

CLIMATE ASSEMBLAGES

Governing the vulnerable in a neoliberal era

A Thesis Submitted in Partial Fulfilment of Requirements for the Degree of Doctor of Philosophy

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This is to certify that to the best of my knowledge, the content of this thesis is my own work. This thesis has not been submitted for any degree or other purposes.

Abstract

In late 2000s Cambodia something strange began to happen – foreigners could be seen in numerous rural provinces milling around organising villagers into community forestry groups and conducting workshops on climate change adaptation and resilience. A series of seemingly never ending workshops on climate change were conducted across the country and a stream of foreign experts came to Phnom Penh and beyond. A climate change bureaucracy was hastily constructed and money from Europe, the US, Japan and Australia began to flow.

Over the last few decades Cambodians have been devastated by flood and drought events – in no small part due to the precarious nature of rural livelihoods. There is no doubt that the increasing frequency and severity of these events is a part of global climate change. Yet it is only in the last few years that government officials have taken an interest in climate change, and even more recently since NGOs have enthusiastically taken up the climate change cause. When looking at climate change programs in Cambodia it quickly becomes clear that they did not originate in Cambodia: terms such as ‘resilience’, ‘adaptation’ and ‘risk reduction’ did not come from Cambodia, nor are Cambodians financing these activities. Climate change programming has never specifically had Cambodians in mind; across the global south there has been a remarkable proliferation of western donor funded projects being done in the name of climate change, yet which all seem to employ the same concepts, terminologies and world views.

This thesis attempts to come to terms with all of this by looking at climate change programming as part of a broader ‘assemblage’ that is now global in scope. This thesis holds that to understand why it is that experts flow into rural Cambodia and other countries in the global south (and not vice versa), it is crucial to examine how dominant approaches to climate change have been assembled – that is, the material process through which some approaches have been condensed into ‘global designs’ and which now travel across the world. Dominant approaches to climate change do not just come from anywhere. They were specifically assembled in Europe and North America and were

shaped by experiences in those places and draw upon European concepts and world views. It should thus not be a surprise that terms such as “adaptation’ and “risk reduction” – which are now ubiquitous in the world of climate change programming - have colonial genealogies and owe a lot to the experiences of western civilisations attempting to assert dominance over tropical lands and people. So too, it should not be a surprise that the neoliberal revolution in North America has deeply shaped the contours of dominant approaches to climate change where climate change programming is becoming increasingly tangled up in western finance’s search for new fields of investment.

This thesis briefly explores how a global climate change assemblage came into being and looks at the specific logics and rationalities that the assemblage has become fixated upon in the early 21st century. It argues that to understand climate change programming in Cambodia and elsewhere it is firstly important to appreciate how western liberal democracies have become obsessed with the question of governing over life (biopolitics) as well as the quest to open up environmental and social problems to specifically market approaches (neoliberalism).

The second part of this thesis examines the messy and fraught process of actualising ‘global designs’ to solve climate change within contemporary Cambodia. This part of the thesis looks at how patronage politics, rural abandonment and militarisation challenge the orderliness of climate change programming. By examining two particular climate change projects (one adaptation and one mitigation), the thesis shows how the logics and rationalities of climate change programming were stretched to breaking point as they encountered the specificities of local geographies and histories. Yet one of the conclusions of this thesis is that global designs to address climate change do not actually depend upon local successes. Rather, the climate assemblage first and foremost prioritises its own expansion. Behind glossy brochures and optimistic meetings, it is often the case that the people who are supposedly at the centre of climate change programs – namely rural farmers, rarely experience substantial tangible benefits. Yet as the global climate assemblage trudges forward it continues neoliberal experiments throughout the global south which promise to be ever more

participatory and effective. Now more than ever, critical scrutiny of the climate assemblage is urgently required – especially as the climate assemblage increasingly turns to resilience and financialisation rather than honest attempts to mutually assist those who disproportionately bear the burden of climate change.

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Acronyms

ADB: Asia development Bank

ARC: African Risk Capacity organisation

CCCN: Cambodia Climate Change Network

CCA: Climate Change Alliance (global initiative operating in Cambodia)

CDA: Children's Development Association (NGO based in Oddar Meanchey)

CDM: Clean Development Mechanism

CER: Certified Emission Reduction

CF: Community Forest

CFI: Community Forestry International

CIFs: Climate investment Funds

CCB: Climate Community and Biodiversity Standard

CoP: Conference of Parties

DCA: Dan Church Aid (Danish Christian NGO operating in Cambodia)

DANIDA: Danish International Development Agency

DfID: Department for International Development (UK)

EPA: Environmental Protection Agency (US)

ELC: Economic Land Concession

FA: Forestry Administration (Cambodia)

FAO/UNFAO: Food and Agricultural Organisation of the United Nations

FFI: Fauna and Flora International (International NGO operating in Cambodia)

FCPF: Forest Carbon Partnership Facility (World bank Program)

GEF: Global Environment Fund

GFC: Global Financial Crisis

GIZ: Deutsche Gesellschaft für Internationale Zusammenarbeit (German agency for international development)

GGEs: Greenhouse Gas Emissions

IFAD: International Fund for Agricultural Development (international program operating in Cambodia)

IUCN: International union for the Conservation of Nature

IETA: International Emissions Trading Association

JCCI: Joint Climate Change Initiative (NGO program in Cambodia)

JICA: Japanese International Cooperation Agency

LCDF: Least Developed Country Fund

MAFF: Ministry of Agriculture, Forests and Fishery's

MoE: Ministry of Environment (Cambodia)

NAPA: National Adaptation Program of Action (World Bank program)

NBSAP: National Biodiversity Strategy and Action Plan (World Bank program)

NGO: Non Government Organisation

NGOF: NGO Forum on Cambodia

NTFP: Non Timber Forest Product

OECD: Organisation for Economic Co-operation and Development

PES: Payment for Environmental Services

RECOFT: The Regional Community Forestry Training Center for Asia and the Pacific (regional NGO operating in Cambodia)

REDD+: Reduction of Emissions from Deforestation and Degradation (with other benefits which the “+” refers to).

SIDA: Swedish International development Agency

SPCR: Strategic Program for Climate Resilience (international climate change program)

tCO₂e: Tonne of carbon dioxide equivalent (standard unit commonly employed in carbon trading scheme).

TWGs: Technical Working Groups (Cambodian inter-ministerial bodies)

TWG-FE: Technical Working Group on Forestry and Environment

UNDP: United Nations Development Project

UNEP: United Nations Environment Program

UNCTAD: United Nations Conference on Trade and Development

UNESCO: The United Nations Educational, Scientific and cultural Organization

UNFCCC: United Nations framework Convention on Climate Change

UNREDD: United Nations program on Reduction of Emissions from Deforestation and Degredation

UNSC: United Nations Security Council

UNTAC: United Nations Transitional Authority Cambodia

USAID: United States Agency for International Development

VCS: Voluntary Carbon Standard

WCS: Wildlife Conservation Society (international NGO operating in Cambodia)

WB: World Bank

WRI: World Resources Institute

WWF: World Wildlife Fund/ World Wide Fund for Nature

Chapter 1. Introduction

1.1 Setting the scene

Venerable Bun Saluth, a chubby, but stern monk, lives in the Samroang Pagoda, in Cambodia's most northern province. Samroang, the provincial capital of Oddar Meanchey, of which Bun Saluth is a native, is a small, sprawling, unremarkable, Cambodian provincial town. His dwelling is equally unremarkable—a typical room in a typical Cambodian Pagoda, surrounded by small shops, and a little further away, rice fields. Yet Bun Saluth spends little time in his humble dwelling. In fact Bun Saluth, unlike his native town, has in the eyes of some, outgrown his unremarkable origins to gain something of a remarkable status. He has variously been termed an 'eco warrior', a 'guardian of the Cambodian forest' and a 'climate hero'. After winning the UN's Equator prize in New York—a prize for outstanding environmental work, Bun Saluth now spends most of his time attending international workshops, and meeting government officials and staff from Non-Governmental Organisations (NGOs) in the capital Phnom Penh. Not only has the New York Times (and the Phnom Penh Post) featured articles about his outstanding environmental work, but hordes of bloggers and international environmental NGOs now pay tribute to his crusade to protect the forests of northern Cambodia. In particular, it has been his efforts to establish two community forestry areas in Oddar Meanchey province which have earned him the title of 'eco warrior'. Since 2008, he has come to play a pivotal role in one of the country's first (and in fact one of the first worldwide) carbon reforestation projects. He has become the face of the multi-million dollar project which aims to protect the carbon stored in standing forest within the province, in order to sell carbon credits on the international voluntary carbon credit market.

Within this project Bun Saluth himself has become a discursively powerful symbol in an alluringly simple narrative which contrasts past forest destruction with an enlightened form of conservation that not only encapsulates a Buddhist ethic of respect for nature, but which also promotes market

mechanisms for climate change. 'At first the villagers didn't understand conservation' he states in a UNDP article (UNDP, 2013). It took his dedication and hard work to explain to them why conservation was better than 'turning the forests into rice fields' (ibid). Bun Saluth – when he isn't in Phnom Penh or New York - patrols his community forests, carefully explaining to villagers his newfound knowledge on the carbon cycle, market-based conservation, and of course Buddhist teachings on respecting nature.

As Bun Saluth rushes between meetings and villages providing moral authority for the project, other actors are busily providing technical legitimacy to the project. In particular, two Americans – Mark Poffenberger, cofounder of Community Forestry International (CFI) who originally instigated the project, and Amanda Bradley, of PACT international, who became important proponents of the project, have left a significant paper trail of academic articles, project documents, technical evaluations, reviews, newspaper articles and blog pieces on the Oddar Meanchey carbon mitigation project. They give lectures on the project at universities around the world, have received funds from various international multilateral institutions and private donors, but have also established intimate relationships with key Cambodian government officials and international donors. They have done much to push the project in Phnom Penh and elsewhere; linking together diverse groups of people and coming up with new techniques to measure, evaluate and promote the success of carbon forestry.

The carbon project, with its millions of dollars of grant money, with its massive paper-trail branded with the names of its proponents, as well as the international awards, meetings and workshops, has pushed some towards the centre of an emerging network of carbon experts. Others in the project however remain on the edges. In one particular village, at the centre of Bun Saluth's community forestry area, people are confused about this new carbon commodity and why they in particular, have to sacrifice agricultural expansion in order to protect carbon. This is not the confusion of simplistic farmers who know nothing of climate change, but an honest questioning of the convoluted

logic of carbon credits - 'the endless algebra of carbon markets' as Lohmann terms it (2011). In *Poom Ja Thmey* village 80 per cent of males between 15 and 60 have to migrate to Thailand for seasonal labour work. Rice and cassava, are amongst the only possible livelihood options which can secure at least a minimal standard of living in an overall environment of abandonment where very few options exist (low-paid garment work and construction work notwithstanding). It is in this context that villagers have logically decided to resist Bun Saluth's authoritarian attempts to prevent agricultural expansion into degraded forest. In May 2014, when Bun Saluth and his monks came to demarcate a small section of community forestry land which multiple families claimed they had been farming for at least six years, the monks were met with axes and knives. The villagers were devout Buddhists –but this was the stuff of politics – they had drawn a clear line between friend and enemy, and Bun Saluth and his attack on their livelihoods, put him clearly on the side of enemy.

When looking at the carbon project in Oddar Meanchey it quickly becomes apparent that carbon markets are a world away from the concerns of rural agriculturalists. Concerns of villagers involved in the carbon project range from dams which will flood entire villages, to lack of roads (including being entirely cut off in the wet season), lack of education and health care, ongoing conflict along the border, the vulnerability people experience when doing labour work in Thailand, not to mention the dozens of deaths per year at the hands of the Thai military when villagers cross the border to log rosewood.¹ It is difficult, both economically and ethically, to understand how undervaluing rural land and labour for the sake of northern corporations and consumers to abate their guilt over high energy production systems and lifestyles, is helping rural Cambodian people deal with the enormous livelihood challenges they face. The outcome of all this is that as villagers are co-opted into utilising their labour (nearly always unpaid) to conduct week-long patrols to protect forests, or clear long buffers along the boundaries of the forest to mitigate against the risk of fires, Forestry Administration officials have had their vehicles upgraded to luxury four wheel drives, and Bun

¹ See (Nimol, 2012)

Saluth, Mark Poffenberger and Amanda Bradley become ever more involved in an expanding network of international experts.

This thesis is not however about the benefits that one group receive from international development at the expense of another (although this is a concern). Nor is it another study of international development that highlights the depoliticising nature of development projects in contrast to the deeply political livelihood struggles that people in rural Cambodia face (although this is also a concern). Rather, the study springs from the delirious nature of carbon and climate change projects such as the Oddar Meanchey project and others found in Cambodia. It starts from a simple question – how is it that people in small rural villages came to be enrolled in climate change networks which seemingly offer them few tangible benefits. This question goes well beyond merely the Oddar Meanchey project and encompasses the proliferating array of climate change projects across Cambodia and in fact the entire global south - projects that in many cases only amplify the absurdity of the Oddar Meanchey project; from low energy outdoors air conditioning units,² (see fig 1.1) to teaching orphans to artistically express their concerns over climate change.³ Why is it that in the early 21st century climate change projects proliferate across the global south? Why do billions of dollars a year flow into climate change projects, bringing with them armies of experts, consultants and a seemingly never ending trail of documents? What logics and rationalities drive the rapid

² During the 2011 celebration of international 'Environment Day', UNDP and the EU ran an 'environment fair' in central Phnom Penh in collaboration with the Ministry of Environment. Present at the EU's stall was 'an outdoor air conditioning unit' that was part of the EU's 'one green world' program where the unit was promoted on the basis of its 'low energy use' (see fig. 1.1).

³ 'Children in a Changing Climate Coalition' (featuring international NGOs ChildFund Alliance, Plan International, Save the Children, UNICEF and World Vision International) which works in a number of countries across the global south. The implementing partners in Cambodia ran a program encouraging young children in remote villages to express concerns over climate change through a variety of mediums. The coalition also pushes for children's formal participation in UNFCCC process where it states 'children should be closely engaged in the design, implementation and monitoring of actions. Children's monitoring role should include a facility through which they are able to report back to future conferences of the Parties to help the UNFCCC track progress and promote cross-learning between nations' (Children in a Changing Climate Coalition, : 12).

expansion of these programs and what material effects are they having on the people they involve, and places they operate within?

Figure 1.1 – Outdoor Air Conditioning Unit on Display at Environment Day 2011



Source: author

As many anthropologists have pointed out, development interventions do not successfully function merely by their adherence to a rationality grounded within the materialities of the objects they take as their target (Apthorpe, 2011; T.M. Li, 2007; D. Mosse, 2005; David Mosse, 2011b). It is not the material transformation of ‘vulnerable women’, ‘degraded forests’, or ‘resilient communities’ themselves which allows a development project to be successful. Rather it is these things in their abstract, idealised, virtual form within project documents and log frames which facilitate the production of success. Sometimes development interventions can operate almost entirely autonomously from the things they take as their target – legitimising themselves through indicators,

frameworks and buzzwords which have little to do with the people's lives whom they intervene in. It is here that absurdity can better be understood as delirium, in the Deleuzian sense of something that is 'compelling but even when not making sense rationally' (Holly High, 2014:14). Buzzwords, framework matrices, Participatory Rural Appraisals, maps and discourses all circulate within development networks according to particular logics. A climate mitigation project makes 'sense' in the context of these circulations of donor money, development discourse and project documents that it comes out of. Yet upon coming into contact with objects and people who operate according to different logics, development rationalities begin to unravel. So too, as a project is stretched across space and diverse landscapes, concepts, techniques, discourses and rationalities face the friction of space, ideas get lost, people do not 'participate', have conflicting agendas, budgets never make it to the village level, and well-meaning concepts and discourses developed in capital cities sound artificial and confusing in the village context.

At the same time, within aid agencies, the quest to harmonise the agendas of diverse actors and deal with contingencies often produces a certain delirium; the constant upgrading and shifting of buzzwords according to the whims of policy makers and development professionals (D. Mosse, 2005), the ever fluctuating aid budgets which change according to domestic politics and bureaucratic whims (Wallace, Bornstein, & Chapman, 2007), and the anarchic nature of actual interventions as different groups of actors become involved in projects (Lea, 2012). In other words, development projects do not linearly follow the rationale of official project documents, nor the discourses they supposedly adhere to; rather they are a messy assemblage of individuals with different agendas, of shifting budgets, of geographically diverse constituencies and uneven power relations. Development interventions cannot be understood narrowly as the enactment of a sub-set of goals and aims within a delimited geographic area – 'the intervention site'; rather they must be understood as a large network of actors which typically span multiple countries and which produce unexpected and contingent material changes. In this sense, at any one particular site, development interventions

often take on a delirious nature; producing effects which only make sense within the fluid and serendipitous movements of the much larger network.

Yet taking this acknowledgement as a starting point, it is also possible to see how certain rationalities seek to govern over this chaos; how certain objectives and accomplishments can be extracted from these often ambiguous outcomes, and form the basis for models, plans, guidelines and projects which are gradually expanded and tested across the globe. Particular logics, rationalities and agendas in other words, come together to provide a reproducible and versatile blueprint for conducting climate change interventions - even where unexpected outcomes are the norm.⁴ Negotiation, contestation and logistical challenges then are an imminent part of programming (Lewis & Mosse, 2006b: 5; Peck & Theodore, 2015), yet it is these ‘travelling rationalities’ that can easily be spread across networks to give coherency and some degree of order to the chaotic world of development (David Mosse, 2011a: 3). How else would it be possible to explain the fact that similar types of climate change interventions are indeed popping up across the world? This thesis argues that very particular ways of making the climate change problem visible and knowable (risk analysis), attempts to financialise climate risk (carbon markets) and attempts to govern over the climate vulnerable in a particular way (biopolitics) help to give coherence to the diverse suite of interventions that are being conducted in the name of climate change adaptation and climate change mitigation. This thesis attempts to interrogate these logics and rationalities by tracing their expansion within 21st century Cambodia.

⁴ See Peck and Theodore who for instance make the following observation about policy; ‘while the policymaking imagination may be globalizing, and while transnational circuits of expertise and practice are proliferating, the stubborn’ reality is that *making policies work* very often remains a hands-on, messy, and very much “local” affair. It follows that one-sided celebrations of unconstrained policy mobility will not do, but neither should it be assumed that institutional idiosyncrasy and geographical inertia are destined to prevail forever’ (Peck & Theodore, 2015: xvii).

1.2 Aims and outline of the thesis

The aim of this thesis is to give a spatial account of 'climate assemblages' within 21st century Cambodia. The thesis employs the concept of 'assemblages' in order to try and capture – and focus on – the key elements which constitute and allow for the expansion and reproduction of climate interventions across the globe.

Chapter two gives a detailed outline of the assemblage approach and justifies why it is useful for giving rigorous insights into the study of development interventions - and climate change intervention in particular. It introduces the concept of 'climate assemblages' and lays out how this approach will be employed to study climate change interventions. It also introduces the key contours of the climate assemblage.

Chapter three focuses on some of the key actors and ideas which were slowly and haphazardly assembled together to form a durable assemblage, and how they came to focus on carbon markets, risk analysis and took on a distinctly neoliberal and biopolitical orientation.

Chapter four moves on to Cambodia and gives an outline of how the climate assemblage became established in the country. Drawing upon interviews, surveys and an examination of development projects it gives a description of the various activities that the assemblage has been involved in over the last decade. It emphasises the specifically neoliberal and biopolitical character of climate change interventions and describes the fraught process through which a range of actors have attempted to embed these ideas in Cambodian institutions.

Chapter five moves on to giving a detailed account of a specific climate change mitigation project conducted in rural Cambodia. It looks at the slow and problematic process through which the project attempted to turn carbon stored in trees into a sellable commodity. It shows how a neoliberal rationality was stretched across space and inserted into rural Cambodia and the challenges and contestations that it faced in this place with all its historical and geographic specificity.

Chapter six considers another project - a carbon adaptation project - in rural, mountainous Cambodia. This time it focuses on the biopolitical rationale of governing over the climate-vulnerable and how people's broader relational vulnerabilities contrasted with the project's narrow one-dimensional notion of vulnerability to the external climate.

