money to build a road, they build a road. When another donor wants to build a canal, they destroy the road for the canal. The government doesn't have money for rural development. It is largely donor driven so it does not necessarily meet local needs. But any project is better than no project at all. A project comes, and this equals money, so the government says okay! If there is no money then there is no activity. [Phnom Penh interview, 03-03-14].*

Another example involves the ability to access climate funds. Cambodia lacks an accredited climate fund organization, yet the Adaptation Fund and the Green Climate Fund require accreditation to ensure that

applicants align fully with the guiding principles and objectives of the fund. This is another example of sustainability values guiding action as discussed in the previous policy chapter: Accreditation helps to confirm that institutions have the capacity for strong financial management and the ability to prevent harm through fiduciary principles and standards as well as social environmental and social safeguards. This is a reasonable request especially for countries like Cambodia which rate high for corruption and have poor environmental and human rights track records. However, because this limits the ability of Cambodia to directly access international climate finance, the country's ability to set, lead and pursue adaptation priorities is compromised (DAI 2016). Steps are being taken to address the issue however through the Climate Finance Readiness Programme (CF Ready) of the KfW Development Bank and GIZ. This program assists fifteen countries including Cambodia with accessing climate finance and using it effectively. Accreditation of the Adaptation Fund and Green Climate Fund is also planned within the CCCSP to occur sometime between 2014 and 2018 (Royal Government of Cambodia 2013).

This capacity issue has a set of consequences. Most climate change financing, spent on policy and knowledge-sharing, stays at the national level—even though most impact is at the provincial to local levels. According to an interviewee: "Climate change is the same as any other development issue. Most resources are in Phnom Penh which forms a core-periphery dynamic [Interview, Phnom Penh, 03-01-14]. Yet because institutional capacity is low in Cambodia, much money continues to flow to outside parties, including international NGOs and experts whose salaries are quite a bit higher than those of local experts, and way beyond the salaries of civil servants. According to a policy strategist who worked on the country's transport sector plan, "Climate change is a new concept at the Ministry level. They are not aware so they need to rely on international experts to integrate climate change into policies [Phnom Penh interview, 03-03-14]. A senior official at the Department of Agricultural Extension added that climate change has brought heavier workloads, more responsibility and the pressure for better and more collaboration between civil servants and other actors, but not higher pay [Phnom Penh interview, 09-26-14]. At the same time, the government aims to keep expenditures down by limiting the number of new civil servants coming on board.[1] Climate change has placed increased demands on local institutions but has disproportionately distributed resources at the local level, with other factors further aggravating the situation.

Extremely low civil servant pay is a politically-charged topic that has been connected to financial mismanagement as well as a range of practices used to supplement low salaries. This includes shirking duties and working second jobs but also corrupt behavior including fee-charging or rent-seeking,[2] also a subject of donor concern. It's also used as a political ploy to manipulate the populace and garner votes in upcoming elections.[3] For example, after the Cambodia National Rescue Party (CNRP, the main opposition party) campaigned in 2013 for increasing civil servant salaries and then made unexpectedly strong gains in the elections, Prime Minister Hun Sen announced that a pay raise for civil servants and members of the armed forces would occur by 2018, the year of the next national election.[4] The CNRP, having posed a major election threat for Hun Sen, subsequently lost 55 seats in the 123-seat National Assembly after the party was dissolved by the Supreme Court in 2017; the court also ordered a five-year political ban for 118 members of the opposition party which critics claim signalled the 'death of democracy.'[5]

[1] Khmer Times, August 23, 2017. Available: http://www.khmertimeskh.com/5079512/slash-civil-servant-recruiting-hun-sen/ [Accessed January 6, 2018].

[2] This was observed in the field while collecting data in Samlout District; a full-time soldier was moonlighting as a security guard for a Chinese company who was contracted by the government to establish communication infrastructure [Informal conversation, June 5, 2015].

[3] The Cambodia Daily, August 8, 2013. Available: https://www.cambodiadaily.com/archives/low-paid-civil-servants-to-get-pay-boost-38744/ [Accessed January 6, 2018].

[4] The Cambodia Daily, November 2, 2015. Available: https://www.cambodiadaily.com/news/hun-sen-pledges-250-civil-servant-salary-by-2018-98954/ [Accessed January 6, 2018].

[5] BBC News, 16 November 2017. Available: http://www.bbc.com/news/world-asia-42006828 [Accessed January 6, 2018].

And while boosting the Kingdom's level of self-sufficiency is another main topic of discussion with much focus on bettering the education system to increase the capacity of the country's youth—50 percent of the population are below the age of 22 (FAO 2016a)—the amount of money dedicated to education is small; more attention and funds go to NGOs and the Ministry of Agriculture because it is most impacted [Phnom Penh interview, 03-03-14]. Since the time of data collection, reforms in the education sector have garnered significant attention in the media, for example the government crackdown on bribery and cheating which resulted in more than 70 percent of high school students failing the national examination.[6] Nonetheless, the Education Strategic Plan 2014-2018 mentions climate change only twice: one calls for teacher, student and stakeholder trainings on preventive measures on "disaster, other risks, climate change, tree planting and environment" while the second calls for "life skill teachers" in the area of social and environmental education who will teach methods and skills in agriculture and climate change awareness. These topics are however placed on equal standing in a list which also contains home economics, workshop, arts, working skills, and ICT (Kingdom of Cambodia 2014).

4.3.4 PROBLEMATIZING 'THE VULNERABLE'

Participation and ownership are also relevant at the project level. In practice terms, the database illustrates that the rift between climate and development has a cascading effect which becomes further evident in the way vulnerability is conceived in adaptation interventions, and thus participation and ownership are relegated to a select group. Although the nature of this study makes it impossible to discern what it means for on-the-ground outcomes, development policy, as discussed in the previous chapter, is more nuanced and inclusive of a wider range of groups compared to climate policy; this is perhaps in large part a result of a natural science bias which places most attention on the biophysical—observable in both the agricultural sector and the climate change arena as discussed elsewhere in this dissertation. Now to the point: Target groups from the dataset range from government agencies and district officials to local institutions, coastal and rural communities, the private sector and even road users; fewer interventions focused on especially vulnerable groups identified in development policy including women, children, the elderly, veterans, indigenous groups or the physically challenged among others. While government agencies and coastal communities should certainly benefit from increased capacity to deal with climate change, this disambiguation indicates an imbalance and so raises questions surrounding the extent to which differential levels of vulnerability are considered—or lost—in adaptation planning and action. It also lays bare the ability of planned adaptation interventions to go beyond business as usual and address systemic vulnerability—a demand increasingly at the top of the 2030 sustainability agenda.

Fail safe or safe to fail: Exclusion for success or increased potential for conflict?

Who is vulnerable and why becomes acutely important when interventions bring new opportunities and resources to communities—a classic development conundrum as introduced resources can reignite or bring uneven development and increased inequality to local communities. The dataset shows that new resource endowments brought with interventions include tangible mechanisms such as savings groups and resource management committees aimed at improving access to information or providing a forum for local communities to engage with and influence the local climate change agenda. Interventions also bring new tools and various types of infrastructure, knowledge and practices from drip irrigation and solar pumps to SRI and integrated agriculture. Others employ the use of pilot projects which are designed to test the application of new ideas and practices on a small level for 'up scaling,' or eventual dissemination to achieve large-scale impact, an important objective given the wide-scale impacts but scarcity of climate change funds. According to one climate change expert, pilot projects are common in the agricultural sector with roughly 1,000 demonstration projects dotted around the Tonle Sap Lake in four provinces. There is overlap here and pilots are not uncommon in adaptation in the agricultural sector, for example action that focuses

[6] Radio Free Asia, August 29, 2014. Available: http://www.rfa.org/english/news/cambodia/exam-08292014201054.html [Accessed January 5, 2018].

on technology transfer and increased on-farm incomes to combat drought, considered to be the most severe climate impact for farmers [Interview, Phnom Penh, 02-28-14].

It is clear that new mechanisms and tools are important and the use of a pilot seems like a reasonable endeavour to explore how to best dedicate scarce resources and test implementation. However, outcomes may be unevenly distributed as interventions influence and control the dynamics of participation and so create spaces of inclusion and exclusion. While this potential exists in all interventions, especially unfavourable outcomes for the poorest and most marginalized groups are especially likely in cases which feature changes in land use patterns, land loss and the forced displacement of households as in the US $50 million PPCR intervention *Enhancement of Flood and Drought Management in Pursat Province,* a large flood and irrigation infrastructure project which was estimated to affect nearly 4,000 people, half of them severely. Farm demonstration sites provide another example where benefits are distributed unevenly and heavy consequences are implied because, despite being labelled 'pro-poor,' pilot projects often architect a form of inequality at the start. For example, in the drought and technology transfer project of the ADB, *Tonle Sap Technology Demonstration for Agriculture Enhancement (TSSP),* focus was placed on high productivity and adaptation; strategies included important trainings on book keeping, buying and selling as well as the introduction of native chickens and high-nutrient livestock grass, a clear need as many Cambodian communities keep chickens and other livestock, and fodder shortages are an issue in rural areas. However, participant households were selected based on household characteristics including wealth and capital, size of land, and household composition [Interview, Phnom Penh, 02-28-14]; plot size often determines the kind of agricultural production as there are different risk frameworks [Phnom Penh NGO interview, 10-11-14]. The households of socially and economically disadvantaged groups such as farmers with small plots, elderly farmers and other 'wrong' groups were purposely excluded. When asked if these adaptation pilots created conflict within communities because they in effect targeted the cream of the crop, the interviewee stated, "Yes, sure. People come to ask why they were not asked to participate in the project. We focus on technology. We want to build a good demonstration site. If we focus on the poorest, it will fail" [Interview, Phnom Penh, 02-28-14]. Moreover, to reduce project dependence, farmers must contribute, and poor households have reduced ability to do so. Clearly there is no room for sinking ships when upscaling is an objective: Significant resource investments must lead to successful uptake, outputs and dissemination in a short amount of time. Nonetheless, resource and timeframe issues affect other projects. The database similarly shows that the CCBAP features highly dynamic yet shorter-duration interventions. This means that implementing actions, learning lessons, and being evaluated favorably need to occur in just one seasonal cycle. This issue arose in an interview with a Climate Change Adaptation and GHGs Mitigation Specialist who stated:

> *A lot of projects come with some technology aspect. But after the project is finished, the activity stops because the government doesn't have money to contribute. So it fails. After there is no money to continue. Projects and action should be long term—around 10 to 20 years. The projects are too short. [Phnom Penh interview, 03-03-14].*

Local needs

In addition to the intervention characteristics described above, a lack of full community participation results in a limited understanding of local contexts and local needs which in turn brings inappropriate tools or misunderstandings; each reduces the effectiveness of interventions. For example, part of the TSSP project described above also included the construction of 20 telecenters where farmers have access to a library and the internet (one province alone has five telecenters). Incidentally, smallholder contribution is less of a concern here. According to the expert, "We give it to them for free. If a farmer has a problem and he needs help, they can go there. We can even do video calls to get a solution" [Phnom Penh interview, 02-28-14]. This latter aspect of the intervention in particular brings into question which 'vulnerable' group is targeted and which interests are served. While access to information is clearly necessary and internet connectivity and teleconferencing may be emblematic of the modern, each is far removed from the every-

day adaptation challenges of most smallholders where the provision of basic services related to sanitation, healthcare and education remain elusory. Combined with the above findings, the end goal of pilot scalability is brought into question: are these projects fail safe or safe to fail for vulnerable communities? According to a representative of UN Women, to have greater impact, planned interventions should assume a medium-term outlook and take into account the needs of different farmers:

> *Attention needs to be paid to the farmer and the ability to invest in the future, and poor farmers especially are thinking short term. Short term benefits are needed for daily living. People can invest for the future, but this becomes less important and less successful if daily subsistence requirements are not met. A better life can only come after basic needs are met. [Phnom Penh interview, 11-10-14].*

Moreover, planned interventions need to offer equal opportunity to people. While differing levels of success may be experienced, participation under fair terms is required [Phnom Penh interview, 11-10-14].

The same TSSP project staff member lamented the failure of the program's attempts to reintroduce native chickens; after introduction, project participants sold the chickens to pay their debts. And while the high-nutrient grass, introduced on small pilot plots belonging to farmers, grew very well and was very successful, the farmers did not want to spread the technology via transplants as they claimed that they had insufficient amounts. The interviewee stated that he does not understand because they also explain that the grass can also be purchased at the market. While certainly a genuine effort to increase the adaptive capacity of local communities, it ultimately failed because participants had different ideas, and different motivations. Clearly frustrated, he added:

> *We need to make them aware. We need to make them realize. We must change them. We must change them, make them aware of new things. They need to instill the desire for self-improvement, to bring yourself up to be better. We don't want people to be dependent on us. This project belongs to them, we help them make their business better. [Phnom Penh interview, 02-28-14].*

This echoes the policy perspective discussed in the previous chapter which holds that farmers must radically diverge from their current trajectories to adapt. Following up on the issue of change with a senior staff member of the Department of Agricultural Extension. When asked if local farmers are open to change he stated, "No, no not open to change I think..." When asked for clarification, he stated:

> *Farmers are a diverse group, with many characteristics. They are not all the same. But in my experience, a village has maybe two or three or four farmers who want the technology, who want to learn or know about the new technology. But most of them, they just are not interested, they don't want to know anything, they don't want to change.*

When asked if this could be attributable to increased risk he added:

> *No, they're not afraid [of risk]. The shortage of labor, that's the first reason. They are the oldest farmer, not the young generation. The young generation, they migrated to the city. I think the older farmer, if you go to the village, it's not... it's, you can say, the oldest – it is the grandmother, the grandfather. They look after the grandson or granddaughter after the parents migrated to find work. They have to migrate because, due to the climate change the farmer faces, the yield is too low. They have a problem with the crop so they have no income. [Phnom Penh interview, 09-26-14].*

Technologies may provide good solutions, but if they do not align with the additional considerations of a household, follow-up will be onerous. For one international NGO, it is important to conduct analysis at the farmer level, and transmit messages in a way that can be understood. Some institutions pile information on top of farmers which overwhelms them and makes activities less interesting. An effective approach

utilizes high-impact training tools geared for adult learning that includes props and is digestible [Phnom Penh interview, 10-14-14]. Moreover, while interventions incorporate capacity building, they should also capitalize on existing, locally-situated knowledge, networks and capabilities. According to one adaptation researcher, interventions need to meet farmers half way: "The farmer knows best. They are the expert. It is their livelihood. They know when and where to grow crops. But they only know from their own experience. We need to help them with outside knowledge. But to think the farmer doesn't know anything is wrong" [Phnom Penh interview, 03-01-14]. Data collected in the field illustrates that if the full spectrum of capacity and local needs is not considered, there are unfavorable consequences for both project implementers as well as local communities (see Chapters 5 and 6).

Private sector participation and ownership

Finally, the research revealed that participation and ownership come into play beyond local actors. One observation emerging from the database is that the private sector appears to be a silent stakeholder in the planned adaptation interventions. While interventions often include private sector aspects such as special seeds and irrigation infrastructure, it is difficult to clearly identify a specific private sector actor. Where the private sector is explicitly mentioned, it is in general terms. For example, in the CCBAP intervention, *Livelihood Improvement of 259 families through water management for irrigation and clean drinking water to adapt to drought in Sre Chea Khang Chheung commune, Dong Tong district, Kampot province,* one activity is the selection of a contractor for infrastructure improvement of a water gate and community pond. And, according to one respondent, 'We try to incorporate the private sector. We private contract an international agribusiness company for vegetable seeds [Phnom Penh interview, 02-28-14]. Both imply that companies may step in and out of interventions once their role is complete. However, if companies are playing a key role through technology provision but otherwise remain at the fringes, they may not be completely invested in the outcomes nor able to benefit from feedback processes for improvement. One might also label this 'blueprint' adaptation where technology and agricultural productivity frame the issues and open the gates for certain types of action, but do not involve critical reflection from all actors. Additionally, without clear visibility, it may also be difficult to inspire other private sector actors to engage in what seems to be 'NGO work.'

4.4 GOING FORWARD

This reflection, centered on the concept and complexity of adaptation as well as barriers standing in the way in adaptation interventions, brings to light two issues. The first is how contextualized information generated at the local level might scale up to the national and international levels so that understanding of interventions but also grassroots perspectives on climate change adaptation and needs, *including the perspectives of the most marginalized*, can be improved. A big step forward would be the administrative tracking of interventions via a centralized repository which includes information on both successes and failures, financing mechanisms and other key characteristics as well as information generated.

The second issue is how to account for the real potential of interventions to exacerbate uneven development or (re)kindle community conflict. While interventions clearly aim to target vulnerable groups, the extent to which interventions reconcile household and community dynamics and especially intra- or inter-community power relations (such as related to the unintended outcomes of new resource provision) remains unclear. One way forward is to connect climate change funding and action to development safeguards and principles such as FPIC (Free Prior and Informed Consent) and the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT).

Finally, it is important to consider if action is fail safe or safe to fail—and to plan beyond the short term, and outside of competitive terms; the latter is identified in the national social protection strategy, along-

side common resource depletion, as a threat to resilience in local contexts (Royal Government of Cambodia 2011). This becomes especially critical if the private sector, operating from a profit mandate, is increasingly handed the majority of responsibility in Cambodia's agricultural policy and global financing mechanisms.

4.5 CONCLUSION

This chapter is the second of two chapters that have been dedicated to mapping Cambodia's dynamic adaptation landscape from both a policy and practice perspective. This part of the doctoral dissertation is viewed as particularly necessary because in-depth and comprehensive overviews are missing yet crucial towards understanding the resilience project in the country.

Chapter 3, representing the first half of the mapping exercise, clarified the government's position on risk and vulnerability as well as key objectives, players and solutions through an analysis of core climate change and development policies. This chapter presented the second half of the mapping exercise where the main objective was to critically assess 86 hard and discrete adaptation interventions in Cambodia's agricultural sector based on information from a range of dispersed documents and sources; the study was complemented by in-depth interviews with women and men who worked in both climate change and development at NGOs, universities, and government agencies among others. From a policy perspective, growth is a leading objective and resilience is framed in terms of macroeconomic robustness. From a practice perspective, the situation is naturally more local and nuanced. The study identified the main climate stressors, groups and livelihoods prioritized in interventions which resonate with those identified in policy: floods and drought are main climate threats while the most prominent actions are designed to make livelihoods more robust and most often in the areas of agricultural (crop and livestock) production, water, and infrastructure, although interventions also addressed issues related to human health, energy, tourism, transport, finance, fisheries, and forestry but to a lesser extent. Umbrella programs were also evidenced, and could span countries or take a holistic and community-based approach. As such, intervention size is wide ranging: some interventions are funded by small grants and target as few as 20 farmers while larger projects target thousands of households and cover different districts and sectors; in many cases however the total number of people targeted is unknown. Objectives included bolstering human development, reducing poverty or addressing capability shortages such as through livelihood diversification and projects that address health. Many activities focus on capacity-building to strengthen individuals' abilities to take action while target groups included a wide variety of institutions, groups and even the environment. The especially vulnerable such as children, the elderly and the physically challenged do not emerge as leading target groups. A variety of tools for livelihood and community support were evident, which can be categorized into different types and range from financial to managerial and health-related.

The database additionally illustrates that various funders, types of funding and sums of money are involved and that projects are guided by their funding mechanisms. Co-financing was a prominent feature although the means of calculation was not made clear in most cases. The analysis revealed that interventions are also implemented through partnerships with the Cambodian government, through its various ministries, particularly present. NGOs are also quite present as well as diverse while various adaptation tools imply a private sector role, this role is not made explicit.

Various aspects of practice stood out during data collection and analysis, with clear consequences for adaptation and resilience. An initial observation during the construction of the dataset was the difficulty in some cases to quickly identify whether a project was a climate change project or not, reflective of a long-standing debate that has persisted over the difference between climate change adaptation interventions and traditional development. Although climate financing draws hard and fast lines based on the definition of adaptation funding, this stands in opposition to Cambodia's policy where climate change strategy and resilience directly link to development. This is an area where the politics of adaptation are played out, for example in a donor's generous contributions of bilateral funding to climate finance efforts via 'Rio mark-

ers.' The messiness of adaptation, namely the crisscrossing of adaptation and development, means that interventions with tangible adaptation components—such as a sea wall or irrigation ditch—are easily defined and so are more likely to 'count' for adaptation funding despite the importance of actions that address social barriers standing in the way of resilience which have a much higher potential to lead to systemic transformation. 'Hard' interventions also de-task the state by carving a clear path for private sector contributions and profit generation. However, these approaches are only as good as the systems they are embedded within and so are less able to reach the groups most vulnerable to detrimental climate impacts. While quite a bit of adaptation information exists, an undue amount of persistence is required to uncover it.

Under participation and ownership, the chapter then highlights the restricted ability of various actors, at both the national and local levels, to claim space within, and thus derive direct benefits of, adaptation action. First, funding comes with a mandate, and funds dictate the type of action. Second, although important sustainability values guide access to climate funds through an accreditation process, Cambodia lacks an accreditation agency and so is unable to fully set adaptation priorities. Moreover, due to low levels of capacity, much money continues to flow to outside parties such as international experts. And while civil servants must contend with heavier workloads as a result of climate change, salaries remain insufficient and used as a political ploy. Despite promises and some reforms, it is unclear from a policy perspective how the Kingdom's education system will boost the country's self-sufficiency in terms of climate change.

The way vulnerability is conceived in adaptation interventions implies that participation and ownership are relegated to a select group. This disambiguation indicates an imbalance and so raises questions surrounding the extent to which differential levels of vulnerability are considered—or lost—in adaptation planning and action. This also brings into question the ability of interventions to go beyond business-as-usual and address systemic vulnerability—a demand increasingly at the top of the 2030 sustainability agenda. Who is vulnerable and why becomes acutely important when interventions bring new opportunities and resources to communities as these new resources can reignite or bring uneven development and increased inequality to local communities. The exclusionary nature of pilot projects especially is of concern as exclusion and inequity are hardwired in from the start. Moreover, the tension between local perspectives and the persistence in policy and in some forms of practice to radically change farmers was illustrated in the reflection section on local needs and through examples of failure and misunderstanding. For greater impact, planned interventions should assume a medium-term outlook, respect local knowledge and take into account the needs of different farmers. They must also offer equal opportunity to people.

The reader is left with two key issues: first, how to learn lessons from both successful and unsuccessful aspects of interventions as well as how to ensure that local perspectives inform and improve adaptation policy and action. Second is how to account for the real potential of interventions to exacerbate uneven development or (re)kindle community conflict. Suggestions included the creation of a repository for adaptation interventions as well as the incorporation of FPIC and VGGT safeguards and guidelines into intervention frameworks, especially in interventions and programs related to economic land concessions (ELCs). These included principles related to adaptation interventions, vulnerable groups, participation and ownership as well as responsible investments. This however requires guidance from the Cambodian government, climate finance, and donors so that NGOs, businesses, local authorities but especially local communities understand how the principles and safeguards of FPIC and VGGT can be fulfilled in practice. Finally, it is important to take a longer view and plan outside of competitive terms, especially as the private sector is increasingly served a significant slice of responsibility in Cambodia's agricultural policy and global financing mechanisms.

COMMUNITY PERCEPTIONS

SMALLHOLDER BARRIERS AND OPPORTUNITIES IN BATTAMBANG PROVINCE

5.0 INTRODUCTION

With flooding, drought, sea level rise and groundwater salinization, and more frequent and extreme weather events, the agricultural sector is hit hardest by the effects of climate change (IPCC 2001; Mendelsohn 2008; Pearce et al. 1996); those working in the sector will continue to be impacted by events that are expected to become more frequent and severe (Thomas et al. 2013; National Committee for Disaster Management and the United Nations Development Program 2014). For smallholder and landless agriculturalists in particular, climate variability is a key determinant of vulnerability.

In recent years, the private sector has been granted a central role in international climate change adaptation policy and practice, e.g., under the policy framework of the UNFCCC as well as within global climate change funding mechanisms. When it comes to rural agricultural livelihoods and adaptation in the global South, for example, technical and market solutions such as new seeds, fertilizers and pesticides, insurance packages, and microcredit are promoted and delivered or sold by private companies to local farmers under the impetus of climate change adaptation. Technical solutions, and the policies that promote them, resonate nicely with neoliberal ideals and possibilities for private sector engagement. They are largely viewed as straightforward and neutral innovations despite having derived from privileged knowledge frameworks that dock climate change in primarily top-down and biophysical terms (Stirling, Leach, and Scoones 2010; Ojha et al. 2015). While attention for biophysical vulnerabilities, expert-led and market-based solutions is important, researchers have pointed out that communities simultaneously face myriad social risks and challenges in relation to climate change; these solutions do not automatically solve the problems occurring at the local level, and might even make things worse (Adger and Kelly 1999; Adger and Vincent 2005; Dodman, Ayers, and Huq 2009; Leichenko and Silva 2014; Thomas and Twyman 2005).

In order to make rural livelihoods more adaptive to climate change and variability, building on and enhancing farmers' adaptation strategies is key. For such strategies to emerge and operate efficiently, well-functioning formal and informal rural institutions have been identified as seminal (Agarwal et al. 2012; Agrawal and Perrin 2009). While we know a lot about the role of civic institutions in rural livelihoods and adaptation—most studies focus on the relation between local communities and the state or civil society—the complex interrelations between the state, the private sector and civil society at the local level are under-researched. We need to have a detailed look at how strategies and institutions change with the arrival of new market-based interventions (promoted by the private sector and the state), and particularly how these actors and the new resources they introduce interrelate with local strategies and (new or pre-existing) civic institutions. At the same time, the involvement of local institutions and local collaboration has been romanticized in some of the literature on community-based adaptation (Rawlani and Sovacool 2011; Schipper et al. 2014); a more in-depth look at the reality of trust, collaboration and institutional change at the local level is necessary to come to a more realistic picture of the social barriers and possibilities of adaptation. Finally, in order to understand people's strategies and how they relate to institutions, it is key to delve into their perceptions, gained from first-hand observations and experiences, on climate change and variability.

In this chapter we provide such an in-depth view based on empirical work in Cambodia, a country particularly vulnerable to climate change impacts. Over half of Cambodia's population depends on agriculture for sustaining their livelihoods, mostly through farming small plots of land for subsistence and small-scale commercial purposes (ADB 2014; Socheth 2012). Agriculture is particularly important to Cambodia's poor—roughly 90 percent of those who experience poverty live and farm in rural areas, both directly on their own plots of land as well as by working as agricultural day laborers (ADB 2014b). Given the multidimensional importance of agriculture to economic and social development, the Cambodian government continues to prioritize investment in the sector and its position within the country's policy agenda (ADB 2014b). Attention also focuses on mainstreaming climate change mitigation and adaptation into policies (Am et al. 2013b) as well as financing solutions and implementing them on the ground, often through the increased participation of the private sector. In fact, up to the year 2013, US $655 million from bilateral

and multilateral initiatives had been mobilized for both adaptation and mitigation, largely for agricultural purposes (Pheakdey 2013). Economic growth paradigms brought by influential donors such as USAID—a leading partner in developing the country's 2015 agricultural extension policy—bring significant funding and also align well with National level development goals. Within Cambodia's 'golden triangle' of knowledge institutions, the government and the private sector, it is generally accepted that major barriers to smallholder adaptive capacity result from traditional, unproductive farming practices combined with insufficient capital, knowledge and modern agricultural inputs such as fertilizers, seeds, and agro-chemicals.

Cambodia thus makes for an interesting case to study in-depth the increased promotion of market-based and technical solutions to climate change adaptation, and how this interrelates with local farmers' perceptions on climate change and variability, their adaptive strategies, the social and institutional barriers to adaptation, and the pre-existing and newly emerging civic institutions. This is important because even though climate change has been placed high on the national policy agenda, Cambodian policy makers lack locally-relevant information (Dany et al. 2016).

This research forms part of a larger study on corporate engagement in climate change adaptation in the Kingdom. The analysis is based on fieldwork in Phnom Penh as well as two districts of Battambang province, Cambodia that are the focus of two business-led adaptation interventions funded by the Pilot Program for Climate Resilience (PPCR). By studying local perceptions, strategies, social barriers and local institutions surrounding climate change and adaptation, this article sets out to support pro-poor, evidence-based planning and sustainable development in Cambodia. Toward this end, the remainder of this chapter provides the empirical framework underpinning the analysis, the results, and a discussion on the study's main findings.

5.1 CLIMATE CHANGE ADAPTATION, BARRIERS AND LIMITS

Policy responses to climate change currently come from two main approaches: mitigation and adaptation. Mitigation aims to reduce and prevent global warming through the reduction and stabilization of greenhouse gas emissions in the atmosphere (Schipper and Burton 2009) while adaptation encompasses actions to cope with and increase resilience against the impacts of global warming as well as take advantage of any resulting opportunities (Eriksen et al. 2011). Adaptation, applying to both human and non-human systems, is both a short- and long-term consideration mitigated by geographical, institutional, cultural, political, ecological, and socio-economic factors that shape human-environment interaction. Vulnerability, inextricably linked to adaptive capacity, is a biophysical as well as a social condition whereby differing exposures and abilities to cope with external stress translate into differing abilities to adapt both between and within communities (Adger and Vincent 2005; Leichenko and Silva 2014; IPCC 2007); those that are resource-dependent and already experiencing poverty, conflict, disease or other development challenges are at greater risk (Dodman et al. 2009; Thomas and Twyman 2005). In fact, communities contend with a variety of biophysical and social risks and limits which in turn influence adaptation action (Dow et al. 2013a). All of this combined implies that successful pro-poor adaptation—or adaptation action designed and implemented around the needs and challenges of the poorest members of a community—must extend beyond ecological, technological and economic opportunities and constraints and the values of business to one that includes a holistic assessment of local perceptions of risks and limits including those deriving from social norms, values and rules. After all, unconsidered barriers can result in missed opportunities, increased costs and maladaptation (Moser and Ekstrom 2010).

Ranging in type and scale, social barriers to and opportunities for adaptation encompass the relationships between individuals, institutions and the state (Dow et al. 2013; Moser and Ekstrom 2010; Adger et al. 2009). People's perceptions of climate change and variability, their adaptation strategies, and institutions are closely interrelated. Researchers have highlighted the importance of individual perceptions and their influence on adaptation goals and decisions (Dow et al. 2013; Moser and Ekstrom 2010; Adger et al. 2009;

Field et al. 2012; Grothmann and Patt 2005; Wachinger et al. 2013). For example, the potential for loss is a key aspect of vulnerability; how loss is perceived depends on values, or what matters to the exposed group (Barnett, Lambert, and Fry 2008). Indeed, the goal of adaptation can be seen as the reduction of climate-related risks to the things people value (Adger et al. 2012). Perceptions of opportunity and risk are another example (Dow et al. 2013; Adger et al. 2009) and are particularly important within poorer agricultural households as the stakes for potential loss are higher yet maneuvering space is restricted (Hill 2009; Morduch 1994). At the same time, policy makers have neglected the psychological aspects of the adaptation process, particularly those of motivation (Grothmann and Patt 2005).

For rural farmers' adaptation strategies to emerge and operate efficiently, well-functioning formal and informal rural institutions have been identified as seminal (Agrawal and Perrin 2009; Agarwal et al. 2012). Public, private and civic institutions can greatly shape the adaptation strategies of the rural poor in relation to climate-induced risk, and local institutions function as intermediaries to external interventions (Agrawal and Perrin 2009). The right type of engagement with the right types of local institutions are key toward making adaptation work for the most marginalized groups: local collaboration, trust and inclusiveness of institutions are important, whereas corruption, elite capture and institutions without 'social roots' are examples of socially-constructed barriers to adaptation (Agarwal et al. 2012; Agrawal and Perrin 2009; Ludi et al. 2012). At the same time, the involvement of local institutions and local collaboration has been romanticized in some of the literature; one example is community-based adaptation which has been uncritically celebrated as a solution for adaptation (Schipper et al. 2014; Rawlani and Sovacool 2011). A more in-depth look at the reality of trust, collaboration and institutional change at the local level is necessary to come to a more realistic picture of the social barriers and possibilities of adaptation. While we know a lot about the role of civic institutions in rural livelihoods and adaptation—most studies focus on the relation between local communities and the state or civil society—the complex interrelations between the state, the private sector and civil society at the local level are under-researched.

5.2 RESEARCH FRAMEWORK

Fieldwork for the study was conducted in Banan and Samlout districts of Battambang province, Cambodia during 2014 and 2015. The districts were selected as each formed part of the areas targeted by the two business-led adaptation interventions approved for funding under the PPCR; the businesses aimed to build local resilience by integrating smallholders into the rice and spice value chains respectively through contract farming. At the time of data collection, each business intervention was rated highly and approved for US $5 million in highly-concessional loans under the Pilot Program for Climate Resilience (PPCR). The PPCR, administered by Climate Investment Funds and lying outside of the UNFCCC framework, is the largest of all adaptation funds and one that is driving a private sector-led approach at the global level (Parker et al. 2014). This study focused on the two PPCR-endorsed business-led adaptation interventions because they provided a clear example of private sector engagement in adaptation: easily identifiable *private companies* are provided with *public adaptation funds* to build the *local adaptive capacity* of *climate vulnerable groups*. As each of the PPCR-endorsed agribusinesses was based in Battambang, the empirical data derives from this province (see map in *Research Framework*).

Each district is rural, with Samlout district especially remote with difficult travel as a result of mountainous and forested topography less suited for rice production compared to generally flatter Banan district. Without sufficient supplies or access to water resources, the villages included in this study were characterized as water insecure. Moreover, Battambang is one of the two most heavily mined provinces in the country with Banan district particularly effected (Roberts and Williams 1995). A legacy of prolonged conflict, many respondents taking part in this research must contend daily with physical disability. Each research area characteristic has consequences for adaptation and climate resilience.

The study population was selected purposively to gain information from people with knowledge and expe-

rience in agriculture. Research participants included one microcredit representative actively engaged with smallholders and a senior staff member of the Provincial Department of Agriculture in Battambang city. In addition, a total of 97 farmers residing within 10 villages contributed to the study: 52 from Banan and 45 from Samlout. Eight participants were landless. Of these, 38 participants contributed to five focus group discussions (FGDs). In total, males and females were aged between 21 and 70 years old and comprised 50.5 and 49.5 percent of the sample respectively. While participants largely identified as farmers, livelihoods were diverse; nonfarm activities included goods trading (in situ and door-to-door), wedding party employment, taxi services (*motodop*) and mechanical repair work; regional migration (for agricultural work) and international migration (for domestic, factory, and construction work in Thailand) was also used. In addition, 10 farmers worked for the government: eight as village chiefs, one as deputy village chief, and one as a village staff member.

To increase participation during the corn and sesame harvest seasons, in-depth interviews featured convenience sampling. To delve deeper, participants for three FGDs were selected from the interview sample. Participants for the remaining two FGDs, disaggregated by gender, held specific knowledge in relation to the abovementioned business-led adaptation interventions in their villages; sample selection thus required the assistance of the respective village chief in possession of intervention details.

Throughout all discussions, research topics included: changes in local climate; resulting impacts; perceived cause(s); the solutions needed; and constraints to adaptation. A distinction was made at the beginning of every discussion between day-today changes in weather versus longer-term climate trends. Data was coded and analyzed (alongside field notes) using QSR International's NVivo 11 qualitative data analysis software. Through exploring and interpreting patterns, emergent categories were organized into the themes presented in this article. To maintain the trust and anonymity of the research sample, findings are reported by district rather than by village.

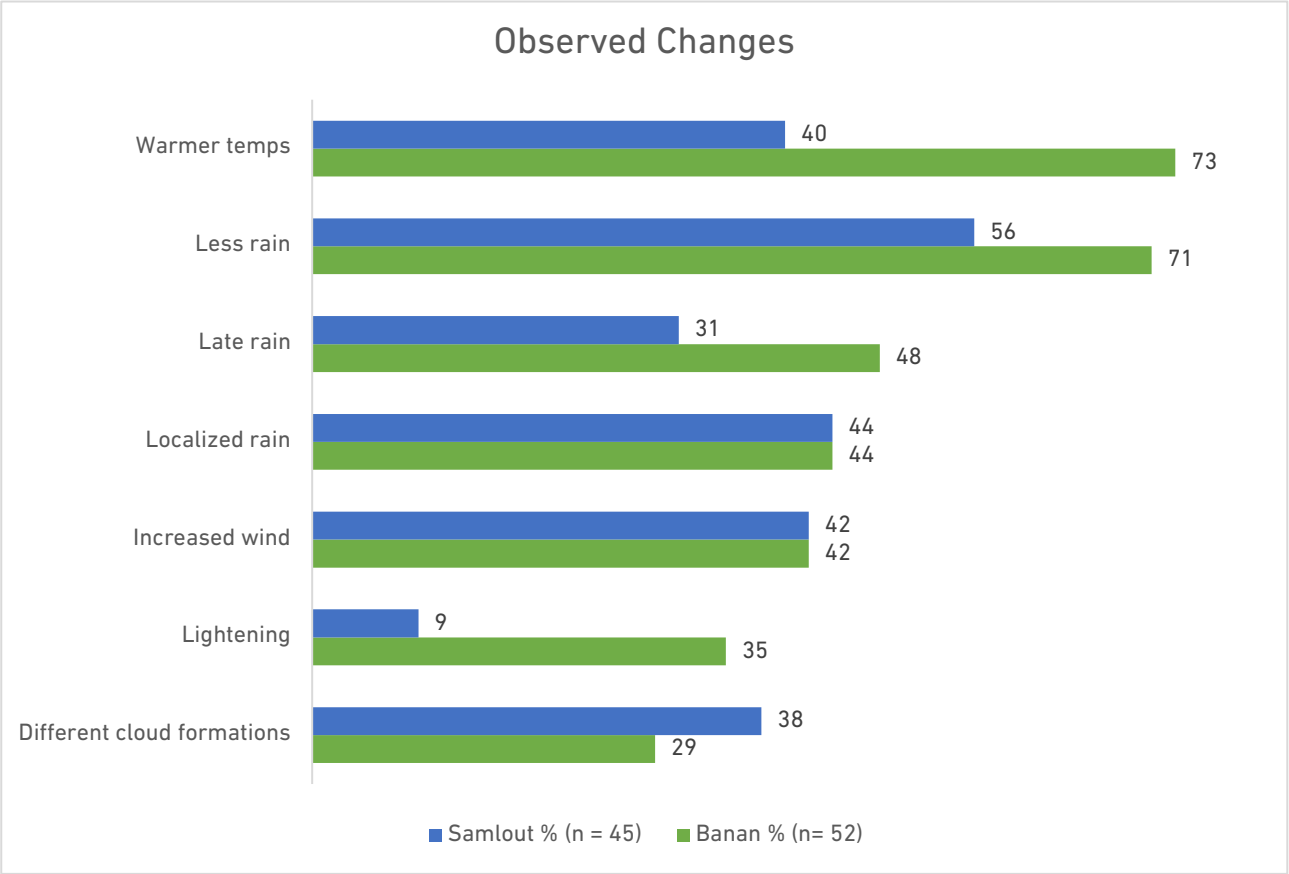
5.3 LOCAL PERCEPTIONS OF CLIMATE CHANGE

Cambodia's climate is often described as having both a dry and a wet season; at the local level, however, a year may be divided into three distinct seasons of dry, wet and cold. [Banan interview 10-23-14, male farmer, age 65; Samlout FGD 6-9-15, male, age 60]. In both districts, 100 percent of respondents reported significant changes in their local climate since their parents' generation including changed weather patterns, warmer temperatures, less rain, more frequent and longer drought periods, and more intense weather events marked by stronger winds, lightening or unusual temperature extremes. Figure 5.1 outlines the most frequently reported observations of research participants in both districts.

In both districts, the majority of respondents reported that the seasons are more variable and no longer predictable; many described the seasons as being 'wrong' or 'incorrect.' One female farmer in Samlout stated, "It is rainy season in the dry season and dry season in the rainy season. The seasons stayed pure before." [Samlout interview 10-27-14, age 46]. Within this context, people talked most about the rain. Seventy percent of respondents combined reported changes in rainfall characteristics, namely the location, timing, frequency, and intensity of rain events. For example, according to 44 percent of respondents combined, the rain is more localized compared to former times. One farmer observed that, "The rain is more local – it's broken. Sometimes it rains heavily here but elsewhere it rains only a little." [Banan interview 10-23-14, male, age 59]. Others referred to the rain in relation to the marked difference in cloud formations. One Samlout village chief stated:

> *Before the clouds would get dark and then the rain would come. Now the clouds get dark and low, but no rain falls. The wind breaks up all the clouds. The rain before fell in big drops. Now the drops are small—sometimes just like smoke. [Interview 10-28-14, male, age 54].*

Figure 5.1. Observed changes in local climates



Source: Author's analysis of fieldwork data

The rain was broken in other ways. For respondents, the changed duration of climate events was also prominent, such as the incidence of shorter periods of rain and extended drought conditions. One Banan farmer observed that, "Sometimes now I can avoid the rain. Before it was everywhere, there was no escape." [Interview 10-23-14, male, age 48]. The changed timing of rain events was especially problematic as it interfered with planting and harvesting. One Samlout community leader observed, "The rainy season is coming later than usual. Then, when we don't need the rain, it comes." [Interview 10-27-14, male, age 60].

Others observed changes in temperature; warmer temperatures were reported by 73 and 40 percent of the Banan and Samlout samples respectively. Other observations included a marked difference in temperature extremes—hotter hots and colder colds—while others reported unseasonable temperatures such as colder temperatures during traditionally warmer times and vice versa. One farmer in Banan observed that:

> *Now the seasons have changed—they don't look the same as before. Before the temperature was tied to the season. Now the seasons are mixed up. During dry season it's cold and during the rainy season it's hot. Before the cold season was very cold, but now it's not. Dry and rainy season are like the same. [Interview 10-23-14, male, age 61].*

In comparison, one elderly FGD participant stated:

> *When I was growing up I never saw weather like now. Everything is wrong. It's not coming the right way... The temperature is not like before. Sometimes hot is too hot and sometimes cold is too cold. [Samlout interview, 10-28-14, male, age 65].*

Alongside temperatures outside of normal ranges, additional observations of 46 percent of the combined sample were the intensity of climate events characterized, not always in tandem, by increased wind, light-

ening, and hard rain. According to a deputy village chief in Banan:

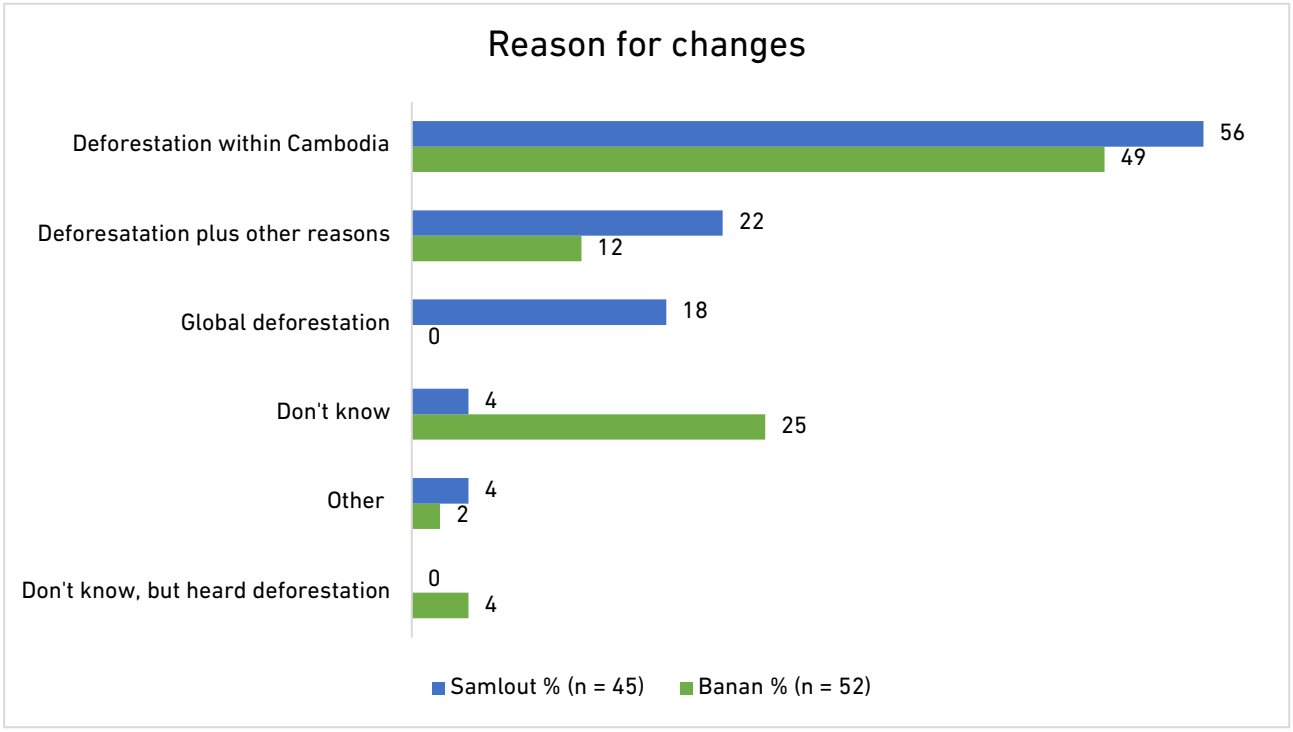
> *Sometimes there are really strong winds. Last year strong winds blew down a few houses then another wind came and blew coconut trees down. When I was little I never saw coconut trees get blown down by the wind. [Interview 10-25-14, male, age missing].*

While lightening was less of a factor, damaging wind was also reported in Samlout. One farmer stated, "Before the rain stayed for a whole day and a whole night. Now the winds are very strong and the rain is heavy but short." [Interview 10-27-14, male, age 56]. A Samlout village chief agreed, stating, "When it rained before there was no wind; now the rain comes with a lot of wind. It knocks down houses and trees." [Interview 10-28-14, male, age 54].