Finally, chapter seven gives a brief overall summary of what the thesis says about climate assemblages by examining the key rationalities and agendas which have facilitated the expansion of climate assemblages across space. It also uses the case study of Cambodia to consider the challenges (in terms of governing over the vulnerable and institutionalising neoliberal approaches to climate change) that the assemblage faces in diverse locations across the globe. It finishes with a discussion of the politics of climate assemblages, moving to the all-important question of the implications of all this on the actual day-to-day challenge of dealing with a changed climate that disproportionately affects the poor and marginalised.

1.3 Force and power in accounts of climate change

Most literature on climate change is unable to provide any analytical hints as to why climate change discourse and carbon projects have been exported across the world to places like Cambodia. The majority of accounts of climate change, both popular and academic, make little or no reference to force and power. The geography and history of climate change are typically taken for granted or a particular historiography repeated ad verbum. On one hand, climate change has become a contested political issue in liberal democracies. For instance, since the 1980s several authors have popularised the idea that the state and state science are not doing enough to deal with global climate change. Within academic literature this is epitomised by Bill McKibben's *The End of Nature* (1989), Steven Schneider's *Global warming: Are we entering the greenhouse century?* (1989), William Nordhaus' essay *Managing the global commons: the economics of climate change* (1994), and more recently Clive Hamilton's *Scorcher* (2007) and Anthony Giddens' *The politics of climate change* (2009). Since NASA scientist James Hansen famously announced in 1988 that 'global

warming is here' (P. N. Edwards, 2010), a plethora of accounts warning of the dangers of climate change, epitomised by Al Gore's *An inconvenient truth* (2006), have gained popularity within liberal democracies.

On the other hand, there has been a steady, if much quieter, proliferation of more sombre, technical studies which have sought to answer the question of how to govern over the atmosphere and make its presence felt within market transactions. Since the White House's 1979 Chafey Report which was one of the first qualitative governmental assessments of climate change (P. N. Edwards, 2010), there have been major reviews and assessments within almost all liberal democracies of governmental approaches to climate change. The British *Stern Review* (2006), the Australian *Garnaut report* (2010) and the U.S EPA's *Climate change Indicators* report (2010), are amongst the most well-known. But far from being just a few key studies, a whole new literature on climate 'risk', 'resilience' and 'vulnerability' can be found within an almost endless array of reports, strategy papers, workshops, reviews and guidelines found within state bureaucracies, from the local to national levels (Betsill & Bulkeley, 2004; Jinnah, 2011; Oels, 2013). As Swyngendou dramatically puts it discussing climate and the post-political; 'the last few decades have been characterized by deepening processes of de-politicization characterized by the increasing evacuation of the proper political dimension from the public terrain as technocratic management and consensual policy-making has sutured the spaces of democratic politics' (Swyngedouw, 2010: 214).

Climate change, in the 21st century has become a key object of what Hajer terms 'ecological modernisation' - 'the recognition of structural environmental problems, but the attempt to nonetheless 'make them calculable' without challenging existing political, economic and social institutions' (M. A. Hajer, 1995: 51). Now recognised as one of the most significant threats to not only economic growth, but also to the health of citizen populations, climate change has seeped into almost all fields of the social and physical sciences; from the proliferating studies of the effects of climate change on human health found within the public health literature (see for instance: Haines,

Kovats, Campbell-Lendrum, & Corvalán, 2006; Anthony J McMichael et al., 2003), to psychological studies on attitudes to climate change (see for instance: Gifford, 2011; Swim et al., 2009), to studies on climate migrants and international security (Bettini, 2013a; Gilbert, 2012). More significant for this thesis, is the way that climate change as a global environmental issue has seamlessly become welded with international development (K. Grove, 2010; Taylor, 2014) where now even the World Bank and the UN place it at the centre of their strategic frameworks; as the World Bank itself puts it, ‘adaptation is at the centre of the World Bank’s support to developing countries as it is critical to sustaining and furthering development’ (The World Bank, 2014a).⁵

Yet what is remarkable about the proliferating fields of climate change research – the denialists, the apocalyptic narratives, and the technical grey literature alike, is that all are almost entirely blind to geography and history. The climate itself is usually taken as an ontological given – controversies are merely concentrated around who best represents the climate. Geography only comes in as a secondary concern; visualising the effects of climate change over space, instead of a concern with how particular approaches to visualising and acting upon the climate have been assembled across space. When history is invoked, it is typically the linear historiography of the advancement of western science which starts with nineteenth century Swedish Svante Arrhenius’ postulations on a relationship between carbon dioxide and atmospheric warming, and ends with the latest IPCC report. This technological love story between science and the atmosphere, which has been endlessly repeated in histories of climate change (Bodansky, 2001; Oreskes, 2004; Weart, 2008) is blind to force and power. Like any major assemblage, financial gain, institutional expansion and desire have become important incentives that seduce policy makers, bureaucrats, business people, researchers, academics, NGO workers and rural farmers to particular logics. Yet rarely is there a willingness to

⁵ Since the late 2000s the World Bank has recreated itself as an important centre for knowledge production on climate change. ‘Climate adaptation’ has been a particularly important theme and a key focus throughout major climate change reports produced by the bank over the last decade.

investigate how the expansion of climate assemblages are themselves altering and reconfiguring already existent relations and assemblages.

Over the last forty years within liberal democracies (and increasingly outside them) climate change as a 'discursive grid' has begun to stabilise; riding on the back of the cold war concern for 'global' environmental problems, a number of reproducible techniques and technologies for seeing, talking about and acting upon the climate have spread across the world (Beck, 2010; Dalby, 2013; Demeritt, 2001; P. N. Edwards, 2010). Far from being 'one of the century's biggest controversies' (Giddens, 2009:4), controversies surrounding climate change resemble those surrounding sexuality in the Victorian period. As Foucault (1978) has famously shown, 'the repressive hypothesis'; that Victorian society was trying to repress sexuality, was an immanent part of the broader discourse on health and sexuality that rapidly grew in the 20th century. Far from suppressing sexuality, the mere fact that sexuality was deemed 'controversial' compelled people to discuss, to disavow, and to protect certain groups from sexuality. Whereas sexuality had previously been for the most part a banal part of everyday life, it now demanded solutions, new knowledge and entirely novel discursive fields. Most importantly, the 20th century saw the promotion of a particular approach and discourse on sexuality that became embedded in very particular institutions from the church to the school to the clinic. So too climate change has become a controversy, but whereas the popular media fixates upon the question of 'the scientific consensus', distinctly risk-based and neoliberal approaches to climate change creep into government policy, development work and even activism.

There is then a particular force to the discourse on climate change. For the philosopher Giles Deleuze, force has a particular, materially grounded meaning. Force is a dominating relationship, established through networks of material relations. It is an application; something that goes beyond merely the objects in view; it is the surrounding context that allows one thing to dominate another. Even to signify an object is an application of a force; an envelopment of an object's material qualities and its positioning within a network of relations – 'a thing has as many meanings as there are forces

capable of seizing it' (Deleuze, 2006: 4). In terms of the atmosphere, the question then becomes what forces have been capable of seizing the climate and how? What may well be asked then is not whether climate change is a real material phenomenon, but what forces have captured it, registered and re-signified it in their own sign system and embedded it their own practices. After all it is not rural farmers in Oddar Meanchey province whose conception of climate change has come to the centre of interventions around the climate. Rather it is the supposedly universal, scientific, objective, risk-based conception of climate change - which have penetrated their locality – which has come to the fore of 21st-century climate change interventions. This is then clearly a geographic question – how is it that one particularistic signification of climate change – can spread across large sections of the globe to dominate another? Through what material and spatial practices has this occurred?

For John Allen (2011a), who draws heavily upon both Foucault and Deleuze, power is inherently a geographic question. For Allen power is an immanent and productive force – it is productive in that it creates things, discourses and relations rather than merely take them away or destroy them (i.e. violence), and immanent in the sense that it is not external to actors; something that is held by the 'powerful' and used against the powerless, but rather constitutive of actors. Power is something that has to be continuously recreated and administered across space; it always has a material basis as it requires networks of objects, people, technologies and discourses to maintain dominance. The application of power can involve a range of tactics from coercion to seduction, but importantly, how effective power is in enrolling people and objects into its networks, depends upon geography – to what degree dominance – whether through coercion or seduction, can be produced and stretched across space.

With this concept of force and power in mind, climate change interventions can be understood in a radically different way. Rather than starting with Svante Arrhenius, one might start with one of the most widespread and important dominations of recent human history; colonialism. In particular the

discourse of tropicality, which played a constitutive role not only on the modern discipline of geography (D. Livingstone, 2002), but also of meteorology (Fleming, 2005; R. H. Grove, 1995), biology (R. H. Grove, 1997; Osborne, 1994) and public health (W. Anderson, 2006; Arnold, 1988; Bashford, 2004). It was during this period that the effect of the climate on human life became a concern – and which no doubt has left a legacy on contemporary approaches to climate change. For at least three hundred years, understanding and mitigating against this risk was a pressing concern of British, French and Dutch colonial societies and it was during this *longue durée* that very particular problems in relation to the climate, vulnerability,⁶ and adaptation⁷ came into common parlance. The colonial period thus set a certain precedent for a type of biopolitics which has infused the contemporary climate assemblage.

The climate has been an enduring concern of western knowledge. European Enlightenment thinking has been deeply shaped by prevailing discourses surrounding the climate – from philosophy where Kant,⁸ Hegel,⁹ Montesquieu,¹⁰ Herder¹¹ and List all developed (and were deeply influenced

⁶ See for instance Richard Grove (R. H. Grove, 1995, 1997) who talks at great length of the colonial development of the concept of vulnerability starting in the 17th century.

⁷ In the early 20th century several geographers and anthropologists based in North America, Australia and Britain began to assemble broad theories about the relationship between Darwinian notions of adaptation, climate and race. In particular William Diller Mathews *Climate and Evolution*, the many works of Australian Geographer Griffith Taylor, and geographer Ellsworth Huntington quite literally mapped climate determinism onto prevailing Darwinian notions of adaptation to elucidate how those in the tropics had struggled to evolve in the face of harsh climates. See (D. N. Livingstone, 2012).

⁸ Kant stated in his 1770s lectures on geography: ‘in the hot countries the human being... does not reach the perfection of those in the temperate zones. Humanity is at its greatest perfection in the race of the whites’ (quoted in D. Livingstone, 2002: 164). See also Elden (2009).

⁹ Hegel rejected the ideas of Comte de Buffon, Montesquieu and Georges Cuvier (amongst others) who for him over-emphasised the way in which climate determined external characteristic of people (and their inferiority). He also rejected determinism and the emerging practices of phrenology and physiognomy. Hegel with his concern with ‘spirit’ saw that different climates were associated with different ‘spirits’. He also infused this main theme with a biological notion of distinct biological races: ‘Blackness is the immediate, the descendants of the Portuguese being as black as the native Negroes, although also on account of mixing... No colour has any superiority, it being simply a matter of being used to it, although one can speak of the objective superiority of the colour of the Caucasian race as against that of the Negro’ (quoted in Tibebu, 2011: 79).

¹⁰ In *The Spirit of The Laws* Montesquieu spends several chapters arguing that ‘[P]olitical servitude depends no less on the nature of the climate than do civil and domestic servitude’ (De Montesquieu, 1989: 278).

¹¹ In his book on World History Herder provides a description of the ‘negroes’ of the tropical zone: with ‘the same raw and robust strength, the carefree mind, the boisterous sensuality, which we observed in the blacks of the continent, are evident also in the Negrilloes of the islands, yet everywhere proportionate to their climate and mode of living’ (quoted in Tibebu, 2011: 119).

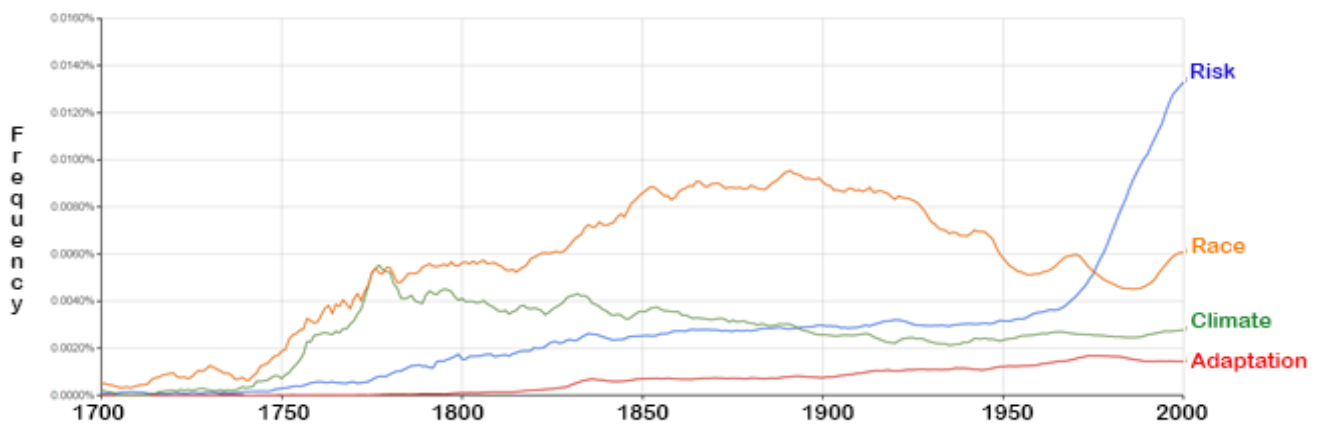
by) notions of the temperate as opposed to the torrid (D. Livingstone, 2000) – and Kant went on to make this the basis of his new discipline of geography (D. Harvey, 2007). The modern map is the result of the innovation of representing different ‘climes’ as latitude. The art of acclimatisation (and taxonomy) was also based on these distinctions (Lafuente & Valverde, 2011; Osborne, 1994) – and which shaped contemporary notions of weeds, pests and invasive species (Dunlap, 1997). The rise of 19th century racism was premised upon inherent biological differences between the tropical races and the temperate (Duncan, 2012; M. Harrison, 2002; Stoler, 2002). Sexism was understood in terms of a feminine affinity with the abundance of nature (especially the sensual and uncontrollable tropical nature) while masculinity was associated with culture and the temperate (Stepan, 2001; Stoler, 2000). Developments in western health, from tropical medicine (Worboys, 1996) to immunisation (W. Anderson, 1996b), to sanitation (Bashford, 2004; Home, 2013; Legg, 2008; M. G. Vann, 2007) were based around a problematisation of tropical bodies and pathogens (Arnold, 1993; Worboys, 1996). Even war, from colonial wars (Kiple & Ornelas, 1996), to the great wars (W. Anderson, 2006) to the cold war (Farish, 2010; Hamblin, 2013), spurred on military health and meteorology networks to secure soldiers and war machines as they entered into a dangerous tropical climate (P. N. Edwards, 2010), not to mention 20th-century experiments with climate manipulation (Kwa, 2001). The 20th-century concept of development is also heavily influenced by notions of the tropical and temperate – right up to the Rockefeller foundation in the 1960s¹² and Walt Rostow’s ‘stages of growth’,¹³ development was still explicitly targeted at ‘tropical’ populations.

¹² Rockefeller consultants such as Van Riel in 1950s U.S were important promoters of ‘tropical hygiene’. That is: ‘...the care of that particular type of environment characteristically populated by backward and depressed people, whose primitive state is not due to racial characteristics but to their having escaped historical and geographical movements...’ (Riel, 1950: 1).

¹³ For Rostow, although economic growth tends towards ‘development’ wherever it is applied, it plays out across a terrain of cultural and climatic factors. As with British development thinkers before him ‘development’ was still something that was to happen in the tropics (due to their backwardness). As he puts it ‘It is the deep roots and staying power of culture and national style which render the stages of growth, or any other system, only a partial answer; for cultures are shaped by geography and climate; by cumulative habits and casts of mind arising from the way men organized their communal lives over thousands of years, within their special physical settings...’ (Rostow, 1959: 18).

Throughout the late 19th and early 20th century, the gaze of colonial governments across the world began to fixate upon neglected colonial subjects (D. Scott, 1995). But it was specifically the problematic colonial subjects inhabiting the ‘risky’, supposedly pathogen-laden environment of the tropics that came to the fore of colonial forms of liberal governance (W. Anderson, 1996a; Bashford, 2006; Home, 2013; Peckham & Pomfret, 2013; Willrich, 2011). The late colonial period created many of the terms which have become common parlance in the contemporary climate change literature from ‘risk’¹⁴ to ‘vulnerability’ to ‘adaptation’.¹⁵ It is thus not surprising that contemporary climate change interventions share many continuities with this enduring colonial biopolitics. Figure 1.2 demonstrates the colonial origins of key terms associated with climate change (and colonial concerns such as race). Due to space limitations, it is impossible to elaborate on these arguments in detail – and hence they have been published elsewhere (see Frewer, 2016).

Figure 1.2 Frequency of the Terms ‘Risk’, ‘Climate’, ‘Adaptation’ and ‘Race’ in Digitised Books from 1700-2000



Data Source: Google (2016)

¹⁴ The term ‘risk’ was commonly used in colonial literature (especially medical, sanitation and planning literature) from the 18th century onwards but became popular in the latter 19th century (see figure 1.2). It was frequently used in relation to the climate - especially within British colonial writing on India, Africa and the America’s. It was also commonly used with actuarial reports (and later journals for insurance companies) starting from 18th century. By the 19th and especially 20th century it was becoming more common to use risk in a general rather than specialised sense.

¹⁵ See footnote #2. As one iconic example see Oxford medical Professor John Kid’s 1841 publication *On the Adaptation of External Nature to the Physical Conditions of Man*.

A burgeoning field of literature has attempted in the words of Chakrabarty (2000) to 'provincialise' climate change; to trace its specific historical and geographic precedents in the colonial and imperial projects and examine its expansion in the later 20th century through particular institutions, technologies and discourses (Demeritt, 2001; P. N. Edwards, 2001; Evans & Reid, 2014; Fleming, 2005; R. H. Grove, 1997; Jasanoff, 2001; Jennings, 2006; Liverman, 2009; D. Livingstone, 2002; M. Vann, 2005). This literature has shown that climate change is not merely a neutral and objective phenomenon, but that the machines of colonialism and empire – which have specific localities, not to mention interests - have invested in particular ways of seeing and understanding the climate.

One particular strand of research for instance shows how the cold war played an integral part in the re-discovery of climate change in the late 20th century where nuclear testing (Masco, 2010), the space race (Jasanoff, 2001), the development of war-time computer technology (Aker, 2008; P. N. Edwards, 1997), satellite imagery (Cosgrove, 1994) and radar all helped to make climate change visible and knowable. So too a very particular type of environmentalism that was global in scope and emerged specifically from the North American experience of industrialisation during the cold war period (Guha, 1996; Merchant, 2007), began to be extended across the globe through various governmental networks (Jasanoff, 2001; Miller, 2004). What all this suggests is not that climate change is a hoax or its case is overstated, but that conceptualisations of, and frameworks for acting upon climate change, have very particular geographies and histories which cannot be separated from broader colonial and imperial histories.

1.4 Cambodia – a laboratory for development

The central focus of this thesis is the meeting point between forces and powers which have assembled particular institutions, techniques and discourses for dealing with the climate, and 21st century Cambodia. It aims to see how long standing discourses emanating from the colonial and imperial project have been actualised and materialised in contemporary Cambodia. Before looking at this in more detail, it is important to ask, why Cambodia? Many other places around the world have

been far more significant in terms of knowledge production on climate change and shaping the burgeoning investment opportunities surrounding climate change. North America and Europe have in particular been cited in the literature as a hot spot for climate change action – due to being the home of the first carbon stock exchange, the largest carbon market and largest and most active climate change movement (Klein, 2011; Newell & Paterson, 2010; Rich, 2013). Yet although the vast majority of people in Cambodia are only partially aware of the controversies surrounding climate change (BBC World Service Trust, 2011), and Cambodia is far from a major player in international climate politics in any way, sense or form, it is home to a bewildering number of climate change projects, and a significant amount of climate aid and climate expertise. More than US\$300 million has been invested in Cambodia since 2005 for hundreds of individual climate projects. There is also a rapidly expanding bureaucracy to deal with these projects, and a proliferating number of NGOs who solely focus on climate change. This is remarkable considering Cambodia's population of fifteen million and per capita GDP of US\$1000 (2013), not to mention the dozens of other poor countries around the world that have received next to nothing in climate aid (for comparison from 2004-06 all 53 countries of Africa together received only US\$850 million in OECD climate-related aid (OECD, 2014b)).

As has been pointed out for the colonial project, it has often been in the non-European places where the tools, discourses and techniques of modernity have been configured (Home, 2013; Mitchell, 1991; Stoler, 2002). This is not just in the sense that the tropics have always played the 'other' to Europe in that they dialectically helped to establish what it means to be European (Bhabha, 1994; Mbembé, 2001). It is also that the unique challenges, contingencies and contestations that arose in the context of attempts to establish rule across vast swaths of territory resulted in the creation of a panoply of institutions, technologies and discourses which have come to have a profound effect on what it means to be modern. Rather than seeing the spread of western modernity and technology as according to what Blaut (2012) calls the 'diffusionist model', where modernity diffuses from the 'advanced' temperate regions to the 'backward' tropical regions, colonialism and imperialism have

to be understood as projects that helped to establish and stabilise domination through new experiments with capitalism, governance and science, primarily outside of Europe. Modernity did not spread to the tropical world, rather, European modernity was crafted in response to the challenges and contingencies faced in attempting to establish rule over non-European lands and people (Mignolo, 2011).

In the case of climate change, Europe, North America, Korea, Japan and Australia have been major producers of new climate change knowledge, and the source of climate aid, but it has been in the non-Annex 1 countries – the places that have become the *object* of carbon experiments and carbon benevolence, where new technologies and intuitions have had to be created to deal with uniquely non-European challenges. As Annex 1 countries ‘muddle through’ (Lindblom, 1959) emissions reductions politics (Bond, 2011), non-Annex one countries have silently been at the centre of new controversies to deal with the challenges of climate change. It is not the case that new ways to understand and deal with climate change have simply been imported from Brussels, London and Washington to the developing world. Rather, just as Structural Adjustment Programmes were crafted as a response to the challenges of establishing markets and stable governance systems in the post-colonial world (especially Sub-Saharan Africa), so too carbon trading, the Clean Development Mechanism and ‘climate change adaptation and mitigation’ have been crafted from the challenges of establishing carbon governance in poor, low carbon emitting countries. For instance, the Reducing Emissions from Deforestation and Degradation (REDD+) scheme, originally proposed by Costa Rica and Papua New Guinea to protect carbon in tropical forests, became a pragmatic way to ensure emissions reductions in non-Annex one countries while providing Annex one countries, especially the U.S with ‘flexibility’ in reaching emissions reductions targets.

Both Timothy Mitchell and Anne Laura Stoler have referred to British and Dutch colonial possessions as ‘laboratories’ (Mitchell, 1991; Stoler, 2000); as sites of experiment and new creations, that in turn had profound effects on the metropole. So too, non-Annex one countries may be considered

'laboratories' for experiments in climate mitigation and adaptation. Cambodia in particular, has been an important site for such experiments due to its recent history of development interventions. With at least a seemingly aspiring democratic government which has enthusiastically sought to maximise development aid, Cambodia has seen significant inflows of international aid over the last thirty years – from nothing in 1990 to US\$807 million in 2012 (OECD, 2014a). It is home to one of the first REDD+ projects in the world; the Oddar Meanchey project serving as a demonstration project for the rest of the world. But it also home to one of the first major rural based surveys on climate change, was one of the first member countries to join the UNREDD programme, was one of the first countries to sign up to the World Bank's Forest Carbon Partnership Facility, has a major project from the Adaptation Fund and has one of the most advanced carbon bureaucracies in the region.

But so too, Cambodia's material and imagined geography, which is at the nexus between international and national forces, has played a significant role in opening up the country to foreign aid, and in particular, climate change interventions. As was emphasised in the last section, climate change as a discourse and problematisation, and as a particular set of solutions, has been pushed across the world through the experiences of colonialism and empire. Yet this says little about why in particular Cambodia has become an important space for carbon experiments in the 21st century. The rest of this section will consider how Cambodia's material and imaginative geography has shaped development interventions over the last decade and especially those related to climate change.

To start with Cambodia's material geography; Cambodia has been an obvious target of aid being a small agrarian, post-conflict nation with 18.6 per cent of the population living in 'poverty' (defined by the World Bank as living below US\$0.93 per person per day, although another 51 per cent are 'near poor') (World Bank, 2014). With agriculture still providing a significant portion of income for Cambodia's economy (contributing to 37 per cent of GDP in 2012) and providing the main source of income for most Cambodian's (67 per cent of the population in 2012) (FAPDA, 2014), Cambodia remains a primarily agricultural country in terms of the livelihoods of most of its population. 75 per

cent of farmers carry out paddy rice cultivation and own under two hectares of land per household (CDRI, 2007).

Deforestation has also been a major issue. Cambodia has previously been rated as having the highest deforestation rate in the world by the UN Food and Agricultural Organisation (which produces the most disseminated statistics on forest cover change). From 72 per cent 'total forest' cover in 1973, this category had been reduced to 46 per cent by 2013 (Open Development Cambodia, 2014), although it has been contended that the actual forest cover level is significantly lower than this (Global Witness, 2007). Apart from decreases in primary forest cover, forest degradation has also been a major issue with both small-scale collection of charcoal and tree felling (Gaughan, Binford, & Southworth, 2009; K. K. Hansen, Top, Murshid, & Sokphally, 2006), and more systematic land alienation, forest clearing and degradation through the rapid expansion of agro-industrial plantations (Frewer & Chan, 2014; Neef & Touch, 2012).

For other common measures of 'human development', Cambodia tends to fall far behind other countries in the region. Its HIV rate has been significant (2 per cent in 1998, down to 0.5 per cent in 2009) (UNAIDS, 2013), maternal death is amongst one of the highest causes of death for women, although has improved significantly (from 95 to 45 deaths per 1000 live births between 2000 and 2010) (UNICEF, 2012), and for education, secondary school attendance remains at below 50 per cent for both males and females.¹⁶

Drawing upon this much-quoted set of indicators, a large number of academics, NGOs and development institutions have treated Cambodia's need for development assistance as an axiomatic. Whether it is international NGOs such as CARE, Oxfam, PACT or Save the Children pushing their particular programs which focus on vulnerable women/children/ farmers, or government officials pushing for greater aid contributions at the yearly donor-government meetings

¹⁶ Meaning the number of children who attend secondary school divided by the total population of the same age group – 45.9 per cent for males, 44.7 per cent for females (2008-2012) (UNICEF, 2013).

to finalise aid pledges (c.f Ear, 2013), it has almost become mantra that the troubles of Cambodia result from not enough 'development' (Ear, 2009; Hughes, 2009). It is here that the very real material geographies of Cambodia – lack of income opportunities, poor health care and education, and forestry loss - seamlessly slip into an imaginative geography of Cambodia as a 'developing', 'post-conflict', agrarian backwater, plagued by war, corruption and nepotism, slowly but surely trudging towards democracy and economic growth (Öjendal & Lilja, 2009). It is not being argued here that poverty, maternal deaths or forestry loss are merely imagined (although it could be contended that at times particular statistics are exaggerated or used selectively), but that these very real material phenomena become 'condensed' into a set of signifiers (Laclau & Mouffe, 2001) within a much-cited discourse about Cambodia, poverty and development.

Said (1993), Gregory (1995) and Mitchell (2002) have employed the concept of 'imaginative geographies' to describe the way in which particular places become invested with meaning in a manner which abstracts them from their material geographies. Exemplary here are Said's famous discussion of the 'middle east' Orient as both a real geographic material entity, but also as an imagined 'other' to Europe within a long tradition of colonial literature (E. Said, 1979; E. W. Said, 1993) and Timothy Mitchell's (2002) discussion of Egypt as the imagined object of technopolitical development interventions (which parallels Tania Murray Li's notion of 'rendering places technical' (T.M. Li, 2007). All these accounts, including Gregory's reworking of orientalism (1995), are very much concerned with how particular places are remade within literary networks and bureaucracies; how power and force produce places as amenable to certain interventions, how they condense very real and complex material relations into reproducible simplifications which are used to legitimise a diverse array of interventions.

Cambodia can also be considered as an imaginative place – like any other modern state, as a repository for nationalist desire (B. Anderson, 2006; P. Edwards, 2007), but also as a space amenable to technical development interventions. There is nothing particularly novel about treating Cambodia

as an exotic backwater, full of backward people waiting to be modernised. Roberts in his history of French colonial policy talks about the shift in late nineteenth-century colonial policy which brought development to Cambodia when the French ‘...turned to the virgin field of Cambodia, which had hitherto remained a picturesquely useless relic of Oriental medievalism...their minds wallowed in inertness just as their bodies did in rice swamps’ (Roberts, 1929: 48). Yet, the Khmer were seen as ‘plastic and malleable’ and thus able to undergo ‘progressive development’ (ibid: 57). Such a trope, although now shorn of such blatant orientalist language, can still be observed within the development industry. For instance the Ministry of Environment’s donor funded ‘No second chance video’ describes Cambodia as a ‘natural alliance of land and water’ where ‘the people live in harmony with nature’ but both of which are now under threat ‘because of climate change’. This romanticisation of the Cambodian landscape, clearly lends itself to a simplistic narrative that suggests climate change interventions are an urgent imperative to restore the harmony of the Cambodian landscape. A wide range of other development interventions reproduce such sentiments to differing degrees of nuance. In a UN Global Gender and Climate Alliance newsletter, it is stated that within Cambodia ‘climate change threatens to erode human freedoms and limit choice’ especially of the vulnerable such as ‘marginalised women and girls’ (GGCA, 2013). Through the text and accompanying image of female farmers toiling in a parched rice field, the implicit suggestion is that Cambodia is a homogenous space of climate-induced struggle (which luckily the climate alliance is remedying through ‘a youth debate program’ and ‘a workshop in Phnom Penh’). Similarly, the Cambodia climate Change Alliance (one of the largest carbon donor initiatives in Cambodia) states ‘[C]ambodia’s vulnerability to climate change is linked to its characteristics as a post-civil war, developing, agrarian country, with 80% of the population relying on subsistence crop production in rural areas...’ (GCCA, 2011). Suddenly climate change is linked to civil war, development and rural farming – tied together in a discursive knot that selectively extracts key statistics and foregrounds them within its simplified narrative on climate change.

Cambodia here becomes imagined as being composed of various climate-vulnerable populations who are in need of governing. UN resident coordinator in Cambodia Claire Van der Vaeren, talking about climate change states that '[P]eople who subsist below the poverty line and other groups—such as women-headed households, children, the elderly, the disabled and the indigenous communities—are particularly vulnerable' (Sovunthy & Chen, 2013). Lashing together people who have very little in common, 'the vulnerable' become the objects of development interventions. 'Youth' are at the centre of Save the Children's 'youth in a changing climate' program, 'indigenous women' become the targets of CARE and its climate change work and 'poor rural farmers' the target of agricultural NGOs such as CEDAC and their climate change projects. In a very biopolitical manner, it becomes the vulnerable – and their relations to the climate that form the target of development interventions.

But throughout the Cambodia-climate change literature, it is the distribution of these vulnerable groups throughout the Cambodian territory that creates a very particular imagined geography. If it is primarily small-scale rural rice farmers who are imagined as being vulnerable to climate change, then Cambodia becomes a vast expanse of small paddy fields, struggling under the dual burden of the climate and an increasing peasant population. This has been epitomised through reoccurring images of caked and cracked paddy fields which have circulated in the Phnom Penh Post, the Cambodia Daily as well as within NGO materials. In a youtube video clip documenting the effects of climate change on rural Cambodian farmers (one of many), produced by the Joint Climate Change Initiative, a lowland farmer *Brok Yeng* is depicted as she struggles to grow vegetables and rice in Battambang province to provide for her family (including her disabled husband) (Forum Syd, 2012). In another youtube clip, Oxfam Great Britain follows *Sre Samsak* as she struggles with decreasing rice yields in Kompong Chnang, and is forced to sell rice cakes in Phnom Penh (Oxfam Great Britain, 2009). Both videos firmly place a changed climate as the cause of both women's woes. Absent of course is the role of economic policy, militarisation, the rise of agro-industrial plantations, land alienation, dams and a kleptocratic state – instead, these two vignettes are meant to represent

the 'typical' peasant, and in the process wipe the slate clean of all other complexities. Cambodia becomes simplistically the stage where the drama of climate change plays out, and with the accompanying plot that development interventions are desperately required.

Cambodia emerged from civil war and international sanctions in the early 1990s – a time when criticism of the last decade of neoliberal orthodoxy was at its peak – particularly in the World Bank (Rich, 2013; Z. Young, 2002). In this context the hard-line economic rationalism of state rollback, privatisation and market exposure, slowly gave way to a more seemingly benign discourse on 'participation', 'human development', 'growth with equity', 'gender equality' and 'green growth' (see Craig & Porter, 2006; G. Harrison, 2004). Sometimes termed 'the Post-Washington consensus' (Stiglitz, 1998), this concept can more usefully be understood through Ananya Roy's term 'millennial development' (Roy, 2010). Roy employs 'millennial development' to signal a mode of development which has become popular throughout major development institutions, and more generally within publics in liberal democracies. As she puts it 'the turn of the century has been marked by the emergence of a remarkable global conscience; an awareness of world poverty and an articulation of the will to end poverty...a remaking of development as a "kinder and gentler" process that is as concerned with human development, as previous eras were concerned with economic growth' (Roy, 2010:21). But as she points out it has also led to a proliferating array of development experiments which combine philanthropy with new forms of capital accumulation. And it is exactly within Cambodia, imagined as a post-conflict, 'developing country', struggling under the burden of a dark history, poverty, corruption and climate change, where these experiments have been aggressively carried out.

If Cambodia was an unremarkable, small, backward Southeast Asian nation in the mind of western diplomats in the 1960s (Osbourne, 2008), it has become an iconic site of millennial development in the early 21st century. The Hun Sen regime's particular dependence on international aid (Ear, 2013;

Hughes, 2003), the country's economic and political transformation which has coincided with the rise of millennial development, and the popular imaginative geography of Cambodia as a rural agrarian land of vulnerable farmers, has produced Cambodia as a clean slate for millennial development interventions. It's burgeoning bureaucracy has provided a fertile ground for new experiments in 'good governance' (Frewer, 2013); its post-communist population has become ideal for new experiments into civil society. But much more than this, it has become a site of charity; where those from developed countries have the opportunity to teach children, to care for orphans, to protect wildlife, to stop human trafficking, to mainstream climate adaptation. From Angelina Jolie and her aptly named 'Millenium village' in north-western Cambodia,¹⁷ to young Australian of the Year Tara Winkler and her charity works in Battambang,¹⁸ Hollywood producer Scott Neason,¹⁹ to Gina Rinehart and her controversial support for a violent 'anti-trafficking' NGO in Phnom Penh,²⁰ Cambodia has become a place to invest desire as much as money and labour.

Development is never just about children, the poor or climate change, or whatever else development discourse brings into view. It is always also about an investment of desire into a particular discourse and place; a desire to 'do something', to 'help the poor', 'to work on climate change', 'to volunteer in Cambodia'. As Raymond Apthorpe (2011:205) puts it, development interventions to some degree or another always involve a

¹⁷ Hollywood actress Anjelina Jolie first visited Cambodia in 2000 to shoot the *Tomb Raider* film. Inspired from her trip she then adopted a Cambodian child in 2002. Around the same time she set up the Maddox Jolie-Pit foundation on 12,000 acres of land in Battambang. The land was used for mixed conservation, healthcare and education projects under the rubric of a 'millennium village' – inspired by liberal economist Jeffrey Sachs.

¹⁸ Australian Tara Winkler started the Cambodian Children's Trust in 2007 in Battambang province and has since been heavily involved in the charity sector in Cambodia raising awareness about the problems of orphanages in Cambodia and promoting her NGO. She has featured on ABC television twice, has published a book, been a speaker at TED talks and frequently appears in the Cambodian and Australian media.

¹⁹ Australian ex- Hollywood marketing executive Scott Neason (who was former head of the major production company 20th century Fox) founded the Cambodian Children's Fund in 2004. The high profile NGO and its director have continued to be in media since then.

²⁰ Between 2012 to 2013 Australian mining magnate Gina Rhinehart donated more than \$1 million to Phnom Penh based anti-human trafficking NGO SISHA. Australian ex-policeman Steve Morrish who is founder and director of SISHA has been at the centre of a number of controversies over violent behaviour, late night informal gang type 'raids' on those questioning his work, and embezzlement (see Wood, 2014).

tabula rasa that Aidlanders make theirs to fret and fancy over, to dream and scheme on, to inscribe at will. Including when claiming in the name of local ownership not to be ‘in the driving seat’, while in actual practise never giving that up’.

Desire compels and pushes people from across the world to visit, volunteer, and work in Cambodia in the development industry. As will be explored in the case study chapters (4,5,6), desire is an important force that helps to hold together the climate assemblage where it acts as a ‘glue’ bringing together those who want to conserve forests, empower the rural poor, propel their careers and gain the benefits of being part of expert networks.

But it is also Cambodia’s particular material geography that has allowed these investments of desire to occur. Unlike say Chad or Sierra Leone or any other post-conflict country imagined as being on its way to development, Cambodia is a safe and accessible country boasting modern tourist infrastructure. Located next to two successful economies with their own long established tourist routes, Cambodia is easily accessible from regional hubs such as Bangkok and Kuala Lumpur. Security concerns have long ago dissipated and it is now possible to travel almost anywhere in the country on comfortable buses. Phnom Penh and Siem Reap are also increasingly cosmopolitan cities offering all the modern trappings of any other developed Asian city. Cambodia then has become a particularly important site for development – at the confluence of its real and imagined geographies, it has become a clean slate for climate change interventions.

1.5 Conclusion

This chapter has attempted to give a broad outline of the thesis as well as introduce some of the key problems it will deal with. It has given a brief sketch of the importance of force and power in accounts of climate change which leads to an examination of climate change discourse in the next chapter. It has also considered why Cambodia forms a particularly important site of development,

and 'carbon interventions'. The rest of the thesis will look at these two converging interests – climate change discourse on the one hand, and Cambodia as a site of development interventions on the other. This will come together in the fourth, fifth and sixth chapters which look at how climate change discourses have become stabilised within a 'carbon assemblage' in contemporary Cambodia.

Chapter 2. Theoretical Framing – Assemblages

2.1 Introduction

The last chapter presented some of the key themes of the thesis and introduced climatic change as a powerful discourse and rationality that has been spread across the world in the form of climate change interventions. It also gave an introduction to Cambodia and outlined how Cambodia will form the geographic focus of the thesis. This chapter will try and bring these two interests together by considering climate change networks as ‘an assemblage’. This will form the theoretical underpinning for the rest of the thesis, which will focus on how ‘climate assemblages’ have formed from various discourses, rationalities and flows of capital, and how they operate within Cambodia. The chapter will first clarify what is meant by the term ‘assemblage’, and outline why an assemblage approach has been utilised as opposed to a critical discursive, political ecology or ethnographic approach. It will focus on the form and content of assemblages by broadly considering how an assemblage approach may be useful for thinking through development interventions.

2.2 Understanding assemblages

Within the field of critical development literature in which this thesis is situated, there has been a sustained debate over methodological approaches employed to understand the process of development (see Bebbington, 2004; Bernstein, 2006; Crush, 1995; Kothari, 2005b). To give a brief summation of these debates, the first wave of critical development scholars employed a range of methodologies, from ethnography, to household surveys, to political ecology inspired approaches, in order to show the unexpected consequences of capitalist development and the divergence between development policies and on-the-ground outcomes (for instance: Bernstein, 1994; Blaikie & Brookfield, 1987; Hirsch, 1989; Schumann & Partridge, 1986). The importance of these pioneering

studies was their dedication to 'thick' ethnographic descriptions of livelihood struggles in the context of state policies and market forces that were often blind to inequality and injustice. A second generation of scholars, largely influenced by Foucault, employed critical discourse analyses to examine project documents, policies and development rationales and how they create technical apparatuses or an 'anti-politics machine' that enrol people into the inner logics of development (Crush, 1995; Escobar, 2011 [1995]; J. Ferguson, 1990; E. W. Said, 1993; Slater, 1997). Many of these analyses were especially concerned with power, and how a particular discursive grid that takes poverty and improvement as its focus legitimised the workings of the western development bureaucracy while simultaneously creating a new field of expertise. Several in-depth historical studies published in the 1990s also examined driving rationalities of 'development' within the context of industrialisation, colonialism and the enlightenment (Cowen & Shenton, 1996; Headrick, 1990; E. W. Said, 1993; J.C. Scott, 1998). The importance of these studies is that they showed that development is primarily an idea, reproduced through project documents and bureaucracies which is quite capable of reproducing itself autonomously from the actual material conditions of poverty that it takes as a target (Quarles van Ufford, Kruyt, & Downing, 1988).