5.3.1 PERCEIVED CAUSES

In both districts, the majority of research participants attributed causes to the changes they observed (Figure 5.2).

Figure 5.2. Perceived reason for observed changes in local climates



Source: Author's analysis of fieldwork data

When asked what was behind the changes they have observed, the majority pointed to large-scale deforestation within Cambodia (12 participants attributed local deforestation in particular). According to one farmer:

The reason is because there is less forest now. Many people cut trees to farm and support their livelihoods. It happens everywhere—the trees are cut down in the whole country. I have seen people cut the trees with my own eyes. [Samlout interview 10-29-14, female, age 56].

Other actors were also mentioned, as in the following quote from a Samlout farmer:

Companies cut the trees down! They can spread land [clear for agricultural production] better than the farmer. Only in 10 years could I cut the same amount of forest as one company cuts in five days. If I had money I could cut trees like the company. [FGD participant, 10-28-14, male, age 48].

Additionally, 12 and 22 percent of Banan and Samlout interviewees respectively pointed to deforestation in Cambodia combined with other culprits including population growth; land use change; increased use of chemical farm inputs; industrialization; and increased trucks, cars and pollution.

A smaller number (18 percent) of Samlout participants recognized the global dimension of their experiences. One woman who moved to the area from Kampong Cham eight years ago with her husband stated that, "It was easy for us to move here," as her husband is an ex-soldier; the area is one of the last strongholds of the Khmer Rouge and has been settled by many men and women who served either in the Khmer Rouge or the Government militaries. With no land or money and only 10 cans of rice, the couple cut trees and cleared land for local landholders to make a living. She explained:

The reason for the change in the seasons is because of deforestation. Cambodia loses a lot of forest. This is happening everywhere—other countries too. People have no money and no land so they must cut the trees down. They don't listen to the authorities. [Samlout interview 10-28-14, age 39].

This perception was echoed by a Samlout village chief who said:

The weather has changed because we lost a lot of forest. Before Cambodia used to have a lot of forest. If we lose forest, we also lose the rain. But even when there was more forest we had less rain. There are more people, more trucks, and all over the world there are more big buildings. This creates climate change. The atmosphere across the world is changing, and it has an impact here. [Interview 10-28-14, male, age 54].

Not everyone had an explanation. One farmer, who lost the lower half of his right leg after stepping on a landmine, relocated to the area 14 years ago. He stated, "I have no idea why the seasons changed. Farmers here talk a lot about the change but they don't know what to do." [Samlout interview, 10-27-14, male, age 56]. In Banan and Samlout respectively, 25 and 4 percent of interviewees did not know why things were so different from before.

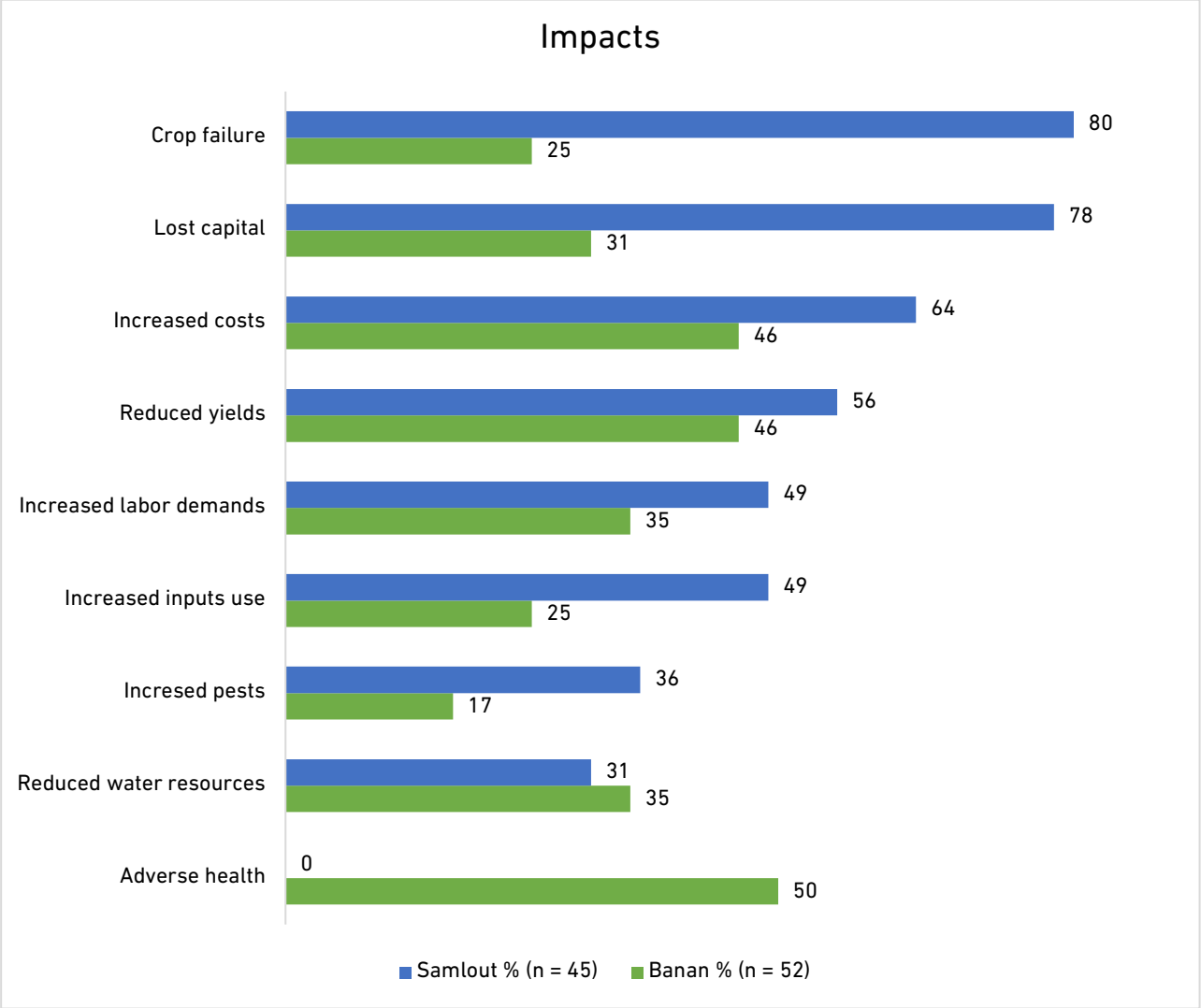
5.3.2.IMPACTS AND STRATEGIES

Research participants were very clear about the impacts, both on farming and on their livelihoods. One long-time farmer, who was conscripted into a mobile work camp to construct the local reservoir during the Pol Pot regime, observed that, "Leaning on the rain is risky—it creates an impact." [Banan interview 10-23-14, male, age 58]. Another farmer agreed, stating, "You cannot control the weather. It's difficult to live and support life with climate change." [Banan interview 10-23-14, male, age 41]. The following sections outline the impacts and coping strategies as described by the research participants (Figure 5.3).

5.3.3 CROP FAILURE AND REDUCED YIELDS

Full or partial crop failure was a leading impact for 25 and 80 percent of Banan and Samlout respondents respectively; impact differed according to crop and the prevalence of flooding and drought respectively. For example, according to a Samlout village chief, "In this area rice is less impacted by climate change but corn is a different story. Corn cannot take heavy rain or drought. Cassava and rice handle drought and heavy rain better. They are more resilient." [Interview 10-28-14, male, age 54]. Within the above figures, eight percent of Samlout crop failures were pest-related, also related to growing corn. More significantly, failure as a result of drought comprised 92 (Banan) and 89 (Samlout) percent while flooding comprised eight and 31 percent; flooding was reported more frequently by Samlout farmers whose plots were located

Figure 5.3. Climate impacts in the research areas



Source: Author's analysis of fieldwork data

near rivers and streams. According to a Banan village chief, "When I follow traditional practices it's not like before. When I plant at the beginning of the rainy season, the crop grows normally. But then it gets too dry so the rice dies." [10-22-14, male, *age missing*]. One farmer, who was unlucky enough to suffer both, stated:

> *The weather change impacts our farming. The seed dies because the rain doesn't fall. So we plant again but at harvest time there is too much water. Last year the river flooded and wiped out two hectares of my corn. This has never happened before. [Samlout interview 10-29-14, female, age 56].*

Additionally, 46 and 56 percent of Banan and Samlout farmers reported reduced yields. While crop failures imply reduced yields, not all farmers described their experiences in this way. As such, *reduced yields* is likely underrepresented.

5.3.4 REDUCED WATER RESOURCES

In addition to reduced yields, 35 and 31 percent of Banan and Samlout respondents respectively reported the reduced availability of water normally obtained from streams, wells, ponds and reservoirs. One woman stated, "We really need rain! I used to pump water from our well, but it went dry. My family has used water from a big pond since Khmer Rouge times. But now that's dry too. Just this year." [Interview 6-10-15, fe-

male, age 44]. The issue also posed a problem in Banan, albeit to varying degrees. According to a village chief, "Some wells go dry. When it is hot, the people near the dam pump the water." [Interview 10-23-14, male, age 66].

One large reservoir, central to the Khmer Rouge regime's plans to irrigate Battambang province, was built between late-1976 and late-1977 by hundreds of thousands of forcibly conscripted laborers. The basin, measuring 1,900 meters wide and holding 110 million cubic meters of water in the rainy season, is mainly used to irrigate 13,500 hectares of rice fields across three districts: Banan, Battambang, and Thmar Kol. Although the system has allowed area farmers to grow rice twice per year since 2003, due to a lack of rainfall, the reservoir was emptied during the 2013 dry season. [Interview with Banan village chief and deputy village chief, 10-25-14, males, age 52 and *missing*]. According to the chief, "This year the lake has not been refilled. Not enough rain." [Interview 10-25-14, male, age 52].

5.3.5 LOST CAPITAL AND INCREASED COSTS

Thirty-one percent of interviewed smallholders in Banan and 78 percent in Samlout also reported the loss of physical, financial, and human capitals as outlined in the following paragraphs. For example, agriculturally-related capital losses related to drought and flooding included seed stocks, rice seedlings for transplant, fruit trees and livestock (cattle, chickens and fish stocks). Livestock losses also resulted from lightning strikes. Other physical capital losses included damage to homes, a school, and transportation infrastructure, namely roads and bridges. In some cases, home damage also entailed temporary displacement to the upper floors of a flooded home [Samlout interview 10-28-14, male, age 54] or worse as described by a village chief in Banan:

> *In 2013 it flooded around my house. The people across the road had to bring their animals and things to the high spot in front of my house, right along the road. They stayed five days until the water was gone and they could go back home. [Interview 10-22-14, male, age 66].*

Health was also implicated. At 50 percent, Banan respondents in particular reported financial capital losses and climate-related health impacts including fatal lightning strikes and adverse health from disease and hotter temperatures; children and the elderly were especially affected. One woman described the impact of heat stress on her household by stating, "It impacts our health. There are higher temperatures, which older people cannot stand." [Banan interview 6-5-15, female, age 54]. One community leader in Banan outlined the domino effects by stating:

> *We are impacted by the hotter weather. Our chickens die. We have to buy more rice. Our husbands must go to work more often to earn more money. The impact on the family is that the children are sick, we have dengue fever here. We must take our children to the hospital and it costs money. The weather impacts on our livelihood. It is a strong impact. [Women's FGD participant, female, age 45].*

The impacts above often resulted in lost revenue yet higher on-farm expenditures. In fact, 46 and 64 percent of farmers respectively in Banan and Samlout reported that costs were rising in part as a result of the climate and that agricultural production required more household resources related to inputs, labor, and time. For example, one strategy was to replant crops after failure or damage which required farmers to invest in more labor and inputs. The inherent dilemma of this strategy was made evident by a farmer in Banan who reflected:

> *This year there is less rain compared to last year. That's normal. But then the weather started to change around 10 years ago. The rain has changed. The farming is not going well. The seeds die because there's not enough water so I have to plant again. I spend more time and money to farm but after harvest the selling price is too low. [Interview 10-25-14, male, age 53].*

If it was too late in the season, famers lost their initial investments of inputs, time and labor, and simply abandoned their land until the next year [Banan interviews: 10-23-14, female, age 56; 10-25-14, male, age 53; Samlout interview 10-28-14, female, age 39; Samlout FGD 6-9-15, male, age 39]. This was also viewed as problematic by the FGD participants in Banan: because the climate is irregular, harvests and thus incomes are also irregular. [FGD 6-3-15].

The research participants provided other examples of impacts and responses in this regard. One Banan village chief referred to increased irrigation costs. He stated that when he was young water was pumped to his corn two to three times a season. Now however, "We pump all the time and it cuts into the profit. It's hard losing money." [10-23-14, male, age 41]. Another farmer added a gendered dimension by stating, "The crop dies so we have to farm again. I have to spend more money to buy more seeds and my wife spends more time in the field. This creates more work for her. She has to work harder now." [Samlout interview 10-27-14, male, age 56]. Higher labor demands were reported by 35 percent and 49 percent of Banan and Samlout farmers respectively.

In turn, farmers facing increased labor demands looked for labor-saving, but cash-reliant solutions. One woman in Samlout used to remove weeds by hand (a job that was observed to be handled exclusively by females in the research areas), but when weeding became overly burdensome she purchased a newly advertised herbicide at the market. [Interview 10-29-14, female, age 56]. Others in Samlout used inputs to manage pests which were reported by 36 percent of the sample. Increased use of agro-chemicals was also reported in Banan district where increased pests were reported by 17 percent of the sample. According to a Ta Kriem farmer, "The rice plants have a lot of disease. This is different from before but I don't know why. We use a lot of fertilizer and pesticides." [Interview 10-25-14, male, age 53]. A village chief stated that, "We grow a special, traditional plant with bitter leaves —*sidau*—to keep the pests away but it doesn't work anymore." [Interview 10-23-14, male, age 66]. Another farmer stated, "Some work, some do not. I change pesticides every year. There are many companies who sell inputs at the market. The farmer is told that a pesticide is stronger, so he buys it." [Interview 10-29-14, male, age 50]. Overall, through the increased use of chemical inputs, 25 and 49 percent of Banan and Samlout farmers aimed to combat the tri-fold threat of reduced yields; increased labor demands; and increased incidence of growth inhibitors such as grass, disease and pests. However, one Samlout farmer attributed the increased incidence of both weeds and pests to the overuse of chemical inputs, albeit in conjunction with the increased prevalence of dry conditions. He stated:

> *Starting four to five years ago, I see more pests—different kinds than we had before. There is a new grass too—a kind that we've never seen. Before we did not use chemicals on grass. The grass was natural. When we started to use chemicals to kill the grass we started to see the new grass coming—a kind that is stronger and taller than the other kind. [Interview 10-27-14, male, age 60].*

These climate impacts also had household food security implications. Twenty-six percent of landholders growing rice in Banan (12 out of 46) reported reduced subsistence rice yields and the subsequent need to purchase rice, a household staple. However, as with reduced yields, the occurrence is likely underrepresented in the study. A reduction in household stores of rice holds implications for household expenditures as well as food security, especially for poorer families. One elderly man who farms rice and sesame on two hectares stated that, "My rice dies from the lack of rain. There is more impact now compared to when I farmed when I was younger." Without enough food, he was coping by eating only once or twice a day; he also spent a previous microcredit loan (at 3 percent interest) on food. Although he is worried about repayment, he planned to obtain another loan in the future. [Banan interview 6-5-15, male, age 54]. The issue is deserving of further research.

Climate impacts and reduced employment opportunities

Finally, while the chart above illustrates the impacts on landholders, landless farmers were also affected

by the changing weather as problems with crops equated to less work [Interview 10-22-14, female, age 38]. This was echoed by a day laborer in Banan who had to sell her land after her mother fell ill and died and her father became a monk. She stated, "If farmers have land they worry about the changing weather. I worry about the impact of the weather too because I may not have a job." [Interview 10-22-14, female, age 35]. Although this appears to go against the above reports of increased labor demands, contributing factors for reduced employment opportunities may be a result of reduced yields and incomes and the rising cost of farming.

Technical adaptation solutions and barriers: Inputs, training and irrigation

In the face of increasing climate change and variability, local farmers attempted to adapt in various ways. Strategies were both large and small, and both autonomous and externally-induced. Many smallholders attempted to make use of new technical and market-based 'solutions' provided by private companies at the local market as well as knowledge-based training provided at the local level by the state and, in one case, an NGO, as outlined in the following paragraphs. However, most activities were viewed to be ill-suited to local needs or were short-term and incremental in that the strategies pursued generally were coping attempts and not end adaptation solutions. The futility of coping was illustrated by a Samlout village chief who stated:

> *Some people dig a shallow hole to collect rainwater. Some borrow money to buy seeds for farming again. Some try new seeds or fertilizer. Some people leave for Thailand to support their family. If people cannot repay their microfinance loans they sell their land. What we are doing is not working. It's just more of the same. We need to find a new way. We want to cut down our risk. [Interview 10-28-14, male, age 54].*

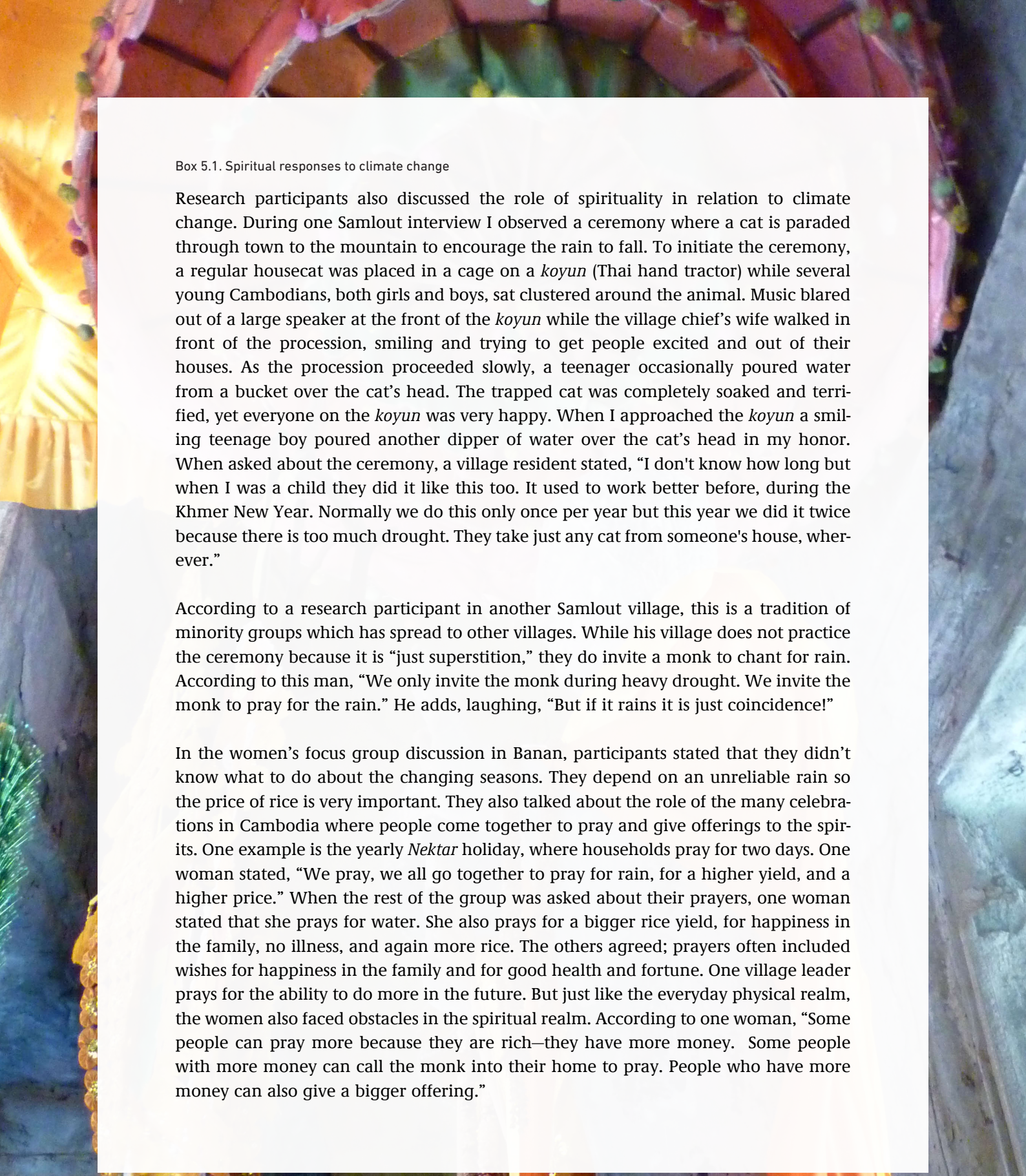
Agricultural input strategies

Given the few alternatives, many farmers aimed to cope by trying different seed varieties, fertilizers and agro-chemicals that were heavily promoted at local markets. One farmer stated that although agricultural companies advise their customers about how to use these new and purportedly improved inputs, he stated, "We do not feel better with this help, we feel worse. Inputs are getting more expensive but the price we get for our crop goes down." [Banan FDG 10-25-14, male, age 31]. This aligns with the observations of de Silva et al. (2014) which revealed that farmers experienced a doubling in the cost of farm inputs in just two to three years. While the farmers in the current study were unsure about the reason for increasingly expensive inputs, one explanation is the escalating cost of fuel which in turn has pushed up the costs of transport and inputs such as fertilizers (ADB 2012; de Silva, Johnston, and Senaratna Sellamuttu 2014). This is an important adaptation consideration because fertilizer expenditure, compared to total household consumption spending that excludes farming, is 'very high,' particularly for the poorest households (ADB 2012), or those most impacted by climate change.

In another example, Banan farmers affected by the climate could access a new, short-term seed variety through a government support program aimed to assist farmers with climate change. Nonetheless and even though seeds are a leading concern of farmers, especially in relation to cost and the ability to produce high-quality yields, smallholders recognized the limitations of this adaptation approach. According to the village chief:

> *Policy now allows affected farmers to file claims and receive government support in the form of seeds. There are two kinds of seeds available, one for the rainy season and one for the dry season. We receive dry season seeds, a three-month variety. I haven't tried it yet. I can't grow this variety because my land is too far from the water source, but I will promote this to farmers located close to the dam. There's no capacity to help those who are not located by the water source. [Interview 10-22-14, male, age missing].*

Overall, the use of agricultural input strategies was viewed to be a stop-gap solution in the face of local



Box 5.1. Spiritual responses to climate change

Research participants also discussed the role of spirituality in relation to climate change. During one Samlout interview I observed a ceremony where a cat is paraded through town to the mountain to encourage the rain to fall. To initiate the ceremony, a regular housecat was placed in a cage on a *koyun* (Thai hand tractor) while several young Cambodians, both girls and boys, sat clustered around the animal. Music blared out of a large speaker at the front of the *koyun* while the village chief's wife walked in front of the procession, smiling and trying to get people excited and out of their houses. As the procession proceeded slowly, a teenager occasionally poured water from a bucket over the cat's head. The trapped cat was completely soaked and terrified, yet everyone on the *koyun* was very happy. When I approached the *koyun* a smiling teenage boy poured another dipper of water over the cat's head in my honor. When asked about the ceremony, a village resident stated, "I don't know how long but when I was a child they did it like this too. It used to work better before, during the Khmer New Year. Normally we do this only once per year but this year we did it twice because there is too much drought. They take just any cat from someone's house, wherever."

According to a research participant in another Samlout village, this is a tradition of minority groups which has spread to other villages. While his village does not practice the ceremony because it is "just superstition," they do invite a monk to chant for rain. According to this man, "We only invite the monk during heavy drought. We invite the monk to pray for the rain." He adds, laughing, "But if it rains it is just coincidence!"

In the women's focus group discussion in Banan, participants stated that they didn't know what to do about the changing seasons. They depend on an unreliable rain so the price of rice is very important. They also talked about the role of the many celebrations in Cambodia where people come together to pray and give offerings to the spirits. One example is the yearly *Nektar* holiday, where households pray for two days. One woman stated, "We pray, we all go together to pray for rain, for a higher yield, and a higher price." When the rest of the group was asked about their prayers, one woman stated that she prays for water. She also prays for a bigger rice yield, for happiness in the family, no illness, and again more rice. The others agreed; prayers often included wishes for happiness in the family and for good health and fortune. One village leader prays for the ability to do more in the future. But just like the everyday physical realm, the women also faced obstacles in the spiritual realm. According to one woman, "Some people can pray more because they are rich—they have more money. Some people with more money can call the monk into their home to pray. People who have more money can also give a bigger offering."

ecological and social barriers such as volatile rainfall patterns and insufficient access to water infrastructure. As a result, the majority of farmers interviewed expressed the inability to devise practical, affordable and long-term solutions for climate variability.

Knowledge-based training and irrigation

Study participants in one village reported knowledge-based training was provided by the government and one NGO which focused on teaching smallholders about keeping chickens or modern farming techniques. According to one village chief:

> *Through the Ministry of Agriculture, an expert from Phnom Penh comes to teach the villagers how to feed cows and chickens and how to care for hens and their babies. They teach how to make their chicks' food, how and when to separate the mother from the chicks. Things like that. The first time the man came from Phnom Penh. The next time they will send the district vet and he will meet everyone. The man from Phnom Penh comes around every two months; the district vet comes every month to take a look. [Banan interview 10-25-14, male, age 52].*

However, the barriers many farmers faced precluded what might superficially be viewed by outsiders as straightforward solutions. According to the same village chief:

> *It's very difficult. The Cambodian farmer is not like the farmer in Europe. They don't follow the expert. This year experts from the Department of Agriculture came two times to teach farmers in the pagoda. Some farmers know about it, some don't care. Seventy families attended. In the end, just two farmers followed the expert, but not all the way—they just took the seed to grow next year.*
>
> *Another expert from the district showed us how to transplant rice. The rice must be planted in straight lines and at a certain distance. They say that if the farmer follows the expert advice the results are very good. Fifteen to 20 stocks grow up. By the traditional way, the plant is not so strong. Transplanting also requires less fertilizer, so the farmer spends less money. But the farmer doesn't follow the training—it's too difficult. Farming like this takes too long and it is tiring. Farmers must hire more people. It requires too much money and labor compared to broadcasting. [Banan interview 10-25-14, male, age 52].*

One microfinance representative from a leading agricultural company based in Battambang City reported similar challenges in his work with local smallholders in the province. He stated that farmers need to modernize, to learn how to plant rice as well as how to select seeds and use inputs. They also need to perform better when preparing land and using fertilizer, in controlling water in their fields, and how to harvest, dry and store crops. While he instructs farmers in employing modern farming techniques, farmers disregard much of the advice and remain primarily concerned with the lack of reliable water supplies. [Battambang interview 11-04-14, male, *age missing*]. These conversations point out the divide between expert-led solutions and local needs. To farmers, the use of knowledge-based strategies and the accompanying improved inputs and agricultural practices was akin to putting the cart before the horse. This common viewpoint was stated by a Banan farmer who said:

> *The expert comes to teach us but farmers don't have enough water so they can't follow the advice. The expert comes to help take care of the problem, but taking care is not really taking care. The expert only comes for a couple of days and then they leave the farmer by himself. [Interview 10-23-14, male, age 58].*

Farmers also pointed out the unintended consequences of technical solutions for adaptation. In a different part of Banan district, one farmer stated that irrigation would help him cope, however:

> *The Chinese and the Cambodian government built a big irrigation system nearby. Before that the water*

was better. Two to three years after they built the system there was no water here. They open the gate but now the water just flows by this community. [Banan interview 06-05-15, male, age 37].

A research participant in the same village agreed by stating:

After they built the irrigation ditches the water just flows past us. It is not spread out across the land like before. The irrigation system is not important if water just flows right by after it rains. [Banan interview 06-05-15, male, age 54].

Water security was hampered particularly for those living far from water resources and the elderly. One farmer stated, "I just wait for the rain. There is no water to pump to my land because even though my land is close to the dam it is far from the water source." [Interview 10-25-14, male, age 53]. Spatial disparities combined with age proved onerous for some. According to an elderly farmer:

People far from the dam have to haul water. In hot weather the young people carry water for the old people. Young people do it because they have the strength to carry water. They prepare the water for the elderly before they go to work. This is different than before. [Banan interview 10-23-14, village chief, male, age 66].

Summing up, externally induced technical and market-based solutions are not a simple adaptation solution for all farmers: there is a clear gap between tech-fix interventions on the one hand, and the priorities and situations of farmers on the other. This is partly caused by internal barriers related to farmers' daily working situations: new farming techniques are considered too labor-intensive, extensive or tiring, and farmers cannot pay the high prices of new types of input and labor. Connected to this, there are external barriers: the prices of crops (particularly rice) are too low to be able to make these investments. Additionally, one main priority of farmers that remains unaddressed by any of the outside interventions is secure access to water.

While these external interventions mainly focus on farmers' individual strategies, collective strategies and institution-building are also highly needed. Such collective strategies in turn face other types of barriers, which help to explain the prevalence of individual and short-term strategies so far.

5.4 INSTITUTIONS, LEADERSHIP AND TRUST

While community water management committees are a potential institutional fit for enhancing adaptation, the malfunctioning of one such management group in Banan shows the complexities of such 'solutions.' When problems arise in Banan in relation to the large reservoir described above, the management group (comprised of a community of water users in conjunction with the commune's Department of Water Resources) holds a meeting. One problem is inclusiveness in terms of gender: while the meetings are open to the public and many women farm, a village chief stated that, "Not many women have a high education so their participation is low." [Banan interview 10-25-14, male, age 52]. The group also faces other effectiveness issues, as one farmer stated:

The system doesn't work—there's nothing supporting the system because the water community doesn't work. Sometimes the management group asks for money from the members but people do not have much money to give. Sometimes the project is so small that it doesn't have much of an impact. The water community is not effective. [Banan interview 10-25-14, male, age 53].

In another example, a community member voiced frustration over the ineffectiveness of numerous attempts to create solutions in his village. He stated:

We've tried unsuccessfully to start many different kinds of groups in this village. We wanted to start a water user group, a savings group, but the leaders are corrupt. There is no way to tackle corruption. I will not continue to try to help my community because there is too much cheating. Every time someone wants to start a new group, people chose the same leader. Sometimes they only choose from the top, so I am not selected to lead. I had a lot of ideas to address problems here, but I was told that my ideas make people in the village go against the policy of the government. In the end the leader turns out to be a cheater. [Banan interview 10-25-14, male, age 53].

After repeated attempts and being shut down by local authorities, the man stated, "I won't try again. There are no caring leaders here." [Banan interview 10-25-14, male, age 53]. Lack of collaboration, leadership and trust thus emerged as main barriers.

Across both study districts, dealing with the impacts of climate change was reportedly more difficult as a result of intra-community power imbalances and corruption related to political divides. Many interviewees referred to a 'political development' whereby politicians attempted to influence and reward voters by dispensing gifts or the development support from other actors. In one Banan village, government support after a flood was reported to come in the form of after-the-fact disaster reparations for individual households; farmers who supported the ruling party received more help in the form of fuel or agricultural seeds. In another village, FGD participants agreed that the political environment created a barrier to climate resilience as farmers in the village had no sense of community. [Banan FGD 10-25-14]. According to one participant:

Everyone is just doing their own thing, staying private. There is a political divide in the village. If you are not a member of CPP [Cambodian People's Party] you do not get help. If you are in the CPP, you get a lot of things for free like seeds and tools to spray pesticides. [FGD 10-25-14, female, age 41].

As a topic of discussion in another village as well, one older man stated:

They do not help each other in this village. I don't know why. The government is just nepotism, the community is nepotism, it rains nepotism. Some NGOs only give to the people who are rich, those with a modern moto [motor bike]. They do not give to widowed women. The village chief also decides who gets the benefit from NGOs like the Red Cross, by party affiliation and by family ties. The commune chief appoints the rich to pick up the contributions but they do not go so it all goes back to the NGO. [Interview 06-05-15, male, age 54].

One Samlout woman reported that despite being poorer than others in her village, her household has never had ID Poor status. She explained that, "The village chief has never called on us to undergo the process. He does not always select the real poor families in the village." [Interview 10-29-14, female, age 37].

Hence the lack of well-functioning and inclusive local institutions as intermediaries between rural communities and the state, in the context of lack of trust, greatly hampered adequate long-term responses to climate change.

However, village chiefs also voiced challenges in relation to creating resilient communities. In one village a company was mining gravel from a nearby mountain. According to the chief, "The explosives they use make a lot of noise, and they destroy our houses and schools. The company doesn't cooperate with the village and the villagers have no power to stop the company from taking stone from the mountain." Although he repeatedly requested government assistance, he received no response. He eventually decided to forward his letter to a Khmer journalist. Although he will request government assistance once more, he likely will quit, stating, "This is a very powerful company, and the Province is corrupt." [Interview 10-25-14, male, age 52].

This section has shown that, in the absence of well-functioning and inclusive local institutions as intermediaries between rural communities, the state, and the private sector, a chronic lack of trust and the disempowerment of local leaders has manifested. This greatly hampers adequate and long-term responses to climate change, especially for the most vulnerable to the impacts: women, widows and the poorest members of the community.

5.5 DISCUSSION

Based upon fieldwork in Banan and Samlout districts of Battambang province, this research provides further evidence of climate change and its impacts at the local level. People's perceptions of climate change and variability, their adaptation strategies, and institutions are highly interrelated. Across all study sites research participants observed changes in local climate that were described to be significant and distinctly different from their parents' generation. While a portion of the respondents recognized the global dimension of their local experiences, the majority attributed observed changes to large-scale deforestation within Cambodia. This is not surprising given the sample population's close connection with and reliance on, both economically and spiritually, their environment. The topic receives considerable attention in the country especially in connection with high-profile cases such as the death of rainforest activist Chut Wutty as well as political and economic elites who are awarded economic land concessions (ELCs) in protected areas in circumvention of the law and at the cost of the environment and local livelihoods. This attention is not misplaced; the decline in forest cover has been found to have, alongside serious environmental effects, an influence on microclimates and hydrological processes (Meher-Homji 1991). Additionally, ELCs as a whole have been shown to be a significant driver of deforestation in Cambodia with numerous social and environmental effects (Davis et al. 2015).

Research participants reported being negatively impacted by changed weather patterns and increased climate variability and unpredictability. Seasons were described as 'incorrect' especially as a result of rain —a topic that was discussed at great length but ultimately distilled down to one word: broken. Changes in rainfall characteristics included reduced, late and localized rain, different cloud formations, and longer drought periods. In addition, respondents reported warmer temperatures, more intense weather events marked by stronger winds, lightening or unseasonable weather and unusual temperature extremes. Similar results were obtained by a study commissioned by the Cambodian Ministry of Environment and conducted in 24 provinces by the BBC World Service Trust (MoE and BBC World Service Trust 2011). People in this study likewise reported warmer temperatures, increased drought and negative impacts on livelihoods, especially as a result of insufficient water resources. The majority of respondents similarly attributed weather changes to deforestation in Cambodia. In contrast, a larger percentage of the sample contributing to the current study attributed changes in weather to other causes including global deforestation as well as land-use change, industrialization, pollution and vehicle use.

Resulting impacts were reported to include crop failure and reduced yields, reduced water resources, lost capital and reduced employment opportunities for day laborers. These fit well within the confines of what has been described by adaptation scholars as a pre-eminence of attention on the observable ecological, physical, economic and technological aspects of adaptation (Adger et al. 2009). However, we cannot separate these from the social aspects and dynamics of vulnerability (Adger and Kelly 1999): climate change adaptation and strategies are closely linked to livelihood strategies and embedded in imbalanced power relations. Due to climate change and variability, household shocks reduced rates of return on livelihood strategies and in turn increased the potential for individual, household and community vulnerability. Impacts are highly stratified and diversified spatially and socially, e.g., with regard to gender, age, health and political affiliation. More research is needed in this regard given the greater implications for vulnerable groups, for example in terms of the physical and psychological impacts of water insecurity on youth and the elderly (Stevenson et al. 2012; Wutich and Ragsdale 2008; Sorenson, Morssink, and Campos 2011). Moreover, the study hints at an institutional barrier to climate change adaptation for land-poor farmers –

a particularly vulnerable group which comprises 42 percent of all rural households in the Kingdom (ADB 2014b). Despite their important role in farming, many policies and interventions focus solely on land, landholders and their crops to strengthen the resilience of the agricultural sector. More research into this dynamic is required.

With few alternatives, most farmers' coping activities aligned with those promoted at the macro-level, namely the application of modern agricultural inputs such as fertilizers, seeds, and agro-chemicals. However, externally induced technical and market-based solutions are not a simple adaptation solution for all farmers: tech-fix interventions often contrast with the priorities and situations of farmers. Various barriers prevent these external interventions from working effectively. Internal barriers arise, related to farmers' daily working situations: new farming techniques are considered overly labor-intensive, extensive or tiring, and farmers cannot pay the high prices of new types of input and labor. This turns problematic as the prices of crops (particularly rice) are too low to be able to make these investments—an external barrier. Although significant resources are invested in agricultural activities, returns are increasingly harder to achieve. Additionally, one main priority of farmers that remains unaddressed by any of the outside interventions is access to water. Hence although technical and market-based strategies are seemingly straightforward, they are ultimately costly, short-term and incremental, and so not likely to increase long-term resilience. Such interventions often aim at broadening opportunities for market exchange, while engaging less with other types of adaptation strategies (such as mobility, storage, diversification and communal pooling) (Agrawal and Perrin 2009). However, market exchange, particularly for the most marginalized groups, needs to be treated with caution due to highly unequal access to markets across different social groups (Agrawal and Perrin 2009). While from a neoliberal perspective they are viewed to create win-win situations and almost automatically aid adaptation and enhance resilience through increases in agricultural productivity and farm incomes, this stance is also used to promote an unbalanced development agenda centered on economic growth. Without more secure water resources and increased sustainable institutional support, especially to mitigate market malaise and create a truly enabling environment, technical solutions ultimately remained temporary and premature fixes to what really ails individual farmers of all income levels as well as local communities.

This in turn necessitates collective strategies and institution-building: well-functioning formal and informal rural institutions have been identified as seminal for adaptation (Agarwal et al. 2012; Agrawal and Perrin 2009). However, the emergence and functioning of such institutions are subject to other types of barriers in this particular local context. Aligning with the observations of Wachinger et al. (2013), intra-community political divides and lack of trust in the study areas blocked the creation of new community institutions and harmed the functioning of existing ones (Wachinger et al. 2013). The necessary intermediaries between external interventions (both public and private) and communities (Agarwal et al. 2012; Agrawal and Perrin 2009) are therefore missing or dysfunctional. Jones, Ludi, and Levine (2010) also observed that local adaptive capacity can be 'blocked' by restrictive institutions that maintain structural inequities. In Banan, the absence of 'community' and political favoritism have manifested to form institutional barriers to adaptation. Moreover, the political climate not only demotivated and extinguished leadership and development initiatives, local institutions actively worked against grassroots innovation and attempts at increased resilience. This has been attributed to the country's past, namely while genocide and war has ended, their legacy lives on. According to Morris (2004), the population is demoralized, community structures and relationships are broken, and there remains a deep distrust and division at all levels of society (Morris 2004). Post-conflict politics —characterized by human rights abuses and unabashed corruption at higher government levels—has further embedded the trust deficit in many facets of Cambodian society, including trade (Hill and Menon 2014b; World Bank and Asian Development Bank 2015). Economic liberalization and aid influxes have exacerbated current inequalities (Hughes 2007) or created new ones.

Hence through this study we provide a more realistic picture as a necessary counterpart to the literature celebrating the involvement of local institutions and collaboration in adaptation (Rawlani and Sovacool

2011; Schipper et al. 2014). As each of these institutional barriers also provides an example of socially-constructed vulnerability (Adger and Kelly 1999; Ludi, Jones, and Levine 2012), newly emerging private sector adaptation initiatives in the area should take this into account.

While in some cases the global adaptation discourse is shifting toward more nuanced approaches, a technocratic approach to adaptation has staying power. The nature of the debate, as an urgent global crisis characterized by uncertainty, guides action toward a rather dispassionate, cut and dry expertise. Through modernization and expert leadership, climate and adaptation can be stripped down to restrict the focus to a few observable variables to result in 'proven' strategies that are fiscally efficient and measurable. Steeped in the urgency of action, disimpassioning, mechanizing and thus depoliticizing human-environment relations in the context of climate change makes sense on some level but ultimately is incomplete. Efforts to build rural resilience are sustainable if: 1) they address the social processes that have caused particularly vulnerable groups to be vulnerable in the first place, and 2) they then consider how climate-related stresses can exacerbate risks to rural livelihoods (Dodman, Ayers, and Huq 2009). Adaptive capacity is not only about tools and techniques but also of problems related to policies and actions that may be obscured by a focus on macro-level strategies. Sustainable adaptation and resilience require that agricultural and adaptation policies and interventions reflect a deference for differential adaptation scenarios and an understanding beyond the nuts and bolts.

5.6 CONCLUSION

Drawing from qualitative research at the village level in Cambodia, Chapter 5 supports evidence-based adaptation planning by exploring the increased promotion of market-based and technical solutions to climate change adaptation, and how this interrelates with local farmers' perceptions on climate change and variability, their adaptive strategies, the social and institutional barriers to adaptation, and the pre-existing and newly emerging civic institutions. A key finding to emerge from the research is that while a techno-economic perspective propels the necessary technical solutions and fits the call for increased private sector engagement, it overlooks equally influencing social factors that mitigate successful adaptation. Rather than global climate change, the findings showed that rural farmers believed that large-scale deforestation is to blame for the climate-related impacts they experience. In addition, technical and market-based solutions often contrasted with the priorities and situations of farmers: they are costly, short-term and incremental, and so not likely to increase long-term resilience. While collective strategies and the building and strengthening of local civic institutions are highly needed, intra-community political divides and lack of trust blocked this development, bringing long-term resilience into question. The information presented here should be kept in mind for the next chapter which presents the research on the two business cases that were approved for PPCR funds. It was motivated by one core question: Can such businesses be a leading force for pro-poor and transformational adaptation as envisioned by the PPCR?

TRANSFORMATIVE CLIMATE CHANGE ADAPTATION?

BUSINESS BARRIERS AND OPPORTUNITIES IN BATTAMBANG PROVINCE

6.0 INTRODUCTION

The role of private sector is believed to be pivotal when it comes to addressing the challenges presented by climate change—society's most pressing issue. In today's development landscape, some even consider business to be *the* leading agent of transformational and climate-resilient change, especially in developing countries where the impacts are severe, adaptive capacities are restricted, development needs are high, and new markets lie waiting to emerge. The need is urgent and the reasons are compelling: adaptation will require a minimum of tens of billions of US dollars per year (World Bank, 2010; UNFCCC, 2007) yet despite current pledges and funding mechanisms there is an enormous funding shortfall (Ghisu and Ancharaz, 2013). In this context, the private sector has key knowledge and tools and is able to leverage significant funds and ensure government action (Biagini and Miller 2013). Finally, business proponents believe that actions guided by the logic of the market are ultimately more efficient and sustainable (Edward and Tallontire 2009; GEF 2012; WEF 2008) as well as quickly scalable for maximum impact (United Nations 2013).