A third wave of critical development theorists have turned back to ethnography, not so much to focus on livelihood struggles, but to examine the actions of those within aid bureaucracies. In particular they focus on how the 'travelling rationalities' of development are 'translated', through 'brokers and translators' within diverse circumstances and localities (Anne-Meike Fechter & Hindman, 2011; Kothari, 2005a; Lewis & Mosse, 2006a; T.M. Li, 2007; Mitchell, 2002; David Mosse, 2011a; Wallace et al., 2007). Rather than just focusing on the rationalities and discourses of development projects as espoused through policy documents and goals, they focus on how technologies, objects and individuals facilitate the production of success and project coherency under challenging circumstances. They bring to light the complex politics of aid-chains, the contingencies and failures of development interventions, and yet nonetheless show how the will to

improve and govern over the often-chaotic world of people and things is what matters in the reproduction of development institutions and ideas.

Of course, the history of critical development thinking is not linear, and is far broader than what is briefly presented here; political ecology and Marxist approaches have for instance been infused with radical feminism, post-colonialism and actor-network theory approaches to produce novel critiques and perspectives on development. Nor are the former studies necessarily less complex or less relevant to critical development studies than the latter – with an increasing trend towards discourse analyses and actor-network approaches in place of detailed village level case studies, detailed political ecology influenced studies that focus on livelihood struggles are as relevant and as needed as ever.²¹ The purpose however of this caricature of critical development studies is merely to broadly outline how an assemblage approach at once draws on elements of all three approaches, yet is distinct in key ways.

What distinguishes an assemblage approach from these three broad bodies of literature is that an assemblage approach does not privilege the epistemological *or* the ontological. It does not take discourses or rationalities to be the driver of development theory (as early Foucauldian inspired work has been criticised of doing) (De Sardan, 2005; D. Mosse, 2005), but nor does it fall back on the relativism of the everyday, or a prioritisation of the messiness, complexity and contingency of the local – what Massey (2005:110) terms the ‘fetishization of the local’, or Latour (2005:168) ‘social sciences obsession with context’ – as some of the more empirical village level work has been accused of doing. Rather, an assemblage approach challenges one to account for how micro techniques (as famously described by Foucault in *Discipline and Punish* (1977) for instance) combine

²¹ As Achille Mbembé (2001: 8) notes on studies on Africa: ‘[I]nstead of patient, careful, in-depth research, there are off- the-cuff representations possessed and accumulated without anyone’s knowing how, notions that everyone uses but of origin quite unknown— in Kant’s well-known formulation, “groundless assertions, against which others equally specious can always be set.”

with institutional rationalities, discourses and individual interests and desires to form durable bonds between people and objects. Rather than starting with discourses and rationalities and searching for their effects on the marginalised (an approach De Sardan (2005) terms 'deconstructive populism'), the challenge is to account for how an institution, set of ideas, and set of techniques maintain some sense of coherency across time and space; i.e. through what exact material process and geographies does the institution maintain itself? In this way, an assemblage approach is interested in force and power – how particular discourses and rationalities are projected across space, and the effects they have on bodies and space, but also on how desire, capital accumulation and individual interests form a constitutive part of assemblages. To elaborate on this, Deleuze's ontology of assemblages will be explained.

At base level, Deleuze (Deleuze, 1994; Deleuze & Guattari, 2009; Deleuze & Guattari, 1987) understands an assemblage as a confluence of forces; the meeting of different powers across a space which form durable relations and which can be reproduced in time. Importantly, assemblages cannot be understood as a complete whole where each internal component is subordinate to, and makes up an overall individual entity. Unlike classic metaphysics there is no distinction between subject and object, society and nature and inside and outside (DeLanda, 2006). Rather the 'flat ontology' of assemblage theory sees assemblages not as hierarchies of bodies but as collections of bodies, each of which 'drums to its own beat' (Allen, 2011b). As Anderson and McFarlane (2011: 124) put it 'deploying the term assemblage enables us to remain deliberately open as to the form of the unity, its durability, the types of relations and the human and non-human elements involved.' Rather than a unity, assemblages can be understood as being intersected by crisscrossing flows that exist beyond the focus of the researcher. In terms of studying climate change, the implications of such an approach are important; for instance much of the adaptation literature doggedly holds onto

a model of an external climate which is a part of nature and which effects 'inside' human groups which are a part of the 'social'.²² An assemblage approach helps to break down such binaries.

Assemblage thinking also acknowledges that bodies never find themselves in a single assemblage, orientated towards singular instrumental ends. Thus a 'climate assemblage' in Cambodia is not understood to mean a group of individuals all with homogenous aims and desires who doggedly pursue a singular set of institutional goals and interests. Rather a climate assemblage is composed of people with very divergent, contradictory agendas, who are none the less compelled to chase particular agendas at particular times. For instance, in his deployment of assemblage theory, Farías (2010) envisions an 'urban assemblage' as a heterogeneous group of elements that at key times come together forging strong relations between different bodies, while at other times only demonstrating weak or disjointed connectivity. Employing this approach hopefully mitigates against the common practice within much of the climate change-development literature of using abstract analytical units such as 'the state', 'market' and 'civil society' which tends to obscure actual relations between different people and objects rather than shed light on them.

Similarly, and in relation to researching development and environmental issues, assemblage theory complicates linear notions of causality. It resists the temptation to assign some hidden motor as the driver of outcomes and events – whether this be capital accumulation, a particular discourse, or the state, as is common in the critical literature, or laws, the market or institutions, as within mainstream development theory. For example, unlike neo-Gramscian approaches to climate change, assemblage theory does not look to any 'hegemonic block' or class contestations as a driver to climate politics (Levy & Egan, 2003; Meckling, 2011) and unlike neo-institutionalism or neo regulation theory, assemblage theory does not pose that the 'right' dosage of expertise, laws, rules, norms and scientific concepts, can casually overcome climate change and ecological problems (e.g.

²² As Taylor (2015) states, the adaptation literature sees the climate as 'an external system that provides exogenous stimulus and shocks to which society must then adapt' (Taylor, 2014: 6).

see Elzen, Geels, & Green, 2004; Percival, Schroeder, Miller, & Leape, 2009). Rather, an assemblage approach looks to climate change as a material phenomenon co-produced through capitalism and geographically uneven patterns of energy use and waste distribution. Vulnerability is understood as something assembled amongst groups and within particular landscapes in relation to particular histories. This thesis hones in on just one particular part of this broader assemblage – the institutions, people, flows of capital, rationalities and desires that have successfully been assembled together to deal with climate change on a global level.

The question then arises, what makes an assemblage an ontological entity- what makes it a material ‘thing’ in contrast to the vast complex and chaotic material world around it? For Deleuze, it is a question of relations. Assemblages are always made up of durable relations which can reproduce themselves across time and space. Thus a climate assemblage in Cambodia incorporates government officials who are embedded in Cambodia-specific patron-client relations – and whose careers are almost exclusively orientated toward moving up the patronage chain. Yet it is also incorporates foreign technocrats who are genuinely dedicated to liberal universal notions of democracy and the ‘rule of law’ – which in many cases are in utter contradistinction to their Cambodian counterparts. However, an assemblage forms when donor-government relations become stabilised through annual ‘roundtable donor-government meetings’ and through the development of institutions such as the Cambodia Development Cooperation Forum and Cooperation Committee for Cambodia, and most significantly through the annual flows of aid money and expertise from donor countries. In this instance, flows of aid money and expertise help to establish durable relations between different actors which can weather the ups and downs of government-international donor political relations. Indeed, aid to the Cambodian government has been increasing year on year regardless of criticism over land alienation and what the UN has termed the ‘worsening human rights situation’ in Cambodia (UNHCR, 2015). Thus, the focus of an assemblage approach becomes less the task of describing what is taken to be already there, but the

more onerous task of describing the actual process of assembling – the constant quest to establish secure relations between heterogeneous elements (see B. Anderson & McFarlane, 2011).

The aim is then to sketch how different discourses, rationalities and agendas have at different times given coherency to the climate assemblage – i.e. served to stabilise relations between diverse actors. Similarly, according to theorists of biopower such as Michael Dillon (2008) and Kevin Grove (2015), the challenge is always to account for how schemes of biopower are actually assembled, just as for governmentality theorists such as Mitchell Dean (2009), the emphasis is on how governing rationalities are hashed together to legitimise government, rather than seeing such rationalities as mere top down blueprints for establishing rule. In a similar vein Sandra Halperin (2013) reverses the common critical account of the relationship between market integration and development by emphasising that it is not merely the case that state-led development is driven by a desire to open up areas to market forces. Rather, at specific historical times elites have mobilised the concept of development both to profit from export orientated enclaves while simultaneously shielding agricultural hinterlands from capitalist relations. What all these authors suggest in different ways is then that assemblages cannot be thought of as merely being driven by any singular instrumental goals. Capital accumulation, the will to govern people and things, and popular discourses clearly interact in complex ways - and the rest of this chapter will focus on these complex interactions by considering a few key components of assemblages which will inform the rest of the thesis.

2.3 The event, the virtual and actualisation

For Kevin Grove (2014: 615) climate change programming can be characterised as ‘a complex and unstable assemblage of techniques, bodies, emotions, plans and strategies that are continually reconfigured in response to life’s refusal to be governed as intended’. This is a useful, if broad starting point for describing climate assemblages as used in this thesis, as it highlights some of the various material and immaterial components of an assemblage as well as the inherent instability of assemblages and their constant attempts to evolve in the face of contingency. Tania Li, who similarly

envisions assemblages as a process of 'pulling disparate elements together', offers six essential practices crucial to the establishment of assemblages, which are worth repeating here at length:

1) Forging alignments: the work of linking together the objectives of the various parties to an assemblage, both those who aspire to govern conduct and those whose conduct is to be conducted. 2) Rendering technical: extracting from the messiness of the social world, with all the processes that run through it, a set of relations that can be formulated as a diagram in which problem (a) plus intervention (b) will produce (c), a beneficial result. 3) Authorizing knowledge: specifying the requisite body of knowledge; confirming enabling assumptions; containing critiques. 4) Managing failures and contradictions: presenting failure as the outcome of rectifiable deficiencies; smoothing out contradictions so that they seem superficial rather than fundamental; devising compromises. 5) Anti-politics: reposing political questions as matters of technique; 6) closing down debate about how and what to govern and the distributive effects of particular arrangements by reference to expertise; encouraging citizens to engage in debate while limiting the agenda. 7) Reassembling: grafting on new elements and reworking old ones; deploying existing discourses to new ends; transposing the meanings of key terms.

(Murray Li, 2007:266-267)

Although this definition has been criticised for over-emphasising the governmental nature of assemblages (i.e. not all assemblages are attempting to impose order and govern) as well as ignoring other crucial aspects of assemblage theory such the relation to 'flight', 'becoming' and territorialisation, which were all essential aspects of Deleuze and Guattari's notion of an assemblage (Legg, 2011), it is nonetheless a useful approach for the purposes of this thesis, and for studying development assemblages. In particular, the focus on rendering technical and de-politicising through the deployment of expert knowledge, and reassembling to deal with contingencies, resonates with

contemporary ethnographic work on development (as introduced at the beginning of this chapter) and suggests a useful approach to understanding how concrete techniques are employed by experts in the climate assemblage to deal with 'life's refusal to be governed' (Grove, 2014: 615).

To extend these insights into the practices of assemblages, it is important to return briefly to Deleuze and Guattari's original ontology of assemblages as it provides some useful clarity on how an assemblage actually exists in time and space (see K. Grove & Pugh, 2015). Deleuze and Guattari's understanding of assemblages fundamentally relates to the difference between 'the event', 'actuality' and 'the virtual'. These three terms are crucial to Deleuze's ontology. The event refers to the messy material world of overlapping bodies, trajectories, forces and circumstances. Climate change for instance can be considered an event, not in the sense that it is a singular moment in the linear progression of time; a change to the otherwise regulated climate, but an unpredictable unfolding of a set of forces which cannot be attributed to any singular factor; the culmination of capital accumulation, and its unique industrial trajectory, along with multiple ecological trajectories and forces. On a smaller scale, a village workshop, as part of a carbon mitigation project, is also an event in that it is not solely determined by the desires or goals of those organising the workshop – people always come late, are often interested in the free food more than the content of the workshop, and rarely participate as expected. Yet the very real potential for organising a workshop – based on previous experiences, and with the assistance of labour and resources, produces very real – if unexpected – effects. The event thus has a virtual or potential element to it as it refers to the unfolding of a potential as determined by a confluence of forces. It is here that the second term in Deleuze's ontology comes in – the virtual.

The virtual refers not to a parallel reality but an immaterial potential. The virtual can never be actualised perfectly in real states of affairs as actualisation is always the unpredictable and messy outcome of multiple forces. Rather, the virtual is a state of affairs that particular forces attempt to

actualise. Jamie Peck gives a good example of this from his discussion on neoliberalism. He notes that neoliberalism has

only ever existed in “impure” form, indeed *can* only exist in messy hybrids. Its utopian vision of a free society and free economy is ultimately unrealizable. Yet the pristine clarity of its ideological apparition, the *free market*, coupled with the endless frustrations borne of the inevitable failure to arrive at this elusive destination, nevertheless confer a significant degree of forward momentum on the neoliberal project. (Peck, 2010: 7)

The virtual is not impossible because it is inherently disconnected from the actual/real, as in an impossible fantasy; instead the virtual is dynamically related to the actual and based upon a real potential. Yet as real states of affairs are never in stasis, but rather a process of becoming, any plan to create a static state of affairs, or to actualise the virtual in all its entirety, will be frustrated. So there is no such thing as ‘neoliberal societies’, but rather *neoliberalising* societies. Li’s emphasis on problematisations and ‘rendering technical’ is a particularly useful example of this as it highlights the difference between ‘the diagrams of power’ that circulate within expert networks and which give coherency to development assemblages, and the messy word of ‘the actual’ which expertise attempts to tame and represent (see also Mitchell, 2002; D. Mosse, 2005).

This distinction between the virtual and the event may seem minor, but it takes on significant analytical and empirical importance when looking at assemblages. For instance; in looking for the effects of neoliberalism, or even colonialism, on the ground, one may find that the colonial or neoliberal project never succeeded as planned, and in fact was frustrated by local dynamics, or even entirely failed in its objectives. The conclusion is often that neoliberalism or colonialism never actually made it to a particular place. Yet this neglects how the virtual aspect of an assemblage reconfigures relations between people in villages, the market and the state in novel and unpredictable ways. A project does not have to be formally successful to make a mark on the world.

In fact, often the opposite is the case – that it is through failure and attempts to overcome them that new problematisations and solutions evolve and spread across the world (for examples of colonial hygiene see W. Anderson, 2006; Bashford, 2004 for examples of neoliberal thought in development see ; Cooke & Kothari, 2001; Craig & Porter, 2006; Kothari, 2005b). Rather than looking merely at obvious outcomes, it is essential to understand how plans and worldviews are passed along networks, and modified and adapted as they are actualised in diverse circumstances. Just as Walter Mignolo (2012) has usefully articulated the idea of *coloniality* as a particular way of thinking and acting that is enframed in colonial concepts, so too *neoliberalisation* as a process of applying a set of ‘technical solutions’ to real world problems (Ong & Collier, 2008), provides a useful analytical focus that goes beyond the search for the wholesale linear transformation of an economy or society.

Virtual projects in other words are always unfinished and are inevitably frustrated by the resistance of the material world. It is exactly at this conjecture – of the virtual program that desires to order the world, and the messiness of the material world and its resistance to governing, that assemblages dwell. It is this ‘other’ to the virtual, its outside, that gives meaning to assemblages. It could be said that it is the messiness and disorderliness of the material world in need of improvement and governing that the assemblage territorialises, problematises and abstracts into technical programmes, plans and interventions and which is ultimately the motor of development theory and practise. In this sense the assemblage has a parasitic relationship with its outside (cf. Bauman, 2013: 9)²³ – whether this be forests in need of governing, or the vulnerable that are in need of adaptation. This is a theme that is explored later in the thesis; that climate assemblages far from the clunky modernist state-led development assemblages of the mid-20th century as described by Scott (1998), Escobar (2011 [1995]) and others, and which were largely blind to nuance, resistance and critique, now demonstrate a bewildering ability to colonise critical theory and radical resistance and draw a diverse array of concerns into their operating rationale (see for example Fine, 2002;

²³ According to Bauman ‘the Modern state and the modern intellect alike need chaos – if only to go on creating order’.

Goldman, 2006; David Mosse, 2004; Rich, 2013; Z. Young, 2002). The way in which the climate assemblage immunises against critique, by attempting to take what is outside its operating rationale is a topic of the next chapter.

The final term in Deleuze's three-fold ontology is 'actuality'. As has been hinted at above, actualisation is the process of realising the virtual within real states of affairs and bodies. What this third aspect of the ontology adds is a consideration of the very real material effects of virtual programmes. While much of the literature from the anthropology of development focuses on development bureaucracies as 'an independent generator of ideas, goals and interests' (Quarles van Ufford et al., 1988: 77) and emphasises 'the importance of simplification or ignorance' (David Mosse, 2004), this thesis is also attentive to the very real material effects of development programming. Development bureaucracies create wide-ranging and very conspicuous material effects in the places they operate (as will be examined for Phnom Penh in chapter 4). As academic and populist critiques continually demand development be more in line with local realities, the state, private capital and NGOs are quietly going about engineering both physical and immaterial social infrastructure across territories with a wide range of material effects. All around us governmental programmes are actualised with increasing efficiency. Forests for instance are being transformed into agro-industrial plantations in line with government policies at an alarming rate, peasants and urban dwellers are evicted from land to make way for developments, and populations are increasingly territorially managed through borders and other technologies of sovereignty. Thus it is essential to keep sight of the techniques and technologies that allow actualisation of virtual programmes.

This distinction between 'the event', 'the virtual' and 'actualisation' will be employed throughout the thesis and will assist in making sense of the climate assemblage in its different forms in Cambodia.

2.4 Technologies and Techniques

To form durable relations requires much more than mere meetings, flows of capital, discourses and organisations. As Bruno Latour (Latour, 1993; Latour & Woolgar, 1986) has pointed out, durable networks require constant acts of 'translation' and 'brokerage'. For one assemblage to be dominant over others there must be in place efficient means of translating agendas and interests across space (Allen, 2011a). This could be the brokers and translators who play a crucial role in the everyday life of development bureaucracies (De Sardan, 2005; Lewis & Mosse, 2006a) or the delicate balance between coercion and seduction that facilitates the expansion of agendas and interests across space within aid-chains (Wallace et al., 2007). For Latour, non-human actants and technologies are particularly important within his ontology of actor-networks. These actants and technologies 'do work' by translating goals and coordinating interests. 'Immutable mobiles' – endlessly reproducible and transportable objects- are particularly important here.²⁴ In development assemblages project documents and monitoring and evaluation technologies circulate through donor-NGO aid chains and help to produce the truths that project success is dependent on. These technologies and techniques however are rarely the object of ideology, politics or enquiry themselves. Their efficacy derives from their ability to effortlessly and unquestioningly flow and be reproduced within development networks. Just like capital, they do not require people to believe in them for them to perform their purpose (see Žižek, 1989).

In the climate assemblage, a host of 'immutable mobiles' silently translate goals, interests and agendas across networks. For instance, as Maia Green (2011) has shown, documents used within development interventions, and the categories of people they take as their target (e.g. 'AIDS victims') are not merely passive descriptions of the world 'out there', but rather these documents

²⁴ Latour gives the example of the measuring flask, vacuum pump or statistical graph which can be employed within scientific networks and which can be used within any cultural or linguistic setting, being dependent only on people learning the scientific method. As Latour emphasises it is not the case, as positivists claim, that these seemingly neutral and distanced tools, combined with scientific methods uncover an a priori truth. Rather these actants perform 'work' by constantly reproducing such truths throughout an assemblage (Latour, 2012).

and categories 'do work'. So too, Jasanoff (2001) and Newell and Patterson (2010) have considered techniques for calculating carbon emissions and reductions (for instance the 'tonne of carbon dioxide equivalent' or (tCO₂e)) as both novel technologies and 'immutable mobiles' that allow carbon interventions and the 'carbon economy' to spread across space. As will be further explored in later chapters a whole host of technologies and techniques are employed within the climate assemblage which allow for the stabilisation and coordination of interests and agendas. These include not only policy documents, but 'vulnerability maps', 'participatory rural appraisals', 'safeguards' and 'monitoring and evaluation protocols'. Just as Foucault in his later work shifted from the discursive/ archaeological approach developed in *the Archaeology of Knowledge* (1970) to the genealogical approach which was more focused on the 'micro techniques' and technologies which were employed within an 'apparatus', so too contemporary critical literature on development has become acutely aware of the technologies and techniques which sustain development assemblages (Gidwani, 2008; K. Grove & Pugh, 2015; Murray Li, 2007; Ong & Collier, 2008; Tsing, 2005; Watts, 2003). This thesis too attempts to draw out the techniques and technologies, all of which help to actualise virtual programmes, as they are deployed within the climate assemblage in Cambodia and which allow it to form stable relations across space and time.

2.5 Territorialisation

One other crucial element of the Deleuzian notion of assemblages which is especially important for geographers, is the relation to territory (Dewsbury, 2011). Deleuze and Guattari in their two volumes of *Capitalism and Schizophrenia* utilise the twin concepts of territorialisation and de-territorialisation. Crucially, they point out that it is impossible to understand assemblages without taking into consideration their spatiality, and especially the manner in which they create and destroy territories. For Deleuze and Guattari, assemblages can be broadly characterised by their degree of territorialisation or de-territorialisation. Territorialisation is the process through which an assemblage forms across a particular area on the surface of the earth and bonds are formed to that

particular area. Territories form when people invest meaning and desire into a particular place – when they make it ‘theirs’ and mark it out from land in general. Territories also denote the spatial relations of an assemblage – how they solidify in particular places over time and produce certain types of movements or geographies. The concept of territorialisation has been usefully applied to the field of development to help elucidate the dynamics of international development as it territorialises through nation-states (and their territories), while at other times de-territorialising through markets and fragmenting the sovereignty of states (Craig & Porter, 2006; Duffield, 2007; Ong, 2006; Watts, 2003). As Gidwani puts it ‘the development diagram like any diagram is spatial – it always marks out a territory for nationalisms and capitalisms to stake out’ (Gidwani, 2008: 79).

At a finer scale, territorialisation is also helpful for understanding the climate assemblage in Cambodia as it encourages a spatial account of practices and the distribution of bodies and objects. For instance, as will be explored in chapter four, the Climate assemblage in Cambodia has ‘territorialised’ Phnom Penh in a particular way – carbon experts move about the city in a distinct way, often geographically restricted to only a few areas, which transforms the city’s material geographies in novel ways. Also, the climate assemblage has a tendency of territorialising Cambodia (or ‘segmenting’ in Deleuzian terminology) into discrete ‘project sites’ where particular NGOs or government departments territorialise a village/commune/province (cf. Baird, 2016; Frewer, 2013). Carbon projects are thus inherently territorial; always being dependent on delineated spaces in which the project is contained; where success is to be measured and produced. At the same time territories can also be existential or immaterial (see Guattari on ‘existential territories’ (Guattari, 2005)). Development experts, NGOs and government departments create particular territories which do not always overlap with real material places. For instance: ‘indigenous people’, ‘gender mainstreaming’ or ‘conservation’ become territories of particular experts, NGOs, key bureaucrats or government departments, often with the ramification that there is competition between different actors to defend their interests and the investments they have in such territories.

These dynamics between the event/the virtual/actualisation, and territorialisation are developed here at length in the hope they will serve as a heuristic that can effectively tackle some of the complex and often misunderstood issues surrounding development and climate change in Cambodia.

2.6. The Rationalities of Climate Assemblages

The main outline of an assemblage approach has now been given, and it is possible to understand the broad *form* assemblages take in terms of *technologies, virtual/actual/ event* and *de-territorialisations/re-territorialisations*. If technologies are important material objects that facilitate the everyday reproduction of climate assemblages, then it is also important to turn to rationalities and discourses which exist in the virtual and which become the organisational goals and agendas of climate assemblages. The next three sections will give a very brief outline of the three main rationales of climate assemblages which are *capital accumulation, biopower, and desire*.

2.6.1 Capital Accumulation

Considering claims that ‘nature’ is now entirely ‘produced’ within the bounds of capital accumulation (Braun & Castree, 2005; Castree, 2008; N. Smith, 2008),²⁵ and that many of the locations where the logics of carbon interventions spring from are also from where capitalist interests into climate change have been articulated most clearly (Cooper, 2010; Larry Lohmann, 2011; Newell & Paterson, 2010), it is almost impossible to ignore how the logic of capital accumulation influences the trajectory of climate assemblages.

Yet some care has to be taken here in specifying the relationship between capitalism and ‘nature’. As was previously mentioned, assemblage theory attempts to depart from the nature-society binary. As

²⁵ A position that is not without objections – see Bakker and Bridge (2000) and Gibson-Graham (1996)

such, even framing the question of how the climate assemblage interacts with ‘nature’ – even ‘second nature’ produced through labour (N. Smith, 2008), is already problematic as it only complicates, rather than disposes with this binary (Bakker & Bridge, 2006). Taking a materialist approach gives no ontological weight to either social assemblages or constructs, or to matter. As Deleuze and Guattari put it ‘man and nature are not like two opposite terms confronting each other—not even in the sense of bipolar opposites within a relationship of causation, ideation, or expression (cause and effect, subject and object, etc.); rather they are one and the same essential reality, the producer-product (Deleuze & Guattari, 2009: 5). From this reading, matter itself is not only the object of analysis with its own agency in codetermining how the actual unfolds²⁶ – it is the only thing available to analyse (even speech and thought have a material basis). Therefore in understanding how the climate assemblage interacts with capitalism, it is important to acknowledge that capital does not impose itself on an external nature, or over-consume nature where climate change is an unwanted side effect and disruption upon nature. Nor does capital merely exploit nature by commodifying nature through carbon offsets or carbon trading. Rather capitalism cannot exist outside of the biophysical relations of a certain place and time (Massey, 2005: 24-26; Moore, 2015: 37-40). Climate change co-produces capitalism as much as capitalism has co-produced climate change. Climate change has for instance spurred on new forms of capital accumulation (‘climate crisis capitalism’ and ‘decarbonisation’ (Funk, 2014; Newell & Paterson, 2010)). Capitalism has thus re-territorialised with accelerating biophysical changes in particular places. So too the particular ‘world ecologies’ of capital as it works through biophysical processes alters local and global ecologies in unpredictable ways (Moore, 2015). Thus the climate assemblage cannot be thought of as outside or even in response to the material realities of climate change (i.e. working *upon* climate change). Rather the climate assemblage itself is at the conjecture of processes of capital accumulation *and* the very real biophysical forces that are altering the climate. Once again, an assemblage approach

²⁶ This statement is suggesting that the virtual/actual/event ontology introduced is not confined to human intentionality. As Deleuze points out in *Difference and Repetition* all bodies have potential virtual states (i.e. ice has the potential to transition into water).

starts in the middle where any assemblage is always at the confluence of forces – of agendas, rationalities, material processes and people rather than a preformed thing that exists above or over the material world.

In the third chapter, neoliberalism as a particular form of capital accumulation will be considered in terms of how it has broadly shaped approaches to climate change and conservation rationalities. Neoliberalism here is not just a virtual rationality (a programme of altering relations between state and market) but an event particular to the last 45 years (defined by the crisis of over accumulated finance capital). In the latter chapters which give detailed case studies of carbon projects in Cambodia, capital accumulation will also be considered as an important motivation for the reproduction and expansion of the climate assemblage in Cambodia. Thus, flows of capital (in the form of profit, loans and aid money) will be traced as they travel from donors and investors to government departments, NGOs, consultants, beneficiaries and back to investors. This has the potential to shed light on the actual financial flows that sustain and enable the climate assemblage.

2.6.2 Biopolitics

Vitally important for understanding assemblages are the rationalities and discourses which give meaning to everyday practise and give some form of overall institutional agendas. As Dean (2009: 13) points out, following on from Foucault, the significance of a rationality is not that it provides a step by step implementation guide or instructions, but rather it provides a ‘grid of intelligibility’ where a series of practices, ways of viewing the world and problematisations can be ‘lashed together’ for the sake of particular interests and agendas. Rationalities are not merely ‘top down’ programmes imposed on local interest and agendas, but are often ways of talking about, and problematising the world which are articulated *through* localised interests and agendas. Rationalities in other words coordinate agendas and interests and articulate them according to particular shared

and common discourses which travel through the assemblage. For instance, Cambodian ministries and departments often deploy neoliberal rationalities, not merely because they wish to expand the neoliberal project, but because it is a convenient way of gaining access to resources, of legitimising the practices of one department (or individual) over another, and of re-deploying neo-liberal techniques and concepts so as to increase individual territories.

Rationalities thus exist in a virtual form, but are always actualised in complex, unpredictable and diverse ways at particular nodes in the assemblage. Unlike work by scholars such as Simon Springer (2010) who have tackled the question of neoliberalism in Cambodia, this thesis rejects the idea that the existence of neoliberalism can be found and explained a posteriori in an examination of its supposed effects on the poor. Once again neoliberalism is not a top down transcendent force imposed on the marginalised. It is an assemblage of ideas, techniques and technologies, flows of capital and even desire which are deployed in very specific ways across space, and which can be only understood by tracing out these flows.

This thesis will focus on the manner in which rationalities are involved in the practice of governing; that is how people and things are made governable. This includes considering how virtual 'governable spaces' (Rose, 1999: 32) or territories are produced which can be actualised in real places (i.e. creating Cambodia as 'a post-conflict nation' where poverty and natural disasters are concentrated), but also how groups of people are subjectivised and made governable (i.e. groups of people labelled as 'vulnerable to natural disasters' or 'lacking resilience' and hence in need of intervention). At the same time, the analysis will focus on how the climate assemblage deploys particular ways of knowing the world and the preferred techniques it utilises for intervening in the world.

One particularly enduring rationality focused on in this thesis, and which has formed the basis of liberal techniques of governing in the context of a dangerous climate, is biopower. At a very broad level, biopolitics is a form of governance that takes life itself – that is, its immediate biological

function, as an object of governance. This literature is largely informed by Foucault's twin insights that on the one hand, since the late 18th century life has become a distinct concern of both western science (the seemingly unassailable difference between organic and inorganic material) as well as theories of economic value (that place life and its ability to labour at the centre of theories of value) (Foucault, 1970). Foucault also sketched the rise of what he termed state biopolitics – that is the point at which 20th century western liberal states take the protection and enhancement of life as found within the population as their *raison d'etat* (Foucault, 1978). In particular, Foucault interrogates the way in which the management of life as a preoccupation of the state has seen the expansion of government. For Foucault biopower is a very specific form of power, and biopolitics a specific way of governing – one that discovers itself through the supposedly 'natural' existence of events that only statistics can reveal and which fixates on the biological health of populations. Biopower tends to work through 'apparatuses of security' – that is, it does not directly intervene into individual lives, the management of the household, or the national economy. Rather it takes economic and biological flows as a natural given order which can only be managed in a non-interventionist way – i.e. through maximising the flows of goods and minimising the flows of bads in the most cost effective way as possible. Biopower can be thought of as mode of power distinct from sovereignty or disciplinary power in that it legitimises itself on the protection and enhancement of the overall life of the population (giving rise to the welfare state and the myriad technologies such as state insurance). It makes live, rather than the old sovereign power that lets live and can at any time intervene to make die.

This has spawned a substantial literature that has expanded substantially beyond these insights to examine a wide range of biopolitical concerns such as: how sovereignty takes biological life as its target (Agamben, 1998; Esposito, 2004), how colonial regimes employed biopolitical technologies (Bashford, 2006; Duncan, 2012; Lafuente & Valverde, 2011), how neoliberalism (and resilience) are implicated in biopolitics (Chandler, 2014; Collier, 2011; Cooper, 2008) and the biopolitics of sustainable development (Reid, 2013; M. Smith, 2011) and climate change (Baldwin, 2009; Dalby,

2013; Yusoff, 2010). As a number of scholars such as Andrew Baldwin have pointed out, a consideration of biopolitics tends to 'sharpen our understanding of political rule in an era in which climate change is framed as a security issue' (Baldwin, 2003: 417).

This thesis takes biopolitics as an important virtual rationality of climate assemblages. It argues that biopolitics as a rationality gave rise to early climate assemblages in the context of the 19th-century colonial experience. It is further argued that contemporary climate assemblages are thoroughly biopolitical in their ambit. That is, they legitimise their own existence and expansion not based on a supposed ability to protect an external nature from the most damaging aspects of humanity, but rather the opposite – i.e. their purported concern for human life and its ability to 'adapt' and be 'resilient' in the face of dangerous climate change. Biopolitics is thus an important thread which helps to elucidate the colonial legacy of tropicity on contemporary attempts to deal with a dangerous climate in the global south.

2.6.3 Desire

Desire is central to Deleuze's understanding of assemblages, and to a host of scholars doing critical work on colonialism (Bignall & Patton, 2010; R. J. Young, 1994), green neoliberalism (Bakker, 2010; Illouz, 2013; Žižek, 2009), the development industry (Anne-Melke. Fechter, 2012; Roy, 2010) and rural migration (Holly High, 2014). As has been highlighted throughout this chapter, purely focusing on instrumental, top-down reasoning or neoliberal rationales obscures as much as it reveals.

Dominance, or in the context of assemblages, the stabilisation of unequal power relations, is not secured by mere force or imposition but *through* the coordination, alignment and production of interests, agendas and desire. Individuals do not travel across the world to work in Cambodia at an often-reduced salary and with the associated logistical troubles merely because they wish to accumulate capital, or want to extend biopolitical rationalities. People – Cambodian and foreign – do not work day and night to complete climate change projects – merely because they wish to exert power over the marginalised, or to appease their bosses. Rather, desire compels people to seek out

new experiences, to gain insights into 'the developing world', to help the needy, to do something different, to 'make a difference', to better their careers and gain respect, to become well known, to be able to travel, to have a good time, to enjoy life, and to live comfortably (for a Cambodia specific example see Anne-Melke. Fechter, 2012). Desire is thus like an invisible glue that helps to hold together the assemblage.

Similarly, at the edges of the climate assemblage where village participants are enrolled in climate change projects, their engagement cannot be understood as merely instrumental. Many people yearn for the modernity which development projects seemingly promise. As well as hoping for material advantage from development projects, they often also seek status and power and the opportunity to be involved in seemingly modern and important development projects (Cooke & Kothari, 2001; H. High, 2008).

Desire is thus considered an important force which compels individuals to form relations with the climate assemblage. Crucially for Deleuze, desire is not something that comes from within an individual, but something that is assembled by social machines. Nationalist desire, or even the desire to 'help reduce poverty' is fundamentally not about individuals realising their inner wants, but about groups of people re-articulating and expressing sentiments and discourses that circulate throughout broader social assemblages.

2.7 Methodology

The research methodology was designed, adapted and implemented according to the above concepts and areas of focus. Empirical research on the global climate assemblage was limited to a document analysis (of project documents, commentaries, evaluations, statistics, reports, personal accounts, websites and analyses) of major climate change programmes being carried out by governments, experts, multilateral institutions and NGOs. From this initial analysis a broad climate assemblage was mapped out which included the actors, institutions, discourses, rationalities and

flows of money that facilitated dominant programs and approaches to climate change (chapter 5). A similar process was carried out for the climate assemblage in Cambodia. This then led to interviews with available actors who were involved in the climate change assemblage. These two initial processes led to the gradual focus on biopower, risk and neoliberalism and this increasingly became a focus of interviews and document reviews. In the case of the climate assemblage in Cambodia, there was a particular focus on Phnom Penh where attempts were made to map out relations between different actors, ideas, institutions and events through repeated interviews, surveys and ethnographic work. Recruitment of interviewees was done as I became more involved in the climate assemblage and identified people involved through meetings, workshops and from information gathered from other interviewees. All interviews were transcribed and translated (if done in Khmer) and cross analysed using NVIVO software for relevant key words and themes. Fluency in Khmer allowed all fieldwork in Oddar Meanchey and Mondolkiri (and half the interviews in Phnom Penh) to be conducted in Khmer without translation. This portion of work also involved discreet field trips to explore particular projects of the climate assemblage. A detailed methodology for this field work is given in chapter 4.

The two case studies that form chapters five and six were chosen based on both initial interviews with people involved in the climate assemblage in Phnom Penh, and a review of the relevant literature. They were not chosen due to being representative of every climate change project in Cambodia but due to them being iconic projects that could give valuable insights into two different forms of climate change interventions (one climate change mitigation and the other climate change adaptation). Over a four year period multiple trips were made to both study sites (more than ten different trips for between three days to three weeks for Odddar Meanchey and six separate trips ranging from one week to two weeks in Mondolkiri). In all cases the discrete methodology used in a particular place was based on the form of the climate assemblage itself (detailed in chapters four, five and six). Tracing financial flows for instance led to interviews with particular people in the Forestry Administration, in the local level bureaucracy and to community forestry members.

Attempts were also made to trace how project concepts were stretched over space – how they travelled from Phnom Penh to regional NGOs to village forest committees. In the case of Oddar Meanchey, a survey of participants was required to understand their position within the project in terms of financial flows and labour. So too mapping was identified as a useful tool to give a quantitative account of important issues that were repeatedly raised in interviews (land conflict and militarisation). In the case of Mondolkiri more in-depth interviews and ethnographic work was required to focus on how villagers in the study site interacted with the project and better understand their broader livelihood struggles. Focusing on a grounded methodology based on tracing relations and listening to people talk about climate change projects in their own terms helped elucidate the nature of the assemblage and understand how virtual concepts and ideas were actualised in discrete places.

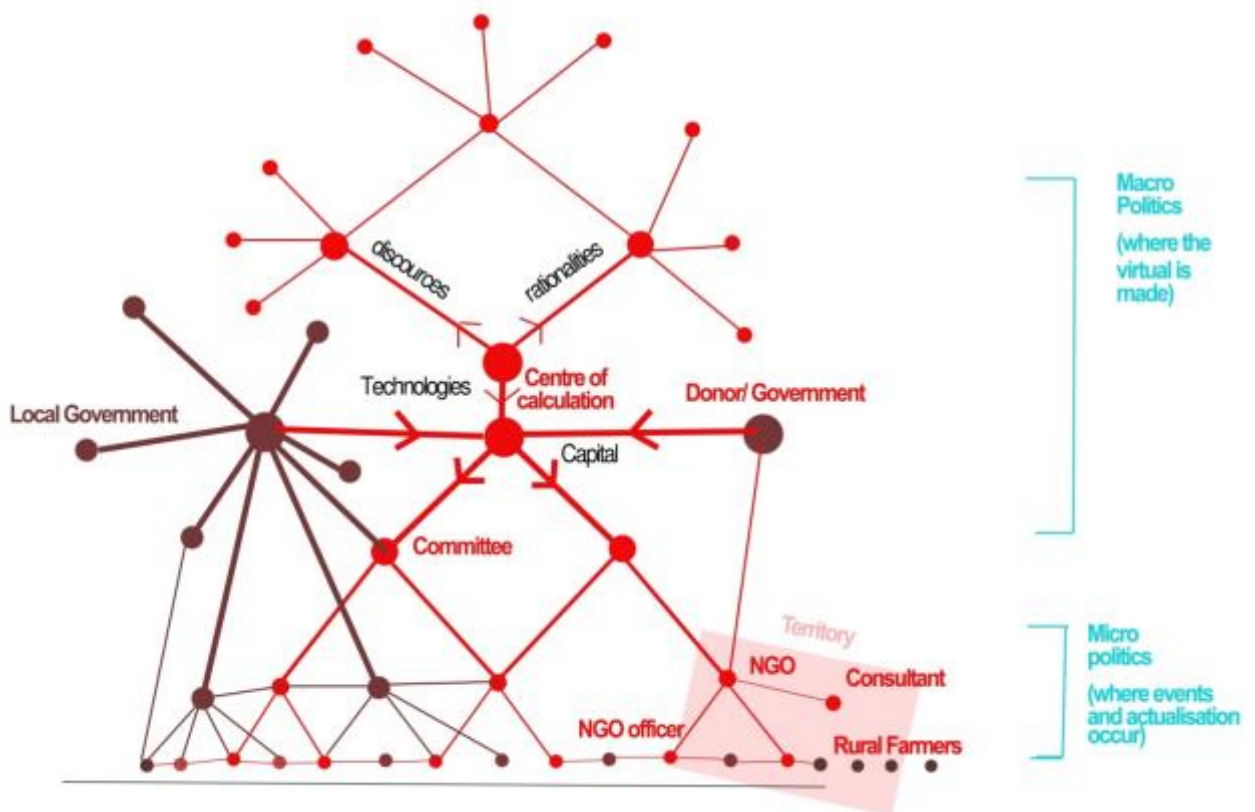
2.8 Conclusion

This chapter has provided a three-pronged approach to tackle the study of climate assemblages. Firstly it will examine the *virtual* component. The focus of the next chapter will be on biopolitical rationalities and how they have circulated within an emerging climate assemblage. Capital accumulation both as a rationale that guides how finance, labour and knowledge flow through the climate assemblage, and economic crisis as an event, will also be considered. The fourth chapter will move to considering Cambodia and how the climate assemblage has been actualised there. Specific technologies that help to reproduce these rationalities, and the institutions they are embedded in, will be of particular concern. Interviews, government policies, NGO project documents and ethnographic observations will be drawn upon to trace out how biopolitics and technopolitics given coherency to the climate assemblage in Cambodia.