The role of the private sector in climate change adaptation is advanced especially in Cambodia where special climate funds are available to businesses through the Pilot Program for Climate Resilience (PPCR), the largest of all adaptation funds and one that is driving a private sector-led approach at the global level. Cambodia has been a PPCR participant since 2009 given its status as a post-conflict and Least Developed Country which is particularly vulnerable to climate change (CIF 2009). Here impacts are expected to be wide-ranging and diverse with significant economic, poverty reduction and development ramifications. One leading focus is the agricultural sector which remains key in terms of poverty reduction, employment, sector growth, and contribution to GDP but is particularly hard hit by erratic rainfall, floods, droughts, pests, disease, strong winds and storms. In fact, more than 80 per cent of the population depends on agriculture for sustaining their livelihoods, mostly through farming small plots of land for subsistence and small-scale commercial purposes. Climate change poses the most challenges for the country's socially vulnerable and marginalized including youth, the elderly, the physically challenged, women, and indigenous groups who are resource-poor, lack food security and often rely on climate-sensitive livelihoods, including farming. The sector faces a myriad of problems including increased variability of rainfall which will undermine irrigation and potable water supplies; flooding threatens both road and water supply infrastructure and waterlogging threatens key crops such as lowland rice and cassava. Animal losses are expected to increase as chickens, cattle, and buffalo face higher exposure to disease and floods. Each is expected to contribute in no small way to food shortages, reduced availability of fertile land and reduced household incomes. This is worrisome as 25 per cent of Cambodia's population is already food deprived and concerns over the fate of the country's land-poor and landless continue to emerge.

While much research has focused on government and civil society action, not much is known about pro-poor business solutions. The current study, based on fieldwork in Cambodia, aimed to reduce this knowledge gap by looking at businesses that were made eligible for PPCR funds. The study was guided by one core question: Can business be a leading force for pro-poor transformational adaptation as envisioned by the PPCR? The study aimed to: 1) understand the PPCR selection process; 2) identify the companies endorsed in Cambodia, and 3) investigate how the proposed business-led action addresses local climate change challenges and needs at the local level.

The remainder of this chapter is organized as follows. Important background information is provided after which the main concepts framing the study, namely vulnerability, adaptive capacity, and transformative climate change adaptation, are discussed. Next, findings related to the PPCR and the business selection process are presented as well as the results related to businesses' activities on the ground. The article ends with a wider reflection on the main findings and a conclusion.

6.1 ADAPTATION AS A BUSINESS CASE IN CAMBODIA

Affecting local livelihoods, climate change is fundamentally a development problem with the private sector promoted as having a unique ability to resolve a number of issues. One driver is the cost: estimates for adaptation are increasing and without additional public and private funds, the finance gap in developing countries is expected to grow significantly. In fact, US $140 billion to US $300 billion is likely needed by 2030, while US $280 billion to US $500 billion is likely needed by 2050 (UNEP 2016). Climate change is also considered to be society's most urgent issue in need of quick and wide spread solutions. The role of business is especially promoted in developing country contexts where climate change impacts are the harshest yet institutional capacity is limited (IPCC 2007c; O'Brien and Leichenko 2003; Paavola and Adger 2006). In this sense, Cambodia provides a good example; the post-conflict nation has been consistently ranked as one of the most at-risk countries for the impacts of climate change (Kreft et al. 2014; Thoeun 2015). Factors of high vulnerability include insufficient infrastructure, institutional capacity, technologies and tools including a lack of hydrological monitoring sites and forecast mechanisms as well as insufficient climate information and weather data. The country also lacks reliable disaster control and public finance. In fact, between 2009 and 2011, 86 percent of climate-related expenditures were estimated to derive from external sources (ADB 2014a). Information collected for this study revealed that rural communities are experiencing increased seasonal variability and changing weather patterns, more intense weather events, stronger winds, more lightening, higher temperatures, and more frequent and longer dry periods as well as late, localized and reduced rainfall. This has resulted in crop failure and reduced yields, reduced water resources, and climate-related health impacts from disease and hotter temperatures. Climate change has also taken its toll on households through livestock losses (cattle, chickens and fish stocks), as well as lost seed stocks, rice seedlings, and fruit trees. Finally, important infrastructure including homes, schools, roads and bridges have suffered unusual storm damage.

In this context, the private sector can bring much needed expertise, climate smart knowledge and technology, products and services (Biagini and Miller 2013; GEF 2012; Pauw and Pegels 2013; WEF 2008). Business solutions in the agricultural sector include fertilizers and drought tolerant seeds, early warning systems, insurance, and climate resilient infrastructure (Pauw and Pegels 2013). Agribusinesses can also offer alternative employment opportunities or link market-reliant smallholders to global value chains. In fact, adaptation through a value chain lens is often viewed as a "win-win"; as with other types of pro-poor economic development, poverty is reduced as smallholders gain access to financial and technical services, enabling environments such as secure market linkages and increased incomes (Donovan and Poole 2013; Tobin, Glenna, and Devaux 2016). Business in turn taps into a new "adaptation marketplace" to turn a profit, and to build business competitiveness and resiliency (Donor Committee for Enterprise Development 2014; Mori and Stern 2012; UN Global Compact et al. 2011). Business impact—and reputation—can also compound if profit motives are linked to broader social objectives through responsible business practices (CSR Asia 2011; Mori and Stern 2012; UN 2014a). As a result, special climate funds are available to businesses to build adaptive capacity and climate resilience at the local level. One example is the PPCR's Private Sector Set-Aside (PSSA) competitive funding mechanism which aims to increase private sector investment in adaptation through the allocation of concessional funds to spur flexible delivery, innovation, and ultimately transformational change that benefits the poorest and most vulnerable.

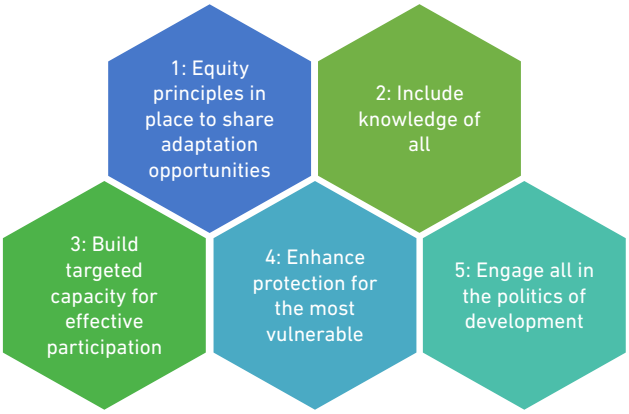
6.2 RESEARCH FRAMEWORK

6.2.1 TRANSFORMATIVE CLIMATE CHANGE ADAPTATION

This part of the larger study, building upon the concepts of adaptation and vulnerability presented in the first chapter, explores the concept of transformational adaptation. This is because more recent conceptualisations of adaptation and resilience have moved beyond incremental approaches and simple recovery as the end goal. Climate change is a complex problem that demands innovation and reinvention, and

remaining at or returning to business as usual—or 'more of the same'—will not secure a sustainable and climate-resilient future (Robinson, in Jackson, 2009). Instead, 'big change,' or adaptive transformation, is necessary. This echoes a wider call in the 2030 Agenda to move away from business-as-usual by taking 'bold and transformative steps... to shift the world onto a sustainable and resilient path' against persistent poverty and inequality that has so far been left unresolved (United Nations 2015b). However, while the need is clear, the definition of transformation varies and how it might be operationalized and achieved is under debate (Feola 2015). The Intergovernmental Panel on Climate Change (IPCC) defines transformational adaptation as 'adaptation that changes the fundamental attributes of a system in response to climate and its effects' (Agard et al., 2014). Given the heightened impact climate change has on marginalized groups, the concept in this study assumes a more political perspective: transformation as an adaptive response are actions that challenge unequal systems of power and distribution of wealth and redefine social, economic or political structures to unseat dominant neoliberal development trajectories (Tschakert et al. 2013; IDS 2016). This requires an account of not only who is vulnerable, but why (Ribot 2014) as well as a look at how the poor and the non-poor 'coexist' and the mechanisms which create and sustain vulnerability (Tschakert et al. 2013). The potential for business-led transformation is viewed herein in terms of inclusiveness, specifically against Gupta and Vegelin's (2016) five principles of social inclusiveness[1] (Figure 6.1). Thus, transformative adaptation action: is equitable and context sensitive; targets capacity building for and includes the knowledge, experiences and aspirations of a community's most vulnerable groups; enhances protection for the poorest and most vulnerable; and engages the marginalized to help define development processes and goals so that human development does not come at the cost of economic pursuits.

Figure 6.1. Principles of social inclusiveness



Source: Adapted from Gupta and Vegelin, 2016

6.2.2 RESEARCH METHODS AND AREAS

This study draws on secondary research as well as two phases of fieldwork conducted over three months in Cambodia in 2014 and 2015. Data was collected in Phnom Penh, Battambang City as well as in 11 Cambodian villages within Banan and Samlout, two districts in Battambang Province that were to be targeted under the planned adaptation interventions. A map of the study areas can be found in Chapter 1, *Research Framework*.

6.2.3 SAMPLING, DATA COLLECTION AND ANALYSIS

With the assistance of a Khmer-English interpreter, data was collected and triangulated through informal observation, semi-structured interviews, and focus group discussions (FGDs). Data was collected during two phases of fieldwork because project information was difficult to access. Available information, such as that contained in project proposals or obtained in leading stakeholder interviews, was limited. The rice company in particular was guarded in their response to interview and other information requests. While the rice company representative who eventually agreed to an interview was well-aware of company activities (especially related to the company's farmer network or Community), the person was unaware of the adaptation intervention; attempts to secure an interview with upper-level staff of the rice company were re-

[1] While Gupta and Vegelin additionally consider ecological and relational inclusiveness in their work, these aspects are beyond the scope of the current study.

peated but ultimately unsuccessful. Company representatives in the spice case were somewhat less guarded, however information about the numbers, genders and specific locations of contract farmers was not forthcoming in both cases. As a result, the study required an exploratory and iterative data collection process where information needed to be tracked down, collected from and confirmed by other research participants, including village chiefs. The methodological consequences of missing or incomplete information extended beyond the need for two phases of fieldwork; each is outlined in more detail in the following paragraphs.

Given the lack of information, snowball sampling was chosen as a key method. The starting point for data collection was based on two pieces of available information: 1) once located, the general location of the spice company's model farm in Samlout; and 2) information that Banan held the largest concentration of Community members [Company interview 5, 11-04-14]. As such, and given each districts' large geographical area, two points of departure were selected as the starting points: Battambang City and the model farm in Samlout. Starting from these points, village chiefs, located in villages situated along the major thoroughfares, were approached first to determine if the companies operated in nearby areas. As village administrators, village chiefs and their staff have detailed information about village activities. If little company activity was found, the next village along the road was attempted. Once a clear research link was established in a village, the chief was interviewed in depth; in the spice case, one village chief was interviewed twice to obtain an update on the project's process and why the intervention was not successful in the village. In six cases, interviews were conducted with both spouses on-farm or at their home. Interviews in all villages were suspended once saturation was reached. This was a lengthy but effective process; the first fieldwork revealed four villages with direct contract farming experience with the spice and rice companies: one each in Kampong Plov and Sung communes in Samlout and one each in Ta Kriem and Snueng communes in Banan. The first fieldwork also included interviews with four spice company representatives and one rice company representative.

In total, 96 participants between the ages of 21 and 70 contributed to the study. Eleven people closely related to village administration (including eight village chiefs) provided significant information and assistance that was largely unobtainable from other research participants. To balance out any gatekeeper bias (Hennink, Hutter, and Bailey 2011) and to gather diverse views during harvest season, 44 individuals (23 men; 21 women), including smallholders and landless farmers, were selected through convenience and snowball sampling. Finally, four FGDs, comprised of 18 men and 13 women, were held in three villages that proved to be especially key in relation to company activities. In Banan, two discussions included: seven farmers in Ta Kriem commune with specific knowledge about the rice company; 13 Community members (nine men and four women) purposively selected and disaggregated by gender by a village chief in Snueng commune. In Kampong Plov Commune in Samlout District, a group of 11 smallholders (six women and five men) selected by the village chief discussed the reasons the intervention failed in their village. For clarity, Table 6.1 provides a synthesis of methods, topics under investigation, as well as sample characteristics with the respective fieldwork phase. Finally, the table indicates both the number of people interviewed as well as the number of interviews.

The research followed protocols related to informed consent, voluntary participation, confidentiality and sample anonymity that considered the safety and welfare of the participants. Research participants were given opportunities to ask questions and were made aware of their ability to opt out at any point in time. Finally, data were coded and analysed using QSR International's NVivo 11 qualitative data analysis software. To maintain the trust and anonymity of the sample, findings are reported at the district and commune levels.

Table 6.1. Synthesis of research methods, topics and sample characteristics

Method	Topics	Sample characteristics	Phase	People (#)	Int. (#)
Informal observation	Topography; agricultural practices & crops; infrastructure; access to markets & services, etc.	11 villages in two districts			
Semi-structured interviews (snowball & convenience sampling)	Institutional characteristics of MDB; intervention objectives, characteristics, & processes	MDB climate change specialist (Phnom Penh)	1	1	1
		MDB Private Sector Division representative (Manila)	2	1	1
	Microfinance	Cambodia Microfinance Association representatives	2	2	1
	Climate change impacts & perceptions; social/biophysical vulnerabilities & adaptation barriers; company activities, intervention processes & participants; levels, types & quality of company-community engagement; local market dynamics	Provincial Department of Agriculture representative (Battambang City)	1	1	1
		Village administration (8 part. rice case; 3 part. spice case)	1 & 2	11	12
		Participant and non-participant smallholders/day labourers (16 part. rice case; 28 part. spice case)	1 & 2	44	32
	Company history, objectives & activities; intervention processes & partnerships; awareness levels of social/biophysical vulnerabilities & barriers at local level	Spice company representatives (4 part.); Rice company representative (1 part.)	1	5	5
Focus group discussions (purposive sampling)	Benefits/drawbacks of Community membership-/contract farming; types & levels of company-farmer engagement; factors influencing participation success/failure; company-community engagement; social/biophysical vulnerabilities & barriers;	FGD 1) Rice case: Community members (Snueng commune, Banan; 2 groups differentiated by gender)	2	13	-
		FGD 2) Rice case: Farmers (Ta Kreim commune, Banan)	1	7	-
		FGD 3 & 4) Spice case: Unsuccessful contract farmers (Kampong Plov commune, Samlout)	1 & 2	11	-
		Total sample		96	53

6.3 MEASURING TRANSFORMATION THROUGH PRINCIPLES OF INCLUSIVENESS

This section presents the results of the research organized along the five principles of social inclusiveness put forth by Gupta and Vegelin (2016). Somewhat out of order, the results start with findings related to the PPCR (the CEF funding mechanism described in Chapter 5) and Principle 5: Engaging all in the politics of development. This is because Principle 5 relates most to the top-down politics of the PPCR and planned implementation process. After this, the finding for Principles 1-4 are presented to gage the level of social inclusiveness on the ground to thereby measure the transformative potential of business action; a section on why the spice intervention failed in one Samlout community is also included.

6.3.1 PRINCIPLE 5: ENGAGING ALL IN THE POLITICS OF DEVELOPMENT

Research revealed that the PPCR process, guided by a global climate fund, a panel of external experts, and a multi-lateral development bank, was a highly-financialized and largely top-down paper process which did not consider local knowledge or perspectives in the design or implementation phases. Furthermore, the study shows that individual businesses were reluctant to take part in the process, indicating that Principle 5, *Engaging all in the politics of development*, was absent.

The PSSA was established in November 2012 when the PPCR sub-committee agreed to set aside unallocated grant resources for innovative programs and projects that engage the private sector in nine pilot countries and two regional programs.[2] Under the scheme, projects or programs may receive no less than US $3 million and no more than US $15 million. Interested parties access funds by jointly developing a proposal with the relevant MDB.

A review of PPCR documentation showed that across all SCF funding vehicles, the private sector showed limited interest; the first round (2013) only generated 11 proposals while the second round (2014) generated eight (CIF 2014). This number was further reduced once the proposals were assessed competitively based on the recommendations of an expert group and a set of criteria, namely: 1) potential to further country SPCR objectives; 2) level of innovation; 3) ability to implement quickly (within 9-18 months after PPCR sub-committee approval); and 3) progress on implementing other SPCR projects. In total, US $75.4 million in concessional funds have been set aside in both rounds and only 12 projects were recommended, including just two agribusiness interventions from Cambodia. As not all documents are made public, limited information is available on unapproved proposals. A third round was slated for launch in 2015 with an additional US $50 to US $80 million (CIF 2015).

The small number of proposals reflects a wider struggle of the SCF with attracting sufficient private sector interest. Although the set aside mechanism has almost doubled the number of private sector projects since inception, a lack of competition in turn has generally reduced the number and quality of submissions. For the PPCR, geographical restrictions have been blamed as well as lacking MDB interest; set aside projects are limited to the most vulnerable countries and are relatively small in terms of funding compared to other projects in MDB portfolios yet the approval process is lengthy and transaction costs are significant. According to expert group members, selected proposals were the only viable concepts available (CIF 2014). Additional obstacles across all SCF vehicles include: a) a misalignment between the rigid fund process and the private sector approach; b) limited finance from financial institutions as a result of insufficient climate change knowledge on risks and opportunities; c) limited co-financiers in SCF countries' as a result of higher risk and lesser-developed financial markets; d) unfavorable investment environments as a result of inadequate regulatory frameworks and policies; e) limited private sector role in many SCF countries; f) limited

[2] This includes Bolivia, Cambodia, Tajikistan, Mozambique, Nepal, Yemen, Zambia, Papua New Guinea, Dominica, Grenada, Haiti, Jamaica, Saint Lucia, Saint Vincent and the Grenadines, Samoa, and Tonga.

infrastructure; and f) low financial and technical capacities of in-country businesses and financiers (CIF 2014).

In response, the private sector mechanism was expanded to previously excluded eligible low and lower middle-income countries in hopes of stimulating interest and replication in the original pilot countries. It was also deemed necessary to provide flexible funding at scale that better aligns with the private sector modus operandi. Moreover, barriers are to be addressed through technical assistance for capacity building and policy reform and innovative funding mechanisms and financial instruments to reduce risks and barriers (CIF 2015). Nonetheless, the PPCR faces continued funding shortfalls and has requested urgent donations (CIF 2016).

Principle 5 and the PSSA in Cambodia

Round two included the endorsement of proposals submitted by two agribusinesses based in Battambang province. According to the MDB Private Sector Unit representative, PPCR is a complementary fund the bank "can tap from time to time" [MDB interview 2, 01-28-15]. While the MDB mostly deals with projects in infrastructure such as power and transport, a relatively new opportunity for the MDB is agribusiness [MDB interview 2, 01-28-15]. According to the same representative, although concerned with the proposed impact the loans are intended to have on the ground, "We are a bank," and so primarily loan focused. The following sections outline the two Cambodian business proposals. Table 6.2 provides a summary at the end of the section.

The spice case

Company and project background

This agribusiness started operations in Samlout district, Battambang province in 2007. Although a separate entity under majority Cambodian ownership, the company is connected to a larger group of Indian agribusinesses producing oleoresins, essential oils and spice products. With four processing plants in India and one in the People's Republic of China with a total capacity of 32,000 tons per year, the group is one of the top five global exporters of spice oleoresins (sources held by author). After searching for suitable land and climate in various countries, the business purchased land in Samlout district from area farmers to establish a 717-hectare model farm [Company interview 4, 11-01-14]. At the time of data collection, 400 ha were under cultivation with turmeric, black pepper, and dragon fruit (used to produce food coloring for the EU market). Run by four fulltime Indian staff, the company employed roughly 33 fulltime Cambodians (such as supervisors and truck and tractor drivers) as well as 200 to 250 seasonal laborers, mostly women [Company interview 2, 10-31-14]. The model farm is also used to disseminate climate resilient farming knowledge and practices to farmers.

At the start, adaptation engagement was not initially on the table for the bank or the business. The company simply came across the PPCR opportunity after hiring a consultant to locate new fund sources as support from the head office had run out [Company interview 4, 11-01-14; MDB Interview 2, 01-28-15]. As the PPCR opportunity also aligned with the bank's interests, original project plans were changed into a climate change adaptation intervention. As opposed to the high interest rates of a commercial bank, lending under project terms required minimal financial obligations, leading one spice company representative to describe the PPCR public funds as 'easy money' [Company interview 4, 01-11-14]. According to the MDB Private Sector Unit representative, 'That's where this PPCR thing was sort of added to the original project' [MDB interview 2, 01-28-15].

Proposed transformational adaptation activities

The proposed project, given a green light by both the PPCR and by the bank, formed part of a larger suite

of activities assisted by the MDB that targeted the development of the spice value chain in India and Cambodia. Key project features in Cambodia included the establishment of an oleoresin extraction plant in Sihanouk and the expansion of the company's model farm in Battambang. Total project cost was estimated at US $29 million: US $16.5 million assistance from the MDB; US $6.4 million from commercial banks; and US $1.1 million from the spice company's internally generated cash. In addition, the bank planned to administer US $5.0 million in concessional loans from the PPCR using US $300,000 of additional PPCR funds for project implementation. The proposed plan was seen as favorable as Cambodia is located close to India and China, two large importing markets. Moreover, export-oriented agri-business products produced in ASEAN have tax free status and light restrictions are in place for the import and export of foreign currencies from Cambodia. Finally, facilitating the growth of the company could create favorable conditions for the bank to benefit from a strategic sale or initial public offering on the stock exchange.

According to the proposal, the company aimed to enhance local adaptive capacity and resilience through the contract farming of organic turmeric supported by harvested rainwater and drip irrigation technology; this approach is expected to improve yields, minimize drought-induced crop failures through year-round irrigation, and increase farmer incomes from US $1.17 per day to US $1.35 per day (source held by author). Although emphasised less, the company also aimed to offer local employment opportunities on its model farm. Contract farming reduces the company's proportion of raw materials sourced from the open market and builds the climate resilience of Cambodia's agricultural sector. PPCR funds are to be used in two ways: US $4 million will enable approximately 1,000 farmers to install rainwater harvesting ponds, drip irrigation systems and to purchase agricultural inputs on credit through a local bank. At the time of data collection, no loans were disbursed and no drip irrigation technology was offered; the company planned to outsource microfinancing due to the risks and lack of experience [Company interview 4, 11-01-14]. The remaining US $1 million in PPCR funds would be used on the model farm to establish drip irrigation and expand the number of rainwater harvesting ponds from 45 to 100 (source held by author). According to a company representative, participant farmers receive technical advice to start pilot plots of organic turmeric with borrowed turmeric fingerlings; loans are repaid after harvest [Company interview 4, 11-01-14]. Farmers must produce under organic quality standards that are verifiable by the company; compost is to derive from farmer-owned livestock. The company reported purchasing turmeric for 1,100 riel (roughly US $0.27) per kilogram [Company interview 4, 11-01-14]. At the time of data collection over 300 farmers were under contract in Samlout, mostly in one Sung commune village [Company interview 4, 11-01-14; Village leader Interview, female, aged 59, 06-08-15]. The company was actively seeking to increase that number [Company interview 4, 11-01-14].

The rice case

Company and project background

Insights into the pre-proposal process were not available in the rice case. In fact, compared to the spice case, much information was inaccessible in general. Nonetheless, research revealed that this Cambodian company, in operation since 2008, first sources and then mills paddy rice from local smallholders for both domestic and international markets. Toward this end, the company, through its "Community," or farmer network, provides farmers in Battambang and Pursat provinces with microfinance loans to access agricultural inputs.

Proposed transformational adaptation activities

This project proposed to address the entire value chain from production to processing for a total of $20 million: US $4 million for paddy drying facilities to improve quality and reduce waste; US $4.5 million for a plant to generate reliable electricity from rice husks and reduce the company's energy expenditures; US $7 million for a line of credit for smallholders to access inputs, small farm equipment, and extension services (US $4 million to derive from PPCR funds); and US $4.5 million for warehousing and storage facilities

(US $1 million to derive from PPCR funds). In addition to the US $5 million in PPCR funds, US $9.5 million was to come from the company's own resources while commercial lending from the MDB was to amount to US $5.5.

The study placed focus at the local level where at least 50,000 smallholder farmers in the Battambang and Pursat provinces were to take advantage of membership in the Community; this in turn would lead to increased rice production and value and so reduced smallholder climate vulnerability. As farmers lack capital, access to low-interest microfinance (through the company's credit department) is considered a key membership benefit and adaptation tool. Community members (hereafter "members") also gain access to extension services and agricultural inputs such as high-quality seeds at reduced prices as well as assistance with farm cycle planning, and a special, higher purchase price (compared to competitors) for paddy rice; paddy is also collected at the farm gate. In weekly village meetings, members reportedly receive information about farming technology, practice and market prices; an on-call representative makes additional site visits if a problem arises. The company aims to increase paddy collection by expanding the current Community from 6,000 [Company interview 5, 11-04-14] to at least 50,000 members as outlined in the proposal (source held by author).

Despite remaining part of the PPCR process since 2014, the company was dropped from the PPCR in late 2015. While the details are unclear (and not forthcoming from the MDB as a result of client confidentiality), signs pointing to difficulties were evident. First, the expert group had concerns in 2014 over risk and 'the collateral security structure' (CIF 2014). In addition, the bank representative stated that smaller, local companies are a higher credit risk in terms of commercial lending [MDB Interview 2, 01-28-15]. Nonetheless, this study investigated business adaptation activities at the local level before the company was dropped and as a result, the case offers important lessons for all stakeholders. This is especially the case for the PPCR whose expert group in 2014 ranked the company's business proposal as 'strong' and recommended a concessional loan of US $5 million.

Table 6.2. The PPSA-endorsed companies and the proposed adaptation activities (Sources kept by author)

Business	Research area	PPCR loan (US$, millions)	Crop	Target	Intervention aim	Adaptation tools
Rice	Banan District	5	Export-quality rice	50,000 small-holders	Increased earning potential, income security & livelihood protection	Transfer of technical advice to Community members; microfinance for increased rice production & value
Spice	Samlout District	5	Organic turmeric	1,000 outgrowers*	Increased earning potential through contract farming & model farm employment**	Microfinance for rainwater harvesting & drip technology

* Number of outgrowers implementing water harvesting ponds (1,000 m3/farm capacity) and drip irrigation (2,000 ha total area covered). Number of loans to be determined.

** Employment opportunities for 260 people, at least 70 percent women.

6.3.2 MEASURING TRANSFORMATION ON THE GROUND

Principle 1: Equity principles in place to share adaptation opportunities

The findings revealed that each business was primarily concerned with securing paddy rice and turmeric. Toward this end, local leaders were used to vet candidates for contract farming, transfer information, and arrange meetings with farmers and government officials. Focused on sourcing, the companies only worked with the strongest segments of the population, namely the wealthiest and most capable farmers able to produce. In spite of the PPCR's core objective, the research found that there was no clear and targeted strategy to bolster the capacity and resilience of the most climate vulnerable and least able to adapt. For example, the spice scheme was launched in one village in Kampong Plov Commune where the company's model farm is located. Twenty farmers were invited to participate by the village chief because they met the company's asset requirements: each owned land and cattle for organic dung production [Interviews 06-08-15: village chief, male, age 60; female, age 59; interviews 06-10-15: female, age 44; female, age 45; male, age 30]. Interviewed farmers reported landholdings of between 5 and 30 ha per household (or more in a few cases). Poorer farmers—those with no land and no cattle, or insufficient land holdings such as remote and mainly forested parcels—were not invited to participate, remained unaware of the opportunity, and generally unaware of business activities in the village. This business strategy was confirmed by one company representative who stated, 'We do not work with the poorest farmers' [Company interview 10-31-14]. As with Kampong Plov, the wealthiest and most capable in Sung Commune were targeted while poorer farmers were largely unable to take advantage of the turmeric scheme. This finding can be illustrated by the following quote:

> *My land is far from town and less fertile, so I grow cassava. The people with big houses [in the village] came here first. They are richer, and they have big, fertile land, so they can grow turmeric. [Interview 06-10-15, female, age 45].*

As in Samlout District, farmers in Banan were invited by their respective village chiefs because of their favorable asset profiles: each invited smallholder owned at least three ha and was deemed financially capable of securing a microfinance loan. Village chiefs who acted as company intermediaries did not extend invitations to poorer farmers with smaller land holdings [Snueng Commune, 06-02-15, female, age 52]. These poorer rice farmers generally cultivated smaller and remote plots which produced less yield and were less profitable especially against the higher investment required of quality production, harvest and delivery. For example, improved seed varieties were significantly costlier for all but especially out of reach for poorer cultivators [Ta Kriem FGD 10-25-14; Interviews: 10-23-14, female, age 56; 10-23-14, male, age 48].

Company focus on the wealthiest was confirmed in the Community FGDs. These farmers had loaned money from the rice company and were thus considered to be "Community members" and so part of the farmer network that would help them to build adaptive capacity as described in the company's PPCR proposal. Each member had landholdings in the range of 3.5 ha to 7 ha (with a median of 5 ha and a mode of 6 ha) backed up by land and house titles; otherwise, lucrative assets such as large farms, farm equipment, and motorcycles enabled them to illustrate collateral and obtain microfinance loans, a key adaptation tool in the planned intervention [FGDs 06-03-15; 06–04-15]. Although the provision of microfinance was not yet implemented in the spice case, a similar scenario is likely to occur where only the financially fit and not the most climate vulnerable will be able to engage in adaptation activities.

Principle 2: Include knowledge of all

The study revealed that local knowledge on the impacts of microfinance was not considered in the design of adaptation solutions. Rather than build capacity, microfinance was widely viewed in local communities to be an inadequate adaptation tool which significantly increased smallholder vulnerability.

Given the associated risks of asset depletion, asset loss, and forced migration, microfinance was seen by research participants to increase the likelihood of household shocks and climate vulnerability rather than enhance adaptive capacity and climate resilience. According to a former Community member in Banan, 'A loan doesn't help people with climate change. There's money, but no clear plan. The [rice] company helps farmers to get a loan—that's all' [06-05-15, male, age 56]. Another Banan farmer stated, 'It's hard to loan money for agriculture because it takes a long time to see the pay-out. Meanwhile the interest grows. Loaning money when you lean on the rain is risky' [10-23-14, male, age 58]. Microfinance debt was considered especially risky with long term crops as stated by the Kampong Plov village chief:

> *The farmer is not encouraged to grow long term crops like turmeric on loans because they cannot give money immediately to the bank. The crop grows from now to December—this is a long time. The farmer doesn't dare to grow turmeric because the farmer has to borrow money. [Interview 06-06-15, male, age 55].*

Overall, the study revealed that 73 per cent of farmers in Banan and 88 per cent of farmers interviewed in Samlout stated that rather than building resilience, microfinance increased climate vulnerability.

Asset loss

Microfinance loans were closely associated with asset loss including livestock, farm equipment, motorbikes and land. According to a Samlout village chief, 'If a farmer can't farm and pay back a loan, I check to see if they have a moto or a *koyun* [Thai hand tractor] to take—no problem' [10-28-14, male, age 54]. Land loss was especially feared. One Banan farmer stated a general wariness reflected in all research areas: 'If I don't pay the loan back, the microfinance company has a problem. They'll take my land' [10-23-14, male, age 48]. One older farmer in Samlout agreed, 'It's happened here—farmers who got into microfinance trouble had to sell a portion or all of their land' [Male, age 56, 10-27-14]. One family who was unable to make the payments on a US $3,000 microfinance loan was forced to sell their house and three hectares. The family subsequently rented farm land and obtained food on credit from the local shop. Especially distressing was that their six children would not inherit land and would have fewer means to house a family and make a living [Interview 10-28-14: female, age 48; male, age 47]. For farmers, land is a key livelihood asset, the loss of which increases climate vulnerability, poverty and food insecurity (Adger and Kelly 1999; Bohle, Downing, and Watts, Michael 1994; Ir et al. 2012). Given these circumstances, even the spectre of land loss is taken seriously and avoided as far as possible.

Forced migration

Microfinance was also closely associated in the research areas with increased smallholder vulnerability through forced migration, the majority of which was reported to be undocumented. According to one Banan village chief, 'If the rice doesn't grow, the farmer will owe a lot of microfinance money. So people leave the village mostly for Thailand' [10-25-15, male, age 52]. Migration was considered a last resort for those unable to farm or repay a microfinance loan. Migration was considered high risk given the lack of information regarding job type, employer and location, and risks associated with undocumented travel across borders and through informal channels. Migrants were also exposed to dangerous work conditions; in the construction industry only Cambodian and Lao migrants work atop tall buildings without safety equipment [Men's FGD, 06-03-15]. Migrants, exploited by employers and local authorities, faced restricted and monitored movement at the destination as well as fines, arrest, and deportation. One Banan farmer provided a good example of this by relaying his family's experience:

> *Working in Thailand is difficult, people are cheated. The child gets a daily wage, but if the boss or other Thai people decide to call the police, the migrant doesn't get paid. My son was hired for a good job on a fishing boat, but instead he worked like a prisoner. [Interview 06-05-15, male, age 56].*

Samlout participants held similar perceptions. A village chief explained:

> *Farming is becoming more difficult because of the climate so people migrate to Thailand to repay loans. Some leave their children and send money home. Some farm here, then leave for Thailand, and then come back for harvest. But not all come back. Some people still search for the relatives that left. [Interview, male, age 54, 10-28-14].*

In many cases sons and daughters were sent abroad. One Banan village chief described the consequences for grandparents and children, the most vulnerable groups in a community:

> *The elderly watch their grandchildren after the parents migrate to Thailand. They need help to farm, so they loan money. But harvest income isn't equal to the investment, so they sell one cow to buy rice for the next year. [Male, age 41, 10-23-14].*

Households comprised solely of children and the elderly experience higher levels of poverty and thus remain at higher risk in terms of climate change impacts. In Cambodia, the issue of migrants leaving children with grandparents is considered to be an emerging social issue of concern (ADB 2014b). In terms of climate vulnerability, children and the elderly experience more climate-related health impacts. According to Banan respondents, these impacts include adverse health from diseases such as dengue fever as well as hotter temperatures with children and the elderly especially affected. Additionally, the elderly need more care when the weather is hot; younger family members must carry and prepare larger amounts of household water supplies before going to work [Banan interview 10-23-14, village chief, male, age 66]. Migration of a younger and key household member, especially under risky and undocumented circumstances, thus places increased pressure on those disproportionately facing impacts yet least able to adapt.

Families turn to migration as a last resort. Since climate change impacts have simultaneously increased farming costs yet reduced the farming incomes needed to repay loans; farmers earn less money from their harvests but simultaneously must invest more time, money and materials as a result of crop losses. In line with other studies (e.g., ADB 2014; CARE International, 2012; Ir et al. 2012), the majority of famers taking part in the research were already struggling with other forms of debt. Although Kampong Plov community members wanted to reduce reliance on microfinance through a community savings group, none had been created as there was a lack of institutional support and smallholder money was already dedicated to microfinance [FGD 06-09-15]. Farmers, perpetually in debt, were reluctant to continue loaning but often had little choice [10-23-14, male, age 41]. This indicates a lack of meaningful participation in the decisions about local development as well as the availability of suitable development alternatives that are able to shift local communities onto more sustainable trajectories.

Principle 3: Build targeted capacity for effective participation

Despite numerous production barriers faced in Kampong Plov, the majority of smallholders did not receive on-farm guidance or training at the model farm; smallholders were unclear on why the company invited them to participate but did not offer much needed assistance. According to a company representative, those who successfully participate in the scheme are responsible for scaling up and passing the necessary knowledge to other farmers [Company interview 10-31-14]. One such local leader who was charged by the company with building the knowledge, skills and adaptive capacity of his neighbours stated, 'I don't know why the company doesn't communicate better, why they don't teach farmers here' [Interview, male, age 60, 10-27-14]. Although selected farmers here were initially excited about the opportunity, the scheme was ultimately viewed as a failure in the community [FGD 06-09-15; Interview 06-06-15, male, age 49; 06-11-15, female, age 54]. The company quietly withdrew from the village without informing local smallholders, citing the poor performance of the village chief in securing contracts as well as insufficient guidance and support from the MDB [Company interview 3, 10-31-14].

Initial barriers for farmers were a lack of experience with organic production and growing turmeric; smallholders in the area have a history of growing corn, cassava and sesame on large, open fields based on chemically-augmented, mechanized, and monocrop cultivation. Smallholders also contended with low soil quality but generally lacked access to sufficient numbers of livestock to produce dung [Kampong Plov FGD, 06-09-15; interviews 06-08-15: village chief, male, age 60; female, age 59; interviews 06-10-15: female, age 44; female, age 45; male, age 30]. Farmers predisposed to larger scale monocrop cultivation also perceived a lack of space to cultivate both corn and turmeric; they also reported a wariness about the high investment costs related to the construction of shading materials. Research participants in Kampong Plov were also reluctant to participate given turmeric's longer growing cycle which would delay harvest income and thus introduce undue livelihood risk and reduced potential to deal with shocks as well as reduced investment manoeuvrability [FGD 06-09-15; Interviews: 10-27-14, male, age 60; 06-11-15, female, age 54; 10-27-14, male, age 56]. Due to a lack of transparency and poor communication on behalf of the spice company, smallholders also believed that there was no clear purchaser which made turmeric a 'useless crop' to grow [FGD 06-09-15]. This perception was made worse when farmers tried but were unable to obtain turmeric fingerlings; the company shipped them, without explanation, to another province [FGD 06-09-15]. Finally, as communities faced chronic water insecurity, the spice company's plans to introduce drip irrigation has potential to address a pressing need. In fact, 84 per cent of all farmers interviewed in the spice case reported problems related to water availability and access (especially those not located near a river). However, cost estimates as presented in the spice case proposal (between US $1,700 and US $2,500 per ha) would exclude the majority of farmers. In addition to affordability, local farmers also stressed that any drip irrigation system must be locally feasible, namely simple to manage and maintain, as captured by the following statement of a village chief:

> *The company has everything, it is very rich. But this water system is not possible for the local farmer. First it is too expensive, and second it is too technical. It requires too much equipment. Even for a farmer like [local champion] it is impossible. He has a lot of capacity, but it is still too difficult—even for him. How can it work for a normal farmer? [Samlout interview, 10-28-14, male, 54].*

Other obstacles to contract farming participation were also encountered at the community level. Smallholders in Kampong Plov reported that their community lacked access to sustainable financial assistance which restricted their ability to invest in agricultural opportunities; at the time of data collection the company's plans to offer microfinance was not yet implemented. However, community members wanted to reduce reliance on costly microfinance as well as local moneylenders through a community savings group, yet none had been created as smallholder money was already tied up in microfinance [FGD 06-09-15]. Villagers here also discussed the general lack of local leadership and community support for community-based initiatives; too busy with their own farms, farmers acted in isolation and did not help each other [Interviews: 10-29-14, female, age 56; 06-06-15, village chief, male, age 55; FGD 06-09-15].

In stark contrast, roughly 300 farmers in one Sung Commune village were under contract with the local government who in turn was under contract with the spice company. Here the scheme benefitted from an enabling environment, including strong leadership and favorable agricultural conditions, knowledge and practices. As the village was older and more developed, many smallholders had land holdings that were centralized and easily accessible by established road networks which reduced transportation costs. The area also featured high soil quality which reduced the need for fertilizer and negated the requirement of cattle ownership and access to organic dung. Compared to Kampong Plov, contract farmers here had experience with growing turmeric and increased knowledge obtained through diversified agricultural production and flexible land use patterns that allowed turmeric production to fit easily into the existing agricultural system; corn and cassava were planted separately on larger parcels while turmeric was intercropped with banana, durian, and lychee on smaller plots (between one rai and two ha) and in-home

[3] According to the MDB representative, more affordable options were being explored.

gardens. Fruit trees provided income as well as a source of low-cost shading for turmeric plants. Nonetheless, smallholders in all research areas continually faced water insecurity and stated a need for increased access to water resources.

NGO and district government support significantly facilitated the contract farming scheme and in turn reduced company risk and costs. Moreover, the village chief's wife, who fulfilled the crucial role of local champion in the business model, garnered support from public officials and handled all aspects of procurement after the company provided authorities with US $10,000; this included locating, purchasing and distributing 40 tons of turmeric fingerlings; arranging smallholder contracts; and arranging farm gate pick-up and final delivery including the provision of plastic bags, transport and labor. Community-level resources also extended to 11 community savings and loans groups which supported Sung farmers in agricultural production through lower interest rates and reduced risk to better build productive capacity [Interview 06-08-15, female, age 59; 06-10-15, male, age 31]; Local leaders and residents also strengthened the village by creating community forest watch groups and cooperation initiatives between NGOs, the commune chief, and the community. Leaders here also created and enforced forest governance mechanisms. Each of these resources built trust in the community and in local leadership [Interviews: 06-10-15, male, age 31; 06-10-15, female, age 45; 06-08-15, female, age 59]. A local leader observed, 'People in this village join together, to grow and protect our trees. The authorities [in neighbouring Kampong Plov Commune] only encouraged farmers to sell their land to the spice company for the model farm' [Interview 06-08-15, female, age 59]. This was confirmed by interviewees; several remote and poor households in Kampong Plov had sold their land to the spice company based on land grabbing rumors as well as the encouragement of their village chief who was assisting the spice company; prices were non-negotiable, set by the village chief and considered by area farmers to be grossly below market value [Samlout interviews 06-06-15: male, age 30; female, age 46].

Similar challenges were uncovered in the rice case. Despite significant challenges, company support (as outlined in the PPCR proposal) was not forthcoming. According to a rice company representative, Community members benefitted from company extension services, an on-call advisor, weekly meetings, information about agricultural planning and practice, technology, and market prices, and a higher price at the farm gate [Company interview 5, 11-04-14]. However, Community members reported that none of these benefits materialised [Men's FGD 06-03-15]. Members only met with a microfinance representative once per year and just prior to harvest. Describing company support, one member stated:

> *The company representatives are too lazy to tell us anything. We ask about how to do something or how to solve problems, but they don't give us any kind of detailed information. They just try to convince farmers to take out loans. [Male, age 32, 06-03-15].*

The telephone number members were given for assistance connected to the microfinance office; it was not possible to access farming advice and staff did not redirect calls. Farmers eventually stopped seeking assistance [Men's FGD, 06-03-15].

All landholding farmers who took part in the Banan research reported difficulty in meeting the quality standards of the rice company which favored the use of transplanting rather than broadcasting methods [Company interview 5, 11-04-14] in spite of farmers' investment restrictions and labor shortages [Ta Kriem FGD 10-25-14; FGDs 06-03-15, 06-04-15]. The company also encouraged farmers to use improved but significantly more expensive seed varieties which were largely unaffordable [Ta Kriem FGD 10-25-14; Interviews: 10-23-14, female, age 56; 10-23-14, male, age 48]. Harvesting to quality standards was also problematic as described by one Banan farmer:

Farmers who can't afford to hire machinery harvest by hand. The rice plant falls over and gets dirty, and if it's muddy or rainy it takes 10 days instead of five. But even with machines the rice gets dirty. It's nature. It falls down from the wind, the rain, and it gets dirty. The company doesn't accept it. [Interview 06-05-15, male, age 37].

After harvest, paddy rice must be no more than two varieties combined, delivered to the mill clean and below 30 per cent humidity and within 12 hours of harvest [Company interview 5, 11-04-14; 10-23-14, male, age 58]. Farmers also faced difficulties with bringing the rice to the mill. According to one farmer:

The company wants the farmer to harvest the rice and then bring it to the mill within 12 hours. But when a farmer delivers the rice there's a long line which makes delivery too difficult—the farmer has to wait a long time. If it takes too long to deliver the rice they say the rice is no good. The company still buys the rice, but for a lower price. [Interview 10-23-14, male, age 58].

This was confirmed by two village leaders who explained that although farmers follow quality production requirements, the company lowers the special member price at delivery because the rice is deemed to be of low quality [Interview 10-25-15, male, ages 52 and *missing*]. The village chief added, 'There are many problems between [company] and farmers. The contract is not respectful. That's the biggest problem' [Interview 10-25-15, male, age 52]. One participant, voicing the frustration of many, stated, 'Our voice is small so we cannot negotiate. The company has more influence' [Men's FGD, 06-03-15, male, age 44]. During times of shortage especially, lower quality rice was accepted. However, farmers were told that despite promises, low-quality paddy does not deserve the higher purchase price. In some cases, farmers refused to sell and so returned home with their paddy [Interviews 10-23-14: male, age 59; male, age, 65; male, age 61; 06-05-15, female, age 37]. One farmer stated, 'If delivery takes too long they say it's no good. The company still buys it, but for a lower price' [Interview 10-23-14, male, age 58]. One contributing factor may be changes in temperature and moisture that occur during delivery delays (resulting from a lack of coordination between the mill and farmer delivery and insufficient drying capacity at the mill). With a mill at full capacity, farmers are left with the short end of the stick: increased risk, lower-quality paddy and a lower price [Telephone communication, 05-31-2017, male, age 36]. In fact, 82 percent of Banan farmers who have sold paddy rice to the company reported that the price they receive from the company is too low.

Receiving payment was also reported by research participants to be a time-consuming endeavour. One farmer who no longer sells his paddy to the company stated, 'It's hard to get your money—the farmer has to wait. They weighed my rice and then gave me a receipt, but no money. Before I had to wait one to two days to be paid.' Somewhat ironically, a photograph of a long line of farmers waiting to deliver their paddy outside of the company mill was featured prominently at the company's Battambang office as a symbol of the company's success [Observation, 11-04-14].