The fifth and sixth chapters will examine two different climate change projects. A finer examination of how desire infuses the practice of particular actors in the climate assemblage will be considered through reference to interviews and ethnographic encounters. Throughout the analysis the role of

technology will also be considered. Figure 1.1 below attempts to summarise this chapter by providing a schematic of an assemblage. This diagram attempts to give a sense of how the methodology was formulated based on the assemblage itself. Arrows show how technologies, discourses or finance tend to flow in a particular direction. As such the methodology was employed to trace these flows. Similarly, understanding relations between different actors (farmers, NGOs, consultants) required tracing flows of money, ideas and labour.

Figure 2.1 Schematic Example of an Assemblage



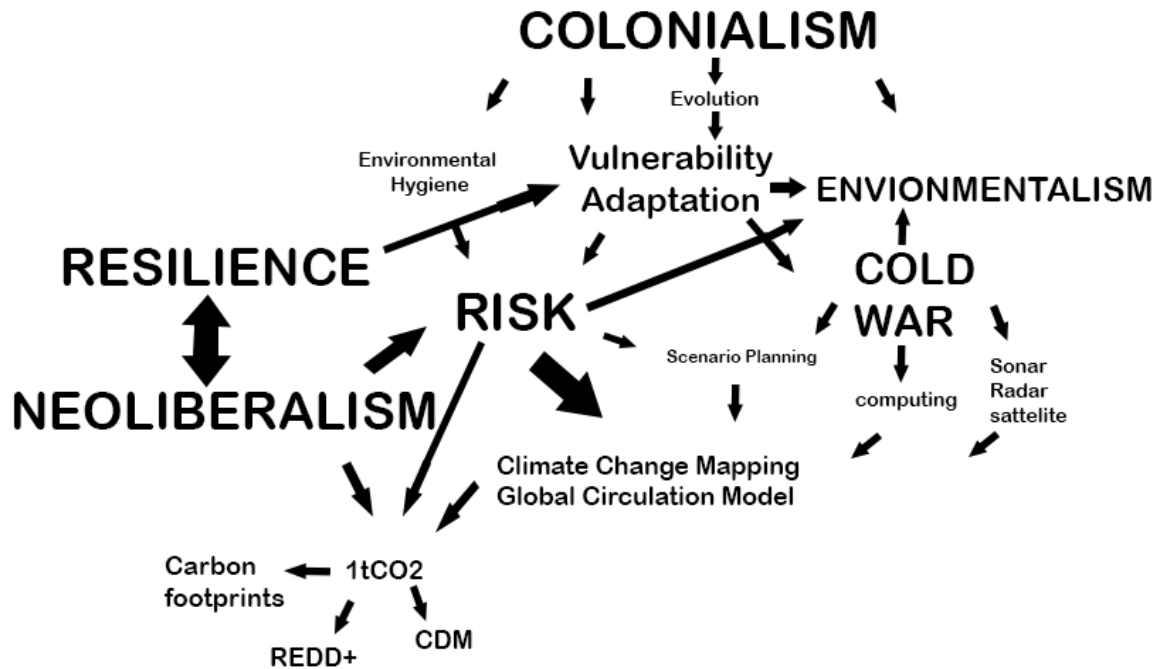
Source: author

Chapter 3. The Rise of the Global Climate Assemblage

Following on from the introduction, this chapter attempts to give a sketch of how the 21st century climate assemblage came into being. Whereas the introduction gave a broad outline of the nebulous origins of the climate assemblage the aim of this chapter is to come to a more specific and detailed account of the logics which are at the heart of 21st century climate change interventions –specifically the neoliberal and biopolitical rationales which are so dominant and ubiquitous within contemporary thought on climate change. As outlined in chapter two this is not a conventional account of climate change. Rather, using the assemblage approach, this chapter traces different rationalities, discourses and techniques that have been forged together within policy documents, academic writing, international conferences and through the ideas of influential individuals, business coalitions and politicians; yet all of which have solidified into a matrix of dominant approaches to climate change. It confines itself to an analysis of policy documents, media statements, industry reports and secondary sources and focuses predominantly on the virtual.

This chapter shows how specifically 20th-century phenomena such as the economic shocks of the 1970s, the rise of neoliberalism, the discovery of carbon dioxide as a greenhouse gas, and climate modelling have all become important components of the climate assemblage. In particular, this chapter focuses on four elements which it is argued are most salient for understanding the contemporary climate assemblage and its experiments in places like Cambodia: 1) the logic of risk reduction 2) the rise of carbon markets 3) the rise of resilience and adaptation as a biopolitical logic 4) and the coming together of older ideas on development with new neoliberal approaches to environmental and social problems. Figure 3.1 below provides some of the major rationalities, concepts and technologies that are constitutive of the climate assemblage and their relations.

Figure 3. 1 Concepts, Rationalities and Technologies of the Global Climate Assemblage



Source: author

As the following chapters will reveal it is not being argued that the expansion of these rationalities across the globe is a *fait accompli* – the messy and precarious actualisation of carbon markets and adaptation projects in discrete locations is more often than not a contradictory, incomplete and failure-prone process rather than the simple expansion of western hegemony across space (K. Grove, 2014).

3.1 The re-discovery of climate change as a global environmental problem

Mainstream contemporary environmentalism, although polymorphous and having a complex and geographically diverse history (Conley, 1997; Worster, 1994), is in many ways a product of the U.S Cold War experience. As McNeil and Unger (2010:11) put it '[M]odern environmentalism has many

parents and grandparents, but it is, among other things, a child of the Cold War'.²⁷ It is argued here that ameliorating the risks that were made visible through global projects such as colonialism and world war formed an important part of what would come to be 20th-century environmentalism. It is from this legacy that 21st contemporary climate change interventions take their precedence.

Across America and Europe, from the 1960s to 1980s, older Arcadian and romanticist forms of environmentalism began to converge with broader concerns over the risks of industrial contamination, the risks of militarised environments (Hamblin, 2013), and pollution in its many forms (Beck, 1992; Guha, 1996; Merchant, 2007; Worster, 1994).²⁸ In the U.S local citizens groups sprung up across the country opposing environmental pollution, and in reaction, some of the U.S's most important environmental regulations were rolled out²⁹ (from 1950-2000 over 70 pieces of environmental legislation were passed in the US senate). If the sanitation and hygiene movements of the colonial period had seemingly abandoned the ever important western dualism of Nature/Society to pragmatically focus on the need to govern 'environments' for the regulation of human health, then it was this concern that was amplified in the Cold War period. In the early colonial phase of the internationalisation of the WHO for instance, 'environmental hygiene' was a major focus of the burgeoning network.³⁰ With the Cold War, the health effects of militarised and polluted *environments* became an ever more urgent issue and spurred on the development of a

²⁷ See also Klein (2015: 38) who notes 'the start of 1989 felt to many in the environmental movement like a momentous juncture, as if the thawing of the Cold War and the warming of the planet were together helping to birth a new consciousness'.

²⁸ Ulrich Becks 1992 *Risk Society* is the most well-known of these texts and outlines an important theory that links together modernisation, environmental contamination and how 'late modern' western societies view their own political and cultural trajectory (reflexivity). Beck's work is important for highlighting how the risks that have arisen from industrialisation, technological development and the Cold War have become an obsession of western political systems. This thesis however is more concerned with risk as a particular technology that has been selectively used by the Climate Assemblage rather than to denote a particular phase in the development of western political systems.

²⁹ For example: The Clean Air Act (1963), The Water Quality Control Act (1965), The Wilderness Act (1964), The National Environmental Policy Act (NEPA) (1969), The Clean Air Amendments (1970), Pesticide Control Act (1972) and Clean Water Act (1977).

³⁰ The constitution of the WHO from 1947 states 'promote, in co-operation with other specialized agencies where necessary, the improvement of nutrition, housing, sanitation, recreation, economic or working conditions and other aspects of *environmental hygiene*.' It was also stated in the first WHO Assembly in 1947 that 'environmental sanitation' should be a 'top priority' of the organisation's work.

proliferating number of international treaties and networks (Hamblin, 2010). For instance, the 1972 UN Conference on the Human Environment held in Stockholm recognised that humans are co-implicated in the production of 'human environments'³¹ where the environment was considered to be composed of human and extra-human parts. With the deliberate targeting of 'human environments' by military machines,³² it was also these environments which became the object of global environmental treaties; for instance the Partial Test Ban Treaty of 1963, the Environmental modification treaty of 1977 and 1976 United Nations Convention on the Prohibition of Military or Any Other Hostile Uses of the Environment (see Hamblin, 2010). In a very governmental manner, this emerging global environmental architecture sought to use science and technology for the 'identification, avoidance and control of environmental risks and the solution of environmental problems and for the common good of mankind' (Principle 18, Stockholm Conference). While climate change is often thought of as a global issue that organically emerged out of an earlier environmental movement (Lutes, 1998), this section argues that climate change as an environmental issue became popularised, and spatially spread across the globe as a major concern, predominantly through expert-dominated governmental networks, that began in the colonial period and underwent further expansion in the Cold War period as the need to govern over 'environments' and the atmosphere became impossible to ignore.

³¹ For instance, in the first paragraph of the declaration of the conference it is stated '[M]an is both creature and moulder of his environment, which gives him physical sustenance and affords him the opportunity for intellectual, moral, social and spiritual growth. In the long and tortuous evolution of the human race on this planet a stage has been reached when, through the rapid acceleration of science and technology, man has acquired the power to transform his environment in countless ways and on an unprecedented scale. Both aspects of man's environment, the natural and the man-made, are essential to his well-being and to the enjoyment of basic human rights the right to life itself' (Stockholm Conference). Yet it can also be seen how the nature/society binary still pops in different guises.

³² See Sloterdijk (2009), Hamblin (2013) and Evans and Reid (2014) who all account in detail how war technologies over the last half century have become increasingly focused on destroying and poisoning environments.

By the 1950s, climate scientists such as Roger Revelle, Gilbert Plass and Charles Keeling had begun to re-evaluate the older theories of the greenhouse gas effect (i.e. the hypothesis of physicist Svante Arrhenius that proposed a link between CO₂ and atmospheric warming and which was largely ignored when it was initially published in the 1920s). Armed with radar, satellite images and computer modelling – which all developed rapidly in the context of the Cold War - they began to draw out explicit and causal relations between levels of carbon dioxide in the atmosphere and possible catastrophic scenarios. Within a decade these initial concerns had begun to be taken up by a number of scientists, and by large, internationally orientated NGOs many of which were either based in the US or dominated by US staff. For instance the Conservation Foundation (later subsumed by the WWF) held an important meeting in 1963 on *The Implications of Rising Carbon Dioxide* where it was stated: ‘it is known that the carbon dioxide situation, as it has been observed within the last century, is one which may have considerable biological, geographical and economic consequences...there is need for a watchdog’.³³ The IUCN, The Rockefeller Foundation and Environmental Defence Fund also became progressively interested in global warming throughout the 1970s and 1980s.

In the 1970s a number of UN conferences became increasingly focused on not only environmental issues but global warming in particular. For instance, at the 1972 Stockholm conference (from which UNEP was initiated) the Earthwatch program was started which would later play an important role in the ozone issue and climate change. Similarly the 1974 UN World Food Conference in Rome recognised the importance of the climate in world food production and the UN Conference on Desertification (1977) saw a renewed discussion on the links between climate change and environmental issues. This was preceded by the 1976 UN resolution endorsing a World Climate Programme. Probably the most significant international event of this period was the World Climate Conference in 1979 jointly organised by the WMO, UNEP, UNESCO and WHO and which signalled the

³³ (National Research Council, 1983: 18)

emergence of a modern global governmental climate assemblage. The conference led to the establishment of the IPCC and set a precedent for the types of expert knowledge involved in climate assemblages (Luke, 2011). In particular, it placed the climate change issue firmly within the domain of experts – from meteorologists to earth scientists, to government bureaucrats and NGOs (Luke, 2011: 135).³⁴

The World Climate Conference culminated in the 1988 ‘Toronto conference’ (*Our Changing Atmosphere: Implications for Global Security*) which has been described as ‘the Woodstock of CO₂’ (M. Hajer & Versteeg, 2011) and represented a pivotal moment when the concern over rising CO₂ and atmospheric warming became a concern of national governments (Bodansky, 2001). It explicated the role of CO₂ on the atmosphere and pushed environmental scientists toward seeing carbon as a discrete thing - ‘an immutable mobile’ – that could be quantitatively studied (Jasanoff, 2001).

3.2 The Rise of Risk

In the second half of the 20th-century American industrial capital, which had been nurtured within the U.S military machine’s war efforts (S. J. Collier & A. Lakoff, 2008; Vitale, 2011), had to contend with coming face to face with new social-ecological barriers. By the 1960s the enduring issue of worker health and safety in the context of industrialisation begun to be expressed as environmental issues that went beyond merely human health (O’Connor, 1991) (although there has been a resounding tendency for U.S environmentalism to be trapped in biopolitical health concerns (Burger, 1990).³⁵ As a number of scholars have shown, during this period workers and residents across

³⁴ At the first climate conference there were over 3000 experts present. As Luke puts it ‘...as the global climate change networks gel, their environmental agendas find great merit in fragmenting the natural world into their respective domains of empty analytical space, as another site for their services as policy-making experts...

³⁵ For instance Richard Nixon’s 1970 address to congress on the establishment of the EPA and NOAS states: ‘[T]he oceans and the atmosphere are interacting parts of the total environmental system upon which we depend not only for the quality of our lives, *but for life itself*. We face immediate and compelling needs for better *protection of life* ..’ [my emphasis].

America were concerned not merely with the immediate and direct impacts of industrial pollution on their health, but the much longer term consequences of *polluted places* on human health and well-being (Gottlieb, 2005; Guha, 1996; Merchant, 2005). The material limits of American industrial growth became impossible to ignore. Degradation of water sources, forestlands and residential areas spurred on a major restructuring of U.S industrial capital in the 1970s (Cooper, 2008; D. Harvey, 1982). Both the intensification and spatial expansion of agro-industry and manufacturing and energy industries, which had boomed in the post-war era, slowed substantially by the 1970s as American capitalism entered into crisis.³⁶ Neoliberal economic reforms in 1970s US were partly a response to the urgent needs to restructure a pattern of economic growth that was premised on unlimited appropriation of what Moore terms 'Cheap Nature'³⁷ (see also D. Harvey, 1982; Meadowcroft, 2012). Or more specifically, by the 1970s, specific natures demonstrated a declining rate of work (delivering cheap or free energy, food and absorbing waste) in service of accumulation.³⁸ Richard Nixon's 1970 decision to establish an independent Environmental Protection Agency (EPA) hence has to be read not as a radical environmental intervention, but an urgently overdue restructuring of capital (a classic 'double movement' in Polanyian terms (Polanyi, 1957: 6)).

³⁶ For instance, hybrid corn yields increased more than fourfold in the period between 1935-1960 and the global cereal trade tripled between 1952 and 1972 and global output doubled between 1950 and 1980. Yet at the same time, the rate of increase in water, fuel, pesticide and herbicide inputs needed to produce one unit of output skyrocketed. For instance it took 2.5 calories of energy to deliver a calorie of food in 1950. By 2000 it took between 15 and 20. At the same time, from 1973-1978 the rate of profit of manufacturing in G7 countries reduced by a quarter and overall industrial output in the global north dropped by 10% (Moore, 2015-127).

³⁷ For Moore Cheap nature consists of flows of non-monetised energy, food and labour that directly or indirectly allows for value creation within circuits of capital accumulation. This could be water, soil, household labour etc. In 1970s America the degradation of this Cheap Nature was becoming impossible to ignore. For instance as part of the campaign to raise awareness around the new Environmental Protection Agency in 1970, a photographer was commissioned to make public images of U.S industrial pollution. These iconic photos depict the extent of 1970s US pollution - with images of clogged sewer systems, clear cut forests, polluted waterways and sprawling rubbish tips.

³⁸ This includes the spatial limitations of agro industry- which in the 1970s in America and Europe barely expanded in terms of area. This also includes the pollution of waterways, residential areas and the atmosphere in Europe and North America to the point where these natures were unable to absorb increasing units of pollution (e.g. the ozone layer, ground water contamination, river siltation, heavy metal contamination, the spread of weeds).

Central to these efforts to restructure the capitalist system in North America and Europe during this time is the rise of ecological modernisation. As Hajer puts it '[E]cological modernisation first and foremost introduces concepts that make issues of environmental degradation calculable' (M. A. Hajer, 1995: 112). As he notes, by the 1960s 'pragmatic regulation' of environmental issues that came out of the colonial project where air and water pollution were regulated by health departments and non-specialised bureaucrats, had reached its limits. Proliferating environmental and health issues of a century of industrialisation in the U.S and Europe, as well as the demands from both workers and a burgeoning radical environmental movement, required a new set of solutions for environmental problems. Ecological modernisation provided a discursive and bureaucratic fix that sutured over the contradictions of American capital accumulation by seemingly incorporating that which was formerly outside the logic of production – pollution - into the inner workings of capitalism (see also Escobar, 1996). The concept of sustainable development which arose in North America in the 1980s proved to be a particularly important rationality that allowed for the entanglement of organised environmental protection with organised capitalism (Death, 2010; Luke, 1997; MacDonald, 2010).

If ecological modernisation 'assumes that existing political, economic and social institutions can *internalise* the cure for the environment' (M. A. Hajer, 1995: 37) then one of the main ways of achieving this, of bringing the environment on the inside of dominant rationalities, is through risk analysis. Risk was briefly mentioned in the introductory chapter where it was noted that it had been employed within colonial literature in relation to hygiene and sanitation and the supposed risk of tropical climates on health. What was being referred to here was largely 'epidemiological risk' – i.e. identifiable risks which can be described by medicine and pre-emptively dealt with through medical technologies (Lupton, 1999). Throughout the 1960s environmental regulation became fused to a much older form of risk knowledge based on the probabilistic actuarial tables used within insurance

technologies (arising from life insurance and maritime insurance (Ewald, 1991). Environmental pollution came to be increasingly thought of in terms of quantitative probabilities where regulation was increasingly based on risk analyses of certain actions and production systems.³⁹

Very quickly risk analyses –spurred on by computer modelling and advances in satellite imagery, become a key way of understanding climate change as a global environmental phenomenon (Demeritt, 2001; Johnson, 2010). By the 1990s global warming was imagined within the emerging climate assemblage as a series of future virtual scenarios with different probabilities of being actualised. With the Second World Climate Conference in 1990 (which led to the 1992 UN Earth Summit at Rio), and which reviewed the first IPCC report, risk analysis had become a key institutional objective of the emerging climate assemblage. By the time of the US 2000 Global Change Research Program, modelling (based on risk) had firmly become linked to policy where decision makers across North America, Europe and Oceania were increasingly dependent on risk analyses to create climate change policy (Demeritt, 2001). This signalled the rise of what Leigh Johnson terms ‘the risk industry’- ‘those who access analytical models, e.g. university departments, buyers, sellers, analysts, brokers, investors and speculators in risk but who all have a shared interest in reproducing risk (Johnson, 2010: 203).