Principle 4: Enhance protection for the most vulnerable

The findings show that the market mechanism does not ensure protection for the most vulnerable; instead local market conditions and price volatility heightened smallholder risk and vulnerability.

Farmers pointed to the difficulties of competing with widely available and cheaper rice from Vietnam [Interview 06-05-15, male, age 37]. The price is also viewed locally as particularly unreliable. According to one woman, 'The price of rice can drop 800 baht in one day [roughly US $20]' [Interview 06-05-15, age 36]. Village leaders in Ta Kriem also witnessed a steady decrease in the price for paddy, down from US $250 in 2012 to US $200 in 2014 [Interview 10-25-15, village chief, male, age 52]. One stated:

The price was higher before the rice company stopped all of the foreign buyers. Vietnamese and Thai buyers started buying rice from the company instead of the farmer and the price dropped. [Interview 10-25-15, male, age 52].

The price dropped after Thai and Vietnamese middlemen "disappeared" in Snueng Commune as well; the paddy price dropped significantly after the rice company's Community was created [Interview 06-05-15, female, age 36]. One Samlout interviewee from Kamplong Plov Commune described a similar issue related to corn:

> *Vietnamese and Thai buyers aren't allowed here. The government wants farmers to sell to Cambodians. Ratanakiri farmers protested about that—I heard it on the radio. Thai and Vietnamese buyers were here three years ago. After they left corn has dropped from US $250 per ton to US $175 now. [Interview 10-29-14, male, age 50].*

Samlout farmers in all study sites also witnessed a severe drop in the market price of turmeric roughly seven years ago. One Sung Commune village chief stated that while farmers previously grew significant amounts of turmeric in his village, after the price fell farmers simply left the crop in the fields for the middlemen to collect [Interview 06-08-15, age 60]. As a result, farmers in his village were no longer interested in turmeric as the current price was too low [Interview 06-08-15, male, age 60]. Kampong Plov farmers also reported a hesitancy to grow turmeric for the company as a result of the price crash (Kampong Plov FGD, 06-09-15].

6.4 DISCUSSION

The PPCR programme aims to target marginalized groups and advance a transformative shift away from business-as-usual to climate resilient growth paths. While much hype surrounds the unique potential of the private sector to contribute to local climate change adaptation and resilience, two key challenges stood in the way of sustainable and transformational change envisioned at the local level. First, against an unenthusiastic private sector and a less than motivated MDB, the Strategic Climate Fund redirected already scare adaptation funds away from the poorest communities in order to make the adaptation environment more palatable and congenial to business actors. This reluctance aligns with what has been discussed in the literature, namely private sector interest may only persist as long as "the notion of development" is not "unduly problematic" (Edward and Tallontire 2009); this implies that until the adaptation pot is sufficiently sweetened by the PPCR, business will to engage with adaptation funds, programs and the marginalized may continue to be limited.

Even when business is interested, challenges can negate private sector contributions as the specific examples from Cambodia illustrate. Quite some time after the fieldwork was finalized, follow-up research in 2017 revealed that the two business cases studied here were no longer taking part in the PPCR funding mechanism. According to the MDB representative:

> *Due to certain commercial considerations since we spoke last time, [MDB] has decided not to close some of the project components for the time being, including our planned loan in Cambodia. Since the PPCR component had always been considered as a package together with our loan, it made little sense to proceed in the absence of our commercial loan to [the spice company]. [email correspondence, 06-14-2017].*

A follow up email sent for clarification received the following response from the same representative:

> *The general principle or the message here is that the PPCR private sector set-aside is always provided in conjunction with unsubsidized loan or equity from [MDB]. Therefore, the PPCR funds will not just be provided on its own, and the project would not go ahead in case [MDB] is not satisfied with the commercial and other risks of the borrower or the project, regardless whether the risk or the issue is related to the PPCR component or not. While we cannot provide the details due to confidentiality, for both [the spice company] and [the rice company], [MDB] has decided not to pursue our intervention in Cambodia.*

At the moment we don't have any pipeline of the PPCR projects in Cambodia as a result. [07-19-2017].

Due to client confidentiality, the complete story remains veiled but it is clear that the PPCR was not successful in the case of Cambodia despite lengthy efforts on behalf of all parties. Furthermore, in this instance mixing business with development prevents access to information and thus violates *Principle 5: Engaging all in the politics of development*. Second, business ethos brings into question the prospect for social inclusion through equitable opportunities and sharing in the benefits of adaptation action: focused utmost on securing the necessary inputs, each business targeted only the wealthiest and most capable suppliers. This fragmented communities into two groups: those with the ability to take advantage of the outgrower opportunity and those without. Although the stated objective is to increase community resilience, processes of social exclusion instead undermine community robustness (Narayan et al. 1999; DFID 1999). While benefits materialized—a selection of smallholders had a new opportunity to generate income, the spice company improved a section of road near the model farm and aimed to address water insecurity and promote sustainable organic farming, the dominant neoliberal business framing remained unchallenged and the findings exposed a persistent tension between the competing values of 'pro-poor' and 'pro-profit' with reduced attention for *Principle 4: Protecting the most vulnerable*. While all development initiatives grapple with conflicting tensions, those featuring a larger role for "the logic of the invisible hand of the market" risk a greater divide between development as a practice and development as a means for major structural change (Edward and Tallontire 2009). This is crucial as, "the roots of the direct and indirect drivers of inequality may lie in the ideological foundations of society calling for the questioning of dominant discourses and vested interests" (Gupta and Vegelin 2016). This also highlights the crucial, yet currently unfulfilled, roles of the Cambodian government, the Climate Investment Funds, and its donors to ensure the balance between equitable development and community resilience needs and profit-oriented business objectives. Without external actors to counter-weight private sector interests and ensure development outcomes (Ashley 2009), such as through inclusive policies, evaluation mechanisms, and support structures that close the participation gap, business-led action will not necessarily achieve the resilience goals of developing countries or their local communities.

New vulnerabilities, adaptive capacity and lack of enabling environment

The study also revealed that not only did both businesses pay little heed to smallholder adaptive capacity or the underlying restrictions to *build targeted capacity for effective participation* or *Principle 3*, new vulnerabilities were introduced which side-lines *Principle 4* concerning heightened social inclusiveness through the *enhanced protection of the most vulnerable*. Farmers in the study areas not only had to independently adapt to the vagaries of climate change but also to new production processes burdened with greater financial and production risks characteristic of stricter global production standards (Blanc and Kledal 2012; IFC 2013). At the project level, production barriers were to be bridged through company investments in training and consultation yet each intervention largely fell short of providing the crowning elements of pro-poor and socially-inclusive business engagement as outlined in *Principles 3 and 4: Enhanced enabling environment for the most vulnerable* and *the building of targeted capacity* (including knowledge and skills). Targeted capacity building and protection of the poorest are crucial as smallholder vulnerability increases if scarce farming resources are dedicated to investments that do not pan out. Additionally, without the building of new resources (such as knowledge that increases adaptive capacity and reduces risk), the potential for resilience is decreased (Emery and Flora 2006). Vulnerability remains in play as both the climate and the market fluctuate, as vital assets such as soil deteriorate, and as productive and financial assets are trapped by indebtedness and export production.

Although microfinance was viewed as a key adaptation tool, smallholders reported that adaptive capacity is not built through indebtedness which indicates local knowledge was not considered—*Principle 2: Include knowledge of all*—in the design of the PPCR-endorsed adaptation interventions. It's also known by outside microfinance experts to fall short in terms of social inclusiveness: according to a representative of Cambodia Microfinance Association, an organization representing 54 microfinance institutions and 17 rural

credit operators in Cambodia, 'Microfinance isn't for the poor' [Interview 05-28-15, male, age 36]. De Waal (1989) and Davies (1993) (as cited by Schipper and Burton, 2009) refer to short-term coping strategies which undermine long-term rural resiliency; microfinance was similarly viewed in the study areas to be a stop gap response that exposed farmers and communities to heightened risk and vulnerability through migration, asset loss and depletion. While debt-based credit earns loan providers high returns (Ashley 2009), one can question its added adaptation value, the likelihood of loans propelling adaptation investments beyond the next harvest, as well its transformative effects. This type of blueprint adaptation—microfinance has been used in rural development for decades—can also be seen as a violation of *Principle 5: Engaging all in the politics of development*. The adaptation project is aligned to business interests which opens the gates for specific adaptation solutions, without critical reflection. Such a blueprint approach to adaptation is limited to aspects of efficient technology and agricultural productivity. In contrast, social inclusiveness is non-discriminatory, promotes participation and well-being of the poor, and takes local 'knowledge, experiences and aspirations into account' (Gupta and Vegelin 2016). Moreover, many microfinance options were already available to smallholders who were perpetually in debt reflecting a business-as-usual scenario. At the macro level, microfinance is promoted as a means to reduce community reliance on exploitative financial intermediaries and exorbitant interest rates (Prahalad and Hammond 2002). When the issue is fully unpacked at the community level, discussions transcend interest rate numbers to encompass challenges of local representation, voice, and ability to shape resilience outcomes (Nelson and Tallontire 2014). This is one example where a cause of risk (lack of smallholder financial capital) precludes a deeper look into the structural causes of climate vulnerability that derive from socio-economic relations (Wisner et al. 2004 as cited by Pelling et al. 2015). Without an understanding or concern for the underlying structural factors, transformation remains elusive. As the findings on migration show, the approach also assumes a climate-centric and static notion of vulnerability which neglects the temporal, spatial and scale dynamics whereby risk and potential for harm fluctuate with the seasons and extend beyond the local (Tschakert et al. 2013). Given farmer indebtedness and the plethora of microfinance options available, planned adaptation activities have not deviated from or added value to what has already been established in the study areas. Although local climate circumstances are out of the ordinary, a business-as-usual approach in the form of microfinance has been advanced over a transformative adaptation approach with potentially negative consequences for resilient livelihoods and Cambodia's agricultural sector. This goes against social inclusion and *Principle 4* which places focus on *marginalized sectors and groups*.

Business-as-usual is perhaps most brought under scrutiny when the market is viewed as a mechanism for positive transformation, an issue squarely in the realm of *Principle 4: Enhance protection for the most vulnerable*. After all, if 'The nature of business is that successes grow and failures flop' (Ashley 2009), raw market principles alone are unlikely to guide pro-poor and transformative adaptation action. Sustainable development is elusive in many contexts, yet it is currently a tall order in Cambodia. The communities under study were subject to asymmetrical power relations and social and economic exclusion, corruption, alliances between government representatives and elites, anaemic participation and voice, and uneven stakeholder engagement within a compromised or largely absent governance regime. While this in itself is perhaps not surprising given Cambodia's development context (in terms of human rights violations see for example Subedi, 2014), unsustainable development and increased marginalization continue—despite the difficulties encountered by the PPCR—to be advanced through public funds under the guise of climate change adaptation. Any benefits of pro-poor and business-led development are only possible if various principles related to equity and justice are in place, from the principles operationalized in the study such as local participation and empowerment to effective regulatory frameworks (Tobin, Glenna, and Devaux 2016; Thomas and Twyman 2005). While differentiated levels of adaptation success are inevitable among farmers and between communities, the playing field must start out level as envisioned in Gupta's and Vegelin's *Principle 1: Equity in opportunity*. Adaptation solutions should be farmer-driven (and this means men *and* women) and interventions should not further enforce already existing income or other social disparities. Yet through a business as usual approach, the focus seemed to fall squarely on increasing business resilience rather than community resilience, as discussed next.

Building business adaptive capacity and resilience

Unlike smallholders, eligible companies stand to receive millions in PPCR funding and so have significant opportunities to directly build adaptive capacity. For example, the spice company planned to increase water security by using PPCR funds to expand the number of rainwater harvesting ponds on the model farm while the rice company aimed to secure energy security as well as beef up drying and storage infrastructure. Each company also had increased ability to scale the business model and work with numerous farmers located across a large geographical area. Scalability, viewed as an important feature of private sector engagement (CIF 2012; UN Global Compact et al. 2011; Wach 2012), allowed the businesses to obtain low-cost inputs by spreading risks related to investment and production to the smallholder with collateral. Having a larger pool of smallholders to draw from directly builds company adaptive capacity and resilience. The companies could also reduce vulnerability and risk—and better allocate company resources—by withdrawing from more problematic (and vulnerable) communities as was observed in Kampong Plov. It is worth noting that value chains are implemented and exclusionary mechanisms are activated at the community level (Tobin et al. 2016). While a scalability perspective can imply greater development reach, it may instead risk glossing over a lack of embeddedness and development opportunities that only reach the "cream of the crop." In opposition to *Principles 1, 3 and 4*, it also points to the observation of O'Brien and Leichenko (2003), namely the generation of winners and losers and the existing and growing imbalance between who is harmed and who benefits from climatic and other shocks and stressors. A two-fold recognition is needed: community risk is company risk (UN Global Compact et al. 2011), and scaling impact, rather than business models, would contribute more to local development outcomes and enhance long-term business resiliency.

6.5 CONCLUSION

This chapter has explored the claim that business engagement in climate change adaptation is good for both business and vulnerable communities. It is based on participatory research into two business cases which were approved for funding under the Pilot Program for Climate Resilience (PPCR) where special PPCR adaptation funds are available, in principle, to businesses. Research into the PPCR first revealed that the fund was unable to generate sufficient interest from the private sector and where interest manifested, this interest did not meet PPCR criteria. Out of 12 recommended projects, just two agribusiness interventions from Cambodia were deemed eligible. Furthermore, the locally-managed rice business ultimately did not pass the bank's risk assessment, which further reduced the number of businesses involved. Later on, the spice company both businesses were then no longer part of the PPCR. These findings bring into question the ability of local firms to take part in shaping Cambodia's wider adaptation strategy as well as the ability of the private sector to meaningfully contribute toward solving society's most pressing problem. It also brings into question the ability of approved businesses to implement quickly (within 9-18 months after PPCR sub-committee approval).

The study also revealed the highly inequitable nature of the business activities, proposed to the PPCR and the MBD as planned adaptation interventions. The PPCR's mandate is to help the most marginalized and manifest systemic change–in essence this is a fundamental aspiration of sustainable development. Both businesses received a stamp of approval from the PPCR and spent quite some time, roughly 2013-2017, working within the process. Here, poor and vulnerable Cambodian farmers were to experience increased incomes and adaptive capacity through agricultural production and integration into global value chains. However, on the ground each pursued a conventional rather than a transformational approach. Analysis on the transformative potential of the interventions, measured against five principles of social inclusion, revealed that while certain benefits transpired, each business was limited in its ability to build adaptive capacity and thus offer transformative adaptation. Moreover, smallholders and communities are likely to be left more vulnerable after such an approach. Despite PPCR's focus on the most marginalized and transformational change, the companies targeted the most capable smallholders through a business-as-usual

approach which built business resiliency but fragmented communities and diverted important smallholder and community adaptation resources. Second, participants had to simultaneously adapt to the difficult farming conditions presented by climate change as well as new intervention processes rife with financial and production risks within challenging market contexts. Microfinance, a key adaptation tool in both cases, was locally viewed as an inadequate but also potentially injurious means to support farming in times of heightened risk. Although there is a re-emergence of this financial tool in development practice, from an adaptive transformation perspective it does little to mitigate the underlying structural causes of climate vulnerability, especially for the poorest members of society. Three lessons emerged from the study. First, increased community resilience requires balance between community and business needs. Second, such interventions should be guided by inclusive policies and integrated stakeholder support. Finally, processes of democratization are needed otherwise marginalized communities, and global business, will find resilience ultimately elusive.

CLIMATE LEADERSHIP

THE POTENTIAL OF BUSINESS ORGANIZATIONS

But, my friends, the period of social pioneering is only at its beginning. And make no mistake about it—the same qualities of heroism and faith and vision that were required to bring the forces of Nature into subjection will be required—in even greater measure—to bring under proper control the forces of modern society.

Franklin Delano Roosevelt

7.1 INTRODUCTION

Previous chapters of this dissertation dealt with the issue of climate change adaptation at the National and local community levels, including an analysis of two business cases in Battambang province. This last empirical chapter aims to close the circle and further disambiguate the role of the private sector by presenting findings from a broader business perspective, namely understanding the potential of Cambodia's business organizations to answer the call for adaptation leadership.

Climate change requires substantial changes in the way humans relate to and govern social-ecological systems (Folke et al. 2005), including shifts in attitudes and behavior across all realms, from policy and planning to infrastructure and agriculture (Meijerink and Stiller 2013). The governance of such action is however beyond the reach of individual governments and international cooperation; non-state actors—including private networks that share information and raise awareness and whose authority often derives largely from private sources—are becoming increasingly important in efforts that address global change (Chan and Pattberg 2008; Pattberg et al. 2008). In fact, since the Kyoto Protocol entered into force, market mechanisms have become a major cornerstone of the current climate governance architecture (Pattberg et al. 2008). This shared-power and shared-responsibility setting makes coordination between different levels of government and public and private actors necessary (Crosby and Bryson 2010; Meijerink and Stiller 2013). Climate change implicitly requires "institutions that promote the adaptive capacity of society and allow society to modify its institutions at a rate commensurate with the rate of environmental change" (Gupta et al. 2010). Answering this call not only requires multi-level governance and coordination; it requires climate change leadership, and notably business leadership (United Nations Global Compact et al. 2013; UN Global Compact & UNEP 2012; Meijerink and Stiller 2013; Pattberg et al. 2008).[1] This has inspired companies such as Nestle to release concretely pledge leadership commitments (see Figure 7.1) and action:

> *We are committed to further reducing GHG emissions along our value chain, in line with science-based targets. We also continue to strengthen our supply chain and help the farmers we work with become more resilient to climate change.*

While business leadership in climate change is a resonating and almost venerable concept, what it means in practice remains at once optimistic and yet curiously undefined. Some discernment is warranted: Who is 'the private sector', and what motivations, capacities and limitations do they possess? Often presented as homogenous, business instead is diverse and varies according to sector, needs, abilities and levels of awareness; these factors will directly influence the type, level and sustainability of any leadership contribution. Further, sustainable adaptation demands a sober assessment of the complexity of climate vulnerability combined with a long-haul perspective (Meijerink and Stiller 2013) which not only *accounts for*, but is *accountable to*, the grassroots (United Nations Global Compact et al. 2013; Pattberg et al. 2008). Finally, climate change scholars and practitioners increasingly call for system changes and transformation, but what is required often remains undefined. Gupta et al. observed that, "there is little research on assessing

[1] The call for climate change leadership has also resulted in international summits (http://www.climatechange-porto.com/ including a women's leadership summit (https://www.unenvironment.org/news-and-stories/story/women-leaders-come-together-fight-climate-change); courses (https://www.futurelearn.com/courses/climate-leadership and http://www.uu.se/en/admissions/master/selma/Kurser/?kKod=1MV077&typ=1); and conferences (https://www.climateleadershipconference.org/) [Accessed on August 12, 2018].

institutions on their ability to enhance the adaptive capacity of society" (2010). If actions for resilience are uncritically implemented or defined by business-as-usual, we will not only be discouraged with the results, we may be confronted with worsened vulnerability and increased marginalization. This is especially troubling if we consider Cambodia, a post-conflict country where roughly 41 percent of the population live on less than two USD per day, where many others teeter just above the poverty line, and where livelihood vulnerability is on the rise (ADB 2014b). Climate change has significant potential to exacerbate poverty in the country (Jacobson et al. 2018).

Figure 7.1. Nestle's leadership commitment to climate change

Source. www.nestle.com/csv/impact/climate-change/climate-change

Given the immensity of the private sector, this study took a narrowed gaze and looked into the ability of national and international business chambers and organizations to answer the call for climate leadership. This path was followed for a few reasons. First, leadership is recognized to be a key sustainability driver (Evans et al. 2015) and an important factor for the emergence and effective implementation of climate change policy (Evans et al. 2015) as well as for successful climate change adaptation (Moser and Ekstrom 2010). Second, climate change is a 'wicked' policy problem and 'an extended peer community' is needed to find and implement solutions (Gough, Castells, and Funtowicz 1998). New forms of governance are emerging, including governance through networks; here norms, rules and implementation reflect agency and architecture beyond the state (Pattberg et al. 2008). As extensive and influential business networks, Cambodian business organizations are a clear example of this and may hold untapped potential.

Previous chapters in the dissertation have investigated different sides of adaptation at the policy and grassroots levels where important empirical data and findings on practice and challenges on the ground emerged. The final aspect of the doctorate study touches on issues at the meso level. Its guiding question was twofold: Where do these business organizations stand in terms of climate change, and what is their potential to play a leading role in adaptation action? While international, regional al local collaborations in climate change have received attention, little information exists at this level. In fact, decision-makers, businesses, civil society and others are coming together in new ways to tackle issues related to climate and development, yet the determinants and attributes that condition institutional response capacity at this scale are less well known. In their search for scholarly publications on climate change leadership, Meijerink and Stiller (2013) found that attention centered on mitigation policies. Where adaptation was addressed, leadership was either: 1) only one factor of successful adaptation; 2) used in the context of conflicts between mitigation and adaptation measures at the local level; or 3) highly abstract. As a result, adaptation leadership is not considered theoretically, systematically or empirically (Meijerink and Stiller 2013). The private sector's role in development has long been a focus in many countries and is increasingly linked to the climate change debate. However, climate change now demands us to critically reassess our patterns of thinking and doing. Does the private sector promise hold? This study aims to narrow this information gap.

Similar to data collection methods at the village level in Battambang, the study sought to identify private sector perceptions on climate change, the major leadership constraints and opportunities, and the extent to which business actors are willing and able to deliver on climate change action. By studying business needs, perspectives and priorities, this chapter grounds the popular discourse on business potential and

provides pragmatic information that can be used to support pro-poor, strategic and evidence-based planning in Cambodia. Toward this end, the remainder of this chapter provides the research framework underpinning the analysis, the results, and a discussion on the study's main findings.

7.2 RESEARCH CONTOURS

The aim of this investigation was twofold: first, to scope out the role of trade and business organizations in Cambodia and, second, within this context understand how climate change is perceived as well as identify which opportunities and constraints emerge in terms of business-led climate leadership. The analysis, based on fieldwork and participation at business events in Phnom Penh in 2015 (including EuroCham's Green Business Forum, Transparency International's National Conference on Business Integrity, and ASEAN CSR's Forum for Responsible Business among others), began with scoping interviews with representatives of the Netherlands Cambodia Chamber of Commerce (NCCC) and the Cambodian Organic Agriculture Association (CORAA). The study also included semi-structured, in-depth interviews with representatives of 16 national and international business associations and chambers as well as one government trade agency representing the United Kingdom. Given that the topic of business leadership in adaptation is relatively new and information is generally lacking, an exploratory approach was most fitting in terms of generating rich and open discussions surrounding the motivations and challenges of these stakeholders. Finally, interviews with seven Cambodian business owners provided complementary data. In total, the study involved 23 respondents (nine females and 14 males). While these organizations and businesses are interesting because of the leading role they play in the country's business environment (and it is likely that no such prior research has been undertaken in this area), one caveat is that the study is unable to give the whole story. Some representatives were out of the country while others, claiming to represent China, Malaysia, Singapore and Thailand, were hesitant or difficult to reach and ultimately declined participation. Table 7.1 outlines the study's sample.

The majority of chambers and associations included in the study—one exception, UKTI, is a government trade agency—are formally classified as non-profits whose central mandate is to support member businesses; more information on this, and how it relates to adaptation leadership, is provided in the findings. Prior to this, in the following sections, a brief overview of the study's theoretical aspects is discussed. The first part illustrates how leadership thought has evolved over time and clarifies common leadership misconceptions. The section ends with an synopsis of the integrative framework developed by Meijerink and Stiller (2013) that is used to analyze the adaptation leadership potential of Cambodia's business chambers and organizations.

7.3 LEADERSHIP FOR CLIMATE CHANGE ADAPTATION

Climate change is a complex sustainability problem which presents messy adaptive challenges that exist within multiple systems (Heifetz and Laurie 2001). Addressing these challenges requires: 1) substantial changes in the way humans relate to and govern social-ecological systems (Folke et al. 2005) or, in other words, landmark shifts in attitudes and behavior, policy and planning, and agriculture and infrastructure among others (Meijerink and Stiller 2013); and 2) adaptive governance regimes that can not only handle uncertainty and change (Dietz, Ostrom, and Stern 2008; Folke et al. 2005) but can set society on a path to increased sustainability and especially adaptive capacity (Stiller and Meijerink 2016; Gupta et al. 2010). A key factor for motivating changes in behavior, effective governance and driving sustainable development is leadership (Evans et al. 2015; Meijerink and Stiller 2013; Stiller and Meijerink 2016; Van Laerhoven 2010; Gallagher 2016). Environmental governance and climate change policy additionally require leadership for their emergence and effective implementation (Folke et al. 2005; Smith, Vogel, and Cromwell 2009) (Evans et al. 2015). And while critical at any stage of the climate change adaptation process, leadership is perhaps most important during initiating stages and for sustaining momentum over time (Moser and Ekstrom 2010); it is also key to realizing transformational adaptation (Kates et al. 2012). The next section delves

Table 7.1. Business organizations represented in the sample

Organizations	
1.	UK Trade & Investment (UKTI)
2.	International Business Chamber of Cambodia (IBC)
3.	European Chamber of Commerce (EuroCham)
4.	Japanese Business Association of Cambodia (JBAC)
5.	Korea Chamber of Commerce (KCC)
6.	Indian Chamber of Commerce in Cambodia **(ICC)**
7.	American Chamber of Commerce in Cambodia (AmCham)
8.	Australian Chamber of Commerce in Cambodia (AusCham)
9.	British Chamber of Commerce Cambodia (BritCham)
10.	Netherlands Cambodia Chamber of Commerce (NCCC)
11.	Social Enterprise Cambodia (SEC)
12.	Cambodian Organic Agriculture Association (CORAA)
13.	Cambodian Chamber of Commerce (CCC)
14.	Young Entrepreneurs Association of Cambodia (YEAC)
15.	Federation of Association for Small and Medium Enterprises of Cambodia (FASMEC)
16.	Cambodian Rice Federation (CRF)
17.	Cambodia Microfinance Association (CMA)
18.	Cambodian Federation of Employers and Business Associations (CAMFEBA)
Businesses	
1.	East West Seed
2.	Sovannak Palm Sugar
3.	Ieng Group (Green Eagle; Khmer Organic Coop)
4.	Kirirom Food Production
5.	Amru Rice (Cambodia) Co., Ltd
6.	Green Leaf Farm
7.	Cambodia Farmer Rice

deeper into the evolution of leadership studies and the importance of leadership for climate change adaptation.

7.3.1 THE EVOLUTION OF DYNAMIC LEADERSHIP

The subject and study of leadership is a relatively recent occurrence which was influenced, at its emergence in the 1940s, by mechanistic Scientific Management principles such as efficiency and predictability (Rost 1997; Burns, Vaught, and Bauman 2015). Leadership was originally thought to be a simple matter of an individual's charisma and vision (Eagly and Carli 2003). Leadership qualities were seen as innate so that: "... you either have it or you don't" (Kotter 2001). The 'great man' theory for example held that leaders are not developed, they are born (James 1880); not surprisingly, these leaders were mostly white males with, 'almost mythical qualities that ensure[d] a bevy of followers (Gallagher 2012 as cited by Shriberg and Macdonald 2013). Leadership was thus bound to the exceptional and singular individual—the visible figurehead who, appointed to fulfill a leadership role, commanded authority and assumed full responsibility for the direction, performance and successes of an institution (Allen, Stelzner, and Wielkiewicz 1998). One person convinced followers of a vision, which once accepted, was implemented in an organization as policy (Rost 1997). Command-and-control structures and a strict and hierarchical division of labor were the means to implement this "rational man" leadership model (Shriberg and Macdonald 2013). In fact, Rost (1997) once observed that, "The concept of leadership is so much bound up in what the leader does that no one else matters." Leaders had followers who were, "passive, submissive, subordinate, controlled, and directed" (1997). Alongside this was the idea that leadership processes were largely transactional which led to the 'pervasive confusion of leadership with management' (Rost 1997). In 1978, Burns was the first to introduce the politics of leadership as transformational change (Rost 1997). This led some theorists to position leadership as heroics: authentic charismatic-inspirational leaders employ their skills in visioning, communication as well as building loyalty and trust to transform organizations toward a higher moral maturity and ethical purpose (Bass and Steidlmeier 1999).

Decidedly inadequate, thought moved away in the late 70s from traditional, hierarchical and mechanistic models (Rost 1997; Allen, Stelzner, and Wielkiewicz 1998; Burns, Vaught, and Bauman 2015). Additionally, management became more distinct from leadership to further define key differences (Table 7.2). Although both involve making decisions, creating networks for action, and monitoring results, leadership involves setting direction and developing strategies to achieve a vision in an increasingly complex and volatile business environment (Kotter 2001). Both systems of action are complementary and necessary, however management aims to achieve stability and *cope* with complexity while leadership aims to instill effective change; more change demands more leadership (Kotter 2001).

Table 7.2. Differences between management and leadership domains

Management	Leadership
Planning & budgeting	Setting direction
Organizing & staffing	Aligning people
Solving problems & controlling processes	Providing motivation

Adapted from Kotter (2001)

Successful leadership responds to 'adaptive challenges,' or the complex problems organizations face (Heifetz 1994; Allen, Stelzner, and Wielkiewicz 1998). Industrial approaches characterized by power, productivity, management, and authority were inadequate in addressing these complex challenges. *Positional leaders* (i.e., individual leaders) were just one part of the larger whole—a set of interconnections and relations embedded within social, ecological and economic systems. This led to various schools of thought where group process, collaboration, and shared goals became foci (Rost 1997) and principles of ecology

and systems thinking were incorporated for example in deep systems leadership (Satterwhite, Sheridan, and McIntyre Miller 2016); eco-leadership (Western 2010); and ecological leadership (Wielkiewicz and Stelzner 2005). In leadership for sustainability, individuals are embedded within a system of relationships and operate on sustainability values that foster healthy and just change through creative and collaborative means (Burns, Vaught, and Bauman 2015). In order to understand the potential of business chambers and similar organizations in Cambodia to be climate leaders, the next section presents the framework which structured data analysis.

7.3.2 GAGING PRIVATE SECTOR POTENTIAL: LEADERSHIP FUNCTIONS

Building on the above points, the adaptation leadership framework of Meijerink and Stiller (2013) serves as a useful means to draw conclusions from the data. The framework was developed after an extensive review of how and where leadership emerges within the climate change literature; it is based on the recognition that significant adaptation leadership is needed to realize 'useful change' in existing policies, practices and institutions.[2] The end result is a set of leadership functions which, when in place, can facilitate climate adaptation action within networks composed of various organizations, including public and private actors.

First, and given the uncertainty of climate change and its impacts, networks need to create sufficient space to experiment with new adaptation approaches. The *enabling function* deals with creating the conditions for the emergence of new knowledge and innovation; favorable conditions include a variety and diversity of approaches, fostering interaction, inserting adaptive tension, or creating a sense of urgency. This function in turn allows the *adaptive function* to work; this concerns activities around innovation and new idea generation and "emerges from the interactions within adaptive networks" (Meijerink and Stiller 2013). The *connective function* allows linkages and trans-boundary work across different levels of government, sectors, and a wide variety of actors. Prominent examples include partnerships and multi-stakeholder platforms. The *dissemination function* includes all activities dealing with the dissemination of innovative ideas and approaches that have been developed through the adaptive function within the network. Finally, the *political-administrative function* targets the political context; this is the space where climate change adaptation policies are made and the respective actors and networks operate, including *Ideational Leaders*, *Policy Entrepreneurs* and *Champions* who find suitable avenues to advocate, connect problems with solutions, and catalyze innovation. These actors similarly promote the change effort by spreading information and ideas across boundaries and linking networks to decision-making arenas. Equally important are *sponsors* who are defined by Crosby and Bryson (2010) as an actor who moves the agenda forward through authority, money, or connections. Through this function, "individual leaders may contribute to the realization of several leadership functions and that leadership functions can be fulfilled by several individuals" (Meijerink and Stiller 2013). The function additionally involves decision-making and the communication of visions as well as resource allocation to realize stated visions.

In this study, the framework is used to identify and analyze which functions are present or absent within the sample—the network of business organizations. However, is important to note that, due to the connective and interplaying nature of the data and the functions, conceptual lines become blurred and sometimes functions overlap. Moreover, effective adaptation action involves more than having a set of favorable leadership functions in place; it also demands more than the ability of individuals and the network itself to influence and change policy. To compensate in part, the functions are applied more broadly in this study. For example, the political-administrative function comes across as somewhat narrow as it is geared toward the public-administrative sphere or "the political context in which policy is made within the network of actors who deal with climate adaptation" (Meijerink and Stiller 2013). This study therefore amends

[2] In their search for scholarly publications on adaptation leadership, Meijerink and Stiller (2013) found that attention centered on mitigation policies, making adaptation the 'poor cousin' of mitigation (Bird 2014) in more ways than one. Where adaptation was addressed, leadership was: 1) only one factor of successful adaptation; 2) used in the context of conflicts between mitigation and adaptation measures at the local level; or 3) highly abstract.

this function to address important socio-political dimensions of power and influence identified in the wider literature including: business reputation (or reputational advantage as identified for example by Ashley 2009; United Nations Global Compact et al. 2013); authority and ability to influence (Smit and Wandel 2006; Rost 1997; Gupta et al. 2010). The study also widens the function to include principles of fair administration such as *equity* and *fair institutional rules*. This is a precursor of important adaptation principles as identified in the literature, namely accountability, transparency and responsiveness to society (Gupta and Vegelin 2016; Gupta et al. 2010; IPCC 2007a; Adger et al. 2005). These are not just considered necessary for adaptation, but are also crucial to effective adaptation leadership (Gupta et al. 2010). Given the darker side of Cambodia's business environment as discussed in previous chapters, this is certainly the case. Table 7.3 outlines the characteristics of each function as applied in the current study.

Table 7.3. Adaptation leadership functions

Leadership function	Domain
Enabling	Conditions supporting the emergence of new knowledge and innovation
Adaptive	Innovating and generating new ideas
Connective	Linkages across different levels of government, sectors, and a wide variety of actors
Dissemination	Disseminating innovative ideas and approaches
Political-administrative	Governance and administration processes at all levels, including socio-political dimensions of power and influence

Source: Adapted from Meijerink and Stiller 2013

Despite the drawbacks, the framework serves a useful role and the findings a starting point for further research and discussion on the (in)ability of private sector organizations to be adaptation leaders. Toward this end, the following results section describes the data that was collected: information on the general organizational and operational characteristics of the business organizations. After the this, the last section of the chapter discusses how these results are meaningful in terms of leadership strengths and weaknesses.

7.4 NETWORK CHARACTERISTICS AND OPERATIONAL STRUCTURE

7.4.1 MANDATE AND SECTORS COVERED

The majority of chambers and associations included in the study were formally classified as non-profits which ran operations from a central office. There were a few exceptions: the lead representative of the Korea Chamber owned and operated a garment factory and so conducted Chamber business on the side and from an office above the factory floor. Similarly, the Indian Chamber of Commerce in Cambodia (ICC), launched in early 2012, did not have an office and was run by volunteers in their free time [ICC, 05-25-15]. Nonetheless, the central mandate of each business organization was to support, promote and grow member businesses. One exception is UKTI, a government trade agency which focused, in close cooperation with BritCham and the British embassy, on getting UK businesses to invest in Cambodia [UKTI interview, 05-04-15].

Within this network of businesses, a wide variety of sectors was represented including manufacturing (garment and machine), real estate, finance and insurance, tourism; construction; education; communications;

and services (including emergency, B2B and B2C) among others. The agricultural sector however was found to be underrepresented in the network and especially in the western chambers. For example, at the time of data collection, the online member directory of EuroCham (http://eurocham-cambodia.org/members-directory#) listed one business under agriculture and 16 businesses under agro-industry while 35 were tagged to construction and 49 to industry. The agricultural sector was however especially central to FASMEC which, established in 2010, focused specifically on SMEs, a large proportion of which were involved in food processing (e.g., rice, fish sauce or dried mangoes) and so needed to source local agricultural inputs [05-20-15].

Supporting this sectoral division, each organization taking part in the research featured sectoral or subject committees which were headed by a set of representatives. Examples included SMEs and Industrial Relations committees at Young Entrepreneurs Association of Cambodia (YEAC) while EuroCham (established in 2011) had committees for Healthcare, Digital & New Technologies, Automotive and Green Business, among others. EuroCham's Green Business Committee was composed of three subcommittees: Corporate Social Responsibility, Renewable Energy; and Green Buildings.

7.4.2 MEMBERSHIP TYPES

Likewise, the data revealed that various membership levels and types were offered for businesses, associations and individuals. For instance, Cambodian Federation of Employers and Business Associations (CAMFEBA, established in 2002) had the following member configuration at the time of data collection: 11 business and sector associations; 252 companies; and 26 non-profits. Membership numbers were somewhat misleading however as membership types, at CORAA for example, include business, NGO and farmer cooperative; individual cooperatives can represent between 70 and 400 farmers for a rough total of 2,000 farmers connected through cooperatives to the business organization [CORAA interview, 5-04-15]. Larger chambers such as the Cambodian Chamber of Commerce (CCC)–the largest 'homegrown' chamber in the country–had roughly 5,000 members. At the low end, Social Enterprise Cambodia (SEC) had roughly 25 while Cambodian Organic Agriculture Association (CORAA) had 40 members. This latter association focused on advancing Cambodia's reputation toward being a "Green Garden of Asia" by building private sector capacity, providing an alternative to conventional (chemical) agriculture, and alleviating poverty [CORAA interview, 5-04-15].

Requirements for membership

The data revealed that, in some cases, certain organizations limited membership and the benefits thereof. For example, AusCham membership was only open to Australian citizens who work in Australian businesses, on Australian projects in Cambodia, or with organizations that have a direct link to Australia. BritCham only gave voting rights to British members [Interview, 05-25-15]. In the case of the Japanese Business Association of Cambodia (JBAC), members had to be Japanese nationals or employ Japanese staff. Perhaps not surprisingly, all affairs and events were conducted in the Japanese language [05-21-15]. The Indian Chamber, "the left and right hand for business in India" restricted voting to Indian nationals [Interview 05-25-15]. While this makes a certain amount of sense for single-nation chambers, it was a source of conflict and in-fighting within the European Chamber which was a loose conglomeration of EU Member State nations [05-05-15]. In fact, the chamber was comprised of two National Chapters: ADW or the German Business Group in Cambodia and the French-Cambodian Chamber of Commerce and Industry. And while BritCham remained a founding member, it retained independent status. BritCham membership was open to any individual with an interest in the UK and Cambodia [05-25-15]. IBC was another exception as, according to the representative, "any company can be a member," however "most are foreign" [05-18-15].

In addition, membership applications were reviewed and approved by board members after certain business integrity criteria are met. For example, the Japanese Business Association of Cambodia (JBAC) evaluated member applications through background checks into patents and registration; companies who did

not operate in Japan must be established in Cambodia for at least one year [05-21-15]. EuroCham required all applicants to be in good standing. At at the upper membership levels, companies must be established under the laws of any EU Member State and have substantial ties to the EU; applicants must also provide supporting evidence including proof of registration from the Ministry of Commerce, a patent tax certificate and confirmation that the CEO or second representative is resident in Cambodia [05-06-2015]. Additionally, microfinance institutions who have obtained a license from the National Bank of Cambodia (NBC), must by law become a member of Cambodia Microfinance Association (CMA) according to article 72 of the Law on Banking and Financial Institutions. When looking more broadly, research participants were generally in favor of more government laws, policies and regulation. In fact, when asked about the kinds of support needed for business-led climate action, roughly 63 percent of the sample indicated the need for *national laws and policies* while 50 percent pointed to *international laws and policies*; a full comparison of the kinds of support needed is provided in Figure 7.2 at the end of the section.

According to the Director, BritCham also viewed business integrity as a means for members to distinguish themselves through a high standard of doing business [05-25-2015]. The final example to illustrate this came from IBC; before a business could join, the chamber conducted a strict background check and a committee-level evaluation of an applicant's reputation in terms of employee health and exploitative behavior [05-18-2015]. Quality-checking the business community did not end here as IBC also conducted wrongdoing investigations and pushed for business integrity by facilitating and promoting the government's Anti-Corruption Unit Memorandum of Understanding (MoU) among membership. The MoU, which aims to improve the ease of doing business and minimize corruption, asks businesses to sign a pledge that states that corrupt business practices will not be tolerated. According to the IBC representative, the chamber was involved in the drafting of the anti-corruption guidelines and they actively worked on getting more members to sign the resultant MoU; one of their more prominent members, Coca Cola, was the first to sign. According to the IBC representative, businesses are more careful because corruption is increasingly questioned and people are more aware of their rights. Through the platform offered IBC–which encourages members to embed anti-corruption practices into their business policies–Coca Cola and Prudential gave presentations. At the time of data collection, Coca Cola additionally wanted to establish a group for signatories to exchange experiences in dedicated meetings and seminars [05-18-15]. The reputation of IBC was made clear by a chamber director from India who stated, "IBC's standing is big in this country" [05-25-15].

Nonetheless, chambers and organizations faced barriers in this regard. For example, one informant described a common occurrence in the sample by lamenting the challenges his organization faced in terms of committees comprised of long-standing members of Cambodia's previously unbridled business community. Part of the 'old boys club,' these members have built strong business foundations and fortunes and so have significant power to block new and more sustainable business initiatives [Interview 05-05-15, male].

Member characteristics

A range of businesses were evident in the respective organizations' membership. Membership at AusCham (established in the mid-nineties as the Australian Business Association of Cambodia) and ICC, the Indian Chamber of Commerce, was largely composed of SMEs with the latter especially comprised of pharmaceutical companies [05-13-15; 05-25-15]. Prominent and larger companies (some held multiple memberships at the different chambers) included Delta Airlines, Coca Cola, Cathay Dragon, Bosch (Cambodia) Co., Ltd, Decathlon (Cambo Sporting Goods), and Chevron (Cambodia) Limited. BritCham, founded in 1995 as the British Business Association of Cambodia, had a number of prominent members including Prudential, Standard Chartered Bank, Marks & Spencer, Dewhirst, Bruntys Cider, Land Rover and Jaguar. The International Business Chamber of Cambodia (IBC), established by nine members in 1993, appeared to be the premier chamber with members from roughly 20 countries; members included Unilever (Cambodia) Ltd., Siemens Representation Cambodia, BMW Cambodia, Mitsubishi Corporation Phnom Penh Representative Office, Ernst & Young (Cambodia) Ltd., and British American Tobacco (Cambodia) Ltd.

The network of business organizations also featured prominent members including Ineg Group led by Cambodian businessman and philanthropist Ieng Sotheara. At the time of data collection, much attention was being placed on organic agricultural production with Mr. Sotheara leading the way through his companies Khmer Organic Farm and Khmer Organic Cooperative [Interview 05-13-15; 05-14-15]. In addition to growing and suppling organic foods, Sotheara's initiatives included training sessions, workshops, and field trips for farmers, youth, and companies. Ieng Foundation also connected to local communities through the implementation of development initiatives in rural Cambodia [Interviews, 05-13-15; 05-14-15]. With a keen interest in responsible business, Sotheara also played a leading role in Oxfam UK's CSR Platform in 2015 as a Steering Committee member [Oxfam interview 05-12-15]. Follow up desk research showed that Sotheara's organic farm at Picnic Resort, which supplies roughly 60 different types of organic produce to distributors in Phnom Penh, was the first in Cambodia to be certified to European Union standards.[3] In addition, Sovannak Palm Sugar is a social enterprise working to support poor farmers and bettering the quality of palm sugar on the market while Cambodian Farmer Rice trades in organically-certified, Cambodian rice for the local market [Company interviews, males, 05-29-15; 10-01-15]. Each aim to source locally from smallholders and improve the quality of local products on the Cambodian market. Finally, Kirirom Food Production is a Khmer-owned business which runs a 5,000 m2 dried fruit manufacturing plant. In partnership with local farmers, and before expanding to include dried pineapple and dried papaya, the company aimed to stabilize farmers' incomes during the mango harvest season and to produce dried mango from unsold fresh mangoes from the Kirirom region that were going to waste. The company took employee health and satisfaction seriously with a nightly football game, an employee canteen, a staff residence complex, and a Buddhist and Meditation House where weekly observances are held [Company interview, female, 05-29-15]. Each of these examples show how members within the business network advance business integrity and bring added societal value.