Risk analysis by itself does not take a position on the futures which it seeks to tame. In fact within the world of finance risk is a productive, if not necessary aspect of profitability (see Dillon, 2008;

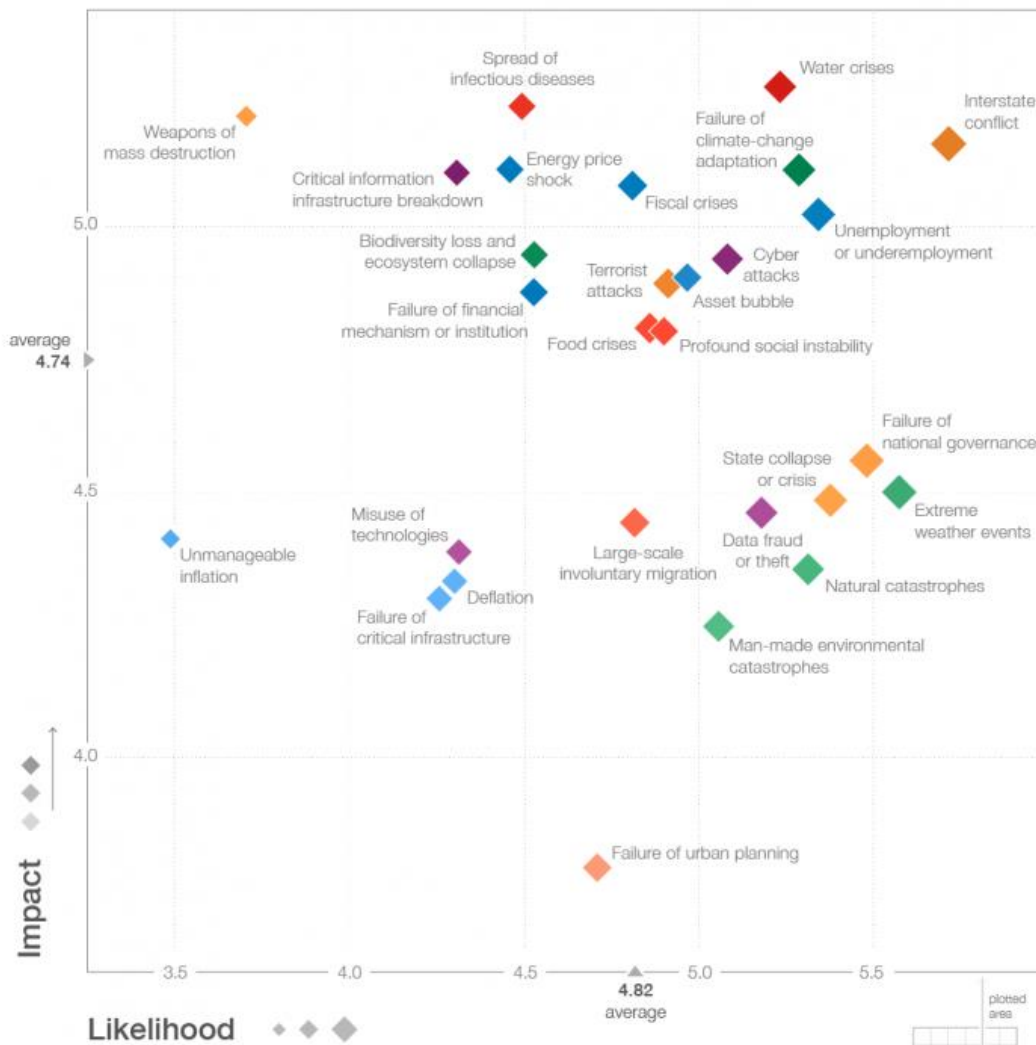
³⁹ For instance as Hornstein noted in the early 1990s, the EPA during the 1970s and 1980s ‘elevated the concept of risk, and the quantitatively formal techniques of risk analysis, into increasingly important roles in the agency's regulatory programs’ (Hornstein, 1992: 564). This had a major knock-on effect on environmental governance more broadly. Rachel Carson’s celebrated *Silent Spring* for instance represented the reinvigoration of state-led ecological knowledge where her book played a major role in the establishment of the American EPA (which would influence approaches to environmental regulation across the globe over the next half-century) as well as influencing emerging large environmental NGOs such as Environmental Defence Fund (which has become a major player in the climate change assemblage).

Mitropoulos, 2012).⁴⁰ It is a way of managing the future without catastrophe. It is not interested in politics, but in security – not in sanctioning threats or excluding them but visualising future flows of goods and bads – not eradicating them⁴¹. As one example, the World Economic Forum’s ‘Global Risks report’ (produced annually since 2005) shows global risk mapping as a pragmatic technology for visualising terrorism, the ‘failures of adaptation’ and mobilising private capital, insurance technologies and government interventions to protect profitability and the high carbon lifestyles in Annex One countries which capital accumulation is dependent upon (figure 3.1). As risk scholars have pointed out risk technologies have often been employed to empty environmental issues of their political controversies while affording a pragmatic way to visualise threats (Baldwin & Stanley, 2013; Dempsey, 2013; Johnson, 2010). As Mary Douglas points out ‘...the idea of risk could have been custom made. Its universalising terminology, its abstractness, its power of condensation, its scientificity, its connection with objective analysis made it perfect’ (Douglas, 2002 15). Risk became a way of ordering reality - ‘a way of representing events in a certain form so they might be made governable in certain ways’ (Dean, 2009: 177).

⁴⁰ As Dillon puts it ‘[O]ur entire global civilisation revolves around the nexus of profit and loss which informs risk and which sophisticated and inventive forms of risk analysis and risk packaging, in their turn, now govern... Strictly speaking, however, risk is neither the occasion of danger nor the occasion for profit. Risk is simply the commodification of exposure to contingency calculated through the generalised measure of probability.’ (Dillon, 2008: 14)

⁴¹ As just one example see the Australian New Zealand *Risk Management – Principles and Guidelines for Aid* (2010) where risk is defined as ‘the effect of uncertainty on objectives’. Risk management here becomes internal to institutional planning and project management. As a framework for managing aid disbursements it is not aimed at eradicating or preventing racism, sexism, power inequalities, restriction on mobility - rather it is a way of ensuring institutional aims are fully aware of uncertainty and can manage it. In this sense it is compatible with these things.

Figure 3.2 World Economic Forum's 'Global Risks Landscape 2015'



Source: (Global Economic Forum, 2015)

It is here that risk analysis goes beyond merely a probabilistic account of a particular threat but becomes a tool to weigh the costs of intervention in order to discover the optimum balance between costs and negative effects. Risk analysis and risk reduction thus represent an art of governing the 'relationship between men and things' (Foucault, 2009: 47) by bringing to light the multi-faceted threats which may impact on the health and vitality of a population and reducing or mitigating them in the most cost effective means as possible. Risk can be utilised not only as a method to quantify future scenarios and manage them accordingly (risk reduction, hazard and risk

mapping, climate adaptation and resilience programs), or assess the potential detrimental outcomes of particular activities and endeavours (risk analyses) but also to govern the future through financialising imagined carbon and climate futures (weather derivatives,⁴² climate bonds and Certified Emissions Reductions). Risk technologies connect to different agendas and goals depending on the context they are used.⁴³

In terms of climate change, risk became bound up, not in addressing the inequalities that colonialism and the cold war had assembled, but in devising techniques for making future impacts on the very machines which created global warming, legible and part of government.⁴⁴ Risk simply seeks to securitise climate change (c.f Dillon, 2008). As such risk is not ‘a particularly accurate way of explaining abandonment or exposure’ as it ‘masks how certain spaces and certain bodies are made to contain the effects of accumulation’ (Stanley, 2013). For all the catastrophism and moral urgency surrounding popular discourses on climate change, risk as a dominant technology for governing the climate, takes a remarkably distant and neutralist stance towards climate change. It naturalises events and inequalities that have their genealogies in capitalism, imperialism and vastly different patterns of energy consumption by viewing them in probabilistic terms where their existence is taken for granted (an irony considering the popular acknowledgement that climate change is anthropogenic in origin).⁴⁵ And it is because risk as a technology along with neoliberalism and

⁴² Just in one year from 2005-2006 the value of weather derivatives traded increased fivefold from US\$9.7 billion to \$45.2 billion (Klein, 2015: 6).

⁴³ For instance a number of authors have noted how insurance is more than a mere financial mechanism, but becomes ‘a way of life’ where the saturation of insurance technologies into all aspects of life (within the global north) configures the way in which people understand and take risks (Defert, 1991; Dillon, 2002; Lobo-Guerrero, 2010). Weather insurance products encourage people to be entrepreneurial even in the face of a changed climate (and continue high carbon lives). This is totally at odds with risk based technologies employed in the global south which encourage resilience and adaptation in the face of low standards of living.

⁴⁴ As Stanley puts it ‘[R]isk as a logic and set of knowledge practices is inseparable from capitalist relations of production that work to securitise economy and accumulation rather than protect life and livelihood’ (Stanley, 2013: 7).

⁴⁵ On this point it is important to note that neoliberalism, and the biopolitics which it emerges from it more generally, do not merely seek to ‘produce nature’ or subsume nature into circuits of capital accumulation in a straightforward and instrumentalist way as some of the ‘neoliberalisation of nature’ literature seems to suggest. Neoliberalism does not merely seek to transform nature and financialise it so much as understand it’s natural rhythms and patterns. In other words at the level of ontology neoliberalism views the natural world –

resilience thinking share this realist ontology that risk has been so enthusiastically employed since the north-American neoliberal revolution.

These observations will become important for the Cambodia case study chapters which show how populations abandoned to the market and kleptocracy become remade as climate vulnerable subjects through risk technologies.⁴⁶ Risk analysis not only disavows the way in which their exposure to markets is entwined with their vulnerability to climate change, but also the way certain populations are forced to 'contain the effects of accumulation' where their own vulnerability to climate change becomes the basis for new circuits of capital accumulation. Much more could be said about risk - and the following chapters will feature examples of how risk imbues contemporary climate change interventions. But at this point it is sufficient to note that risk as a technology for visualising and quantifying the effects of climate change plays a conspicuous role in climate change interventions across the globe.⁴⁷

or more accurately, environments - as being governed by their own laws and process that cannot be easily manipulated and transformed. It is this realist outlook that sees pollution and catastrophe as unavoidable – even normal. Paulo Tavares captures this well when he states '[B]iopolitics imply a whole new understanding of space, not so much territorial or geometrical as environmental and geophysical, inside which nature appears as an entity in itself, with its ungovernable rhythms and laws..' (Tavares, 2013: 127)

⁴⁶ For instance the 2014 *World Risk Report* produced by the UN University, which has been one of the most important documents in terms of providing methodologies for ranking countries on their risk to climate change placed Cambodia as the 9th most vulnerable country in the world.

⁴⁷ For instance WHO since 2000 has created a quantitative assessment of the health risks of climate change – which has been immensely popular within development circles and continuously updated since. The World Bank now screens all projects in donor countries for disaster risks and resilience measures. It is also pushing for all creditor countries to incorporate climate and disaster risk into analyses of development challenges as a condition of funding. A whole new set of 'climate and disaster risk screening tools' are now to be applied to all analyses of development issues (and require a plethora of new expertise – such as the World Bank's Special Envoy on Climate Change). The *Turn Down the Heat* report series – developed by the World Bank and Potsdam Institute of Climate Research and Climate Analytics, also provides a popular methodology for utilising climate risk analytics which has been applied to diverse development issues around the world.

The Asian Development Bank (ADB) also has a climate risk management framework which assesses climate risk for all projects. The ADB has a specialised Climate Change and Disaster Risk Management unit which has been heavily involved in 'climate proofing' infrastructure. UN agencies have also followed the trend. UNDP has been actively 'integrating Climate Change Risks into national development processes' and supporting the development of 'strategic climate change plans' for development partners. The UN now also has a specific office for risk reduction - the United Nations Office for Disaster Risk Reduction.

3.3 From Resistance to Carbon Markets

This section will attempt to highlight how risk analyses opened up the problem of climate change to capital accumulation by financialising future imagined carbon scenarios. It argues that another crucial threshold in the development of the climate assemblage occurred when a diverse group of actors who had varying interests in the climate change issue began to form solid relations as part of efforts to expand carbon markets.

Early opposition and concern over looming climate-related regulation led to organised resistance on the part of carbon-intensive industry. By the 1980s emerging environmental legislation to deal with the ozone problem and acid rain provoked carbon intensive industries into action. A rising public concern over global warming was seen as potentially detrimental to corporate image, and even more serious was the concern that climate legislation may come under the mandate of the EPA under the 1970 Clean Air Act (with direct pollution taxes or enforceable standards). By the mid-1980s industry interests had begun to mobilise against environmental legislation – e.g. public campaigns and lobbying against the proposed 1989 Global Warming Prevention Act.⁴⁸ In 1989 the Global Climate Coalition was created to counter rising public concern over climate change, while also lobbying congress to block environmental legislation on the climate change issue. Members included BP, Shell, the Aluminium Association, Ford and General Motors. So too other industry groups and programs such as the Business Roundtable, the Global Climate Information Project and the Information Council for the Environment were mobilised, often with budgets in the millions of dollars, to push against climate action (Meckling, 2011).

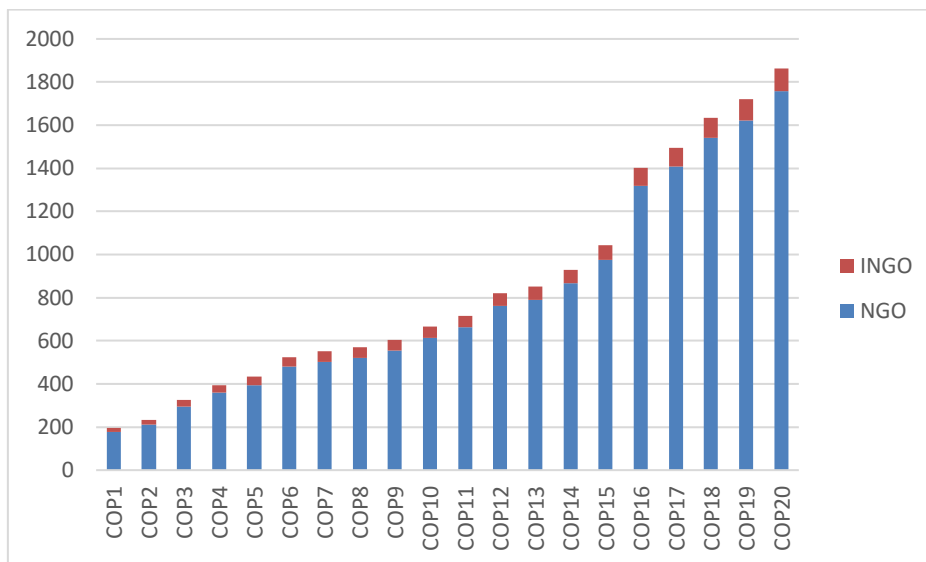
⁴⁸ This legislation proposed for the EPA to have a role in reducing emissions, as well as pushing development assistance to the preservation of tropical forests and population growth issues

At the opposite end of the scale, the IPCC was extending itself across the globe and forming increasingly stable relations with scientists and bureaucrats in various countries – although the IPCC itself had always been highly influenced by US interests – which at certain times sought to contain scientific research on climate change.⁴⁹ Its first Assessment Report (1990) was seen as a significant step in global climate change politics where the threats of global warming had been fully translated into policy friendly risk analyses. It was partially in response to this influential report that the Global Climate Coalition was formed. From the 1970s onwards NGOs were also increasingly becoming bound up in risk-based governmental networks that focused on climate change issues. While more than 250 NGOs attended the 1972 Stockholm Conference, which was a defining point in the growth of ‘professional’ environmental NGOs (Gottlieb, 2005), by the time of the Rio Earth Summit in 1992, 1400 NGOs were officially registered with the UN to take part while a total of 7000 NGOs were involved.⁵⁰ By the 20th Conference of Parties in 2014 in Lima, 1758 NGOs had official observer status (see figure 3.2 below).

⁴⁹ For example Larry Lohmann gives the example of Robert T. Watson – scientist-bureaucrat chair of the IPCC (1997-2002) and senior World Bank official, who was supported by US bureaucrats and politicians because of his moderate views on climate change action.

⁵⁰ There were 1,400 NGO officially with the UN to take part, but many more took part in parallel conferences or somehow participated in the creation of Agenda 21 (Breitmeier & Rittberger, 1998). NGOs are not able to participate in decision making within COP discussions.

Figure 3.3 INGO/NGO Participation at Conference of Parties (1994-2015)



Data Source: (UNFCCC, 2015)

Early professional environmental NGOs, especially in the US, were initially focused on lobbying governments and working with key departments and individuals to raise public awareness of climate change, push for new environmental legislation on climate change, and counter the efforts of industry groups such as the GCC. For instance, the Climate Action Network, which was one of the first and most important NGO networks involved in the CoP⁵¹ initially focused on challenging the ideas and campaigns of the oil industry. Other big ENGOs such as WRI, the WWF and the IUCN were involved in similar campaigns where they authored key reports documenting the link between CO₂ production and environmental and human risks. By the 1992 Earth Rio Summit, a large network of professional NGOs had become embedded within new risk-based climate networks (around the IPCC

⁵¹ A participant of the Rio conference described the relationship between NGOs and CAN – “At the time, if you were an NGO there you were in CAN” (Climate Action Network International, 2014). CAN currently has over 900 member organisations.

and CoPs and various networks that sprung up from them) which were in direct confrontation with industry groups opposed to climate change regulation.

This began to definitively change by the late 1990s. In 1997 Dupont and BP left the GCC and in 1998 Shell also departed – leaving the GCC to fall into demise, eventually disbanding in 2002 (Meckling, 2011). In particular, BP's shift to support carbon trading was at the time a momentous, if not a controversial occasion signalling the shift from carbon-intensive industry's denial of, and blanket resistance to carbon regulation, to an acknowledgement of the importance of climate regulation and even active engagement with the risk-based climate networks. In particular BP's launching, in partnership with the US NGO Environmental Defence, of an in-house emissions trading system (the first ever international emission trading scheme) set an important precedent (Meckling, 2011). It marked a decisive moment when the interests of carbon-intensive business, NGOs and governments began to coincide. From this point onwards, throughout the 2000s emissions trading slowly won out over command and control regulation such as pollution taxes. This was largely due to the efforts of key actors from oil and power companies such as BP, Shell and General Electric, along with the insurance and re-insurance industries, large Washington-based NGOs and key parts of the US government who all aggressively promoted emerging ideas on carbon markets (Bond, 2011; Lohmann, 2006). This represented a crucial moment at which the global climate assemblage in its current form began to emerge; where scientists, government technocrats, financiers, oil companies and NGOs began to form durable relations, concentrated around the new carbon commodity.⁵²

It is here that climate politics needs to be understood not merely as a stalemate between progressive forces keen to act in the name of climate change, and conservative forces who put capital accumulation ahead of action on climate change (i.e. as *Capitalism vs the Climate* (see Klein,

⁵² Shell for instance has a formal partnership with the IUCN where it receives advice on biodiversity performance including its engagement with carbon markets. See (MacDonald, 2010). BP also provides funding to conservation NGOs such as WWF, CI and EDF.