Women's representation

The number of business women observed in the network was notably small; the study was only able to include the perspective of one business women who ran Kirirom Food Production. Research respondents were not clear on the exact numbers (membership often falls under the umbrella company), however all respondents reported that the percentage of female members was very low. In addition, nearly all respondents reported that there were no activities or programs that specifically targeted the needs of female business owners and entrepreneurs. The one exception was CAMFEBA which had dedicated anti-harassment policies in place [05-22-15]. BritCham used to host a women's networking event and had plans to collaborate more strongly with Cambodia Women Entrepreneurs Association (CWEA was not available to take part in this study) [05-25-15]. Follow up desk research confirmed that this was indeed the case. BritCham members Jaguar/Land Rover held a networking event and seminar for BritCham and CWEA members at their showroom. The seminar, focused on company rules and regulations for businesses operating in Cambodia, went hand in hand with the promotion a of their latest car model.[4]

7.4.3 SOURCES OF FUNDING

As non-profits, the majority of chambers and associations relied on the revenues obtained from annual membership fees, sponsorships, events and services (such as market research, advertisement, and trade fairs). Yearly fees ranged from US $100 for individual membership at AmCham to US $5,000 for Corporate Platinum membership, also at AmCham [05-05-15]. CMA, established in 2004 with the mission to, "facilitate microfinance operators in their operations and to strengthen communication with authorities, national and International donors, creditors and investors," based the fee structure on the amount of a member's outstanding loans: entities with dispersed loans under US $3 million paid US $750 per year while members with a loan portfolio of more than US $10 million or more were charged US $1,600 per year in

[3] Khmer Times, September 12, 2017. Organic farm is first EU standard in Cambodia. Available at: http://www.khmertimeskh.com/5082394/organic-farm-first-eu-standard-cambodia/ [Accessed 10-27-2018].

membership fees [05-28-15; CMA 2018]. Association membership fees at CAMFEBA are based on the number of members within the association. Members of this type included restaurant and hotel associations but also business associations such as AmCham and BritCham illustrating that business chambers themselves were also members of other business associations [05-22-15]. Finally, CORAA charged service fees for trainings and follow-up coaching on organic standards, production methods and inspections, or on record-keeping for certification [interview, female, 05-04-15; CORRA 2018].

Organizations also frequently charged a one-time administration fee at sign-up; fees ranged between US $100 and US $1,200, the latter at IBC. Some chambers additionally benefitted from the support provided by *sponsors*. For example, the Korean Chamber relied solely on somewhat informal member donations while FASMEC charged a membership fee but also received donations from members, including board members. EuroCham was working quite comfortably on a five-year grant from the European Union which led one association representative to state, "EuroCham has a lot of money" [05-18-15]. Additionally, the Cambodian Rice Federation (CRF), established in 2014 and sub-decreed to solely represent Cambodia's rice sector, was established with US $500,000 of seed money from the Cambodian government. The CRF was also supported through membership and export fees [05-27-15]. CORAA, established in 2006, was initially supported during the start-up phase by the Ministry of Agriculture, Forestry and Fisheries, the Ministry of Commerce and the German Technical Cooperation (GTZ) and more recently by the International Finance Cooperation and the European Commission (CORRA 2018).

The question of funding was a source of contention for UKTI and the international business chambers in particular because of concerns surrounding the large amounts of donor funding flowing into Cambodia yet the perceived misuse and lack of impact of these funds. One quote in particular illustrates this general perception of the international chambers. When asked if funding was needed to provide climate change solutions, one EuroCham representative stated skeptically, "This is the value and some of the principles that we want to promote, being green, more sustainable, and corporate social responsibility... But does it need a lot of money? I don't know." A co-representative from the same chamber agreed: "[It's] better to demonstrate that you can do it without the funding." He went on to say, "Companies don't need two, three, four million—10, 20, 30 thousand is enough. [But] ideas need to come from the private sector, not imposed upon them. You can have the best climatologist, the best economist, whatever you want. But you will need to spend much time understanding the situation and needs of your beneficiary if you want to have any possible chance of impact" [05-06-15].

While not completely opposed to funding, participants agreed that funding needed to be done carefully with attention to impact and locally appropriate solutions. Smaller funding amounts were also viewed favorably. Despite these reservations, 50 percent, or half of the sample, considered funding an important aspect of taking on the task of climate adaptation action.

Furthermore, while mixed membership types were seen as an advantage, diversity in membership could cause problems. According to one representative:

> *We have a real mix which in some ways is really good because as a business association you don't want just one narrow type of business otherwise, you're missing out on a lot. But there can be different priorities for different members. Sometimes the individual producers or the vegetable producers, they think that we're ignoring them because we're working with a rice cooperative because it's their harvest season or whatever. It's more intense, and the more hours you put into that, other members say, "Hey! We're part of [organization] too!*
>
> *[...] it also has a little bit to do with where the money comes from. So, you know, the rice cooperatives,*

[4] BritCham Cambodia, August 3, 2016. Available at: http://www.britchamcambodia.org/post/85/JaguarLand-Rover-Supporting-women-in-business-

some of them in the past have had project funding that has paid for our services to help them. In the past that was about two-thirds of our funding, so two of the three staff spent the majority of their time on that while our remaining staff worked with the vegetable producers as part of our other focus points. So yeah, it's still something we work out every day, you know, priorities. [Interview, 05-04-15].

This quote illustrates the issue of limited funds that these organizations continually contend with. This example from the data illustrates a palpable tension threading throughout the study—a continual jostling for resources within an inherently competitive environment where interests can quickly diverge at the cost of sustained collaboration.

7.4.4 MEMBERSHIP BENEFITS

Once membership was secured, businesses were able to take advantage of various benefits, including increased local to international exposure as well as opportunities for capacity building, lobbying, inter- and intra-chamber networking, match-making and B2B (business to business) support. For instance, members were generally included in a membership directory and benefited from website presence while monthly newsletters provided information on a range of business-related issues and services. IBC additionally had an online library so members could access a diversity of information and important documents including minutes of the General Meetings and the Government-Private Sector Forum (G-PSF) Working Group D (Legal Tax & Governance see Chapter 6 for more details on the G-PSF Working Groups). Business chambers and associations conducted market research and also published trade and investment white papers and policy recommendations. EuroCham's 'business center' assisted startups and individuals while AmCham member benefits included discounts on professional development through a local business training institute. IBC organized field trips and hosted the biggest international investment conference every two years. At the time of data collection, CAMFEBA provided vocational, first aid and occupational safety trainings and was running a two-year youth employment program with ILO; in fact, membership provided access to a number of national workshops and trainings organized by the Cambodian government and the ILO [05-22-15] as well as frequent trainings in Japan that are fully-sponsored by the Japanese government (CAMFEBA 2016). Finally, the Association also provided expert advice (through meetings, email and telephone) on a range of business topics as well as member representation in labor dispute settlements at the business, Arbitration Council, and court levels (CAMFEBA 2016).

Climate change: Everywhere but no where

Absent from the business agenda

Despite these numerous activities, the study showed that climate change was generally not on the agenda. EuroCham's Renewable Energy and Green Buildings subcommittees and the Green Business Forum (established in 2013), were the only formal mechanisms found in the research to consider climate change issues directly. Another limitation was observed as the 2015 Forum was solely focused on mitigation, namely green fuel (e.g., solar and renewable energies, sustainable biomass), green buildings and developments, and energy efficiency for small and medium enterprises.[5] While CORRA focused on organic production, this seemed to be more along the lines of production standards and expanding niche markets; in fact the CORRA representative interviewed for the study stated that there were other, more pressing issues to deal with in the country before climate change [CORAA, 05-04-15].

In fact, across the sample climate change was not perceived to be a leading priority in Cambodia in general. More pressing issues (described by the non-Cambodian representatives in particular) included poverty; uneven geopolitical power relations in transboundary water management; ASEAN integration

[5] Follow-up research showed that the green debate had also reached the tourism sector in 2018 through another EuroCham event.

and reduced competitiveness; and finally, the difficulties businesses faced and lack of an enabling environment for business [CORAA, 05-04-15; EuroCham, 05-06-15]. Leading discussions in the country's business landscape often centered on Cambodia's reduced competitiveness in relation to other ASEAN members, improving the ease of doing business in Cambodia, and increased strengthening and formalization of the business environment through enhanced human resources and simplified customs, transport and logistics, business registration and taxation (perceived to be important for a level playing field) among others. These resonated easily within the network of organizations because they relate very practically to doing business and making a profit, the traditional domain of the private sector. The core mandate was expressed by an association representative who stated, "Members aren't really thinking about climate change. It's not on the agenda yet. They are trying to grow their businesses. Climate change is a priority for the farmer, there is a lot of impact. But so far there is not much attention for it here" [CAMFEBA, 05-22-15]. In fact, only five out of 19 organization representatives reported that they noticed changes in the risk perceptions among their member companies; no representatives considered climate change to be important in terms of their organization's strategy.

It's abstract and global

Another challenge to emerge from the analysis was that the majority of interviewees recognized climate change to be a major issue, yet one that is largely abstract and global in nature. The representatives of Cambodian business associations such as FASMEC and CAMFEBA were two exceptions; because of their connections to rural areas and farmers, these organizations were much more attuned to the impact and implications of climate change in rural, farming areas. In fact, the FASMEC operations manager had special training and experience in climate change, but action was stymied by a lack of human resource capacity [05-20-15]. Climate change was a topic of concern for business owners too; interviews were conducted with seven agricultural companies, each working directly at the local, rural level and observing or experiencing water shortages; heightened perceptions of risk among local farmers; reduced yields; and increased costs [East West Seed, 05-22-15; Sovannak Palm Sugar, 05-29-15; Green Eagle (Khmer Organic Coop), 05-13-15 and 05-14-15; Kirirom Food Production, 05-29-15; Amru Rice (Cambodia) Co., Ltd, 06-16-15; Green Leaf Farm, 04-28-15; and Cambodia Farmer Rice, 10-01-15].

A few examples from the data can be used to illustrate this general attention deficit within the network. According to a representative of Cambodia Microfinance Association, while deforestation and pollution emerged as topics of conversation, there was not much discussion about climate change [05-28-15]. This was also mentioned by the FASMEC representative who stated, "Only a few people are talking about it, most attention comes from NGOs. But business—they don't understand the benefits of thinking about it" [05-20-15]. This was recognized by EuroCham representative who reflected, "Can we do more? Probably. But it needs to come from the members" [EuroCham, 05-06-15]; the consequences of this member-led approach are discussed later in the chapter. One business owner with an organic vegetable, herb and fruit farm close to Phnom Penh observed that the private sector already struggles with understanding how to do business in local contexts, much less how to address climate change. Business in general needed to go beyond the product placement model that was in use and join together in a more meaningful way with farmers. Specifically, "Businesses are needed, and they are not going away, but they need to work with what is happening on the farm for the long-term interests of the farmer. Farmers need to be taught critical thinking instead of just having stuff sold to them. Farmers are thinking about more than just farming–they are resilience thinkers, planning for many potentials at once. Business needs to understand this" [Interview, 04-28-15, male business owner]. According to a representative at EuroCham, the business model was important; not all businesses can bring positive action so their role in development of adaptation to climate change may not be the most suitable: "Companies who are doing business and dealing with farmers? Very few farmers get rich when dealing with these companies" [05-06-15].

Who's responsible?

Research participants also questioned where the responsibility for addressing climate change lies. Many respondents wondered: Was it a public-sector problem or should the private sector get more involved, namely out of CSR objectives? The leading perception was that climate change was mostly the 'job' of NGOs, research institutions and the government. Lingering behind these views was a somewhat anti-NGO, anti-development sector sentiment and the belief that business was generally more sustainable given the ability to move quickly and to generate profits. According to one research participant:

> *We are not an NGO, and we don't intend to be [...] When you talk about all of this, engaging communities, it is a very nice thing to say, but it is long and difficult, and not always rewarding work... there are other ways to develop. There is a perception that the climate, being green and so on is costly. But you can be green and make money. It's not only about being nice – you can also in the long run be profitable. [05-06-15].*

Aligning with these three barriers (lack of attention, other priorities and unclear responsibilities), roughly 87.5 percent of the sample indicated that *knowledge and opportunities to increase capacity* was needed to take climate change action. The next section also shows that research informants also viewed partnerships to be important for business-led climate action.

The importance of partnerships

The survey revealed another prominent organizational characteristic of the business network: all organizations taking part in the research regularly worked through collaborative partnerships with businesses, the government, NGOs and each other. For one EuroCham representative, collaborative partnerships offered by the network were key: "It is the essence of the way we function. To be the link, to build bridges" [05-06-15]. The chamber actively engaged with NGOs, government, businesses, universities (especially in relation to students and the generation of higher-quality human resourcesa leading concern for Cambodia's business community) and other chambers and associations. AmCham worked with FASMEC and CAMFEBA as well as NGOs and government and medical professionals [05-05-2015]. While EuroCham and AmCham in particular held casual gatherings at upscale venues complete with free-flowing drinks and appetizers, each hosted more serious events that featured, for example, discussions with leading experts on taxation, long-term financing and political risk insurance [EuroCham, 05-06-2015; AmCham, 05-05-2015].

One of the most important collaborative partnerships the business organizations had was with the Cambodian government. EuroCham and AmCham hosted input meetings to enable private sector actors to shape the Prakas, or ministerial proclamations [EuroCham, 05-06-2015; AmCham, 05-05-2015]. Elsewhere, the leading role of business organizations is formally and systematically embedded in governance structures such as the Council for the Development of Cambodia (CDC), established in 1994 via the Law on Foreign Investment aimed at promoting private sector investment, and the Private Sector Forum (G-PSF), which, again, is outlined in Chapter 6. As a result, "The government is pretty accessible" [BritCham, 05-25-15] and these business organizations clearly benefited in terms of advancing the business agenda. For example, through the G-PSF, chambers and associations collaborated and lobbied their member's concerns and challenges to the Cambodian Government. This appeared to be a very effective mechanism: for example, CAMFEBA lobbying has resulted in a reduced night-shift rate, a significantly-reduced National Social Security Fund contribution rate, as well as an established Trade Union Law (CAMFEBA 2016). According to the FASMEC representative, "We cannot live alone. We have problems with the government that we cannot solve. We need to talk to them" [05-20-15]. The feeling appears to be mutual. According to Tin Ponlok, Deputy Director General at the Ministry of Environment, "The role of the Chambers of Commerce is essential. They can assist with the rules and regulations within the needs of Cambodia. They can provide expertise and advisory functions, and they can contribute to the policy debate and help promote high-quality

investments' [Key note speech, Green Business Forum, 04-23-15].

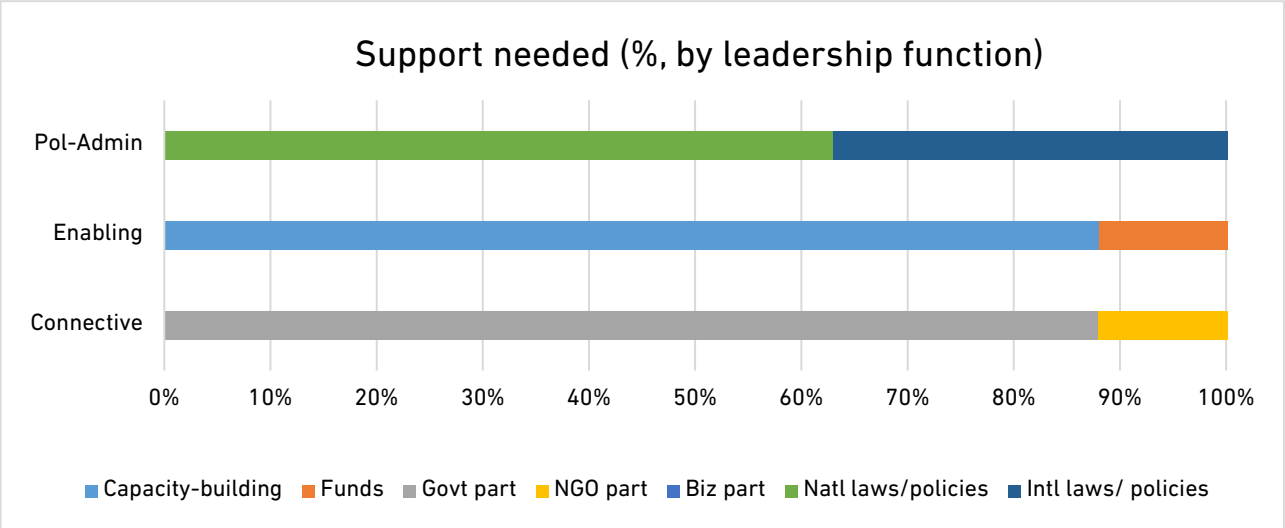
Business organizations provided other direct access to international business actors and environments, often deriving from outside of the country, including higher-level actors from government ministries, embassies and other key officials from both Cambodia and abroad. For instance, CAMFEBA was the only organization representing Cambodian employers at ILO's International Labor Conference held yearly in Geneva, Switzerland (CAMFEBA 2016). FASMEC was organizing a trade mission to China and Malaysia which would provide businesses with the opportunity to exchange and learn, often from more developed market actors. The association was also approached by UNIDO and then began working jointly on clean production and managing waste as well as with the EU on green energy promotion [05-20-15]. The international chambers (such as EuroCham, BritCham, AmCham and ICC for example) also linked diplomatically to the Cambodian government and logistically and diplomatically to their home governments. In fact, these international chambers kept close working ties with their embassies, government agencies of their home countries as well as country ambassadors. For example, early in 2018, EuroCham hosted a luncheon which featured opening remarks by George Edgar, the European Union Ambassador to Cambodia, alongside an extensive Q&A session with Minister of Environment Say Samal. As a consequence, EuroCham members were able to directly engage with key leaders of the EU and Cambodia on current and forthcoming policies, the reform agenda and the wider vision of Cambodia's environmental sector. Finally, the UKTI was another good example of this Cambodia-home country connection: the trade organization is a government agency which focuses, in close cooperation with BritCham and the British embassy, on getting UK businesses to invest in Cambodia. This is no small endeavor: trade between the UK and Cambodia surpassed US $1 billion in 2013 while bilateral trade increased by roughly 24 percent, or US $358 million, in the first quarter of 2014.[6] This forms part of the British Government's efforts to develop services for UK small- to medium-sized enterprises (SMEs) who are interested in the Cambodian market. The core aim is to work together to increase the number of UK exporters among (SMEs) and thereby provide them with a soft landing to begin exporting to the country [UKTI, 05-04-15].

Along these lines, when asked about the kinds of support needed to contribute to climate change solutions, 87.5 percent of the sample indicated *government partnerships*; 75 percent of the sample wanted *NGO partnerships* and 63 percent needed *business partnerships*.

Before the findings are discussed, Figure 7.2 presents a comprehensive overview of the survey responses (% of total) related to business needs as presented in the various sections above; each has been categorized under the following functions: political-administrative; enabling; and connective. This figure shows that, in order for their respective organizations to take a stronger stance on climate change, most respondents indicated that they needed more support in the following categories: capacity-building, government partnerships, National laws and policies as well as international laws and policies. Fewer respondents indicated a need for funds and NGO partnerships. Figure 7.2 shows that most respondents think that most support is needed in the following functions: Political-administrative; Enabling; and Connective with little attention for the other equally important leadership functions: Adaptive (innovating and generating new ideas); and Dissemination (Disseminating innovative ideas and approaches).

[6] British Chambers of Commerce, Export Britain, March, 2, 2015. Available at: http://exportbritain.org.uk/blogs/olivia-widen.html [Accessed October 27, 2018].

Figure 7.2. Support needed to take action on climate change



Source: Author analysis

7.5 FUNCTIONAL STRENGTHS AND WEAKNESSES COMBINED

The starting point for this investigation was the clear call for—but the glaring dearth of information on—private sector leadership for climate change adaptation, especially surrounding agendas, constraints, and boundaries. The research, departing from the basic idea that business organizations are already leaders in Cambodia's business environment, aimed to answer the following research question:

> *What potential does the network of national and international business chambers and associations in Cambodia have to answer the call for climate adaptation leadership?*

The following sections discuss the findings from a functions perspective (Table 7.3), namely the main adaptation leadership strengths and weaknesses that have emerged. Given the limited attention for climate change, attention also aims at understanding how strengths and weaknesses might be reconceived and implemented with adaptation leadership in mind.

7.5.1 DYNAMIC PLATFORM

Based on organizational structure, clear strengths emerged in terms of the *enabling*, *connective* and *adaptive functions*: business organizations offer a well-established network which facilitates significant linkages across different levels, countries, actors and sectors. Membership offered significant opportunities to join forces or engage with internal and external actors, including key decision-makers at home and abroad. In fact, business organizations are unique in that they are the only key actor to be formally connected to such a wide range of stakeholders. As these organizations share knowledge and source solutions, the network also shows clear *dissemination* potential. Member businesses in turn benefited from greater visibility and support as well as capacity-building and networking opportunities. Membership also connected businesses to important learning and dialogue spaces; each is key toward building leadership capacity. Furthermore, key business challenges are identified and formal solutions are directly discussed with leading experts and lobbied to the National government. Nation-oriented chambers, or those with a strong country or regional focus (such as BritCham, AmCham and EuroCham) maintained close and strategic working ties to their embassies, government agencies of their home countries as well as the country ambassador. This diplomatic link, evidence of *connective, dissemination* and *political-administrative* functions, is important as ambassadors play an especially important role by facilitating home country business interests, spreading messages, and creating a friendly and functional atmosphere around key processes, decision-makers and

markets. This strong delineation through nationality can be seen as a clear strength in terms of addressing complex, global problems such as climate change which requires shared knowledge, strong linkages and shared priorities between home governments and the Cambodian business community. In short, the network facilitates flows of information, ideas, and insight which has potential to transfer into higher levels of business performance and the generation of shared value for society in the area of climate change adaptation.

7.5.2 REPUTATIONAL ADVANTAGE & CSR

On top of this, the network illustrates additional strengths which can be categorized under the *political-administrative function*. Specifically, the value of these organizations and the network in general is recognized by members, governments (both foreign and Cambodian) and other influential stakeholders who bring 'money, authority or connections to move the change effort forward' (Crosby and Bryson 2010) including a range of *sponsors* from the Ministry of Agriculture, Forestry and Fisheries to the International Finance Cooperation and the European Commission; this is important as funding was considered by half of the respondents to be a key factor for climate leadership. Another *political-administrative* strength was that prominent members served as *champions* and *positional leaders*: Coca Cola was taking on a leadership role by promoting the anti-corruption MoU while Ieng Sotheara, through Khmer Organic Cooperative, was leading the way in organic production and community development. Kirirom Food Production took employee health and satisfaction seriously. If climate change adaptation were incorporated into the agenda, such as in the joint work of BritCham and UKTI, these business organizations could stand out as climate leaders. Tony Blair in fact declared, 'Climate change is probably the greatest long-term challenge facing the human race' (Shove 2010). The findings thus illustrate a clear role for such *sponsors* and *champions*—important actors who could use their connections to further embed and push the climate change agenda.

Similarly, the platform bolstered the reputation of Cambodia's business environment by treating business integrity as a core and strategic value in many instances; membership was controlled to varying degrees and approved based on adherence to good business practices. Some of the most promising examples in this regard included BritCham, UKTI and CMA as well as IBC which actively promoted corporate social responsibility and good governance. In fact, the data revealed that the IBC is leading the pack in terms of business integrity showing a clear commitment to use its platform, connections, influence and authority to improve business practices in Cambodia, a clear example of the *enabling function*. Similarly, CORRA was advancing the organic cultivation agenda which can bring many environmental and social benefits to communities and especially to women farmers (Lyon, Bezaury, and Mutersbaugh 2010). As key network actors operationalized important sustainability principles, adaptation leadership potential is heightened.

This was already happening to a limited extent: EuroCham's Green Business Committee and Green Business Forum were active leaders working to broaden business dialogue and practice, a clear strength in terms of the *connective, enabling* and *dissemination functions*. In this way, business organizations, characterized by prominent sponsors and members, actively enhance the reputation of Cambodia's business community and bring a level of authority, credibility and legitimacy to the network and Cambodia's business environment. Vilanova, Lozano, and Arenas (2009) have shown that reputation is a "a fundamental driver to initiate, develop and embed a CSR strategy in an organization" and so extend value beyond shareholders; reputational advantage is also recognized elsewhere (Ashley 2009; United Nations Global Compact et al. 2013). A good reputation is not only an economic multiplier and a means to increase competitiveness, it is a key link to business practices that benefit society. Moreover, authority, and legitimacy are important for changing behaviors and when planning for climate change adaptation. For example, formal authority, an important resource considered by Gupta et al. (2010) as 'accepted or legitimate forms of power,' is needed for institutions to enhance adaptive capacity; likewise, authority, such as that provided by government actors and sponsors, is needed to influence and initiate adaptation policy processes (Meijerink and Stiller 2013).

7.5.3 CLIMATE CHANGE? NOT A PRIORITY

Notwithstanding, the study exposed a range of adaptation leadership weaknesses. Perceptions about Cambodia's top development priorities were a far stretch from climate change. One of the strongest weaknesses uncovered in the study was that climate change was generally not on the agenda of these business organizations. Just two organizations worked in an area relevant for climate change adaptation: CORRA (organic production) and EuroCham through its Green Business Committee. Here only one direct mechanism for business leadership was in place at the time of data collection and, focused on 'green business' and mitigation, only narrowly addressed the full spectrum of the issue. Leading discussions and concerns often centered around Cambodia's reduced competitiveness in relation to other ASEAN members, improving the ease of doing business in Cambodia, and increased strengthening and formalization of the business environment through enhanced human resources and simplified customs, transport and logistics, business registration and taxation, and tackling corruption. While this aligns very well with priorities at the WTO as addressed in Chapter 1 and coalesces with many legal and administrative reforms supported by regional development banks, society faces dire consequences for adaptation if business thinking stops at actions that 'level the playing field.' Compounding the issue was that research participants generally were not clear on their level of responsibility, and awareness and a sense of urgency were also lacking. The lack of awareness and interest in climate change shows serious limitations across all leadership functions: *enabling, adaptive, connective, dissemination and political-administrative.* To address these limitations, the *political-administrative function* could instead be used to develop beneficial business practices for climate vulnerable communities. Both committees and member champions could be harnessed for climate change adaptation leadership. These policy entrepreneurs could take advantage of windows of opportunity to advance the adaptation agenda, such as the Green Business Forum or current governance mechanisms such as the Government-Private Sector Forum (G-PSF) and the inter-Ministerial Green Growth Working Group (GGWG) which is responsible for formulating its policies and raising awareness at ministerial levels (see Chapter 3).

7.5.4 FUNDING FOR BUSINESS-AS-USUAL

Funding is an important aspect of climate change action and catalyzing business to bring solutions. Although EuroCham benefited from significant sponsorship, this was certainly not the case for the majority of organizations contained in the sample. Organizations are generally underfunded; the smaller organizations in particular were generally underfunded. In two extreme cases, the organization did not have a dedicated office and relied on volunteers. Each of the organizations relied on regular membership fees and donations; the entities must also sustain operations through services which are primarily geared toward meeting the needs of members. This showed that, although business rhetoric often purports higher levels of economic sustainability when compared with donor-funded NGOs, this research revealed that business was no better off in this regard. This has profound implications; in spite of their unique leadership position within the community, chambers and associations are first and foremost service-based and demand driven rather than independent agenda setters looking ahead to innovation and climate-resiliency. When this service orientation is combined with a limited awareness of and concern with issues outside of traditional business, and climate change is the current case in point, the service mentality for business-as-usual is reinforced.

Finally, the organizations under study are clearly enabled and constrained by their institutional contexts. While board members and committees serve as the main decision-making arms of these organizations and can collectively promote business integrity and advance green business initiatives as outlined previously, they can also serve as gatekeepers that stunt more ambitious objectives. Having been established in the country for some time, influential members can be embedded in the 'business-as-usual' old boys club where previous views, interactions and power relations create a bias (Klijn and Koppenjan 2014) that contributes to the inherently conservative nature of institutions and ultimately a resistance to change (Gupta et al. 2010). Additionally, as observed by Meijerink and Stiller (2013), the generation of new and innovative

ideas do not always fit organizational objectives and routines.

7.5.5 COMPETITION VS. COOPERATION

A clear weakness emerges where functions work against each other. For example, the *enabling* and *adaptive functions* are seen to be optimized when there is a variety of actors, sectors and perspectives in place. However, the data clearly show that this variety in a competitive and self-interest business setting can also create competition and division rather than cooperation. While diverse membership adds value and is a quality of adaptive capacity—it can diversify and multiply income sources, for example as well as result in varied frames of reference and the involvement of different actors and sectors (Gupta et al. 2010)—competing interests made it more difficult to satisfy members and maintain collaboration and trust in the network. The importance of trust in business networks has been explored by de Klerk (2012) and Porras et al (2004), the latter of whom found that if resources and information are openly shared, opportunistic behavior is reduced and collaboration increases through goodwill and mutual understanding. In competitive business environments, trust is especially important for collaboration because the risk of opportunistic behavior is higher (Porras, Clegg, and Crawford 2004). Yet in Cambodia's business network, activities are dictated through funding sources and a service orientation so that a competitive rather than a cooperative environment is created; this has significant potential to stifle innovation despite the diverse context. To stimulate the adaptive capacity of society, individuals need to be able to self-organize, foster social capital and innovate (Gupta et al. 2010). Additionally, innovation processes are notoriously inefficient (Mintzberg 1989 as cited by Gupta et al. 2010); in a tight funding context, innovation could be a pipe dream.

Moreover, international business chambers and associations essentially exist to advance the business interests of their nations and nationality strongly influences chamber identity and participation. One consequence of this home-country focus is that this could encourage silo thinking or limited cross-fertilization between diverse members whereby innovation, local ownership and empowerment become a concern. Although the chambers are clearly interested in bettering Cambodia on the whole, the clear differences in influence, abilities and levels of business support between 'transplants' and local Cambodians cannot be ignored. As a result, one can challenge the self-interest, priorities and outcomes of such chambers; even if aligned with local needs, one can question who gains the most. At this level, the country becomes a platform upon which plans are drafted, business deals are struck and where the low development context provides potentially lucrative opportunities for a generally more-qualified and internationally-connected expatriate community with structured home government backing. In turn, the local population may lose out in less-obvious ways. For example, lobbying is an effective means to advance agendas, however business lobbying aims to *reduce* the contribution of business to society—the push for lower wages and contributions to social security has resulted in a reduced night-shift rate, a significantly-reduced National Social Security Fund contribution rate, as well as an established Trade Union Law (CAMFEBA 2016). Uneven power relations and the promotion of foreign business can be used as a means to quell local civil unrest, which itself is often a result of loose enforcement of rules and regulations and the relatively free reign of business. According to Nguon Meng Tech,[7] director general of CCC:

> *My concern is that the on-going protests and strikes are giving Cambodia a bad image. Who will want to invest their money when things can go wrong at any time? If protests and strikes keep going on like this, investors will become fed up with the chaos. I urge protesters to reconsider their actions and weigh the good and the bad, for the country, the economy and for themselves.*

Cooperation is a requirement for sustainable adaptation action; collaborative forms of leadership were described by Luke (1998), Chrislip (2002), as well as Crosby and Bryson (2010) whereby interactions between interdependent actors is needed to solve societal problems (Meijerink and Stiller 2013). A tentative conclusion therefore is that while business organizations have suitable mechanisms and thus the potential

[7] The Phnom Penh Post, December 27, 2013. Available at: https://goo.gl/mRAE9c [Accessed January 21, 2018].

to assume more authority, it is unclear if this is adequate in achieving leadership goals and thereby contributing, at least partially, to solving the climate change problem. To deliver benefits on top of those that have not already been realized in more traditional business-as-usual scenarios, such organizations need to transcend interest structures, including nation-state and old boys club mentalities. Diversity in itself may enhance competition to a certain extent, but it is insufficient in itself to inspire sustainable transformation.

What is the first conclusion to gel from all of this? It is clear that action will not progress unless concern extends beyond business-as-usual and awareness is increased within the network, such as through pressure and incentives put into place by sponsors and other key actors such as the Cambodian government. After all, and as outlined in depth in Chapter 3, the government foresees a major role for the private sector in development. For Shove (2010), options and possibilities which encourage responsible behavior are structured by institutions and the government. Because chambers and other organizations clearly valued collaborative action and capacity-building activities, these functions need to play a bigger role for climate change adaptation leadership. The Green Business Committee relates directly to climate change and so has potential to insert adaptive tension or create a sense of urgency on the matter. Collaborative network activities could stimulate *adaptive* ideas and undertakings. For business interest to be primed however, a direct business connection to climate change is necessary. To do so, the *enabling function* could be employed by sponsors, policy entrepreneurs and champions; these actors can raise more awareness about the risks of business-as-usual, promote new knowledge and lead by example; such actors and their representative organizations could in turn benefit from enhanced reputation and thus increased social legitimacy. Given its mandate and connection to the rural grassroots, FASMEC could play a key role by serving as a *positional leader* or *champion* to advance adaptation leadership and action within the network. Sponsors such as the European Commission and UKTI could set conditions and support collaborative work that is visionary and reformist for resilience over the long-term.

7.5.6 ISSUE OF INCLUSIVENESS

Another major drawback is that, despite the wide range of actors and sectors represented, the agricultural sector was found to be sorely underrepresented in the network. Most activities are limited to the city of Phnom Penh which highlights a geographic and social restriction especially in terms of being far removed or in touch with the issues and needs of rural Cambodia: the frontlines of climate change impacts and the bedrock of the country's social structure and economy. Organizations such as CAMFEBA, FASMEC and CORAA connected better with local communities given their focus on companies who source local agricultural products or because of their engagement with farmer cooperatives; these associations as a result are more aware and knowledgeable of what is happening and needed at the local level. For example, although CORAA members included wealthy, landholding Cambodians, the business association also works with very poor smallholder farmers. However, these organizations struggled financially. Social Impact Hub aimed to harness markets for social deliverables, and it was here that many small or fledgling businesses were being supported, including those who were especially working at the grassroots with rural communities. Likewise, FASMEC and AmCham specifically focused on supporting SMEs who have close connections to rural areas in Cambodia and who face climate change directly. Business organizations with local connections can shape the face of local economic development as their members, namely SMES, are embedded in the local economy (Ashley 2009).

Additionally, while the chambers and associations were joining stakeholders and building member capacity, these activities and benefits were largely reserved for capable businesses and largely business*men*. Membership and other fees collected for participation may exclude some fledgling and small businesses (such as Sovannak Palm Sugar and Cambodian Farmer Rice) or limit their participation in events; while this was accounted for (as was mentioned previously in relation to smaller organizations and inclusive membership fee structures), small companies, for example those headed by one or two persons, could face participation limitations due to a lack of resources. Moreover, women's representation was a clear limitation and understanding women's perspectives and facilitating women's contributions generally was not a

priority among the sampled organizations. This is important for climate change adaptation as women and girls have a specific social role to fulfill (such as farming, collecting water and otherwise caring for household members) and so are especially affected by climate change impacts. These weaknesses limit the inclusiveness of the network and thus the range of adaptation actors, perspectives and innovative solutions that can be drawn from.

7.6 SO, WHAT IS THE POTENTIAL?

The above sections have illustrated that many prerequisites for adaptation leadership are met. In fact, all functions—*enabling, adaptive, connective, dissemination and political administrative*—are already in place and operational and could be re-tooled to fit adaptation aims. Nonetheless functional weaknesses are significant and have potential to stymy business-led adaptation in Cambodia. Concluding this chapter, Table 7.4 highlights a selection of the above points and provides specific examples where progress could emerge given the right conditions and incentives.

The table makes clear that Cambodia's private sector is generally not ready to take a leadership position on climate change. Rather than a natural and automatic process as is often assumed, this chapter—alongside the findings from Battambang province—provides further evidence that business currently falls short in many aspects and it is unrealistic to think that any organic action will sprout out of the current environment. It is also necessary to understand that voluntary action by the private sector nor the profit motive alone are enough to solve climate problems. It is not enough to make business resilient; Climate change requires substantial changes in the way humans relate to and govern social-ecological systems (Folke et al. 2005), including shifts in attitudes and behavior across all realms (Meijerink and Stiller 2013). For the World Economic Forum (2018), "The more cooperation that takes place across industries, the greater the extent of potential action against climate change." Moreover, "... success isn't just about action from individual companies. To create change on a level large enough to halt climate change, businesses–and whole sectors and value chains–will need to consolidate efforts" (World Economic Forum 2018). Collaboration needs to be taken one step further to involve joint action between donors, civil society organizations and government agencies. Moreover, while respondents stated a need for supporting national laws and policies, business itself must also step up as vocal lobbyists for stronger policy action. Much depends on the network's ability to alter the institutional environment, or rules of the game in the network. In fact, the ability of this private sector network to effectively influence Cambodia's business environment towards higher states of resilience is based on the achievement of fundamental changes in how its constituent business actors *think about* and then *do* business.

7.7 CONCLUSION

Business is envisioned to be a key actor in bringing resilient solutions to society yet limited knowledge exists on how these actors can be adaptation leaders. This chapter aimed to gage the readiness of Cambodia's private sector to serve as climate leaders. The aim of this investigation, based on mixed methods research in Phnom Penh, was twofold: first, to scope out the role of trade and business organizations in

Table 7.4. Leadership function synthesis

Leadership function	Strengths	Weaknesses	Leadership avenues
Enabling	Platform with strong legitimacy & reputation; regular networking activities	Lack of attention for climate change; Restricted geographical & social reach; industry sectors are silo bound; lack of capacity & resources	Sponsors push adaptation agenda through awareness campaigns, targeted funds & trainings, especially for young business owners; SMEs and women's farmers organizations
Adaptive	Businesses access important learning, dialogue & lobbying spaces	Lack of attention for climate change; business actively lobbies for reduced societal contribution	Training to apply international frameworks through climate perspective: SDGs; business & human rights; FPIC; VGGT
Connective	Steady engagement between wide ranging actors & sectors	Lack of attention for climate change; business setting creates competition & division rather than cooperation	Better illustrate civil society connections & activities; provide information & support to connect with sustainability mechanisms (e.g., Sustainable Development Investment Partnership)
Dissemination	Regular capacity-building & trainings; organizations share knowledge & source solutions	Lack of attention for climate change; many positive partnerships & projects likely hidden within the network	Uncover & showcase business best practices, including collaborations with CSOs; create business toolkit with list of resources
Political-administrative	Structured & dynamic network with links to domestic to international frameworks, actors & governance mechanisms; leading organizations advance business integrity principles	Lack of attention for climate change; Lack of attention for/ representation of certain groups (agriculture sector; SMEs; women, youth & Cambodian businesses)	Target under-represented groups for participation through membership & in committees & trainings; Sponsors push adaptation agenda through multi-stakeholder partnerships, initiatives & earmarked funds (with strong criteria & oversight)

Source: Author analysis

Cambodia and, second, within this context understand how climate change is perceived as well as identify which opportunities and constraints emerge. This was deemed necessary as funds are increasingly made available to private sector actors while climate change scholars and practitioners increasingly call for system changes and transformation. What is required on both fronts often remains undefined. Focus was placed on business organizations in Phnom Penh as they sit at the junction between all stakeholders; they also feature unique characteristics in terms of business leadership and agency.

Analysis, based on the key concepts of *leadership*, revealed that these organizations operate in ways which make climate leadership possible. These included a focus on business integrity, the ability to bring business people together and build their capacity, as well as the ability to join hands through collaborative partnerships with governments and diplomats, CSOs as well as other chambers and associations. Although these characteristics lend well to the role of climate leader, other key features of the organizations compromise leadership ability, namely a service orientation that follows rather than leads in many cases, a tendency to lean toward business-as-usual and low hanging fruit, and limited awareness of climate change, including its urgency, demands and implications. Organizations expressed the need primarily for knowledge and opportunities to increase capacity, and government and NGO partnerships. This was followed by the need for business partnerships and the implementation and support of national laws and policies. Less needed were international laws and policies and funds, the latter because of concerns surrounding the large amounts of donor funding flowing into Cambodia—generally perceived to be misused and lacking impact. This is an interesting finding since all organizations referred to funding challenges, and moreover, funding is an important aspect of climate change action and motivating business to bring solutions. This finding in particular highlights the importance of tackling misguided perceptions.

The study showed that chambers and associations are the nominal stewards of important resources that are jointly owned and produced by members of Cambodia's business community. These actors—who collaboratively create, manage and inspire new institutional arrangements, new ways of thinking about and doing things at the policy level, and new resources—thus have significant potential to direct private action for the public good in the realm of climate change adaptation. However, deeper analysis brought the understanding that while many adaptation leadership functions are already in place, there is a need to alter the institutional environment, or rules of the game in the network. In fact, the ability of this private sector network to effectively influence Cambodia's business environment towards higher states of resilience is based on the achievement of fundamental changes in how its constituent business actors *think about* and then *do* business. Despite acute focus on the private sector at both the global and national levels, there is a clear gap in climate change policy in terms of meaningfully engaging business in resilience building. Moreover, clear barriers at the business level effectively stymy business leadership. It is not enough to make business resilient; climate change requires substantial shifts in attitudes and behavior and collaboration, not just leadership, is necessary.

REFLECTIONS AND CONCLUSIONS

THE CHALLENGE OF RESPONSIBLE ADAPTATION

Changing paradigms is very, very difficult. Changing belief systems is agonizing. Putting aside old models and theories is painful. Changing our authority-oriented behaviors is hard. Learning new skills is arduous. Collaboration is time consuming. Thinking new thoughts is strenuous. Proposing significant changes is risky. Developing diversity is an uphill battle. Getting agreement is tough. The politics of it all is toilsome. And on and on. The problem is that nothing else is going to work. We have tried all the easy ways… and they don't work. So maybe it is time to get serious and try the difficult but more promising approach.

Joseph Rost (1997)

8.0 BEYOND THE LIBERALIZATION OF ADAPTATION

This book aims at bringing a better understanding of the private sector's ability to sustainably resolve climate change challenges in Cambodia. Although the study involved one country, it arguably illustrates broader trends in climate change adaptation and business leadership more generally. Aiming to bring a deeper understanding of the problems and opportunities occurring at the grassroots to the global funding levels, the study was guided by the following central research question:

How, and to what extent, can the private sector contribute to sustainable climate change adaptation in Cambodia's agricultural sector?

The findings, gained from extensive research conducted behind the desk and in the field, provide evidence at the micro to macro levels that the market-based solutions brought by the private sector are currently insufficient to achieve sustainable climate change adaptation for farmers in Cambodia's agricultural sector. This study exposed a persistent tension between the competing values of 'pro-poor' and 'pro-profit' with reduced attention for *protecting the most vulnerable*. In particular, Chapters 5 and 6 in point out that the business activities evaluated herein, and the market context within which they are embedded, have significant potential to make things worse through heightened risk exposure and the enforcement of already existing income and other social disparities. Chapter 7 additionally points to a set of structural limitations the private sector faces that hitherto undermine some promise for climate leadership on behalf of Cambodia's rural farmers. This includes *inter alia* lacking awareness of climate change and a business-as-usual approach that is generally exclusive and driven by competition and demand. The contribution of the private sector to sustainable and transformative climate change adaptation in Cambodia's agricultural sector, as defined in Chapter 6, thus remains illusory.

Moving beyond the findings, this chapter concludes the dissertation with a wider reflection on the research itself and possible next steps to answer how business-led interventions can achieve more sustainable impact. By coining the term *Responsible Adaptation*, this investigation results in an innovative approach which ties two currently disparate debates: adaptation and responsible business.

Private sector engagement in climate change adaptation exemplifies a broader contemporary turn towards market liberalism, both in environmental policymaking and international development. While proponents cite a need for flexibility, pluralism of approach and resource identification and optimization, an inherent tension arises when doing business for a greater good. Neoliberal economics and the accompanying market logic have long been questioned in their ability to lead to inclusive development (O'Brien and Leichenko 2003; Wade 2001). Today, businesses are increasingly perceived to be a major cause of economic, environmental and social problems and the few are often viewed to be benefiting at the cost of society and the environment as a whole. Pressure is mounting for companies to extend accountability beyond the boardroom and stakeholder profits to generate positive and lasting social value creation and increased social and environmental accountability. Maximizing profits is no longer enough, and busi-

nesses now have to redefine their relationship with society, and themselves. In response, and to increase business legitimacy, business logic has evolved beyond 'license to operate' to include corporate philanthropy and corporate social responsibility and the creation of 'shared value' (Ashley 2009).

A clear reflection of this is seen in in the development sector where the private sector is explicitly promoted as primary agent (Knott and Ellis 2009) and many actors and organizations—from development institutions such as DFID and USAID, multilateral development banks as well as The World Trade Organization and global venture funds (including the Acumen Fund and Rockefeller Foundation) actively tout the benefits of private sector-led development. This clearly differs from the traditional policy agenda that continues to focus on improving the business environment, or "private sector development" (Byiers and Rosengren 2012). More recent focus has shifted to "private sector *for* development" by leveraging international business activity and finance through Official Development Assistance (ODA) to realize development goals (Byiers and Rosengren 2012; Knott and Ellis 2009). Occurring in the context of significant financial need in development, stagnant economies, and emerging competition from Brazil, Russia, China and India, traditional donor states are looking to simultaneously increase development effectiveness *and* promote their own private sectors while companies look to reduce risk and increase competitiveness (Byiers and Rosengren 2012). This has been extended to encompass business-led solutions for climate change adaptation, recently emerging from the United Nations Global Compact as 'responsible corporate adaptation.'

8.1 RESPONSIBLE CORPORATE ADAPTATION

The United Nations Global Compact (UNGC) is the world's largest sustainability initiative which aims to align business strategies and operations with universal principles on human rights, labor, environment and anti-corruption.[1] In 2015, UNGC established 'a new paradigm' for corporate climate action based on the recognition that climate change is a significant business risk, but one that brings new business opportunities. The Compact calls on companies to, 'become leaders in advancing social, environmental and economic resilience through responsible corporate adaptation' which encompasses 'the strategies, actions and partnerships through which businesses adapt to climate impacts and at the same time create shared resilience benefits for the communities and ecosystems where they operate' (UN Global Compact 2015). Business action for itself—through responsible corporate adaptation (RCA)—will improve operations and competitiveness; protect the value chain; build corporate brand; and leverage new business opportunities. RCA recognizes that companies can only be sustainable and successful if the risks and vulnerabilities of the communities in which they operate are considered (UN Global Compact 2015). RCA also recognizes the importance of preventing maladaptation, which for example may occur by disproportionately burdening the most vulnerable populations (UN Global Compact 2015). From RCA, adaptation action orientates first and primarily from the central business mandate of successful business operations and preventing business interruptions (which are naturally very costly for business). The current study however illuminates from different levels (micro-macro) and angles the limitations of such an approach for vulnerable communities.

To succeed business necessarily needs to understand local context, but this coin has two sides: once local vulnerabilities and risks are known, the best strategy for a company might be to retreat as this would contribute more to business resilience, also a key to RCA. In fact, as outlined in the literature, private sector interest may only persist as long as "the notion of development" is not "unduly problematic" (Edward and Tallontire 2009). As illustrated in Chapter 6 (where the spice intervention failed in the most vulnerable Samlout community), business will to engage with the marginalized, such as those most impacted by climate change, may be limited. In addition, Chapter 6 additionally demonstrates that ill-planned adaptation action can result in the franchising-out of adaptation and resilience and a 'one-stop' private sector solution where intra-community differentiation is down-played yet local areas become highly segmented for purposes to serve at a larger scale; the local is simultaneously portrayed as cohesively

[1] UN Global Compact homepage. Available at: https://www.unglobalcompact.org/what-is-gc . Accessed March 31, 2019.

climate vulnerable to fit the objectives of business profit-making and the global market. If business gravitates to the best locations for doing business, a massive adaptation gap is left for especially vulnerable smallholders and communities who, not suitable for business engagement, are not profitable and therefore 'adaptation unready.'

Second, as with vulnerable groups, businesses face context-specific risks and sustainability challenges. First, and according to Yale University, average company lifespans in the last century have shortened from 67 years in the 1920s to 15 years today (World Economic Forum 2018); this business landscape is thus an issue for transformative adaptation. Furthermore, the literature outlines additional challenges of the landscape that were very relevant to the business cases and communities involved in this study: market downturns (Ashley 2009) and changes in consumer habits and competition (Biagini and Miller 2013). Also observed in this study: private sector actors generally lack development knowledge and experience (Knott and Ellis 2009; Wach 2012) as well as financial resources (Pauw 2015). We ask business to lead, but any sustainability issue facing business will stymy the potential of RCA and business leadership.

Finally, and perhaps inadvertently, RCA also leads to potential scenarios where the driver becomes making *business-as-usual* more climate resilient. For example, in the report where the RCA concept is promoted, one transit authority's attempts to reduce vulnerability to more frequent occurrences of heavy rains and winter storms is sold as a resilience strategy that benefits rather than simply being acknowledged for what it is: a harsh reality of what it now means to do transport business in an increasingly unpredictable and warming world. Simply evolving to meet the demands of the current business landscape will not lead to transformative adaptation. In fact, it could be argued that as the costs are passed to customers, transportation becomes more expensive for commuters but transport services remain profitable for transit companies. RCA, with a business spin, thus pays homage to another approach which limits transformative results: viewing development as a management and metrics problem (Edward and Tallontire 2009; Nelson and Tallontire 2014). How does this relate to adaptation? Viewed from a business perspective, complexities are smoothed over, depoliticised and reined in by managerial pragmatism and the provision of necessary but ultimately reductionist solutions limited to the profitable, financial and the technical.

Taken as a whole, these examples and reflections contrasted against the RCA illustrate a key finding of the current study: Resilience-building at the local level requires more than identifying risks and barriers on the corporate side of adaptation. While all development initiatives grapple with conflicting tensions, those featuring a larger role for "the logic of the invisible hand of the market" risk a greater divide between development as a practice and development as a means for major structural change (Edward and Tallontire 2009). As business does not necessarily reach the groups most impacted by climate change, a key question is thus: why use donor money to subsidize business in profit making? Perhaps as Blowfield suggests, "rather than consider the business case for development, we should ask what is society's case for business—a call that aims at a more comprehensive debate about both interdependence and the nature of development (2005b as cited by Edward and Tallontire 2009). The ultimate vulnerability question therefore should be: What additional value is brought by business action, and for whom? Although climate change presents a range of urgent and confounding issues, with development literature chock-a-block with lessons we can't say that we haven't been here before.

8.2 MERGING TWO DEBATES: RESPONSIBLE ADAPTATION

Through empirically-back lessons, this study illustrates that several challenges will continue to stand in the way of sustainable business leadership and engagement in adaptation. Current approaches as discussed in this study often do not consider community experiences or perspectives; these approaches also do not place community needs on equal footing but rather treat them as secondary to the business case for adaptation and resilience. Considering this, and the lessons from this study, is a primary imperative if the perceived role of business continues to have staying power—all signs are pointing in this direction—and if we

aim to engage all actors and resources for sustainable adaptation and so reduce the adaptation financing gap. We also know that business-as-usual will not increase the adaptive capacity or resilience of Cambodia or its most vulnerable groups; it will also stall resilience gains of business itself. By linking two currently isolated debates—climate change adaptation and responsible business—this study provides an innovative approach termed *Responsible Adaptation*. The next sections outline some key characteristics of Responsible Adaptation (RA), define a set of principles and practices for RA, and suggest a set of workable entry points through current frameworks which can help to further define what RA means and why it is important. By applying principles found in the responsible business debate— as currently practiced in sustainable land and natural resource governance and agricultural value chains—the RA debate can gain traction. Finally, while these apply most directly to the agricultural sector, basic RA principles can be translated to other sectors.

To move beyond business-as-usual, the lessons from the two key arenas addressed in the study are key: Policy and practice. The first section to follow deals with a few of the policy considerations that are necessary for RA while the second part addresses the practice side of RA. Each discusses current challenges as revealed by the research and corresponding responses.

8.2.1 THE POLICY ARENA: THE ROLE OF POLICY, POLICYMAKERS AND (FINANCIAL) INCENTIVES

This study shows that climate change has been institutionalized in Cambodia and a range of ministries, departments and committees take responsibility for guiding the response at the national level. Due to the country's low emissions profile, the government has placed much more emphasis on adaptation as opposed to mitigation. Agriculture has long been important in Cambodia, so a policy focus on this sector makes sense; so do adaptation interventions designed to build the resilience of rural communities who depend greatly on the sector. However, economic growth maintains dominion as a leading policy objective; the main focus is placed on continued economic growth and macroeconomic robustness rather than sustainable and resilient rural development. As a result, much attention is placed on modernizing the agricultural sector. After all, according to the government's perspective, too many people are engaged in agricultural work, the country has few large, modern businesses and informal and small farms and enterprises dominate the private sector. Finally, the nascent processing industry is stunting growth. This policy priority therefore has significant potential to exacerbate economic inequality and thus stymy resilience building in rural areas where multidimensional poverty rates are particularly high and the bulk of the population are vulnerable, especially to exogenous and domestic shocks that threaten to push a significant portion of population (the almost-poor) back into official destitution; during field work it became clear that families living on the edge can be one crop failure or one hospital bill away. Cambodia also faces wider market challenges including poor infrastructure and high energy and logistics costs, and under-developed human resources which go against macroeconomic robustness.

At the same time, climate change funding flows largely from external sources through bilateral and multilateral initiatives and by way of international donors, multilateral climate funds and development organizations. Given this context, major financiers of projects, including banks and project sponsors, have a leading role to play through risk and responsibility management frameworks such as the Equator Principles[2] and International Finance Corporation's Performance Standards.[3] These standards can drive clients to adapt their practices and be accountable to international best practices on environmental and social standards. In Chapter 7, respondents already indicated that a supportive regulatory framework and guiding principles for business are needed. Moreover, business and private sector governance (which includes financial due-diligence guidance mechanisms as well as national-level platforms such as the Private Sector Forum (G-PSF) can no longer operate separately from climate change issues; where they do address climate

[2] Equator Principles homepage. Available at: https://equator-principles.com/. Accessed on March 31, 2019.

[3] IFC Performance Standards homepage. Available at: https://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/Sustainability-At-IFC/Policies-Standards/Performance-Standards. Accessed on March 31, 2019.

change, there is a need to move beyond GHG emissions and mainstreaming. For instance, an updated version of the Equator Principles is expected in August 2019; the new version, based on the recommendations made by the Task Force on Climate-related Financial Disclosures[4] will better integrate economic and social risks in a post-Paris Agreement environment.

Nonetheless, as voluntary frameworks, this is not a full stop solution. Deforestation, forced evictions and human rights abuses related to land-based investments have illuminated the dark side of business in the Kingdom and compelled donors to withdraw support. Weak rule of law and an impotent regulatory framework threaten to undermine these frameworks, especially if civil society is restricted. Indeed, these frameworks require the watch dog role of civil society to be activated and civil society actors to be informed of the tools at hand, and the factors that motivate business to act responsibly—such as the aforementioned client requirements and subsequent contract responsibilities as well as reputational risk. The subsequent lack of trust in the government and the private sector as a whole does not bode well for business-led adaptation in Cambodia. Nonetheless, programs and projects are guided first and foremost by their funding mechanisms, making the development of responsible climate funding principles is necessary. These principles, applicable across all funding actors and mechanisms, are essential for supporting action that is not only economically meaningful but also looks beyond renewable energies, carbon footprints and the like to progressively catalyze social and gender equality.

Second, and given the significant amount of funds already spent and actions completed, the administrative tracking of interventions via a centralized repository is needed. Such a mechanism, including contextualized information generated at the local level on both successes and failures, financing mechanisms and other key characteristics, would expose overlaps and gaps and facilitate upscaling efforts to the national and international levels. It would also bring heightened transparency and a better understanding of interventions as well as grassroots perspectives on climate change adaptation and needs, *including the perspectives of the most marginalized*. This also has potential to contribute to the effective tracking of SDG implementation, and the likely evolution institutions will have to undergo to meet new challenges.

Finally, poverty and other forms of climate vulnerability require an effective social protection scheme at the National level. While poverty reduction has been achieved through agriculture development, in large part only easy-to-reach households have benefitted. Moreover, many of these households have only barely surpassed the poverty line and so remain sensitive to shocks (ADB 2014b). Many households borrow money to cope which potentially camouflages poverty vulnerability; the findings from Chapter 6 clearly show that household debt increases vulnerability. While the Council for Agriculture and Rural Development established the Social Protection Coordination Unit (SPCU) in 2010 with the distribution of farm inputs as a program option, increased focus on farmer support for sustainable poverty reduction is needed especially given the importance the government places on the agricultural sector. This could include weather-based crop insurance, seed transfers, asset transfers, and cash transfers among others. It is also important to understand farmers and farms come in all shapes and sizes and attention for differences is crucial within broad groups such as women, youth and ethnic minorities. Finally, livelihood and resource competition are identified in the national social protection strategy, alongside common resource depletion, as a threat to resilience in local contexts (RGC 2011).

8.2.2 PRACTICE REQUIREMENTS: THE NEED FOR A RESPONSIBLE BUSINESS APPROACH

The discussions surrounding business for development are simultaneously: 1) vague and optimistic; 2) decidedly neutral and automatic; and 3) powerful and positively presented as a catalytic process of technology, resources, leveraging power, and scalability. Moreover, there is limited cross-fertilization between adaptation and responsible business practices; the adaptation discussion is disengaged from the ongoing

[4] Task Force on Climate-related Financial Disclosures homepage. Available at: https://www.mainstreamingclimate.org/tcfd/. Accessed on March 31, 2019.

debate on responsible agricultural investments. This study reveals that this is a serious shortcoming in the business-led adaptation arena. Rent seeking, land and resource grabbing by corporations and leading party actors continue to be widespread in Cambodia, and many communities are generally suspicious of business activities involving the use of land and local resources. Additionally, farmers feel forsaken by the government and much development which is visible at the local level is politically motivated. This requires businesses to work harder to operate more sustainably within the communities they impact. Community resilience is business resilience. A reflection on the wider business and climate change adaptation debate, combined with the research findings, leads to the following areas where Responsible Adaptation can be realized in practice.

Business as locally-embedded and aware

One means to realize responsible business-led adaptation in practice is by establishing a social license to operate by building relationships and trust within a community. Companies embedded locally are better informed, better respected and more sustainable. The same applies to other leading stakeholders if they are: 1) sensitized to issues surrounding business, land, and vulnerable groups; and 2) invested to create inclusive and transparent frameworks.

However, the study unveiled barriers such as limited awareness and capacities and a service-oriented approach, both in Battambang and in Phnom Penh. Business actors advance the use of water saving and green technologies but, in many instances, follow rather than lead in a business-as-usual fashion. For business organizations, this is despite their significant potential not only to shape the country's businesses, but also to fortify Cambodia's business environment through climate-resilient development. Adding to this, and despite clear leadership potential, one of the biggest obstacles is that climate change is not yet on the docket unless catalytic funds are provided such as is done through the PPCR. In this sense, transformational change becomes not so much a matter of 'efficient' transactional change (such as changing processes, functions, lines and positions) or even the management of change, but rather one of *changing visions* and *cultures*.

Holistic adaptation is Responsible Adaptation

Smallholder adaptive capacity in Cambodia is often viewed to be restricted as a result of traditional and outmoded farming practices and insufficient access to capital, knowledge and inputs. In an environment of urgency and expedient silver bullet solutions, one clear conclusion of the study is that we must avoid a top-down "technology transfer" mindset where "sustainable" means cheaper and profitable, or where business resilience pre-empts local community adaptation. Moreover, that the development bank and businesses opted out of the PPCR process after prolonged engagement with the funding mechanism—for reasons which shall remain unknown—illustrated the significant challenges we may face if we rely solely on the private sector and the semantics of outside experts and innovation.

Another key point relates to how the 'tech-fix' perspective overlooks equally influencing factors standing in the way of adaptation. Local communities face significant social risks and vulnerabilities that are inextricably intertwined with biophysical climate change impacts. As a result, technical and market-based solutions often contrasted with the priorities and situations of farmers: they are costly, short-term and incremental—and given the need for constant marketing, one can even argue short-lived and faddish—and so not likely to increase long-term resilience. As such, these means to increase resilience are inconsistent with the objective of pro-poor adaptation that transforms local realities to enhanced resilience. This does not imply that such tools hold little or no value; it rather points out that these solutions have drawbacks and are only part of the larger and more complex adaptation puzzle. A key lesson from the research therefore is that social vulnerability needs attention when thinking about and taking action on climate change. While technical expertise is important, it is also critically interdependent with the need to understand the full context of what is at stake and what solutions will work.

This implies two things. First, social science is a critical component in planning for and understanding resilience in local communities and in businesses. To be effective, adaptation planning requires adequate due diligence to uncover the differential vulnerabilities, needs, and capacities identified by target communities. While actors may agree on resilience objectives (e.g., increased yields, higher incomes, and financial support), adaptation processes toward these ends may easily go awry as a result of differing perceptions of risk, vulnerability and reward as well as the level of sustainability that can be realistically achieved. Second, local knowledge and experience needs to be respected and used to inform and shape interventions. Although the technocratic mindset often views local communities as outdated, traditional, lacking capacity and even lacking ideas, smallholders and other community members (including the landless) hold considerable experience in relation to coping and risk management strategies. They also have concrete ideas about what their communities lack and need, and what has and has not worked in the past. Identifying and recognizing the value of local knowledge and experience by engaging directly with a wide variety of community members, including women and youth, can provide locally-appropriate scaling opportunities.

Closely aligned with a holistic approach is access to appropriate technology in a supportive environment. Climate change adaptation solutions can force wealthier smallholders into growing specific crops as well as into being captive consumers of related technology and financial products; this is likely to be suitable and profitable for companies but the case studies show that this is less appropriate and costly for Battambang farmers. Without a holistic approach that offers appropriate solutions and support, smallholders taking part in the study faced increased risk and vulnerability as a result of intervention tools and market objectives.

Ecosystem thinking in value chain development

The research in Chapter 6 rendered visible tensions by pinpointing the ways in which inclusion and exclusion are hardwired into the projects from the start. While farmers want to farm and make a reasonable return on agricultural investments, the new uncertainties and increased costs brought by climate change means that routine agribusiness is neither innovative nor necessarily effective toward building community resilience; Responsible Adaptation demands a sober assessment of the complexity of climate vulnerability combined with a long-haul perspective which accounts for and is accountable at the grassroots.

Asset-led development excludes the most vulnerable groups. It also fragments communities to create resentment and increase distrust of local leaders and businesses. Accidental or trickle-down adaptation is likely to fail the most marginalized and those so far 'left behind.' If we are truly serious about the role of the private sector, hybrid business models and suitable adaptation tools are needed because the market is incapable of solving non-market problems. Projects that facilitate a shallow, asset-led adaptation that privileges higher-income and better-established groups not only excludes the poorest households, in future it likely will place unrealistic expectations upon these wealthier farmers through increasingly problematic farming practices that rely even more on asset access and the fickleness of global production processes. Included farmers may be able to produce, but it may be difficult for them, down the line, to meet quality standards as significant resources may be needed for expansion and post-harvest activities such as storage and processing. When much effort is dedicated to making business work in small communities before or at the expense of other needs (such as water, health care or education), the resentment of local residents is fueled by what is perceived to be unfair business practices, corruption and 'political' and privileged development. Rather than departing from household asset evaluation in order to determine participation, project designers can innovate through an ecosystem approach to value chains that view local contributions differently and take advantage of asset pooling schemes. A holistic view of assets, such as extending the concept to include time, labor and land, or often overlooked resources such as biomass or animal waste products, could increase the contribution of and extend intervention benefits to the poorest households. Companies should support such interventions but actions that are community-led will benefit from greater suitability and sustainability.

Scaling impact and development partnerships

Moreover, business can focus on scaling impact, not business models. A dominant economic discourse purports that the impact of private investment in development is too difficult to measure given the complexity of markets, the slow emergence of benefits, or the difficult traceability of benefits (Wach 2012). Yet when aid subsidizes corporate engagement, societal benefits should be clear, traceable and exceed private returns. To scale resilience impact, businesses could reduce their geographical sourcing range and further embed locally through strategic development partnerships. In fact, rather than businesses acting independently, one means to counter exclusion and increased marginalization, to build stakeholder capacity and resilience, and to strengthen stakeholder relationships is to integrate development partnerships that reduce transaction costs and offer support (Blanc and Kledal 2012; Eaton and Shepherd 2001; Raynolds 2012; Tobin, Glenna, and Devaux 2016; Vermeulen and Cotula 2010). Many problems cannot be fixed by the market, and farmers are not the sole demographic in need of new knowledge, training and support to cope with climate change; businesses themselves lack knowledge and resources and can suffer from outdated ways of operating that still run under the banner of efficiency. Climate change has already required the collaboration of many different actors and academic disciplines (even though this has created challenges related to divergent language, definitions and conceptual frameworks) (Füssel 2007). Additionally, a renewed attention for bottom up approaches is emerging in the business realm; local communities can be viewed as development partners rather than project beneficiaries. Both the industry of development and indeed the industry of adaptation could engage the power and potential of communities to find more suitable, and less resisted, forms of resilience building.

True partnerships between different actors could bridge knowledge gaps and spark innovation to effectively create positive development outcomes that increase the resiliency of both communities and businesses. Sponsors, including governments and funding agencies, are in the best position to push the adaptation agenda and drive the formation of diverse partnerships between the private sector and the development sector. However, these partnerships will be challenged by differing organizational cultures and language, as well as skepticism between 'camps.' Moreover, Nelson and Tallontire (2014) observed other limitations of multi-stakeholder initiatives (including reinforced asymmetrical power relations). It is therefore important that multi-stakeholder initiatives go beyond platforms and dialogues to practice—by problematizing communities and recognizing and integrating the key stakeholders, such as different groups of women (including indigenous and the youth), and frameworks such as (VGGT), Free, Prior and Informed Consent (FPIC) and the SDGs. This is key as, "... a community ignored or scorned can exact a significant financial price in the present and impose opportunity costs for a company in the future" (Herz, La Vina, and Sohn 2007).

Drivers for accountability: Business and Human Rights

A clear contribution of this study emerged from the macro level analysis. Evidence emerged that adaptation as a concept is bent, stretched or shrunk to fit a purpose, bringing into question the centrality of adaptation and the increased potential for scarce adaptation funds to be misused. The study also revealed that a variety of tools and livelihood types were being promoted and supported; without sufficient attention and safeguards, any resultant change in land use patterns or the introduction of new resources, such as irrigation infrastructure, can serve as the dry kindling that lights and sparks uneven development, rising inequity and community conflict. It is clear that climate change funding and action should be guided by development safeguards and principles frequently used in other arenas; this is closely related to the points made above in relation to the IFC Performance Standards and the Equator Principles but the onus of responsibility there rests largely with financial institutions who wield significant power to drive better business on the ground. It is nonetheless in the interest of business itself to take steps toward sustainable engagement as this increases business profitability and business resilience.

Toward this aim, two frameworks that are already applied and known by governments and businesses alike include the Guiding Principles on Business and Human Rights (UNGP) and the OECD Guidelines for Multinational Enterprises; each is internationally-applicable and currently guides responsible business conduct at the global to local levels. Additional frameworks founded upon international human rights that can be especially useful for business-led adaptation include Free Prior and Informed Consent (or FPIC) and the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (the VGGT). These frameworks are briefly described in the following sections. At the end of this chapter, Figure 8.1 uses the various principles discussed next to present the general framework of Responsible Adaptation in a globalized world.

UNGP & the OECD Guidelines

UNGP guides companies on protecting and respecting human rights and remedying breaches for 'socially sustainable globalization' (OHCHR 2011). While States are primarily responsible for ensuring human rights, enterprises have the potential to impact human rights and so have the responsibility to respect them in their own operations and in their production chains. These rights range from worker rights to equal participation in political and public affairs. They also encompass environmental rights and the ability to exercise control over local natural resources. The UNGP is backed up by National Action Plans which outline how States put the UN Guiding Principles into practice.

The OECD Guidelines is a multi-lateral soft law instrument which aims to address the economic, social and environmental challenges of globalization that is applicable to companies based in OECD countries.[5] A set of voluntary principles and standards for responsible business conduct consistent with applicable laws, the Guidelines promote an improved foreign investment climate and an enhanced contribution of multinational enterprises to sustainable development. According to the Guidelines, businesses should take fully into account established policies in the countries in which they operate, and consider the views of other stakeholders (OECD 2008). The OECD Investment Committee has oversight responsibility for the Guidelines.[6] As a result, the Guidelines provide an effective framework for States and businesses that can be applied across sectors and so can guide Responsible Adaptation from different angles. First, the Guidelines apply to all sectors, including the financial sector. Second, all governments adhering to the OECD Guidelines have established a National Contact Point (NCP). NCP is responsible for: 1) raising awareness of the OECD Guidelines with businesses, trade unions and non-governmental organisations; and 2) mediating and helping to resolve non-compliance issues.

The full implementation of human rights treaties remains challenging in countries like Cambodia, which means the State often falls short of fulfilling its duties. This makes regional human rights bodies and local offices especially important; this is recognized by the UN itself and efforts to build the capacity of these entities is seen to be important (Office of the United Nations High Commissioner for Human Rights 2014). Furthermore, since National regulations may be in place but may be below best practice or lacking enforcement, civil society organizations are a crucial link to the equal enjoyment of human rights, especially the most socially, economically and climate vulnerable. For example, after receiving complaints from local NGOs, the actions of the Thai Human Rights Commission were the first steps toward holding a Thai sugar business accountable for serious breaches of its responsibility to respect human rights under the UNGP in Cambodia (see also McLinden Nuijen 2012). Later, and in March 2019, the UK NCP received a complaint against Bonsucro, the UK-based certification body of which the Thai company is a member.[7] As a result,

[5] Every OECD country (36 in total) as well as 12 non-OECD countries have subscribed to the OECD Declaration and Decisions on International Investment and Multinational Enterprises. [Accessed May 5, 2019]. A full list of member countries and the dates on which they deposited their instruments of ratification is available on the 2019 OECD webpage List of OECD Member countries - Ratification of the Convention on the OECD. [Accessed May 5, 2019].

[6] OECD, 2019. OECD Investment Committee. [Accessed May 5, 2019].

[7] Business and Human Rights Resource Centre, March 2019, Cambodia: Sugar certification body, Bonsucro, faces a complaint from families displaced by Mitr Phol operations. [Accessed May 5, 2019].

these international mechanisms are especially important for business-led adaptation in low- or post-conflict development contexts; accountability mechanisms such as these can be an effective means to ensure tracking and compliance that can help to prevent human rights abuses or lead to remedy and ultimately transformation. For example, and based on the UNGP and OECD Guidelines, the Dutch government has designed a National Action Plan (Netherlands Ministry of Foreign Affairs n.d.) to respect human rights responsibilities and has made agreements along the OECD Guidelines on corporate social responsibility within 13 sectors including Food Products; Vegetable Protein; Banking; and Sustainable Forestry among others.

Agreements for the Agricultural and Floriculture Sectors, many of which are operating overseas, are being developed (Sociaal-Economische Raad 2019). Each of these sectors has clear linkages to climate change and private sector investment. Another recent example of how human rights breaches are remedied: a complaint filed with the Dutch NCP, by four Dutch NGOs against ING Bank, has led the bank to commitment to aligning its climate and other policies and procedures, including sound environmental management, with the OECD Guidelines; this has additionally resulted in the NGOs and ING to jointly call on the Dutch Government to "trequest the International Energy Agency to develop as soon as possible two 1.5 degrees scenarios, one with and one without Carbon Capture and Storage (CCS), that provide a 66% chance to limit global warming to below 1.5 degrees."[8]

FPIC

At the local level, a key tool to ensure Responsible Adaptation under the Human Rights umbrella is Free Prior and Informed Consent, or FPIC. FPIC is a process where projects and programs are *free* from coercion and manipulation; where *prior* consent is sought from local communities in advance of project approval or implementation; where people are *informed* especially in terms of economic, social, cultural, economic and environmental impacts; and where *consent* can be given or withheld at any time and is an inclusive and transparent process centrally characterized by consultation, meaningful participation, and negotiation, from the start of project or program design and through all stages of evaluation (FAO 2016b). FPIC is therefore embedded within the human rights framework which holds that, 'all peoples have the right to freely pursue their economic, social and cultural development' as explicitly incorporated into both binding and non-binding international human rights laws (FAO 2014). Backing FPIC are the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), the Convention on Biological Diversity and the International Labour Organization Convention 169, which are the most powerful and comprehensive international instruments.

FPIC was initially designed to protect the rights of indigenous peoples, however its principles are increasingly applied to other cases and communities, especially the most vulnerable in relation to secure land tenure (FAO 2014). FPIC is also considered and international best practice for business and a tool which can first reveal and then assist reconciliation of the range of stakeholder expectations and interests; if ignored, this can result in exceptionally high business costs and reputational damage (Davis and Franks 2014). While the definitions of community and consent need careful consideration, FPIC has potential to reduce business risks and result in greater benefits, shared value, and increased business legitimacy. While it is common practice to "subtly choreograph" the interests of other stakeholders, host communities should not be relegated to observer status as they have the greatest interest and the most to lose in projects (Herz et al., 2007).

FPIC is protected under the UN Declaration on the Rights of Indigenous People (UNDRIP) and ILO Convention No. 169. While Cambodia voted in favor of the former,[9] the Kingdom has not ratified the latter where

[8] The Netherlands National Contact Point, April 19, 2019. Final Statement. [Accessed May 5, 2019].

[9] UN Bibliographic Information System, UNRRIP voting record. Available: http://bit.ly/2v1W4UM [Accessed January 7, 2018].

FPIC is an obligation.[10] Nonetheless, financing mechanisms are becoming increasingly sensitized to the differing needs of climate vulnerable communities and groups. For instance, the Green Climate Fund's climate finance gender framework aims to level the playing field of climate action by including women, girls, men and boys from socially excluded and vulnerable communities in all aspects of climate finance while balancing mitigation efforts with those of adaptation. The GCF manual for mainstreaming gender does not specifically refer to FPIC but includes similar principles such as gendered analysis, identification of gender-related development impacts, and effective means of women's participation in initial screening phase of a project or program (GCF and UN Women 2017). What this sensitized mainstreaming means in practice is another matter but it is clearly a step in the right direction and may provide the necessary impetus for more inclusive governance, awareness and action.

VGGT

The VGGT, or Voluntary Guidelines, is another useful tool for Responsible Adaptation at the local level. The VGGT is a key international standard used to improve the governance of tenure of land, fisheries and forests to support food security for all and the progressive realization of the right to adequate food. The underlying premise is that tenure governance over the use and control of land, fisheries and forests is a crucial element in determining if and how people and communities acquire rights and the associated duties. This is key in terms vulnerable groups who rely most heavily on their natural resource base, and especially since this base is also undermined by climate change. The VGGT aligns significantly with FPIC principles as relates to indigenous peoples but also more broadly to appropriate safeguards such as meaningful consultation and participation in project and program implementation. For example, an implementation principle relates to meaningful and prior engagement with those who could be affected by decisions in a way that responds to their contributions. The implementation principle also acknowledges and encourages an awareness around the role of existing power imbalances between different parties to "ensure active, free, effective, meaningful and informed participation of individuals and groups in associated decision-making processes" (FAO 2012). Guideline 23.3 refers directly to mitigation and adaptation program implementation and negotiation and the need for participation of all individuals, communities or peoples, with an emphasis on farmers, small-scale food producers, and vulnerable and marginalized people, who hold legitimate tenure rights. All parties should also ensure that tenure problems do not lead to conflict (p. 37).

The VGGT also contains a set of guidelines pertaining to investments. Here, the state should promote and support responsible public and private investments which are smallholder-sensitive and which support broader sustainability objectives under a variety of farming systems. Furthermore, investments should do no harm, be made in partnership with local communities and contribute to rural development (FAO 2012). Furthermore, and related to the centralized intervention tracking mechanism suggested above, the call for continuous improvement in the VGGT means that states should improve mechanisms for monitoring and analysis to develop evidence-based programs that secure on-going improvements (p. 5). The VGGT has already been identified as a development objective for collaboration between the FAO and the Cambodian government as a means to enhance equitable and sustainable growth and development and reduce natural resource degradation (FAO 2016a, 3). While all development projects would benefit from FPIC and VGGT frameworks, the case of Cambodia illustrates a specific need in interventions and programs related to Special Economic Zones, infrastructure projects, and especially economic land concessions (ELCs) such as those granted to rubber and other large-scale agricultural production, the detrimental effects of which were discussed in previous chapters. This requires guidance from the Cambodian government, climate finance, and donors so that NGOs, businesses and local authorities understand how the principles and safeguards of FPIC and VGGT can be fulfilled in practice.

[10] ILO, NORMLEX Information System on International Labor Standards. Available: https://goo.gl/G1kqYr [Accessed January 7, 2018].

Synthesizing the above, Figure 8.1 briefly outlines the four core principles which make up Responsible Adaptation including Corporate Governance; Corporate Citizenry; Development Partnerships; and Environmental Stewardship. Although not an exhaustive list, each area provides examples which are derived from the international best practice frameworks above. Although not an exhaustive list, each area provides examples which are derived from the Business and Human Rights frameworks above: The United Nations Guiding Principles on Business and Human Rights, the OECD Guidelines, FPIC, and the VGGT.

Figure 8.1. The four Key Principles of Responsible Adaptation

Source: Author's analysis

8.3 CONCLUSION

This study has illustrated that corporate engagement in climate change adaptation faces significant limitations; foremost is the running tension between the needs of poor communities and profit-oriented actors. As business does not necessarily reach the groups most impacted by climate change, a key question is thus: why should donor money be used to subsidize business in profit making? If action mostly concerns obtaining a profit from social and environmental challenges, we essentially privatize parts of the policy response to global change through finance, private sector investment, and technology. While business undoubtedly contributes to some forms of development, business alone or business-as-usual will not only leave us discouraged with the results, we may be confronted with worsened vulnerability and increased marginalization and uneven development. Given this, the current study offers a new approach termed *Responsible Adaptation* to make evident that the corporate approach to adaptation should not be distanced or disconnected from the responsible business debate that characterizes discussions and progress being achieved in other realms of land and natural resource governance. While further definition needs to emerge through additional research and learning lessons through best practices, initial core issues in need of increased attention relate to value for money and ethical models of development. In other words, it is important to look beyond scale and the macroeconomic level to question the additionality brought via public subsidies for the private sector, and at which level and to which actors benefits and negative impacts accrue. Moreover, planned adaptation interventions should be backed by a wider set of policies and partnerships which assist actors to bring development benefits. Accountability mechanisms, safeguards and principles frequently applied to other arenas—including FPIC, the VGGT, Guiding Principles on Business and Human Rights as well as the OECD Guidelines for Multinational Enterprises—can further reduce the isolation that currently exists between the responsible business and the adaptation arenas. These mechanisms can similarly be used to uphold business standards and to monitor and ensure results; they can also serve as a means to more closely involve local communities to shape and take part in the initiatives that affect their lives and livelihoods. Finally, it is important to consider if action is fail safe or safe to fail—and to plan beyond the short term, and outside of competitive terms; the latter is identified in Cambodia's national social protection strategy, alongside common resource depletion, as a threat to resilience in local contexts. This becomes especially critical if the private sector, operating from a profit mandate, is handed a high level of responsibility in Cambodia's agricultural policy and global financing mechanisms.

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APPENDIX I: KEY INFORMANT INTERVIEWS

This list outlines the experts and organizations included in the research. Names and positions are withheld to preserve the trust and anonymity of research participants. Interviews were conducted with high-level informants such as department heads and company owners; NGO interviews were conducted with program leaders and researchers.

Table A1.1. List of key informant interviews

Government
Cambodian Climate Change Alliance
Department of Agricultural Extension, Ministry of Agriculture
Ministry of Women's Affairs, Department of Women's Equality
Ministry of Interior (advisor)
Provincial Department of Agriculture, Battambang
Delegation of the European Union to the Kingdom of Cambodia
UK Trade & Investment
Development banks
ADB
Research/academic institutions
Royal University of Agriculture
Royal University of Phnom Penh (climate change and community development researchers from: Department of Sociology; Faculty of Development Studies, Department of Environmental Science, Department of Tourism, Research Office)
CGIAR CRTP: Climate Change, Agriculture and Food Security
PADEK (Partners for Development in Kampuchea)
UNDP
UNDP, CCBAP
UN Women, Cambodia Country Office
Development organizations
SNV
ForumSyd
Oxfam America
Oxfam Novib
Transparency International
Cambodia Climate Change Network
Private sector
Sciaroni & Associates

Table A1.1. List of key informant interviews *(continued)*

Development organizations *(continued)*
East West Seed
Consultants (one responsible business specialist; one climate change specialist)
Business organizations
Japanese Business Association of Cambodia
EuroCham
BritCham Cambodia
Young Entrepreneurs Association of Cambodia
AMCHAM Cambodia
Netherlands Cambodia Chamber of Commerce
International Business Chamber of Cambodia (IBC)
Korea Chamber of Commerce
Social Enterprise Cambodia
Cambodian Organic Agriculture Association
Cambodian Chamber of Commerce
Indian Chamber of Commerce in Cambodia
AusCham
Federation of Association for Small and Medium Enterprises of Cambodia
Cambodian Rice Federation
Cambodia Microfinance Association
Cambodian Federation of Employers and Business Associations
Businesses
Sovannak Palm Sugar
Green Eagle
Kirirom Food Production
Amru Rice (Cambodia) Co., Ltd
Green Leaf Farm
Cambodia Farmer Rice

APPENDIX II: INTERVENTION MAPPING RESOURCES

The table below provides examples of online sources that have informed the research.

Table A2.1. Examples of sources used for intervention database

Name	URL
Adaptation Partnership	http://www.adaptationpartnership.org/sites/default/files/East%20and%20Southeast%20Asia%20Country%20profiles%20(Cambodia).pdf
APAN	
CCCA	http://www.kh.undp.org/content/cambodia/en/home/operations/projects/environment_and_energy/cambodia-climate-change-alliance/
Cambodian Ministry of Environment, Climate Change Department	http://www.camclimate.org.kh/
GEF Least Developed Countries Fund	http://www.thegef.org/gef/project_highlights/LDCF
IFAD	https://www.ifad.org/topic/overview/tags/climate_change
NAPA Priorities Database: Cambodia	http://unfccc.int/adaptation/workstreams/national_adaptation_programmes_of_action/items/4583.php
SEAN-CC	http://accad.sean-cc.org/index.php?option=com_msearch&c=search&task=mfilters&id=178&fid=193&mtab=356&Itemid=117
Sumernet	http://www.sumernet.org/
UNDP Adaptation Leaning Mechanism (ALM)	http://www.adaptationlearning.net
UNDP Cambodia	http://www.kh.undp.org/
weADAPT	http://weadapt.org/placemarks/maps
World Bank	http://sdwebx.worldbank.org/climateportalb/home.cfm?page=country_profile&CCode=KHM&ThisTab=Adaptation

APPENDIX III: EVENTS OVERVIEW

The table below provides an outline of various events that have informed the research.

Table A3.1. Events overview

Name	Host	Location
CoCoon Conference 2014 Natural Resources and Climate Policies: Inevitable Conflict?	NWO	The Hague, The Netherlands
Advanced course Climate change: Understanding the challenge	Universidad del País Vasco	San Sebastian, Spain
Green Biz Forum	European Chamber of Commerce, Cambodia	Phnom Penh, Cambodia
National Consultation Workshop on Agricultural Extension Policy		Phnom Penh, Cambodia
2nd Mekong Climate Change Forum: Adaptation to Climate Change in the Transboundary Context	Mekong River Commission	Siem Reap, Cambodia
AmCham Networking Event	American Chamber of Commerce, Cambodia	Phnom Penh, Cambodia
CSR workshop	Social Enterprise Development / Impact Hub	Phnom Penh, Cambodia
Forum for Responsible Business	ASEAN CSR Network	Phnom Penh, Cambodia
National Conference on Business Integrity	Transparency International Cambodia	Phnom Penh, Cambodia
Asia-Pacific Climate Change Adaptation Forum 2014		Kuala Lumpur, Malaysia
Sixteenth International Conference on Knowledge, Culture, and Change in Organizations	The Organization Studies Knowledge Community	Honolulu, Hawaii

APPENDIX IV: CIF ELIGIBLE COUNTRIES IN 2015

The table below outlines the countries eligible under the PPCR's SCF Private Sector Facility as of April 2015.

Table A4.1. Eligible countries (2015)

Country	CIF Program	World Bank Country Classification by Income	Comment
Armenia	SREP	Lower-middle-income	Endorsed Investment Plan (IP)
Bangladesh	PPCR/SREP (New)	Low-income	Endorsed SPCR; New SREP country (no IP)
Benin	SREP (New)	Low-income	New SREP country (no IP)
Bolivia	PPCR	Lower-middle-income	Endorsed SPCR
Brazil	FIP	Upper-middle-income	Endorsed IP
Burkina Faso	FIP	Low-income	Endorsed IP
Cambodia	PPCR/SREP (New)	Low-income	Endorsed SPCR; New SREP country (no IP)
Congo, Dem. Rep.	FIP	Low-income	Endorsed IP
Dominica	PPCR	Upper-middle-income (SIDS)	Endorsed SPCR
Ethiopia	SREP	Low-income	Endorsed IP
Ghana	FIP/SREP (New)	Lower-middle-income	Endorsed FIP IP, New SREP country (no IP)
Grenada	PPCR	Upper-middle-income (SIDS)	Endorsed SPCR
Haiti	PPCR/SREP (New)	Low-income	Endorsed SPCR; New SREP country (no IP)
Honduras	SREP	Lower-middle-income	Endorsed IP
Indonesia	CTF/FIP	Lower-middle-income	Endorsed CTF and FIP IP
Jamaica	PPCR	Upper-middle-income (SIDS)	Endorsed SPCR
Kenya	SREP	Low-income	Endorsed IP
Kiribati	SREP (New)	Lower-middle-income	New SREP country (no IP)
Lao PDR	FIP	Lower-middle-income	Endorsed IP
Lesotho	SREP (New)	Lower-middle-income	New SREP country (no IP)
Liberia	SREP	Low-income	Endorsed IP
Madagascar	SREP (New)	Low-income	New SREP country (no IP)
Malawi	SREP (New)	Low-income	New SREP country (no IP)
Maldives	SREP	Upper-middle-income	Endorsed IP
Mali	SREP	Low-income	Endorsed IP
Mexico	CTF/FIP	Upper-middle-income	Endorsed IP
Mongolia	SREP	Lower-middle-income	No IP

Table A4.1. Eligible countries (2015) *(continued)*

Country	CIF Program	World Bank Country Classification by Income	Comment
Mozambique	PPCR	Low-income	Endorsed SPCR
Nepal	PPCR/SREP	Low-income	Endorsed SPCR and SREP IP
Nicaragua	SREP (New)	Lower-middle-income	New SREP country (no IP)
Niger	PPCR	Low-income	Endorsed SPCR
Papua New			
Guinea	PPCR	Lower-middle-income	Endorsed SPCR
Peru	FIP	Upper-middle-income	Endorsed IP
Rwanda	SREP (New)	Low-income	New SREP country (no IP)
Samoa	PPCR	Lower-middle-income	Endorsed SPCR
Sierra Leone	SREP (New)	Low-income	New SREP country (no IP)
Maldives	SREP	Upper-middle-income	Endorsed IP
Solomon Islands	SREP	Lower-middle-income	Endorsed IP
St. Lucia	PPCR	Upper-middle-income (SIDS)	Endorsed SPCR
St. Vincent and the Grenadines	PPCR	Upper-middle-income (SIDS)	Endorsed SPCR
Tajikistan	PPCR	Low-income	Endorsed SPCR
Tanzania	SREP	Low-income	Endorsed IP
Tonga	PPCR	Upper-middle-income (SIDS)	Endorsed SPCR
Uganda	SREP (New)	Low-income	New SREP country (no IP)
Vanuatu	SREP	Lower-middle-income	New SREP country (no IP)
Yemen	PPCR/SREP	Lower-middle-income	Endorsed SPCR; New SREP country (no IP)
Zambia	PPCR/SREP (New)	Lower-middle-income	Endorsed SPCR; New SREP country (no IP)

APPENDIX V: MAPPING POLICY

Table A5.1. Key climate change institutions in Cambodia

Institution	Description	Year est.	Major roles
National Committee for Disaster Management (NCDM)	Inter-ministerial body comprised of members from relevant ministries and the armed forces	1995	Developing and coordinating emergency plans and responses
			Providing emergency relief
			Developing preventive measures to reduce disaster-related loss of life and property
National Climate Change Committee (NCCC)	Inter-ministerial body comprised of senior policy-makers from 20 ministries, agencies, and the Department of Climate Change, which serves as the NCCC secretariat	2006	Developing, coordinating and monitoring the implementation of climate change policies, strategies and programs
			Determining national positions and strategies for participating in international climate change negotiations
Climate Change Technical Team	Inter-ministerial technical body	2011	Providing technical and advisory services to the NCCC/NCSD
			Developing sectoral climate change plans with key line ministries
National Council for Sustainable Development (NCSD)	Comprised of Secretaries and Under-Secretaries of respective government ministries and agencies; chaired by the Minister of Environment	2015	Coordinating climate change activities, including the preparation of key strategy documents
Ministry of Environment (MoE)	Key ministry for environmental protection and natural resources conservation	1994	Protecting and conserving the environment and natural resources including Protected Areas
			Implementing, and negotiating commitments under international environmental treaties, including the UNFCCC
			Coordinating and implementing climate change policies
			Hosting the Department of Climate Change
			Chairing the National Climate Change Committee
			Implementing activities under the CDM
	Designated National Authority for the Clean Development Mechanism (CDM)	2003	Assessing potential CDM projects
			Authorizing and approving participation in CDM projects
			Submitting proposed standardized baselines
Climate Change Department (CCD)	Housed within the MoE	2009	Secretariat for NCCC; assists with implementation of NCCC roles and responsibilities
			Focal point for the UNFCCC, the Kyoto Protocol, the IPCC, the CDM, international negotiations on climate change, and preparing the national position for these negotiations

Table A5.1. Key climate change institutions in Cambodia *(continued)*

Institution	Description	Year est.	Major roles
National Council on Green Growth (NCGG)	Lead institution for Green Growth (GG); comprised of 57 members and chaired by MoE minister	2012	Preparing laws, policies, strategic plans and programs for the implementation of GG; Coordinating regional and international cooperation and technology exchange; Promoting education and training for public, private and civil society sectors
Ministry of Water Resources and Meteorology (MOWRAM)	Key ministry for water resources and meteorology; composed of 10 departments and one technical center	1999	Developing and implementing water resources strategy
			Rehabilitating water infrastructure; constructing new water supply schemes; irrigation and flood control
			Facilitating and coordinating activities related to donors and the private sector
			Collecting and managing meteorological data
			Serving as World Meteorological Organization focal point
Department of Meteorology	Nested under MOWRAM		Providing weather and climate information
Ministry of Public Works and Transport	Key ministry for public transportation infrastructure	1996	Coordination of public works including roads, bridges and waterways
Ministry of Health	Key ministry for governing public health; comprised of eight departments and 24 provincial health departments	1993	Strengthening public health interventions
			Regulating the activity of medical professionals, hospitals and clinics
			Eliminating vector-borne disease
Ministry of Rural Development	Key ministry for improving living standards and alleviating poverty in rural areas	1996	Coordinating, evaluating and implementing rural development projects and programs
			Evaluating and recognizing communal land rights claims of indigenous groups
Ministry of Agriculture, Forestry and Fisheries (MAFF)	Key ministry for governing agricultural activities		Coordinating agriculture, forestry and fisheries activities
Department of Agriculture Extension (DAE)	Key department for extension services with district and community-based extension workers; housed within MAFF	1995	Enhancing food security and rural income through improved human capacity and agricultural production

Table A5.1. Key climate change institutions in Cambodia *(continued)*

Institution	Description	Year est.	Major roles
Ministry of Planning	Key ministry for socioeconomic planning; comprised of the General Directorate of Planning and the National Institute of Statistics	1997	Guiding and managing national socioeconomic development including technical guidance to line ministries
			Providing national framework for NAPA integration
			Developing and reviewing draft documents with ministry and wider stakeholder participation

Sources: IFAD, 2010; Sam, 2015; UNFCCC, 2017; Ung and Sey, 2014; and various Ministry websites

Table A5.2. Core climate change-related policies and documents

Name	Policy type	Private sector (PS) focus / contribution	Dimensions of vulnerability	
Rectangular Strategy for Growth, Employment, Equity and Efficiency (Phase III 2013-2018)	Dev	Investment, PS-led development & employment; PPPs & CSR	Families of the poor, soldiers, and veterans	
			Farming systems characterized by low productivity and low value-added outturns	
			Cambodian people, particularly the poor and the vulnerable including women and children	
			The poor and the vulnerable who cannot cope with health, education, food insecurity and crisis-related financial impacts	
National Strategic Development Plan (NSDP) 2014–2018	Dev	Investment, PS-led development & employment; PPPs & CSR	Declining demand for exports and increased macroeconomic and financial risks	
			Indigenous groups in 'unintegrated' northeastern provinces	
			Children from poor families, especially girls; children with disabilities	
Cambodia Climate Change Strategic Plan 2014-2023 (CCCSP) with Sectoral Climate Change Strategic Plans	CC	Mobilizing PPPs & CSR; Community-based adaptation; tools & technology	People, in particular the most vulnerable, and critical systems (natural and societal); rural poor, the majority of which are women, who depend strongly on natural resources and agriculture	

	Tools of resilience (examples)
	Increasing rights over and access to land through land titles and social land concessions
	Cropping technology such as irrigation systems, cultivation techniques, appropriate use of inputs, collection and storage facilities, processing capacity, logistics system, quality, sanitation and phyto-sanitation (SPS) standards, and financing
	Improving sanitation, health, nutrition and well-being
	Comprehensive social protection system
	Diversifying economic base for a broad-based and competitive structure, with low and manageable inflation, a stable exchange rate and steady growth in international reserves
	Increasing indigenous communal land registration; permitting access to NTFPs; expanding access to primary education in remote areas; Reducing number of children not in school
	Objective 1: Improving food, water and energy security through: business facilitation in carbon market opportunities; agricultural diversification and productivity; livestock and natural rubber production; watershed and ecosystem management; decentralized energy production systems; (re)building small to large irrigation systems; (re)building rural road infrastructure/ connecting production areas to markets
	Objective 2: Reducing sectoral, regional, gender vulnerability and health risks through: community-based adaptation, appropriate technologies, early warning systems; livestock and natural rubber production; coastal, watershed and ecosystem management; healthcare infrastructure/ personnel; capital-intensive urban transport infrastructure planning and development; prioritizing women's needs
	Objective 3: Ensuring climate resilience of critical ecosystems, protected areas and cultural heritage sites through: biodiversity conservation; cost-effective community/ ecosystem-based approaches and eco- tourism; REDD + and PES; participatory land-use planning
	Objective 4: Promote low-carbon planning and technologies to support sustainable development through: sectoral analyses on low emission options and sources of emissions; low-carbon development policies, legal frameworks and action plans; appropriate technology transfer and diffusion via partnerships; financial/ fiscal incentives; carbon market mechanisms; public-private partnerships; establish system of registration for GHG mitigation projects and programs
	Objective 5: Improve capacities, knowledge and awareness for climate change response through: partnerships for data collection and management; targeted training/ awareness programs in schools/ universities/ communities; sensitized private sector on threats/ opportunities of climate change (technical support, financing and technology transfer); public-private partnerships for communication
	Objective 6: Promote adaptive social protection and participatory approaches in reducing loss and damage through: micro-financing; insurance schemes; multistakeholder and public engagement, participation and consultation in adaptation planning; public-private partnerships and corporate social responsibility
	Objective 7: Strengthen institutions for national climate change responses through: developing and mainstreaming plans; inter-ministerial coordination; national monitoring and evaluation framework
	Objective 8: Strengthen collaboration and active participation in regional and global climate change processes through: commitments under and negotiations within UNFCCC framework and; ASEAN cooperation; Clean Development Mechanism (CDM), carbon market mechanisms, carbon credit schemes; climate finance

Table A5.2. Core climate change-related policies and documents *(continued)*

Name	Policy type	Private sector (PS) focus / contribution	Dimensions of vulnerability	
National Adaptation Program of Action to Climate Change (NAPA October 2006)	CC	None	Rural people and the poor who are most affected by climatic impacts	
Agriculture Strategic Development Plan 2014-2018 (ASDP)	Dev	FDI/ investment; Public Private Farmer Partnership (PPFP)	Outdated agricultural practices; low productivity and crop diversification; trade and investment barriers	
National Policy on Green Growth (2013)	Dev	FDI/ investments; green economic growth projects; PPP	Poverty; erratic price fluctuations of natural resources; food/fuel/financial crisis; depleting ecosystems; water scarcities; and increased climate vulnerability; climate-vulnerable communities; the poor	
The National Green Growth Roadmap (2009)	Dev			
National Social Protection Strategy for the Poor and Vulnerable (2011)	Dev	Government partnerships; Training and education programs and centers	Women and children; Special vulnerable groups (orphans, the elderly, single women with children, veterans, people with disabilities or living with HIV, TB and other chronic illness); people who cannot cope with and/or have a high level of exposure to shocks, particular focus on people living near and especially below the national poverty line; the landless and land-poor	

	Tools of resilience (examples)
	Capacity building/training; awareness raising and education; and infrastructure development with focus on priority sectors: agriculture (e.g., soil conservation); forestry (e.g., community agroforestry), human health (e.g., biopesticides production); coastal zone (e.g., mangrove restoration) and water resources (e.g., rehabilitation of agricultural and domestic water systems)
	Move from subsistence to agricultural commercialization; focus on strategic crops such as rice and rubber; diversification; high-value crops; livestock farming and aquaculture; 'deep' reform; improved irrigation, transportation links, positive business environment; dissemination of new technology, agricultural research and development to adapt to climate change; strengthened cooperation with development partners
	Access to: clean water/ sanitation (e.g., improved water governance); renewable energy (e.g., Clean Development Mechanism (CDM) and voluntary markets); information/ knowledge (GG integrated in education system); better mobility (e.g., public transportation); finance/ investments (e.g., FDI, microfinance); food security/ non-chemical products (e.g., organic production); sustainable land use (e.g., Payment for Ecosystem Services; organic production)
	Basic needs support in times of emergency and crisis (e.g., food, sanitation, water and shelter); human capital development and improved nutrition, maternal and child health; promoting education and ending child labor; Public Works Programs (food/ cash for work) in village/ sub-district infrastructure (e.g., climate change mitigation and adaptation work); increased access to affordable health care and financial protection in case of illness (e.g., fee waivers, insurance schemes); strengthen access to and expand social welfare services (e.g., in cash or in kind social pensions and transfers)

SUMMARY

Developing countries such as Cambodia are hit hardest by climate change yet already face myriad challenges such as food and livelihood insecurity. In fact, where access to healthcare, education, safe water and electricity remain out of reach for many, climate change is an additional and unpredictable stressor. As such, there is an acute urgency to couple strategies that address climate change adaptation and poverty, especially for marginalized groups who are most severely affected by a warming planet. This is no easy task; adaptation is estimated to cost a minimum of tens of billions of US dollars per year, and despite current pledges and funding mechanisms, there is an enormous funding shortfall. One way to bridge this gap is to bring in the resources, such as technology and expertise, of business. Moreover, as the private sector has the capacity to leverage additional funds, ensure government action and quickly scale-up positive outcomes for poor communities, the role of business is now believed to be pivotal. For example, in key and particularly vulnerable socioeconomic sectors such as agriculture which supports household and national economies, solutions such as new seeds, fertilizers and pesticides, insurance packages, and microcredit are promoted and delivered by private companies to local farmers under the impetus of climate change adaptation and resilience-building. Despite the positive rhetoric however, there is little evidence of effectiveness. Additionally, the contribution of the private sector, particularly in the realm of adaptation, is not as straightforward as it is often assumed. This book, drawing on multi-scalar and mixed-methods research conducted over three years in Cambodia, aims to reduce this knowledge gap and contribute to a better understanding of what it means to give private actors the reins to a public good. It is guided by the main research question:

> *How, and to what extent, can the private sector contribute to sustainable climate change adaptation in Cambodia's agricultural sector?*

The first step in the study aimed to understand Cambodia's adaptation landscape at the macro level through an analysis of the country's main climate change and development policies as well as through the collation and critical review of 86 planned adaptation interventions; this mapping relied on online data as well as first-hand information obtained through in-depth interviews with representatives from NGOs, universities, and government agencies among others. The mapping revealed that, in both policy documents and adaptation interventions, floods and drought are the main climate threats to Cambodia's agricultural sector. Second, the private sector was clearly evident in key development and climate change policies and was facilitated on the ground through a range of financing mechanisms. This was also found to jibe well with processes at the global level: in recent years, business has been assigned a central role in international climate change adaptation policy and practice, for example under the policy framework of the UNFCCC as well as within global climate change funding mechanisms brought by climate funds themselves but also donors and Civil Society Organizations (CSOs). Through background research, pro-poor action was also found to be a key principle in a global climate change regime where equity and climate justice are clearly stated throughout the Paris Agreement and where the contribution of business and the market is increasingly promoted as the best and most sustainable means to solve pervasive climate change. The mapping of Cambodia's adaptation landscape revealed another alignment with the global arena: the exact role of the private sector in the majority of interventions included in the study was generally unclear.

The findings additionally show that the characteristics of vulnerability were assigned in policy and practice to both natural and human systems with poverty the main obstacle and agriculture, water resources, forestry, fisheries, tourism, coastal zones and human health the most vulnerable sectors. In policy especially, resilience remedies were generally cast as the urgent need for rural economy development by way of agricultural modernization. Here traditional livelihoods come across as anathema to resilience, and domestic and foreign business investment is believed to ensure the primary objective of National resilience achieved through macroeconomic growth and enhanced global competitiveness. Under this casting, partnerships with the private sector, engagement through contract farming or an increasing leadership role in the provision of agricultural extension services are part and parcel.

Mapping Cambodia's adaptation landscape also revealed an underlying tension between global and local priorities. This is stems from the fact that, based on a specific definition of adaptation funding, climate financing is able to draw hard and fast lines on what comprises adaptation. This can stand in opposition to the above where climate change strategy and resilience directly link to development and can be considered two parts of one increasingly connected whole. The financial definition of adaptation is important to consider because it allows the politics of adaptation to be played out through development assistance, for example in a donor's 'countable' contributions of bilateral funding to climate finance efforts via 'Rio markers' which ultimately indicate whether a project or program is considered official climate action. The crisscrossing of adaptation and development also means that interventions with tangible adaptation components such as a sea wall or irrigation ditch are much more easily defined and so are more likely to 'count' for adaptation funding despite the importance of actions that address social barriers standing in the way of resilience; this is important because these barriers point to the root causes of vulnerability and so have a much higher potential to lead to systemic transformation if addressed. Finally, these 'hard' interventions de-task the state by carving a clear path for private sector contributions and profit generation, but also increase the likelihood of uneven development in a loose governance context. Naturally, technical approaches are only as good as the systems they are embedded within and so are less able to reach the groups most vulnerable to detrimental climate impacts, further raising the issue of equitable adaptation. This is a leading concern because especially climate vulnerable groups—such as children, the elderly and the physically challenged—did not emerge in the mapping as leading target groups despite their heightened vulnerability. Exposing a certain shallowness to the easy win-win mentality, these groups highlight the persistent difficulty of development and so continue to haunt the ambitions of the 2030 Agenda.

The second step in the doctoral study focused on the micro or village level to understand as much as possible: 1) how climate change is perceived and dealt with by farmers on the ground; and 2) given this local context, how two agri-businesses driven by global climate change funding—namely the Pilot Program for Climate Resilience or PPCR—aimed to assist these farmers in building adaptive capacity through integration into the global rice and spice value chains and subsequent income increases. Although desk research was used to delve deeper into the PPCR funding mechanism, the majority of empirical data derives from in-depth fieldwork and extensive qualitative research conducted in two phases and within 11 villages located within Banan and Samlout Districts of Battambang province. Methods included informal and participant observation, semi-structured interviews, and focus group discussions. Specific villages were selected in these districts as they comprised areas of operation for the businesses under study.

The first fieldwork explored farmers perceptions around the increased promotion of market-based and technical solutions to climate change adaptation. Rather than global climate change, the findings showed that the majority of rural farmers, both women and men, land holding and landless, believed that large-scale deforestation was to blame for the climate-related impacts they experienced. In addition, technical and market-based solutions provided by the private sector often contrasted with the priorities and situations of farmers: they are perceived as costly, short-term and incremental, and so not likely to increase long-term climate or livelihood resilience. A key conclusion is thus: while a techno-economic perspective propels the necessary technical solutions and fits the call for increased private sector engagement, it overlooks equally influencing social factors that mitigate successful adaptation. For example, collective strategies and the building and strengthening of local civic institutions are highly needed, yet intra-community political divides and lack of trust blocked this development, bringing adaptive capacity and long-term resilience into question.

The next stage of the study focused the research on the businesses and their activities at the local level. However, before looking at the village level, the first step was to evaluate the PPCR at the global level to understand leading objectives and processes. The findings revealed that the fund was unable to generate sufficient interest from the private sector. Where interest manifested, this interest did not meet PPCR criteria. Out of only 12 recommended projects, just two agribusiness interventions were deemed eligible in Cambodia and only one of them was fully Cambodian. This general lack of private sector interest at the

global level brings into question the ability of the private sector to meaningfully contribute toward swiftly solving society's most pressing problem. Finally, the reduced capacity of local firms to take equal part in shaping Cambodia's wider adaptation strategy is also questionable.

Within the study villages, research exposed the highly inequitable nature of the business activities. Despite the PPCR's focus on the most marginalized and transformational change, each business took a conventional business approach. While certain benefits transpired in one village, each business was ultimately limited in its ability to build adaptive capacity and thus offer transformative adaptation as envisioned by the PPCR. Moreover, smallholders and communities were likely to be left more vulnerable after such a traditional business approach. First, the companies only targeted the smallholders most capable of participating in the prescribed business activities through 'business-as-usual' which built business resiliency but fragmented communities and diverted important smallholder and community adaptation resources. Second, participants had to simultaneously adapt to the difficult farming conditions presented by climate change as well as new farming processes rife with financial and production risks within already challenging market contexts. Microfinance was used as a key adaptation tool in both cases but was locally viewed as an inadequate but also potentially injurious means to support farming in times of heightened risk and uncertainty. Although there is a re-emergence of this financial tool in development practice, from an adaptive transformation perspective it does little to mitigate the underlying structural causes of climate vulnerability, especially for the poorest members of society. It also exposes farmers to predatory behavior of generally unregulated lenders and their highly profitable schemes which suspend and place at risk important household assets.

This micro-level investigation showed that while technical and market solutions spur initiatives to increase local development, each rest on fundamentally different foundations which brings pro-poor and pro-profit face-to-face and into direct contradiction. On the ground, the promotion and public subsidy of profit-oriented actors in adaptation has significant potential to unfairly skew the distribution of gains, losses, risks and vulnerabilities to result in adaptation winners and losers. While attention for biophysical vulnerabilities, expert-led and market-based solutions is important, communities simultaneously face myriad social risks and challenges in relation to climate change; the solutions brought by business do not automatically solve the problems occurring at the local level, and chances are they might even make things worse. One solution is to bring in strategic development partnerships as business lacks expertise in this area. Furthermore, in the business world, attention is easily placed on scaling up by adding more geographical locations to the sourcing pool, but attention should be equally placed on actual impact and the socio-economic settings and adaptation barriers standing in the way of both business and transformational adaptation and resilience. In other words, it is insufficient to measure *the type* of business model inclusiveness; the *level* of inclusiveness and thus impact also needs to be assessed given the principles of equity elaborated upon in the various IPCC Reports as well as within the Paris Agreement. Finally, it is important to note that even though both businesses received a stamp of approval from the PPCR and spent quite some time—estimated to be in the period of 2013-2017—working within the process, it was revealed (some time after data was collected) that both businesses were no longer part of the PPCR for unclear reasons.

The final component of the study focused at the meso level to understand the potential of the private sector to be climate leaders. Business is envisioned to be a key actor in bringing resilient solutions to society yet limited knowledge exists on how these actors can be adaptation leaders. To move beyond the case studies and gage the broader readiness of Cambodia's private sector to serve as climate leaders, mixed methods research was conducted with 18 business organizations and seven businesses in Phnom Penh. The objective was twofold: first, to scope out the potential role of trade and business organizations in Cambodia and, second, within this context understand how climate change is perceived as well as identify which opportunities and constraints emerge. This was deemed necessary as funds are increasingly made available to private sector actors while climate change scholars and practitioners simultaneously call for system changes and transformation. What is required on both fronts often remains undefined. Focus was placed on business organizations in Phnom Penh as they sit at the junction between all stakeholders; they also

feature unique characteristics in terms of business leadership and agency.

Analysis, based on the key concepts of *leadership*, revealed that these organizations operate in ways which make climate leadership possible. These included a focus on business integrity, the ability to bring business people together and build capacity, as well as the ability to join hands through collaborative partnerships with governments and diplomats, CSOs as well as other chambers and associations. Although these characteristics lend well to the role of climate leader, other key features of the organizations compromise leadership ability, namely a service orientation that follows rather than leads in many cases, a tendency to lean toward business-as-usual and a gaze for low hanging fruit, and limited awareness of climate change, including its urgency, demands and implications including consequences for business. Organizations taking part in the study expressed the need primarily for knowledge and opportunities to increase capacity, and government and NGO partnerships. This was followed by the need for business partnerships and the implementation and support of national laws and policies. Less needed were international laws and policies and funds, the latter because of concerns surrounding the large amounts of donor funding flowing into Cambodia—generally perceived to be misused and lacking impact. This is an interesting finding since all organizations referred to the difficulties experienced as a result of funding challenges; moreover, funding is an important aspect of climate change action and motivating business to bring solutions. This finding in particular highlights the importance of tackling misguided perceptions that stymy pro-poor action. In conclusion, it is clear that business chambers and associations are the nominal stewards of important resources that are jointly owned and produced by members of Cambodia's business community. These actors—who collaboratively create, manage and inspire new institutional arrangements, new ways of thinking about and doing things at the policy level, and new resources—thus have significant potential to direct private action for the public good in the realm of climate change adaptation. However, deeper reflection brings the understanding that, while many adaptation leadership functions are already in place, there is a need to alter the institutional environment, or rules of the game, in the network. In fact, the ability of this private sector network to effectively influence Cambodia's business environment towards higher states of resilience is based on the achievement of fundamental changes in how its constituent business actors *think about* and then *do* business. Despite acute focus on the private sector at both the global and national levels, there is a clear gap in climate change policy in terms of meaningfully engaging business in resilience building. Moreover, clear barriers at the business level effectively stymy business leadership. It is not enough to make business resilient; climate change requires substantial shifts in attitudes and behavior and collaboration. While leadership can play an important role, more is necessary.

This book makes clear that raw market principles alone are unlikely to result in pro-poor adaptation action. After all, pivoting climate change action from a narrow profit perspective largely advocates that governments and firms narrowly address adaptation via monetary and technical rationales. Not incidentally, rendering problems as technical also makes them more suitable for investment and also marketable. As the most impacted, the poorest and most marginalized constitute a core consideration—and obligation—in climate change funding, policy and action. Therefore, corporate engagement in adaptation—in essence the liberalization of adaption and the privatization of adaptation governance—must adhere to international principles which are crucial for sustainable development. Toward this end, this book aims to spur deeper theoretical enquiry as well as effect practical change by merging two currently de-linked debates—climate change adaptation and responsible business—to put forth a number of principles for Responsible Adaptation based on a business and human rights approach. This includes meaningful community participation, a community's right to refuse, and adequate social and environmental due diligence. In addition, Responsible Adaptation requires firms and their business partners to operate in a transparent manner and adhere to responsible corporate citizenry and corporate governance. After all, technical and market solutions, and the policies that promote them, resonate nicely with neoliberal ideals and possibilities for private sector engagement. Yet running this course also means that we run the risk that private sector options are largely viewed as straightforward, neutral, and even apolitical innovations even though they are derived from privileged knowledge frameworks that dock climate change in primarily top-down, 'outside expert,' profit-oriented and especially biophysical terms. This line of action also overlooks a deeper layer of discourse,

namely one that privileges business conceptualizations of adaptation over those of local communities. A responsible and human centered approach to business-led adaptation, which respects the full range of human rights, has better potential to positively transform a farmer's adaptation experience and so overall community wellbeing.

SAMENVATTING

Ontwikkelingslanden zoals Cambodja worden het zwaarst getroffen door de klimaatverandering terwijl ze toch al met ontelbare uitdagingen worden geconfronteerd, bijvoorbeeld inkomens- en voedselonzekerheid. In een land waar gezondheidszorg, onderwijs, schoon water en elektriciteit voor de meeste mensen nog altijd onbereikbaar zijn, vormt klimaatverandering een extra, onvoorspelbare stressfactor. Er is daarom een acute noodzaak om de strategieën voor aanpassing aan klimaatverandering en bestrijding van armoede op elkaar af te stemmen voor de gemarginaliseerde bevolkingsgroepen die het meest te lijden hebben van de opwarming van de aarde. Dit is geen eenvoudige opgave: de aanpassing gaat naar schatting minimaal tientallen miljarden dollars per jaar kosten en ondanks bestaande toezeggingen en financieringsmechanismen is er nog een enorm tekort. Een manier om dit gat te dichten is met middelen vanuit het bedrijfsleven, zoals technologie en expertise. Sterker nog, omdat de private sector het vermogen bezit om aanvullende fondsen beschikbaar te maken, overheidsmaatregelen af te dwingen en in hoog tempo grootschaliger positieve resultaten voor arme gemeenschappen te bewerkstelligen, wordt de rol van het bedrijfsleven tegenwoordig van doorslaggevend belang geacht. In belangrijke en zeer kwetsbare sociaaleconomische sectoren zoals de landbouw, waarvan huishoudens en nationale economieën afhankelijk zijn, worden oplossingen—nieuwe zaden, meststoffen en bestrijdingsmiddelen, verzekeringspakketten, microkredieten—door particuliere ondernemingen bij lokale boeren gepromoot en geleverd onder druk van de klimaatverandering en de noodzakelijke versterking van de weerbaarheid. Ondanks de positieve taal is er echter weinig bewijs voor de effectiviteit hiervan. Bovendien is de bijdrage van de private sector, met name wat betreft de aanpassing aan de klimaatverandering, niet zo eenduidig als vaak wordt aangenomen. Dit boek, gebaseerd op multiscalair mixed-method onderzoek dat gedurende drie jaar is uitgevoerd in Cambodja, is bedoeld om de kenniskloof op dit gebied te verkleinen en bij te dragen aan een beter inzicht in wat het betekent om private partijen het initiatief te geven in een publieke zaak door antwoord te geven op deze onderzoeksvraag:

> *In hoeverre kan de private sector bijdragen aan duurzame aanpassing aan de klimaatverandering in de Cambodjaanse landbouw?*

De eerste fase van de studie was bedoeld om inzicht te krijgen in het aanpassingslandschap in Cambodja op macroniveau door middel van een analyse van de belangrijkste elementen van het nationale klimaat- en ontwikkelingsbeleid en door het kritisch beoordelen van 86 plannen voor aanpassingsinterventies. Deze inventarisatie was gebaseerd op enerzijds online data en anderzijds informatie uit de eerste hand, verkregen uit diepte-interviews met vertegenwoordigers van onder andere ngo's, universiteiten en overheidsinstanties. Bij de inventarisatie bleek uit zowel beleidsdocumenten als aanpassingsinterventies dat overstromingen en droogte de grootste klimaatdreigingen voor de Cambodjaanse landbouw zijn. Ten tweede was de private sector duidelijk aanwezig in belangrijke onderdelen van het klimaat- en ontwikkelingsbeleid en stonden deze sector verschillende financieringsmechanismen ter beschikking. Dit bleek ook op te gaan voor processen op mondiaal niveau. De laatste jaren hebben bedrijven een centrale rol toebedeeld gekregen in het beleid en de praktijk van de internationale aanpassing aan de klimaatverandering, bijvoorbeeld in het kader van het VN-Klimaatverdrag en in financieringsmechanismen van zowel klimaatfondsen als donoren en maatschappelijke organisaties. Uit achtergrondonderzoek bleek dat armoedebestrijding eveneens een belangrijke hoeksteen is van een mondiaal klimaatveranderingsregime, aangezien gelijkheid en klimaatrechtvaardigheid helder geformuleerde doelen zijn in het Klimaatakkoord van Parijs en de bijdrage van het bedrijfsleven en de markt in toenemende mate wordt aangeprezen als de beste en meest duurzame oplossing voor de alomtegenwoordige klimaatverandering. Het in kaart gebrachte aanpassingslandschap van Cambodja bracht nog een overeenkomst met de mondiale arena aan het licht: de exacte rol van de private sector was bij de meeste onderzochte interventies over het algemeen onduidelijk.

De uitkomsten laten daarnaast zien dat de kwetsbare kenmerken in het beleid en in de praktijk worden toegeschreven aan zowel natuurlijke als menselijke systemen, met armoede als belangrijkste obstakel en landbouw, waterbronnen, bosbouw, visserij, toerisme, kustgebieden en volksgezondheid als de meest

kwetsbare sectoren. Met name in het beleid krijgen versterkingsmaatregelen over het algemeen de vorm van dringend noodzakelijke ontwikkeling van de plattelandseconomie door middel van modernisering van de landbouw. Hier worden traditionele vormen van levensonderhoud beschouwd als hinderpalen voor betere weerstand, en is men ervan overtuigd dat investeringen van het binnen- en buitenlandse bedrijfsleven het primaire doel van nationale weerbaarheid dankzij macro-economische groei en een betere concurrentiepositie op de wereldmarkt mogelijk maken. Op grond van deze taakverdeling zijn samenwerkingsverbanden met de private sector—betrokken via *contract farming* of door een leidende rol bij de dienstverlening ten behoeve van extensivering van de landbouw—schering en inslag.

Uit het in kaart gebrachte Cambodjaanse aanpassingslandschap bleek ook een onderliggende spanning tussen mondiale en lokale prioriteiten. Deze komt voort uit het feit dat klimaatfinanciering werkt met scherpe definities van wat klimaataanpassing inhoudt. Daardoor kan een tegenstelling ontstaan met het bovenstaande beeld, waarin de strategieën met betrekking tot klimaatverandering en versterking direct zijn gekoppeld aan ontwikkeling en kunnen worden beschouwd als twee delen van een steeds meer verbonden geheel. Een goede financiële definitie van aanpassing is van belang omdat zij het mogelijk maakt het aanpassingsbeleid vorm te geven met ontwikkelingshulp, bijvoorbeeld in de 'telbare' bijdrage van een donor aan bilaterale financiering van klimaatinspanningen via zogenoemde Rio-markers die uiteindelijk aangeven of een project of programma als officiële klimaatactie wordt beschouwd. Het door elkaar lopen van aanpassing en ontwikkeling betekent ook dat interventies met tastbare aanpassingscomponenten – zoals een zeedijk of irrigatiekanaal – veel gemakkelijker te definiëren zijn en dus sneller 'meetellen' voor aanpassingsfinanciering, ondanks het grote belang van maatregelen tegen sociale hinderpalen voor weerbaarheid; dit is van belang omdat deze hinderpalen symptomen van onderliggende oorzaken van kwetsbaarheid zijn en daarom in potentie sneller tot systeemverandering leiden als ze worden aangepakt. Ten slotte ontlasten deze 'harde' interventies de staat doordat ze een sjabloon voor investeringen en winsten van de private sector vormen, maar vergroten ze tegelijkertijd de kans op ongelijke ontwikkeling door de geringe mate van governance. Door hun aard zijn technische oplossingen slechts zo goed als de systemen waarin ze worden toegepast. Daardoor kunnen ze de groepen die het meest kwetsbaar zijn voor schadelijke klimaateffecten het slechtst bereiken en blijft de kwestie van gelijkwaardige aanpassing actueel. Dit is een groot punt van zorg omdat met name klimaatgevoelige bevolkingsgroepen, zoals kinderen, ouderen en lichamelijk gehandicapten, uit de inventarisatie niet als belangrijke doelgroepen naar voren komen. De positie van deze kwetsbare groepen brengt een zekere oppervlakkigheid in de simpele win-winmentaliteit aan het licht, en onderstreept hoe het hardnekkige ontwikkelingsprobleem de ambities van de agenda voor 2030 blijft achtervolgen.

De tweede fase van het promotieonderzoek was gericht op het micro- of dorpsniveau om zoveel mogelijk inzicht te krijgen in de vraag (1) hoe klimaatverandering wordt ervaren en benaderd door de boeren in het veld, en (2) hoe, gegeven deze lokale context, twee landbouwbedrijven met steun van een klimaatveranderingsfonds – het Pilot Program for Climate Resilience (PPCR) – deze boeren willen bijstaan bij de realisering van aanpassingsvermogen door integratie in de wereldwijde waardeketens van rijst en specerijen en de daaropvolgende inkomstengroei. Hoewel bureauonderzoek is uitgevoerd om dieper in het PPCR-financieringsmechanisme te duiken, komen de meeste empirische gegevens voort uit diepgravend veldwerk en uitgebreid kwalitatief onderzoek dat in twee fasen is verricht in 11 dorpen in de districten Banan en Samlout van de provincie Battambang. De gehanteerde methoden omvatten informele en participerende observatie, semigestructureerde interviews en discussies in focusgroepen. De specifieke dorpen werden geselecteerd omdat ze gebieden omvatten waar de onderzochte bedrijven werkzaam waren.

In de eerste veldstudie zijn de percepties van boeren onderzocht ten aanzien van de toegenomen promotie van marktgestuurde en technische oplossingen voor aanpassing aan de klimaatverandering. Hieruit bleek dat niet de wereldwijde klimaatverandering maar de grootschalige ontbossing volgens de meerderheid van de boeren, mannen en vrouwen, landbezitters en landlozen, de oorzaak was van de klimaateffecten die zij ervoeren. Bovendien waren de door de private sector aangedragen technische en marktgestuurde

oplossingen vaak strijdig met de prioriteiten en omstandigheden van de boeren: zij ervaren ze als duur, op de korte termijn gericht en incrementeel, en achten het daarom onwaarschijnlijk dat ze hun klimaatbestendigheid of inkomenszekerheid op lange termijn versterken. Een belangrijke conclusie is daarom dat een technisch-economisch perspectief weliswaar de nodige technische oplossingen voortbrengt en beantwoordt aan de roep om meer betrokkenheid van de private sector, maar geen oog heeft voor even invloedrijke sociale factoren die succesvolle aanpassing in de weg staan. Zo zijn bijvoorbeeld collectieve strategieën en de opbouw en versterking van lokale burgerlijke instituties zeer noodzakelijk, maar stuiten deze ontwikkelingen op politieke verdeeldheid en wantrouwen binnen de gemeenschap, waardoor het vermogen tot aanpassing en duurzame weerbaarheid twijfelachtig is.

De volgende fase van het onderzoek richtte zich op de bedrijven en hun activiteiten op lokaal niveau. Alvorens naar het dorpsniveau te kijken hebben we echter eerst op mondiaal niveau het PPCR bestudeerd om inzicht te verwerven in zijn belangrijkste doelstellingen en processen. Hieruit bleek dat het fonds niet voldoende interesse wist te wekken van de private sector. Waar wel interesse werd getoond, voldeed deze niet aan de criteria van het PPCR. Op een totaal van 12 aanbevolen projecten kwamen maar twee interventies van landbouwbedrijven in Cambodja in aanmerking voor financiering. Slechts één ervan was volledig Cambodjaans. Dit algemene gebrek aan belangstelling van de private sector op mondiaal niveau wekt twijfel over het vermogen van de private sector om een zinvolle bijdrage te leveren aan een snelle oplossing van het meest dringende maatschappelijke probleem van deze tijd. Ten slotte is ook de geringe mogelijkheid voor lokale bedrijven om gelijkwaardig mee te werken aan de Cambodjaanse aanpassingsstrategie twijfelachtig.

In de bestudeerde dorpen legde het onderzoek de ongelijkwaardige aard van de bedrijfsactiviteiten bloot. Ondanks de focus van het PPCR op de meest gemarginaliseerde groepen en wezenlijke verandering, hanteerde elk van beide bedrijven een conventionele zakelijke aanpak. Hoewel in één dorp bepaalde voordelen zichtbaar waren, was elk bedrijf uiteindelijk maar beperkt in staat aanpassingsvermogen op te bouwen en daarmee wezenlijke verandering te bewerkstelligen in de geest van het PPCR. Daarbij komt dat kleine boeren en gemeenschappen van zo'n traditionele aanpak waarschijnlijk alleen maar kwetsbaarder worden. Ten eerste richtten de bedrijven zich alleen op de kleine boeren die het best in staat waren aan de voorgeschreven bedrijfsactiviteiten deel te nemen met 'business as usual', wat weliswaar sommige boeren sterker maakte maar gemeenschappen verdeelde en belangrijke bronnen van aanpassing onder de boeren uitsloot. Ten tweede moesten de deelnemers zich tegelijkertijd aanpassen aan de moeilijke agrarische omstandigheden als gevolg van de klimaatverandering én aan de nieuwe bedrijfsprocessen met hun financiële en productieve risico's in marktomstandigheden die toch al uitdagend waren. In beide gevallen werd microfinanciering gebruikt als belangrijk hulpmiddel, maar dit werd ter plaatse gezien als een ontoereikende en potentieel schadelijke methode om boerenbedrijven te steunen in tijden van verhoogd risico. Hoewel dit financiële instrument opnieuw in opkomst is in de ontwikkelingspraktijk, doet het vanuit veranderingsperspectief te weinig om de structurele oorzaken van klimaatkwetsbaarheid weg te nemen, in het bijzonder voor de armsten in de samenleving. Ook stelt het boeren bloot aan het roofdiergedrag van veelal ongereguleerde geldverstrekkers en hun zeer winstgevende regelingen, die belangrijke bezittingen van huishoudens in de waagschaal stellen.

Het onderzoek op microniveau toonde aan dat technische en op de markt gebaseerde oplossingen weliswaar tot initiatieven voor lokale ontwikkeling leiden, maar dat deze fundamenteel van elkaar verschillen en armoedebestrijding en winststreven als tegenstrijdige doelen tegenover elkaar stellen. Aan de basis brengt de bevoordeling en subsidiëring van op winst gerichte partijen in het aanpassingsbeleid het grote risico met zich mee van een oneerlijke verdeling van winst, verlies, gevaar en kwetsbaarheid tussen winnaars en verliezers. Hoewel aandacht voor biologisch-fysische gevaren en door deskundigen ontwikkelende marktgestuurde oplossingen belangrijk is, staan gemeenschappen tegelijkertijd bloot aan ontelbare sociale risico's en uitdagingen in verband met klimaatverandering. Deze oplossingen maken niet automatisch een einde aan de problemen op lokaal niveau; de kans bestaat zelfs dat ze ze erger maken. Een oplossing is de inbreng van strategische ontwikkelingssamenwerkingsverbanden, omdat het bedrijfsleven

op dat gebied expertise ontbeert. Verder gaat in het bedrijfsleven veel aandacht uit naar groei door uitbreiding van het aantal geografische locaties, maar zou evenzeer aandacht moeten worden besteed aan de werkelijke impact en de sociaaleconomische omstandigheden en hinderpalen voor aanpassing die zowel de bedrijfsactiviteiten als de aanpassingen en versterking van de weerbaarheid in de weg staan. Het is, met andere woorden, onvoldoende om *het type* inclusiviteit van het bedrijfsmodel te meten. Ook *de mate* van inclusiviteit en dus de impact moet worden vastgesteld, gezien de gelijkheidsprincipes die zijn uitgewerkt in de verschillende IPCC-rapporten en het Klimaatakkoord van Parijs. Tot slot is het van belang om op te merken dat, hoewel beide bedrijven de goedkeuring van het PPCR hadden gekregen en een hele tijd (naar schatting de periode 2013-2017) in het PPCR-proces actief waren geweest, enige tijd na het verzamelen van de onderzoeksdata bleek dat beide bedrijven om onduidelijke redenen niet langer deel uitmaakten van het PPCR.

Het laatste deel van het onderzoek was erop gericht om op mesoniveau inzicht te krijgen in het potentieel van de private sector als voortrekker in de klimaataanpassing. Het bedrijfsleven wordt beschouwd als een belangrijke speler bij het realiseren van veerkrachtige oplossingen in de samenleving maar er bestaat weinig kennis over de wijze waarop het de rol van voortrekker in de klimaataanpassing op zich kan nemen. Om verder te kijken dan de casestudy's en te bepalen in hoeverre de Cambodjaanse private sector in bredere zin kan fungeren als voortrekker in de klimaataanpassing, is mixed-method onderzoek uitgevoerd bij 18 bedrijfsorganisaties en zeven bedrijven in Phnom Penh. Het doel was tweeledig: ten eerste om een indruk te krijgen van de mogelijke rol van branche- en bedrijfsorganisaties in Cambodja, en ten tweede om in die context te kijken hoe men klimaatverandering ziet en te ontdekken welke kansen en beperkingen daaruit voortvloeien. Dit werd noodzakelijk geacht omdat in toenemende mate financiële middelen beschikbaar worden gesteld aan partijen in de private sector terwijl klimaatwetenschappers tegelijkertijd pleiten voor systeemverandering en transformatie. Wat op beide fronten vereist is, blijft vaak onduidelijk. De focus lag op bedrijfsorganisaties in Phnom Penh, omdat zij zich op het knooppunt van alle belanghebbenden bevinden. Ze hebben ook unieke kennis over het leiden en vertegenwoordigen van bedrijven.

Een analyse op basis van sleutelbegrippen op het gebied van leiderschap wees uit dat deze organisaties op manieren werken die klimaatleiderschap mogelijk maken. Hiertoe behoren een nadruk op zakelijke integriteit, het vermogen om ondernemers samen te brengen en capaciteit op te bouwen, en het talent om de handen ineen te slaan in partnerschappen met overheden en diplomaten, maatschappelijke organisaties en andere belangenverenigingen. Hoewel deze eigenschappen goed aansluiten bij de rol van klimaatleider, hebben de organisaties andere belangrijke kenmerken die leiderschap bemoeilijken, te weten een houding ten aanzien van dienstverlening die in veel gevallen meer volgend dan initiërend is, een neiging tot 'business as usual' met de blik gericht op laaghangend fruit, en een beperkte kennis van klimaatverandering, inclusief de urgentie, eisen en implicaties, waaronder de gevolgen voor het bedrijfsleven. Organisaties die aan het onderzoek deelnamen, spraken voornamelijk van de behoefte aan kennis en mogelijkheden met betrekking tot capaciteitsuitbreiding en samenwerking met overheden en ngo's. Hierna volgde de noodzaak van zakelijke partnerschappen en de uitvoering van nationale wetgeving en beleid. Minder nodig vond men internationale wetgeving, beleidsregels en fondsen, laatstgenoemde vanwege zorgen over de grote sommen donorgeld die al naar Cambodja stromen – en die over het algemeen worden beschouwd als verkeerd aangewend en met te weinig impact. Deze uitkomst is interessant omdat alle organisaties spraken over moeilijkheden die zij hadden ondervonden als gevolg van financieringsproblemen. Bovendien is financiering een belangrijk aspect van klimaatmaatregelen dat bedrijven kan motiveren om oplossingen aan te dragen. Deze bevinding onderstreept het belang van goede voorlichting om misvattingen te bestrijden die maatregelen voor armoedebestrijding in de weg zitten. Concluderend is het duidelijk dat bedrijfsorganisaties, kamers van koophandel en dergelijke op papier belangrijke middelen – het gezamenlijk bezit en de gezamenlijke productie van het Cambodjaanse bedrijfsleven – vertegenwoordigen. Deze partijen – die samen nieuwe institutionele arrangementen, nieuwe manieren van politiek denken en handelen en nieuwe middelen uitdenken, tot stand brengen en beheren – beschikken daarmee over een aanzienlijk potentieel om richting te geven aan private actie voor de pub-

lieke zaak op het gebied van aanpassing aan de klimaatverandering. Bij nadere beschouwing rijpt echter het inzicht dat veel functies voor een voortrekkersrol bij de klimaataanpassing weliswaar al aanwezig zijn, maar dat er behoefte is aan een verandering van de institutionele omgeving (de spelregels) in het netwerk. Het vermogen van dit private netwerk om het bedrijfsklimaat in Cambodja daadwerkelijk te beïnvloeden in de richting van een hogere mate van weerbaarheid, is gebaseerd op de realisering van fundamentele veranderingen in de wijze waarop de partijen in het netwerk *denken over zaken* en vervolgens *zakendoen*. Ondanks een scherpe nadruk op de private sector op mondiaal en nationaal niveau, gaapt er een duidelijk gat in het klimaatbeleid ten aanzien van zinvolle betrokkenheid van het bedrijfsleven bij versterking van de weerbaarheid. Bovendien vormen duidelijke hinderpalen op bedrijfsniveau een effectieve belemmering voor leiderschap. Het is niet genoeg om bedrijven weerbaar te maken. Klimaatverandering vergt substantiële veranderingen in houding, gedrag en samenwerking. Leiderschap is belangrijk, maar er is meer nodig.

Dit boek maakt duidelijk dat zuivere marktprincipes op zich waarschijnlijk niet zullen leiden tot aanpassingsactie ten behoeve van de armen. Tenslotte worden vanuit een nauw winstoogmerk voornamelijk klimaatmaatregelen bepleit waarbij overheden en bedrijven de aanpassing benaderen vanuit strikt monetaire en technische overwegingen. Niet toevallig komen problemen eerder in aanmerking voor investeringen en marketing als ze als technisch worden bestempeld. Omdat zij het zwaarst getroffen worden, vormen de armste en meest gemarginaliseerde groepen in de samenleving een centrale factor – en verplichting – in de financiering, het beleid en de maatregelen in verband met klimaatverandering. Daarom moet de betrokkenheid van het bedrijfsleven bij het aanpassingsbeleid – in wezen de liberalisering van de aanpassing en de privatisering van het toezicht op de aanpassing – voldoen aan internationale principes die cruciaal zijn voor duurzame ontwikkeling. Met het oog hierop wordt in het boek de aanzet gegeven voor een diepgravender theoretisch onderzoek en voor praktische veranderingen door twee nu nog gescheiden debatten – klimaataanpassing en verantwoord ondernemen – met elkaar te verbinden. Er worden enkele principes voor maatschappelijk verantwoorde klimaataanpassing voorgesteld op basis van zakelijke overwegingen en mensenrechten. Deze aanpak omvat zinvolle participatie van de lokale gemeenschap, het recht van die gemeenschap om nee te zeggen, en een adequate sociale en ecologische *due diligence*. Daarnaast vereist maatschappelijk verantwoorde klimaataanpassing dat bedrijven en hun partners transparant opereren en maatschappelijk verantwoord ondernemen. Technische en marktgestuurde oplossingen, en het beleid waarmee ze worden gepromoot, passen immers naadloos bij de neoliberale idealen en mogelijkheden van een betrokken private sector. Maar het volgen van die koers betekent ook dat we het risico lopen dat de opties van de private sector grotendeels als ongecompliceerde, neutrale en zelfs apolitieke innovaties worden beschouwd, ook al komen ze voort uit bevoorrechte kenniskaders waarin klimaatverandering primair top-down, door externe experts, met het oog op winst en vooral in biologisch-fysische termen wordt beschreven. Een dergelijke aanpak ziet ook een diepere laag van het discours over het hoofd, namelijk die waarin zakelijke conceptualisaties van klimaataanpassing voorrang hebben op de conceptualisaties van lokale gemeenschappen. Een verantwoorde en mensgerichte benadering van klimaataanpassing onder leiding van het bedrijfsleven, die de mensenrechten volledig eerbiedigt, biedt een betere kans om een boer een positieve verandering te laten beleven en bevordert daarmee het totale welzijn van de gemeenschap.

សេចក្តីសង្ខេប

បណ្តាប្រទេសកំពុងអភិវឌ្ឍដូចជាប្រទេសកម្ពុជាបាននឹងកំពុងជួបការលំបាកពីឥទ្ធិពលនៃការប្រែប្រួលនៃអាកាសធាតុជាពិសេសការប្រឈមទៅនឹងកង្វះចំណីអាហារនិងជីវភាពខ្វះខាត។ លើសពីនេះទៅទៀតការប្រែប្រួលនៃអាកាសធាតុបានធ្វើឲ្យយើងមិនអាចដឹងមុននូវការប្រឈមផ្សេងៗទៀត ដូចជាការទទួលបានសេវាសុខភាព ការអប់រំ ទឹកស្អាត និងអគ្គីសនី

ជាដើម។ ដូច្នេះយុទ្ធសាស្ត្រទាំងឡាយគួរត្រូវបានរៀបចំដើម្បីបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុនិងភាពក្រីក្រ ជាពិសេសយុទ្ធសាស្ត្រគួរផ្តោតសំខាន់ចំពោះក្រុមមនុស្សងាយរងគ្រោះថ្នាក់ដែលងាយនឹងរងឥទ្ធិពលពីការកើនឡើងនៃកំដៅលើភពផែនដី។ ការងារបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុនេះត្រូវបានបាន់ប្រមាណនូវតម្រូវការជាថវិការាប់ពាន់កោដិដុល្លាក្នុងមួយឆ្នាំៗតាមរយៈយន្តការនៃការសន្យាផ្តល់នូវមូលនិធិពីបណ្តាប្រទេសនានា ប៉ុន្តែវានៅតែជួបប្រទះនូវកង្វះខាតថវិកាទាំងនោះជាច្រើនថែមទៀត។ វាមិនមែនជាការងាយស្រួលនោះទេ។ មធ្យោបាយមួយគឺចលនាធនធានទាំងឡាយប្រកបដោយប្រសិទ្ធិភាព តាមរយៈការប្រើប្រាស់នូវបច្ចេកវិជ្ជា និងជំនាញធុរៈកិច្ចទាំងឡាយបញ្ចូលគ្នា ដែលអាចជំរុញឲ្យវិស័យឯកជនមានលទ្ធភាពចូលរួមផ្តល់នូវថវិកា ដើម្បីធ្វើឲ្យប្រាកដថារដ្ឋាភិបាលធ្វើសកម្មភាពរហ័សប្រកប

ដោយយកចិត្តទុកដាក់ចំពោះសហគមក្រីក្រទាំងឡាយ។ ដូចនេះតួនាទីរបស់វិស័យឯកជនត្រូវបានជឿជាក់ថាជាកម្លាំងចលករស្នូលជួយចលនាថវិកាសម្រាប់ការងារបន្សាំទៅនឹងការប្រែ
ប្រួលនៃអាកាសធាតុនេះ។ ឧទាហរណ៍បណ្តាក្រុមហ៊ុនឯកជនបានផលិតនូវពូជដំណាំ ជី និងថ្នាំសម្លាប់សត្វល្អិតថ្មីៗសម្រាប់កសិករប្រើប្រាស់ដែលមានលក្ខណៈសមស្របទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ។ ទាំងនេះជាការចូលរួមដោះស្រាយបញ្ហាសេដ្ឋកិច្ចគ្រួសារ និងសេដ្ឋកិច្ចជាតិតាមរយៈវិស័យ

កសិកម្ម។ ទោះបីយ៉ាងណាក៏យើងសង្កេតឃើញថាការចូលរួមនៃវិស័យឯកជននូវមិនទាន់ត្រូវបានធ្វើការស្វែងយល់ឲ្យបានច្បាស់លាស់នៅឡើយ។

ដូច្នេះការសិក្សានេះបានប្រើប្រាស់វិធីសាស្ត្រចម្រុះក្នុងការស្វែងយល់ពីទស្សនៈនៃអ្នកពាក់ពន្ធ័គ្រប់លំដាប់ថ្នាក់អស់រយៈពេល៣ឆ្នាំនៅក្នុងប្រទេសកម្ពុជា។ គោលបំណងនៃការសិក្សានេះ គឺចង់បង្ហាញនូវចំណេះដឹងថ្មីមួយ ថាតើវិស័យឯកជនបានចូលរួមអ្វីខ្លះក្នុងដំណើរការបន្សាំទៅនឹង ការប្រែប្រួលនៃអាកាសធាតុប្រកបដោយនិរន្តភាពនៃវិស័យកសិកម្មក្នុងប្រទេសកម្ពុជាយ៉ាងណាខ្លះ និងដល់កម្រិតណាខ្លះ?

ជាចំហានដំបូងការសិក្សា គឺធ្វើការស្វែងយល់ និងវិភាគពត៌មានដែលមានស្រាប់ចម្រុងៗពីទិដ្ឋភាពទូទៅនៃគោលនយោបាយចំពោះការងារបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ និងការអភិវឌ្ឍក្នុងប្រទេសកម្ពុជាទៅលើ៨៦គម្រោងដែលបានអនុវត្តតាមរយៈសម្ភាសន៍ជម្រៅជាមួយភ្នាក់ងាររដ្ឋាភិបាល អង្គការមិនមែនរដ្ឋាភិបាល សាកលវិទ្យាល័យនានា។ ជាលទ្ធផលពីការវិភាគទាំងនេះ ទី១៖ យើងឃើញថាគ្រោះមហន្តរាយពីការប្រែប្រួលអាកាសធាតុទៅលើវិស័យកសិកម្មក្នុងប្រទេសកម្ពុជា គឺមានដូចជាទឹកជំនន់ និងគ្រោះរាំងស្ងួត។ ទីពីរ៖ វិស័យឯកជនចូលរួមយ៉ាងសំខាន់ក្នុងការសម្របសម្រួលនៃយន្តការចលនាថវិកាសម្រាប់គោលនយោបាយបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ។ តួនាទីទាំងនោះឃើញមានប្រសិទ្ធិភាពកំរិតអន្តរជាតិដូចជានៅប៉ុន្មានឆ្នាំចុងក្រោយនេះ វិស័យឯកជនបានដើរតួនាទីស្នូលក្នុងការកំណត់ និងអនុវត្តនូវគោលនយោបាយបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ។ ឧទាហរណ៍នៅក្នុងយន្តការចលនាថវិកានៃគោលនយោបាយបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុជាសកលនៃអង្គការ UNFCC បានបង្ហាញពីតួនាទីជាម្ចាស់ជំនួយ និងការគាំទ្រអង្គការសង្គមស៊ីវិល (CSOs)នានា។ សកម្មភាពដើម្បីជួយអ្នកក្រីក្រត្រូវបានកំណត់ជាចំណុចសំខាន់នៅក្នុងកិច្ចព្រមព្រៀងទីក្រុងប៉ារីសស្តីពីការទប់ស្កាត់ការប្រែប្រួលនៃអាកាសធាតុជាសកល ដែលក្នុងកិច្ចព្រមព្រៀងនោះបានចែងពីការចូលរួមចំណែកនៃវិស័យឯកជនក្នុងការលើកកំពស់ភាពប្រសើរឡើងនូវដំណោះស្រាយទាំងឡាយទៅនឹងបម្រែបម្រួលនៃអាកាសធាតុ។

ការកំណត់បង្ហាញពីស្ថានភាពទូទៅនៃសកម្មភាពបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ ដែលស្របនឹងសកម្មភាពជាសកលក្នុងការរាប់បញ្ចូលតួនាទីនៃវិស័យឯកជនក្នុងគម្រោងជួយក្នុងការបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ ហាក់បីដូចជាមិនមានការសិក្សាច្បាស់លាស់នៅឡើយ។

របកគំហើញថ្មីមួយទៀតបានបង្ហាញថាសកម្មភាពដែលងាយរងផលប៉ះពាល់ពីបម្រែ
បម្រួលនៃអាកាសធាតុនេះត្រូវបានដាក់បញ្ចូលក្នុងគោលនយោបាយ និងការអនុវត្តជាក់ស្តែងក្នុងការគ្រប់គ្រងកសិកម្ម ធនធានទឹក ព្រៃឈើ ធនធានជលផល ទេសចរណ៍ តំបន់ឆ្នេរ និងសុខភាពមនុស្ស។ លើសពីនេះទៅទៀតនៅក្នុងគោលនយោបាយបានរំលេចចេញនូវវិធានការក្នុងការធ្វើឲ្យមានភាពប្រសើរឡើងវិញចំពោះការអភិវឌ្ឍន៍សេដ្ឋកិច្ចជនបទដាច់ស្រយាលតាមមធ្យោបាយនៃទំនើបកម្មវិស័យកសិកម្ម។ វិធានការទាំងនោះរួមមាន ការកែប្រែជីវភាពរស់នៅតាមបែបប្រពៃណីទៅជាជីវភាពបែបទំនើប និងប្រសើរ និងពីការធ្វើជំនួញក្នុងស្រុកទៅជាការធ្វើជំនួញបែបវិនិយោជនៅបរទេស។ វិធានការទាំងនេះត្រូវបានជឿជាក់ថាបានរួមចំណែកនូវការកែចំរើនផ្នែកម៉ាក្រូសេដ្ឋកិច្ចជាតិ និងចូលរួមប្រគួតប្រជែងជាសកល។ ក្នុងដំណើរការនេះ ការធ្វើជាដៃគូរជាមួយវិស័យឯកជន ដូចជាការលើកកម្ពស់កសិកម្មបែបកិច្ចសន្យា ឬការបង្កើនសេវាកម្មផ្សព្វផ្សាយ បច្ចេកទេសកសិកម្ម។

ការកំណត់បង្ហាញពីស្ថានភាពទូទៅនៃសកម្មភាពបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុក៏បានរកឃើញនូវភាពតានតឹង និងប្រជែងគ្នារវាងការផ្តល់អាទិភាពសម្រាប់ការប្រកួតប្រជែងក្នុងស្រុក និងជាលក្ខណៈសកលផងដែរ។ នៅក្នុងដំណើរការនេះក៏បានកំណត់និយមន័យនៃចលនាផែនការហិរញ្ញវត្ថុសម្រាស់សកម្មភាពបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ ថាតើសកម្មមួយណាគួរកំណត់ជាអាទិភាព។ ទាំងនេះអាចមានជាជំហរផ្ទុយរវាងគោលនយោបាយយុទ្ធសាស្ត្រនៃការបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ និងការអភិវឌ្ឍន៍ទូទៅ។ ការកំណត់និយមន័យនៃចលនាផែនការហិរញ្ញវត្ថុសម្រាស់សកម្មភាពបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ គឺមានសារៈសំខាន់ណាស់ ពីព្រោះវាមានឥទ្ធិពលចំពោះការកំណត់នូវផែនការជំនួយអភិវឌ្ឍន៍ ដោយផ្សារភ្ជាប់ទៅនឹងសកម្មភាពបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ ។

ការប្រទាក់ក្រឡាគ្នារវាងសកម្មភាពបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ និងការអភិឌ្ឍទូទៅក៏មានស្តែងចេញជារូបរាងជាក់ស្តែងដូចជាការកសាងនូវសំណង់ទំនប់ទឹកសម្រាប់ទប់ការឡើងកំពស់នៃទឹកសមុទ្រជាដើម។ សកម្មភាពទាំងនេះត្រូវបានវាប់បញ្ចូលនៅក្នុងគម្រោងថវិកានៃសកម្មភាពបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុផងដែរ។ វាជាសកម្មភាពចាំបាច់ដើម្បីដោះស្រាយឬសគល់នៃបញ្ហា ដែលនាំមកនូវភាពងាយរងគ្រោះនៅក្នុងសង្គមរស់នៅរបស់មនុស្សដែលស្វែងរកភាពប្រសើរឡើងពីផលប៉ះពាលនៃបម្រែបម្រួលនៃអាកាសធាតុ។

របកគំហើញចុងក្រោយ នៃជំហានដំបូងនៃការសិក្សានេះបង្ហាញថាភាពកម្សោយនៃអភិបាលកិច្ច មិនសូវរួមចំណែកក្នុងការអភិវឌ្ឍជីវភាពប្រជាជនពិតប្រាកដនោះទេ ប៉ុន្តែអាចធ្វើឲ្យវិស័យឯកជនទទួលផលប្រយោជន៍ច្រើនទៅវិញ។ កង្វះប្រព័ន្ធអភិបាលកិច្ចល្អមិនសូវបានជួយដល់ក្រុមមនុស្សដែលងាយរងគ្រោះថ្នាក់បំផុតដែលរងគ្រោះពីផលប៉ះពាលនៃការប្រែប្រួលនៃ

អាកាសធាតុនោះទេ ហើយវាកាន់តែបង្កើតភាពមិនស្មើរភាពគ្នាក្នុងការអនុវត្តនូវគម្រោងបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុផងដែរ។ ក្រុមងាយរងគ្រោះថ្នាក់រួមមាន៖ កុមារ មនុស្សចាស់ជរា ដែលក្រុមនេះមិនសូវបានរំលេចឡើងខ្លាំងនៅក្នុងការវិភាគទិដ្ឋភាពទូទៅនៃគោលនយោបាយបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ និងរបៀបវារៈនៃការអភិវឌ្ឍឆ្នាំ២០៣០។

ជំហានទីពីរនៃការសិក្សានិក្ខេបបទថ្នាក់បណ្ឌិតនេះបានផ្តោតសំខាន់ក្នុងការស្វែងយល់ច្បាស់ពីទស្សនៈនៃអ្នកពាក់ព័ន្ធថ្នាក់ភូមិ ដែលអាចឆ្លើយតបទៅនឹងសំណួរមួយចំនួនដូចខាងក្រោមនេះ៖ ១) តើការយល់ឃើញ និងចូលរួមដំណោះស្រាយនៃប្រជាកសិករចំពោះការបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុយ៉ាងណា? ២) តើដំណើរការនៃកសិឧស្សាហ៍កម្មចំនួនពីរដែលមានទំនាក់ទំនងជាមួយនឹងគម្រោងសាកល្បងសម្រាប់ធ្វើឲ្យប្រសើរឡើងនូវការបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ(PPCR)?ហើយដែលគម្រោងនេះសំដៅជួយកសិករដែលពាក់ព័ន្ធនឹងសមត្ថភាពបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុដោយផ្សារភ្ជាប់ពួកគេទៅនឹងខ្សែរចង្វាក់ទីផ្សារអន្តរជាតិនៃផលិតកម្មដំណាំស្រូវឲ្យផលចំណេចច្រើន។ ក្នុងការឆ្លើយសំណួរទាំងនេះការវិភាគទៅលើទិន្នន័យដែលមានស្រាប់ចំពោះយន្តការនៃចលនាថវិកានៃគម្រោងសាកល្បងសម្រាប់ធ្វើឲ្យប្រសើរឡើងនូវការបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ (PPCR) និងការចុះប្រមូលទិន្នន័យបែបគុណវិស័យដោយផ្ទាល់ពី អ្នកពាក់ព័ន្ធទាំងឡាយក្នុងភូមិចំនួន១០ នៅក្នុងស្រុកបាណន ស្រុកសម្អតក្នុងខេត្តបាត់ដំបង។ វិធីសាស្ត្រប្រមូលពត៌មានរួមមាន៖ ការសង្កេតដោយផ្ទាល់ ការសម្ភាសពាក់កណ្តាលផ្លូវការ និងការពិភាក្សាជាក្រុម។ ការកំណត់យកភូមិនៅក្នុងស្រុកទាំងពីរត្រូវបានកំណត់ដោយផ្អែកទៅតាមទីតាំងភូមិសាស្ត្រ គឺភូមិដែលស្ថិតនៅក្នុងតំបន់ដែលជាប់ពាក់ព័ន្ធគម្រោងកសិឧស្សាហ៍កម្មទាំងនោះ។

របកគំហើញទី១៖ ការយល់ឃើញរបស់ប្រជាកសិករជុំវិញការស្វែងរកទីផ្សារដោយផ្អែកលើទីផ្សារ និងបច្ចេកទេសបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ ជាជាងការយល់ឃើញពីបម្រែបម្រួលជាសកល។ ការសិក្សាបានបង្ហាញថាកសិករភាគច្រើនទាំងស្ត្រី ទាំងបុរសយល់ឃើញថាការកាប់បំផ្លាញព្រៃឈើទ្រុងទ្រាយធំសម្រាប់កសិឧស្សាហ៍កម្មនាំមកនូវការប្រែប្រួលនៃអាកាសធាតុ។លើសពីនេះពួកគេយល់ឃើញថាបច្ចេកទេស និងរបៀបស្វែងរកទីផ្សារដោយផ្អែកលើតម្រូវការទីផ្សារ ដែលបង្ហាត់បង្ហាញដោយក្រុមហ៊ុនឯកជនវាហាក់ដូចជាផ្តួយទៅនឹងបំណងជាអាទិភាពរបស់កសិករ។ ពួកគេយល់ថាវាថ្លៃ និងមិនស្ថិតថេរចំពោះដំណោះស្រាយជីវភាពរបស់ពួកគេ ជាការសម្រាប់ទប់ទល់នឹងបម្រែបម្រួលនៃអាកាសធាតុ។

ជាសេចក្តីសន្និដានក្នុងពេលដែលវិស័យសេដ្ឋកិច្ចផ្អែកសំខាន់លើបច្ចេកវិទ្យាពេលនោះតម្រូវការបច្ចេកវិទ្យាយកមកដោះស្រាយតម្រូវពិតជាមិនអាចខ្វះបាន ហេតុដូចនេះតម្រូវការ

វិស័យឯកជនពិតជាចាំបាច់ណាស់។ វាក៏មានឥទ្ធិពលទៅលើកត្តាសង្គម ដែលអាចកំណត់ភាពជោគជ័យនៃការងារបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុផងដែរ។ ជាឧទាហរណ៍ការពង្រឹងសមត្ថភាព និងរៀបចំផែនការយុទ្ធសាស្ត្រជួយដល់ស្ថាប័នសង្គមស៊ីវិលពិតជាចាំបាច់ណាស់ ដើម្បីបង្កើននូវភាពមិនជឿទុកចិត្តគ្នាក្នុងការងារអភិវឌ្ឍន៍ ក៏ដូចជាការងារពង្រឹកសមត្ថភាពក្នុងការបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុផងដែរ។

ដំណាក់កាលបន្ទាប់មកទៀត ការសិក្សាបានផ្តោតសំខាន់ទៅលើការធ្វើធុរៈកិច្ចនៃវិស័យឯកជន និងសកម្មភាពវិស័យនោះនៅតាមមូលដ្ឋាន។ ការសិក្សាបង្ហាញថាក្នុងចំណោម

អនុសាសន៍១២ចំណុចនៃគម្រោងសាកល្បងសម្រាប់ធ្វើឲ្យប្រសើរឡើងនូវការបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ (PPCR)មានតែ១ចំណុចប៉ុណ្ណោះ ដែលបានយកមកអនុវត្តតាមរយៈក្រុមហ៊ុនវិនិយោគកសិឧស្សាហកម្ម

នៅកម្ពុជា។ ជាទូទៅវិស័យឯកជនមិនសូវចាប់អារម្មណ៍ចំពោះបញ្ហាថ្នាក់សកលប៉ុន្មានទេក្នុង ការរួមចំណែក ដោះស្រាយបញ្ហាសង្គម។ ផ្សេងពីនេះការវាយតម្លៃលើគោលបំណង និងដំណើរការរបស់គម្រោងសាកល្បងសម្រាប់ ធ្វើឲ្យប្រសើរឡើងនូវការបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ (PPCR) ក៏មិនសូវមានការទាក់ទាញចំណាប់ អារម្មណ៍ពីសំណាក់វិស័យឯកជននោះដែរ។ ជាចុងក្រោយនៅតែជាចំណោទបញ្ហាចំពោះក្រុមហ៊ុនក្នុងស្រុកអាចនឹង ទទួលយកនូវចំណែកណាមួយក្នុងការចូលរួមក្នុងផែនការយុទ្ធសាស្ត្រក្នុងការបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ ។

តាមការសិក្សាពីសកម្មភាពរបស់ក្រុមហ៊ុនដែលបានផ្តល់ដល់ភូមិនីមួយៗមានតែមួយភូមិប៉ុណ្ណោះដែលបានទទួលនូវ ការងារពង្រឹកសមត្ថភាពពីរបៀបបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុស្របតាមគម្រោងសាកល្បងសម្រាប់ ធ្វើឲ្យប្រសើរឡើងនូវការបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ(PPCR)។ ចំពោះកសិករ និងសហគមជាច្រើនទៀត អាចនឹងរងផលប៉ះពាល់ក្នុងពេលដែលពួកគេនៅតែអនុវត្តវិធីដាំដុះតាមបែបប្រពៃណី។ ទី១៖ការសិក្សាក៏បាន បង្ហាញថាក្រុមហ៊ុនភាគច្រើនផ្តោតតែទៅលើក្រុមកសិករមានលទ្ធភាពចូលរួមផលិតកម្មកសិកម្មជាមួយក្រុមហ៊ុន ប៉ុណ្ណោះ គឺ"ធ្វើអ្វីដែលអាចធ្វើបានដើម្បីតែផលចំណេញ" ។ ទីពីរ៖ កសិករភាគច្រើនបានព្យាយាមសាកល្បង ដំណើរការបង្កបង្កើនផលបែបថ្មី ជាមួយនឹងការប្រថុយប្រថាន

នៃលក្ខ័ខណ្ឌ័បម្រែបម្រួលនៃអាកាសធាតុ និងការប្រឈមនិងស្ថានភាពទីផ្សារប្រគួតប្រជែង។
មីក្រូហិរញ្ញវត្ថុត្រូវបានប្រជាកសិកររប្រើប្រាស់ជាមធ្យោបាយយ៉ាងសំខាន់សម្រាប់ដោះស្រាយភាពបន្ទាំទៅនឹងការ ប្រែប្រួលនៃអាកាសធាតុក្នុងការប្រកបរបរកសិកម្មទោះបីពួកជួបឧបសគ្គក្នុងការដោះបំណុលក៏ដោយ ជាពិសេស ប្រជាជនដែលក្រីក្រ។ ម្យ៉ាងវិញទៀតប្រជាជនភាគច្រើនខ្វីលុយពីអ្នកផ្តល់កម្ចីឯកជនដែលមានការប្រាក់ខ្ពស់ ដែល ជាហេតុធ្វើឲ្យពួកគេអាចបាត់បង់ទ្រព្យសម្បត្តិដីធ្លី ផ្ទះសំបែង។

ការវិនិយោគកម្រិតមីក្រូដែលផ្សារភ្ជាប់នូវបច្ចេកទេសនិងដំណោះស្រាយទីផ្សារអាចជាការផ្តួចផ្តើមក្នុងការដំណើរការ អភិវឌ្ឍថ្នាក់មូលដ្ឋាន ប៉ុន្តែវាហាក់នៅតែមានភាពមិនប្រាកដប្រជា ក្នុងការដោះស្រាយចំពោះភាពងាយរងគ្រោះថ្នាក់ នៃបម្រែបម្រួលនៃអាកាសធាតុសម្រាប់ប្រជាកសិករ ដែលវាអាចនាំឲ្យមានអ្នកទទួលផលចំណេញច្រើន និងអ្នក បង់ខាតច្រើនផងដែរក្នុងការអនុវត្តនូវដំណើរការបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុនេះ។ទោះបីប្រឈមឬជួប ឧបសគ្គសម្រាប់ប្រជាជនក្នុងសហគមយ៉ាងណាក៏ដោយក្នុងការទប់ទល់នឹងបម្រែបម្រួលនៃអាកាសធាតុ ក៏ ការពឹងផ្អែកលើអ្នកជំនាញបច្ចេកទេស និងការផ្តោតសំខាន់ទៅលើតម្រូលការទីផ្សារនៅតែមានសារៈសំខាន់។ ការកំណត់នូវភាពខ្វះខាតផ្នែកជំនាញបច្ចេកទេសទាំងឡាយក្នុងផែនការយុទ្ធសាស្ត្រនៃភាពជាដៃគូរក្នុងការអភិវឌ្ឍ វាជាដំណោះស្រាយមួយ ដើម្បីបញ្ចៀសនូវហានិភ័យខាងលើ។ ម្យ៉ាងទៀតក្នុងការយកចិត្តដោះស្រាយនូវបញ្ហា ខាងលើគួរធ្វើដោយផ្អែកលើស្ថានភាពភូមិសាស្ត្រ និងលក្ខខណ្ឌសង្គមសេដ្ឋកិច្ចក្នុងសហគមនីមួយៗក្នុងការប្រកប អាជីវកម្មដែលសមស្របនឹងការបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ។ ការបានប្រមាណនូវប្រភេទជំនួញដែល អាចសមស្របសម្រាប់ប្រជាជនក្រីក្រជាអាទិភាព វាពិតជាស្របទៅនឹងកិច្ចព្រមព្រៀងទីក្រុងប៉ារីស និងរបាយការណ៍ IPCC។ ដោយសារវាត្រូវការពេលវេលាច្រើនក្នុងការទទួលបាននូវការគាំទ្រពីPPCR ដែលត្រូវចំណាយពេល តាំងពីឆ្នាំ២០១៣ដល់ឆ្នាំ២០១៧ប៉ុន្តែមុខជំនួញទាំងពីរដែលជាករណីសិក្សានេះមិនត្រូវបានទទួលស្គាល់ជាផ្នែកមួយ នៃគម្រោងសាកល្បងសម្រាប់ធ្វើឲ្យប្រសើរឡើងនូវការបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ (PPCR)ទេ។ ហើយ ការបដិសេធមិនទទួលស្គាល់នៃមុខជំនួញទាំងពីរនេះ ក៏PPCRមិនបានបញ្ចុកព័ត៌មូលហេតុច្បាស់លាស់ឡើយ។ នៅផ្នែកបញ្ចប់នៃការសិក្សានេះបានផ្តោតសំខាន់ទៅលើកម្រិតមេសូ ដើម្បីស្វែងយល់ពីសក្តានុពលនៃវិស័យឯកជន ក្នុងការនាំមុខការងារទប់ស្កាត់ការប្រែប្រួលនៃអាកាសធាតុ។ វិស័យឯកជនត្រូវបានចាត់ទុកជាតួអង្គសំខាន់ក្នុងការ នាំមុខជួយដោះស្រាយកិច្ចការសង្គម ប៉ុន្តែនៅមិនស្វែងយល់ច្បាស់លាស់ ថាតើវិស័យឯកជនជួយដល់ការងារបន្សាំ ទៅនឹងការប្រែប្រួលនៃអាកាសធាតុយ៉ាងណាខ្លះដែរ។ ដើម្បីស្រាយចម្ងល់នេះការសិក្សាបានស្វែងយល់អង្គការ ចាត់តាំងក្នុងក្រុមហ៊ុនចំនួន១៨ និងក្រុមហ៊ុនឯកជនចំនួន៧នៅទីក្រុងភ្នំពេញ ថាតើគេត្រៀម

លក្ខណៈក្នុងការនាំមុខនូវកិច្ចការបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុនៅកម្ពុជាយ៉ាងណា។ ក្នុងនោះការសិក្សា ពិនិត្យទៅលើគោលបំណងចំនួនពីរ ទី១៖ ផ្តោតសំខាន់លើតួនាទីនៃអង្គការចាត់តាំងពាណិជ្ជកិម្ម និងជំនួញនៅ កម្ពុជា។ ទី២៖ ស្វែងយល់ពីការយល់ឃើញឱកាស និងការលំបាកក្នុងការជួយដោះស្រាយការប្រែប្រួលនៃ អាកាសធាតុ។ ថាតើវិស័យឯកជនបានត្រៀមថវិកាអ្វីខ្លះក្នុងការជួយអ្នកស្រាវជ្រាវ និងអ្នកប្រតិបត្តិគម្រោងក្នុង ការទប់ស្កាត់ការប្រែប្រួលនៃអាកាសធាតុ។ ការសិក្សាក៏ផ្តោតលើរបៀបចាត់ចែង និងទំនាក់ទំនងនៃក្រុមហ៊ុនឯកជន ជាមួយនឹងគ្រប់ភាគីពាក់ពន្ធ័នៅក្រុងភ្នំពេញ ដែលពួកគេជាអ្នកដឹកនាំក្នុងការងារបន្សាំទៅការប្រែប្រួលនៃ អាកាសធាតុ។ ការវិភាគដោយផ្អែកទៅលើទស្សនៈទាននៃភាពជាអ្នកដឹកនាំ។ ជាលទ្ធិផលបង្ហាញថាក្រុមហ៊ុន ទាំងនោះអាចដើរតួនាទីជាអ្នកដឹកនាំការងារបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ ការងារទាំងនោះ រួមមានការ ប្រមូលផ្តុំវិស័យឯកជន និងការបណ្តុះបណ្តាលពង្រឹងសមត្ថភាពដៃគូពាក់ពន្ធ័ទាំងឡាយ និងកិច្ចការកៀងគ រដ្ឋាភិបាល អ្នកការទូត អង្គការសង្គមស៊ីវិល សមាគម និងសភាពាណិជ្ជកម្មនានាឲ្យចូលរួមកិច្ចការខាងលើ។ ផ្ទុយទៅវិញតាមការអនុវត្តជាក់ស្តែងឃើញថាក្រុម ហ៊ុនភាពច្រើនដើរតួនាទីជាអ្នកធ្វើតាម ជាជាងដឹកនាំការងារប បន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ បើទោះបីពួកគេមានលទ្ធភាពដឹកនាំ និងសមត្ថភាពចាំងចែងល្អក៏ដោយ។ ពួកគេហាក់បីដូចជាសំលឹងឃើញតែផលប្រយោជន៏ ដោយភ្លេចគិតពីផលវិបាកពីការប្រែប្រួលនៃអាកាសធាតុចំពោះ ជំនួញពួកគេ។ ក្រុមហ៊ុនខ្លះបង្ហាញថា ពួកគេត្រូវការចំណេះដឹង និងឱកាសជាដៃគូរជាមួយរដ្ឋាភិបាល និងអង្គការ សង្គមស៊ីវិល ក្នុងដំណើរការជំនួញឲ្យស្រមតាមច្បាប់ និងគោលនយោបាយរបស់រដ្ឋាភិបាល។ តម្រូវការថវិកាក្នុង កិច្ចការទប់ស្កាត់ការប្រែប្រួលនៃអាកាសធាតុពិតជាចាំបាច់ ប៉ុន្តែភាគច្រើននៃស្តាប់ន៏ទាំងនោះជួបការលំបាកក្នុង ការស្វែងរកថវិកាទាំងនោះ។

ជាសេចក្តីសន្និដ្ឋានរួម ការសិក្សាបង្ហាញថាតួនាទីរបស់សភាពាណិជ្ជកម្ម និងសមាគមទាំងឡាយ គឺជាធនធាន

សំខាន់ក្នុងការជំរុញសហគមជំនួញនៅកម្ពុជា ដើម្បីចូលរួមកិច្ចការខាងលើ។ តួអង្គទាំងនោះអាចចលករយ៉ាង សំខាន់ក្នុងការចាត់ចែងស្ថាប័នគ្រប់គ្រងថ្មីៗ និងរបៀបគិតគូរថ្មីៗបន្ថែមទៀតក្នុងការតាក់តែងគោលនយោបាយ។ វាជាសក្តានុពលថ្មីមួយដែលជំរុញឲ្យវិស័យឯកជនចូលរួមក្នុងការងារបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ។ ដំណើរការឈានមុខក្នុងការជួយការងារបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុក៏នៅតែត្រូវការស្ថាប័នបរិស្ថាន និងមុខនាទីក្នុងបណ្តាញការងារនេះផងដែរ។ ឥទ្ធិពលនៃវិស័យឯកជននៅក្នុងបណ្តាញការងារនេះនាំមកនូវប្រសិទ្ធភាពខ្ពស់ក្នុងការជួយជំរុញការងារបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ និងជួយឲ្យជំនួញពួកគេកាន់តែប្រសើរ។ ផ្ទុយពីនេះ ការសិក្សាបានរកឃើញថា វានៅមានចំនោះខ្វះខាតក្នុងការកៀងគរវិស័យឯកជនក្នុងការចូលរួមរៀបចំគោលនយោបាយដោះស្រាយការប្រែប្រួលនៃអាកាសធាតុទាំងថ្នាក់ជាតិនិងថ្នាក់សកល។ ហើយវាជាការរាំងស្ទះក្នុងការជំរុញឲ្យ

វិស័យឯកជនដើរតួរឈានមុខក្នុងការងារទាំងនោះផងដែរ។ ដើម្បីឲ្យវិស័យឯកជនចូលរួមឈានមុខក្នុងការងារបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុចាំបាច់ត្រូវប្តូរនូវអាកប្បកិរិយាក្នុងការធ្វើការរួមគ្នា ក្នុងខណៈដែលតួនាទីភាពជាអ្នកដឹកនាំ និងនាំមុខខាងវិស័យឯកជនពិតជាមានសារៈសំខាន់ និងចាំបាចណាស់។

ម្យ៉ាងទៀតការសិក្សាក៏បានបង្ហាញថាគោលការណ៍ដែលផ្អែកលើទីផ្សារពេក វាហាក់ដូចជាមិនសូវបានលទ្ធផលក្នុងការងារបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុចំពោះប្រជាជនក្រីក្រ។ គម្រោងសាកល្បងក្នុងការបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុបានបង្ហែរការគិតគែតផលប្រយោជន៍ មកជំរុញឲ្យរដ្ឋាភិបាល និងវិស័យឯកជនចូលរួមក្នុងបុព្វហេតុជួយជាប្រាក់កាស និងបច្ចេកទេសវិញ។ ដំណើរការនេះអាចជួយឲ្យកសិករក្រីក្រអាចទទួលផលពីគោលនយោបាយ និងសកម្មភាពនៃគម្រោងថវិកាពីការងារបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ។ ដូច្នេះការចូលរួមពាក់ព័ន្ធនៃសាជីវកម្មប្រកបដោយឯករាជ្យភាព និងឯកជនភាវូបនីយកម្មនៃអភិបាលកិច្ចល្អក្នុងការងារបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុស្របតាមគោលការណ៍អន្តរជាតិ វាពិតជាមានសារៈសំខាន់ការអភិវឌ្ឍន៍ប្រកបដោយនិរន្តភាព។

ជាចុងបញ្ចប់នៃការសិក្សានេះបានរំលេចចេញនូវការជជែកដេញដោលលើទ្រឹស្តីពីរ គឺ បន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុ និងធុរៈប្រកបដោយការទទួលខុសត្រូវ ដែលវាគួរតែដាក់បញ្ចូលជាគោលការណ៍មួយក្នុងចំណោមគោលការណ៍ផ្សេងៗទៀតសម្រាប់ការទទួលខុសត្រូវចំពោះការធ្វើជំនួញ និងការគោរពសិទ្ធិមនុស្ស។ ការអភិវឌ្ឍន៍តាមបែបចូលរួមរបស់សហគមជាគន្លឹះសំខាន់ក្នុងការធ្វើឲ្យមានសមភាពសង្គម និងបរិស្ថានប្រកបដោយភាពជឿជាក់។ ក្នុងនោះសហគមមានសិទ្ធិបដិសេធក្នុងការប្រកបជំនួញមិនសមស្របក្នុងសហគមពួកគេ។

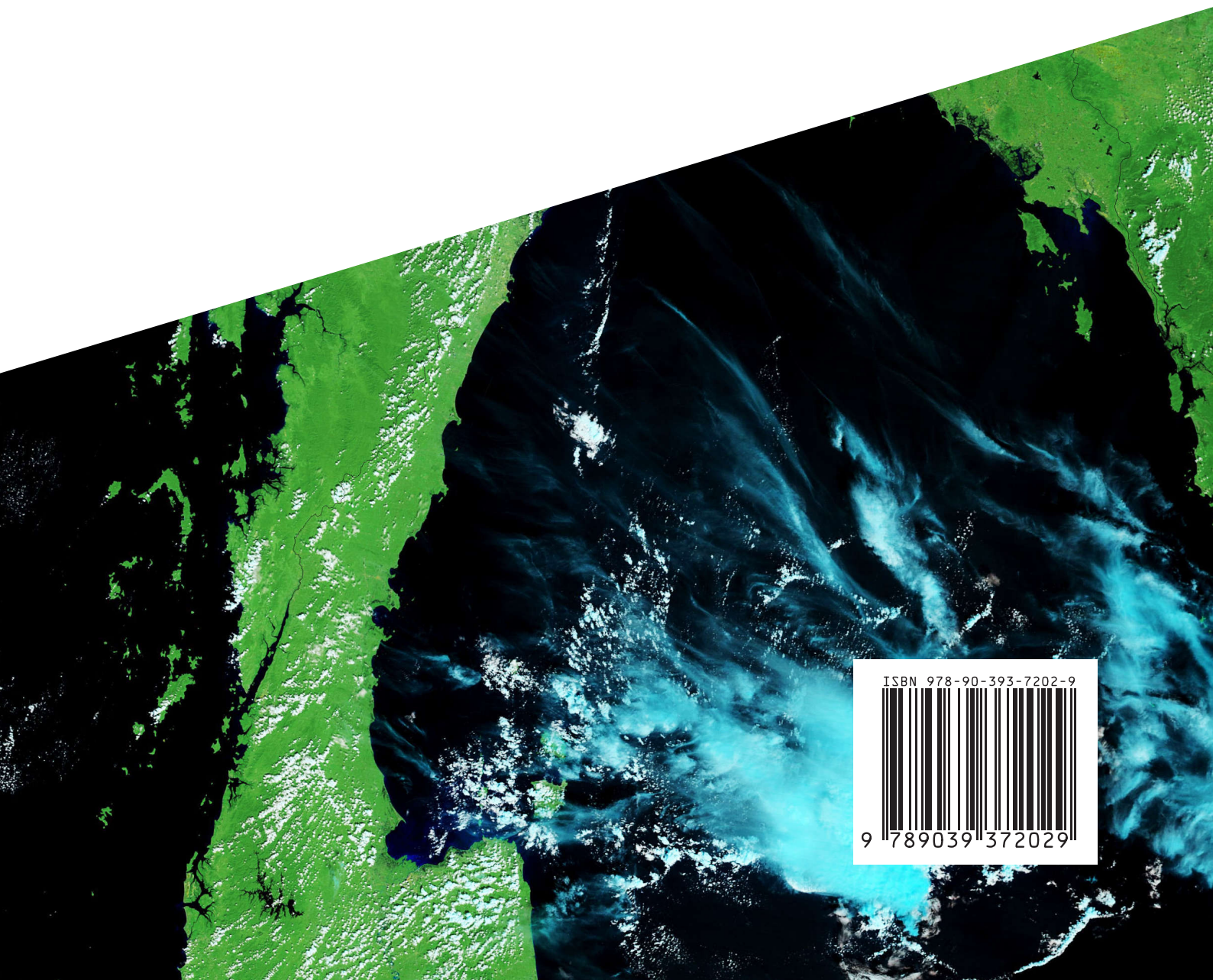
លើសពីនេះការងារបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុប្រកបដោយការទទួលខុសត្រូវទាមទារឲ្យមានដៃគូរជំនួញប្រកបដោយតម្លាភាព និងអភិបាលកិច្ចល្អនៃសាជីវកម្ម ដែលទទួលខុសត្រូវចំពោះប្រជាពលរដ្ឋទូទៅ។ ការផ្តល់បច្ចេកទេស និងដំណោះស្រាយដោយផ្អែកលើទីផ្សារត្រូវលើកទឹកចិត្តដល់ការចូលរួមនៃវិស័យឯកជន។ ប៉ុន្តែវាអាចជាដំណើរប្រថុយប្រថានដែលក្រុមហ៊ុនឯកជនអាចប្រឈមវេទិកានៃការងារទប់ទល់នឹងការប្រែប្រួលនៃអាកាសធាតុក្នុងការកេងចំណេញតាមបែបពីថ្នាក់លើមកក្រោម(top-down) ដើម្បីតែផលចំណេញនាំមុខ ជាពិសេសលើបច្ចេកទេសជីវៈសាស្ត្រ។វាក៏អាចជាផ្តល់នូវឯកសិទ្ធិភាពចំពោះវិស័យឯកជនក្នុងការដឹកមុខប្រជាជនក្នុងសហគមទាំងនោះផងដែរ។ ការទទួលខុសត្រូវ និងការគិតគូរសិទ្ធិមនុស្សជាចម្បងអាចជាសក្តានុពលក្នុងការធ្វើឲ្យសហគមទទួលបាននូវសុខមាលភាព និងទទួលយកនូវបទពិសោធន៍នៃការងារបន្សាំទៅនឹងការប្រែប្រួលនៃអាកាសធាតុប្រសើរឡើង។

ABOUT THE AUTHOR

After obtaining her Master Captain license from the United States Coast Guard in Maui, Hawaii, Michelle McLinden Nuijen received her BSc from American Military University, *with honors*, in Environmental Studies with a specialization in Environmental Technology and Management. After completion in 2010, she relocated to the Netherlands to pursue a graduate degree in Environmental Science, Sustainable Development-International Development at Utrecht University (UU). During her two-year research master, Michelle investigated the socio-economic impacts of forced displacement and hydropower development on indigenous peoples in central Vietnam as well as forced displacement and dispossession of farmers in Koh Kong, Cambodia from industrial sugar production driven by the European Union's *Everything but Arms* (EBA) preferential trading scheme. After graduating *cum laude* in 2012, Michelle founded a sustainable development consultancy with a first assignment to extend her master thesis study to a baseline investigation in Cambodia on the economic, social and cultural human rights impacts of industrial sugar production and the EBA at the country level. This baseline study contributed to wider efforts leading to a review process and temporary suspension of Cambodia's preferential access to the EU market under EBA by the European Union.

During her doctoral studies, Michelle lectured and supervised bachelor and master students at Utrecht University and University College Utrecht in the Netherlands as well as at the Royal University of Phnom Penh in Cambodia. While finalizing her book on Responsible Adaptation, Michelle designed and coordinated an action research program for LANDac, funded by the Ministry of Foreign Affairs, on scaling up women's land rights in five African countries. Michelle also served as the global focal point on Women's Land Rights and Youth at the International Land Coalition, a United Nations agency working toward people-centered land and natural resource governance. Although Michelle continues to work on women's land rights and gender justice at the international level, she recently transferred to the private sector to work directly on Business & Human Rights and social impact analysis as a senior social responsibility advisor for a Dutch multinational in the dredging and maritime infrastructure sectors.

This book aims to bring greater understanding of how businesses can be climate leaders to help societies to become more resilient. Drawing on multi-scalar and mixed-methods research conducted over three years in Cambodia's agricultural sector, it presents the results of an investigation which occurred at different levels and with a wide range of stakeholders: women and men farming in remote areas and facing significant climate change impacts, with individual agribusinesses engaging with these local communities, with government agencies and policymakers, and within international business and related networks. Key findings show that while adaptation funding and action are advancing, outcomes fall short for all but leave the most vulnerable behind, ultimately bringing into question what it means to give private, for profit actors the reins to a public good. Corporate engagement in adaptation—in essence the liberalization of adaption and the privatization of adaptation governance—must adhere to international responsible business principles which are crucial for sustainable development. Toward this end, the book aims to effect practical change by merging two currently de-linked debates—climate change adaptation and responsible business—to put forth a number of principles for Responsible Adaptation.



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