2015)). As Larry Lohman points out, it is not the case that there is 'a lack of political will. In fact many leaders – and private corporations and technocracies that channel their choices – have a surplus of "political will" for dealing with the climate crisis, just as they have plenty of political will for trying to turn any other crisis to their advantage' (L Lohmann, 2006: 36).⁵³ In this sense, within the politics of climate change there is also an important positive and creative aspect; the re-territorialisations that captures different forces and assemble divergent interests into a durable, distinctly neoliberal inspired assemblage - a process that was simultaneously occurring in the field of biodiversity conservation (MacDonald, 2010)⁵⁴ and poverty alleviation (Roy, 2010)⁵⁵ during the 1980s and 90s. The discovery/creation of carbon as an 'immutable mobile' (see Jasanoff, 2010) and the proliferation of new forms of carbon governance (emissions trading schemes, climate bonds, REDD+ and CDM for instance) has seen major investments of labour coming together from quite diverse groups through a dazzling variety of new schemes, forums, organisations and networks that all broadly push for the entrenchment of carbon markets. Frequently these efforts have been frustrated by both technical and political limitations (Larry Lohmann, 2010). Yet carbon, and in particular carbon markets, have come to be at the centre of risk reduction strategies of both governments and business; they have become immanent to business strategies – a way of immunising against climate change by converting it from a threat to a calculable risk which can be offset. In the process whole new industries have sprung up (Johnson, 2010; Lovell & Ghaleigh, 2013). This is not to say that compromises have not been made, conflicts have not occurred⁵⁶ or that these re-territorialisations have not seen relations

⁵³ See also Mark Fisher who notes '[C]limate change and the threat of resource-depletion are not being repressed so much as incorporated into advertising and marketing. What this treatment of environmental catastrophe illustrates is the fantasy structure on which capitalist realism depends: a presupposition that resources are infinite, that the earth itself is merely a husk which capital can at a certain point slough off like a used skin, and that any problem can be solved by the market' (Fisher, 2009:22).

⁵⁴ MacDonald tracks how large US and European based conservation NGOs became increasingly dependent upon corporate finance starting in the 1980s and simultaneously began to promote distinctly market based mechanisms to conservation.

⁵⁵ Roy tracks how neoliberalism has infused poverty alleviation efforts – particularly in the field of microfinance, amongst large bilateral and multilateral donors and NGOs based on North America.

⁵⁶ For instance leading up to Rio, the International Chamber of Commerce and Industry Advisory Committee of the OECD aggressively fought against a proposal to monitor the environmental standards of transnational corporations – and even apply legal standards. See (MacDonald, 2010).

being broken⁵⁷ - but rather that carbon formed an important object around which stable relations could be assembled.

In the 1960s and 1970s, a new sense of global ecological vulnerability, which arose from the experiences of the Cold War (Masco, 2010), helped to establish the idea of 'environmental limits' – that it was no longer viable to ignore the environmental effects of capital pollution and population growth (Larry Lohmann, 2010). Here limits were to be imposed, not only in the form of environmental legislation, but in terms of a trade-off between industrialisation and profitability on the one hand, and conservation and protection of ecological systems to prevent passing ecological tipping points, on the other hand; a kind of environmental Keynesianism (Cooper, 2008).⁵⁸ These ideas are well represented in popular reports such as the *Limits to Growth* (Meadows, Goldsmith, & Meadow, 1972) and *The Population Bomb* (Ehrlich, 1970). Yet at the same time, emerging neoliberal doctrine was co-evolving with biology and ecology. Just as neoliberal economic theory begun emphasising the overcoming of limits to production and economic growth, ecology was shifting away from notions of linear evolution, equilibrium and climax ecosystems. Both converged towards ideas of autopoiesis, cybernetics, chaos-theory and resilience where linear notions of progress were largely overtaken by the notion of complexity – that systems react and evolve across multiple vectors in complex and unpredictable ways (Cooper, 2010; Walker & Cooper, 2011). What this discursive shift successfully overcame was the popular ecological critique of capitalism pushing nature to its limits; instead it opened up the idea that markets could be made to work for the environment by using risk analysis to calculate the *optimum* level of pollution. The very same impediments that green Marxists saw as a limit to capitalism became the source of new forms of

⁵⁷ A number of smaller NGOs and community organisations opted out the emerging climate assemblage after Rio in protest over the entanglements of big industry with the UN and INGOs. Friends of the Earth is the most obvious example of this.

⁵⁸ As Cooper (2008:43) notes '[E]ssential to Keynesian economic strategies is the idea that the growth cycles of production, reproduction, and capital accumulation can be sufficiently calibrated to avoid capital's perennial catastrophe risks'. Pragmatic environmental regulation is of this form – top down state regulation which attempts to manage environmental pollution at the macro level.

accumulation (Brockington & Duffy, 2010: 470). Or more specifically, limits and risk analysis helped to establish new scarce units such as the one-tonne-of-carbon-dioxide-equivalent (1tCO₂e).⁵⁹ This scarcity arises precisely because risk analysis finds the optimum level of future imagined emissions in relation to the benefits of the polluting activities that produce them. It is this scarcity that makes these future emissions valuable and which spurred on carbon markets.

Robert Coase's 1960 article *The Problem of Social Cost*⁶⁰ epitomised this – a concern less with ecological devastation as a threat, than as a 'bad' that was tolerable and even had a calculable optimum level where the 'good' of profitability could be maintained. For Coase polluters were not someone 'doing something bad that had to be stopped' (1960b: 7), but are merely rational market actors. In the essay he laid out a novel concept of pollution that sought to bring risk inside legal approaches to pollution regulation – and which continues to be cited in major climate change reports.⁶¹ By recasting environmental pollution as an 'externality' that had to be converted into an 'internality', pollution became immanent to a new form of risk analysis where it becomes merely one more objective factor within the profit optimisation calculus – balanced against inputs and profits. Under this logic there is nothing moral or remarkable about pollution. Nor is pollution antithetical to the normal running of capital accumulation. Rather pollution is a reality that needs to be internalised within production systems – not in the sense of manipulating and controlling pollution - but making it legible and a part of economic calculus through costing it (opening it up to financialisation and speculation). John Dales 1968 insight that 'to live is to pollute' (Dales, 2002: 4) and that there needs to be a restructuring of economic theory to take account of waste throughput (i.e. assigning pollution rights) was also largely influential at the time and continues to be a reference

⁵⁹ This mirrors Mitchell's discussion of the rise of oil as a commodity. As he points out, there first had to be a way of imagining oil as scarce to make it a commodity – and this required new geological technologies that could convincingly imagine quantitative limits to oil (Mitchell, 2011).

⁶⁰ Which remains the most cited law review article in history. In the 1960s Robert Coase had tenure at the Chicago school – infamous for the actualisation of early neoliberal thought. He was also directly influenced by renowned Chicago school neoliberal theorist Frank Knight whose text *Risk, Uncertainty and Profit* remains the cornerstone of neoliberal thinking on risk.

⁶¹ See for instance the Stern Review.

point for contemporary IPCC reports.⁶² By the 1980s specific texts on air pollution such as Thomas Crocker's *On Air Pollution Control Instruments* (1972) (along with his earlier texts) which hinted at pollution markets for atmospheric pollution, had evolved into new texts which more confidently approached the question of tradable pollution rights in the context of global warming.⁶³

The significance of this observation is that unlike common accounts of the relationship between climate change and capitalism – especially from the left, the tendency on the part of many variants of capital is to attempt to internalise climate change by making it calculable as much as to externalise the negative effects of production by ignoring them.⁶⁴ This is not only because leaving climate change as an externality is inefficient and costly over the long term which will ultimately impact on profitability, but also that the public concern with climate change has itself opened up a host of new markets and opportunities that companies are compelled to act upon so as to remain competitive. Yet once again, Moore (2015) reminds us that cheap nature – whether in the form of energy and labour flows, or as a dump for carbon dioxide, are indeed an immanent part of capital's endless drive to reproduce itself. But he goes one step further in insisting that cheap nature is a necessary factor for continual capital accumulation with the corollary that if cheap nature is brought into the cash nexus (i.e. commoditised), then other frontiers of non-commoditised nature need to be opened up elsewhere. Meaning that for capital accumulation to outrun the problem of a declining rate of profit, it is not possible to universally commoditise carbon pollution, without simultaneously

⁶² As the Mitigation Group of the IPCC recently put it '[O]ver the past three decades, emissions trading, or cap and trade has evolved from just a textbook idea (Dales 1968) to its current role as a major policy instrument for pollution control.

⁶³ See Nordhaus *Managing the Global Commons: the economics of climate change* (1994) and David Pearce et al. *Blueprint for a green economy* (1989).

⁶⁴ This very much depends on the particular variant of capital. As Bond (2011), Lohmann (2012), Bumpus and Liverman (2008) and Funk (2014) all clearly show, for certain company's and corporations, investing in climate change can be very profitable in the long run. While for other carbon intensive corporations – e.g. Shell investments are still largely in projects that will have enormous carbon emissions. What is being suggested is not that capital *either* internalises pollution *or* ignores it keeping it as a non-costed or cheap externality. Rather there are two different logics operating usually simultaneously together; on one side capital often seeks to draw upon cheap nature (by polluting without in a myriad of ways without having to bear the full costs of such pollution), while simultaneously exploiting new opportunities for profitability, mitigating against potential losses by pushing for regulation that will be less costly and pushing for greater long term certainty so as to maintain investor confidence into the future.

opening up new frontiers of non-commoditised cheap nature. What was achieved by neoliberalism in its legal, bureaucratic and economic projects then was the taming of capitalism as it works through ecological systems (or what Moore refers to as ‘the web of life’) within the global north, and the simultaneous intensification of an ultra-exploitative mode of capitalism in the ‘exceptional spaces’ of the global south (see Ong, 2006)⁶⁵ or ‘economies of abandonment’ (Povinelli, 2011). Or as Cooper pertinently puts it ‘neoliberalism does not so much overcome industrial waste as displace it elsewhere—in space and time’ (Cooper, 2008: 19). Hence there has been a significant shift towards carbon offsetting in the global south (through REDD+, CDM, JI and voluntary offset programs) which concurrently draws ‘cheap nature’, and absorbs the excess carbon from northern industrial production, while simultaneously northern industries are forced to reduce their northern emissions. Throughout the 1980s and 1990s a number of Washington based NGOs such as CARE, WWF and World Resources Institute promoted carbon-offset forestry projects throughout the global south. For instance even by 2008 when carbon markets were still in their infancy there were already 226 carbon forestry projects in the global south covering 2.1 million hectares (Katherine Hamilton, 2009). During the 1960s the concept of pollution markets slowly gained traction in academia.⁶⁶ In the 1970s and 1980s, emissions trading schemes were first experimented with in government policy through the Clean Air Act in attempts to phase out leaded gasoline and CFCs (Meckling, 2011). Under the 1987 Montreal Protocol on Substances That Deplete the Ozone Layer, the EPA allowed US companies such as DuPont and Dow to use tradeable production allowances to meet reduction quotas (ibid). From these early experiments, emissions trading schemes were further refined in academic texts such as David Pearce’s book *Blueprint for a Green Economy* (1989) and the many

⁶⁵ Ong sketches the rise of economic zones in Southeast Asia where neoliberal policies are pursued

⁶⁶ Eg Thomas Crocker’s 1966 *The Structuring of Atmospheric Pollution Control Systems* and John Dales 1968 *Pollution, Property and Prices An Essay in Policy-making and Economics* were both influential books on pollution markets and both authors wrote further influential books on these topics in the 1970s (Meckling, 2011). Dales book is still referenced within IPCC reports.

works of Michael Grubb (Newell & Paterson, 2010).⁶⁷ Key people then took these ideas to the Rio Conference in 1992 (e.g. Scott Barrett at the London Business School and Frank Joshua of UNCTAD) and aggressively pushed emissions trading as the preferred mechanism for dealing with climate change (ibid). By the 1990s insurance companies started to realise that climate change was a major risk to long-term profit sustainability and started banding together to pool risk (Johnson, 2013; Lobo-Guerrero, 2010).⁶⁸ For instance the UNEP Finance Initiative which came directly out of the Rio conference aimed to provide improved global standards for calculating climate risk. In 1998 the World Business Council on Sustainable Development and the WRI along with WWF, The Pew Centre on Global Climate Change, BP, Monsanto and General Motors together produced a report entitled *Safe Climate, Sound Business* - a report which would become the basis for the Greenhouse Gas Protocol – the most widely used accounting tool to quantify and manage greenhouse gas emissions (Newell & Paterson, 2010). During the 1990s and 2000s UN agencies became increasingly entangled in capitals interest in quantifying and mitigating against the risk that climate change posed. Apart from UNEPs engagement with the insurance industry, UNDP has also for instance worked in partnership with the World Business Council on Sustainable Development to encourage companies to get involved in the Clean Development Mechanism (CDM).⁶⁹ And UNFAO has conducted extensive research with industry groups looking into carbon sinks and carbon accounting.

⁶⁷ His 1990 International Affairs article *The Greenhouse Effect: Negotiating Targets* was one of the first popular and well circulated articles to argue for a cap and trade system at the international level to deal with climate change at the UNFCCC.

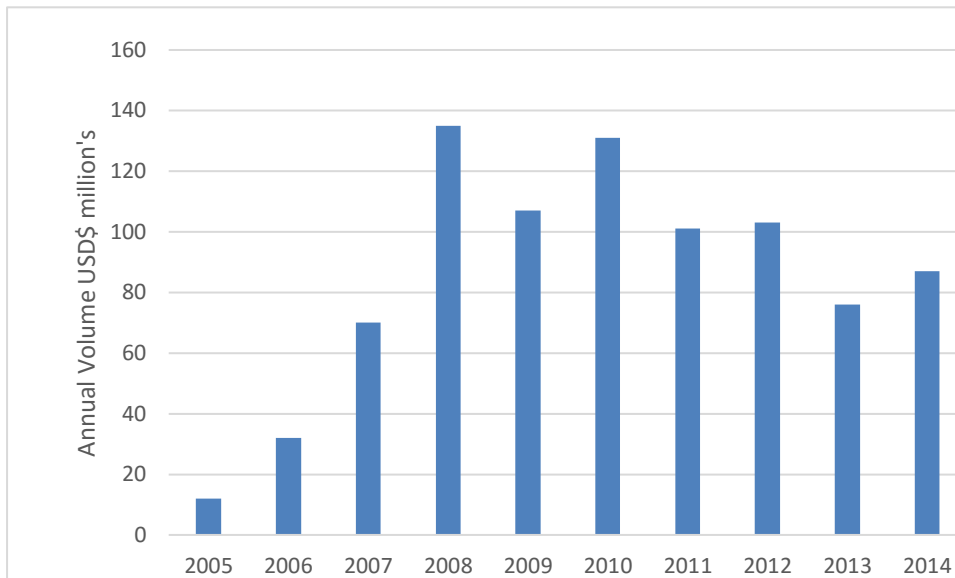
⁶⁸ As Lobo-Guerrero states in discussion Lloyds of London's 'climate change: adapt or bust' forum, 'for insurers climate change has become a priority that can no longer be treated as peripheral, or as an issue of compliance, but that needs to be translated into a strategic imperative. In the industry's words, acting on climate change remains 'business as usual', and failing to do so 'will put companies at risk from future legal actions from their own shareholders, their investors, and clients' (Lobo-Guerrero, 2010 :43).

⁶⁹ The Clean Development Mechanism was introduced as part of the Kyoto Protocol and was aggressively promoted by U.S, Australian, New Zealand and Canadian negotiators – as a condition of them ratifying Kyoto. CDM allows Annex-1 countries to reach their emission reduction targets through emission reduction projects in non-Annex-1 'developing countries'. These project must not be 'additional' to what would already have occurred and must be registered and certified through both 'Designated National Authorities' and the CDM Executive Board. Saleable Certified Emission Reduction credits (CERs) are then produced each of which represents one tonne of CO₂. To date 7752 projects representing 1.7 billion CERs have been produced.

After the US's aggressive push for an emissions trading system at Kyoto that would allow for flexibility in achieving reduction targets without 'compromising the American way of life' (a position that other parties were largely forced to concede to) (Bond, 2011), and as the EU reluctantly began its own emissions trading system, a whole new host of private actors began to involve themselves in both the voluntary and the compliance emissions trading market. In particular the 'creative accounting' which established the 'Certified Emissions Reduction' (CERs) - which was the basis of the Clean Development Mechanism, allowed for an equivalence to be made between carbon emitted in one place, to the amount of carbon saved through mitigation programmes, in another (through the 1CO₂e) (see Larry Lohmann, 2011: 94). After this period the voluntary market (based on voluntary emissions reductions rather than mandated emissions reductions under the global climate agreements) rapidly increased. By 2014 the total value of the world's emissions trading schemes was US\$30 billion. At the same time, the value of the voluntary market was US\$379 million from a high of \$850 in 2007 (see figure 4.3). Yet even where the price of carbon had fallen, the number of players and transactions had steadily increased; just in the decade from 2005-15, government companies and individuals had voluntarily invested more than US\$4.5 billion purchasing more than one billion carbon offsets (Hamrick & Goldstein, 2015). The World Bank in 2015 estimated that markets covered 12 per cent of all global emissions (up from 4% in 2005) (Aldy, 2015). Ecoscurities (founded in 1997) by 1995 had the largest portfolio of CERs by 2005 (with over 300 staff in 30 countries). By the late 2000s there had been an explosion in companies offering services as carbon brokers or providing analytics ranging from PointCarbon (which was offering analysis and consulting in 2010 to 15,000 clients – many of which were some of the largest companies in the world) to Ecosystem Marketplace (one of the largest sources of data and analytics on the carbon markets which works in partnership with UNDP, USAID and a number of European bilateral donors), to small carbon brokers such as Terra Global Carbon selling 'boutique' CERs on the voluntary market. Apart from the official forums associated with the CoPs, which saw increasing participation from the business community, there was also a wide variety of forums and associations targeted at the

voluntary market such as the International Emissions Trading Association (IETA), the Emissions Marketing Association and the annual Carbon Expo.⁷⁰

Figure 3.4 Volume of Market-wide Voluntary Carbon Sales (2005-2014)



Data source: (Hamrick & Goldstein, 2015)

There has also been increasing participation from NGOs – especially key players such as World Resource Institute (which is interestingly funded by both the UN, international aid agencies, oil companies and Monsanto), WWF (which has the same funders),⁷¹ Greenpeace, the Nature Conservancy, Conservation International, the World Conservation Society and the IUCN. Although some of these NGOs were initially critical of carbon trading mechanisms, and particularly of the aggressive stance of U.S industries pushing carbon markets over regulation, by the end of Kyoto they had come to see emissions trading as one of the only options for achieving a global agreement (Bond, 2011). As Lohmann puts it ‘[I]n the increasingly strident neoliberal political climate of the

⁷⁰ The Carbon expo which is the largest carbon trade fair, is a joint organising effort between The World Bank and IETA. Since the late 2000s it has split into a series of regional carbon trade forums in Asia, Africa and Latin America which are conducted in partnership with the UNFCCC.

⁷¹ Controversial 2012 book *Pandaleaks* details corporate funding from Shell, BP, Monsanto, Alcoa, amongst others, to WWF.

1980s and 1990s, pollution trading became more and more fashionable' (L Lohmann, 2006: 57) - even to the point where after the U.S backed out of Kyoto under President George Bush, NGOs were left to push carbon markets and to 'mop up carbon funding from the World Bank and others' (ibid: 49). After Kyoto, the global assemblage forming around the carbon commodity began to solidify where key UN agencies, conservation NGOs (and national NGOs across the global south) in partnership with the World Bank and new carbon funds, all became much more blatantly orientated toward carbon trading. UNDP became much closer to neoliberal NGOs such as the WRI through new research partnerships that promoted carbon markets⁷² and UNEP essentially became a carbon broker through programs such as the UNEP finance initiative.⁷³ As Lohmann puts it '[A]s carbon-trading businesses fused with the UN climate apparatus, revolving doors between the two became jammed with profiteers moving in both directions' (L Lohmann, 2006: 62). He gives the example of UNCTAD;

In 1991, the UN Conference on Trade and Development (UNCTAD), an agency charged with 'assisting developing countries', brushed aside other regulatory or tax alternatives to set up a department on greenhouse gas emissions trading. UNCTAD later helped form the International Emissions Trading Association (IETA), a corporate lobby group dedicated to promoting emissions trading. (Ibid: 69)

Frank Joshua who served as UNCTAD's head of Greenhouse Gas Emissions Trading not only played an important role in brokering the insertion of emissions trading into the Kyoto protocol,⁷⁴ but also the establishment of IETA. Al Gore, who held the 'first congressional hearing on climate change' in the U.S, and producer of the vastly popular *An inconvenient*

⁷² For instance the report *Promoting Development While Limiting Greenhouse Gas Emissions: Trends & Baselines* (1999) (produced by WRI and UNDP).

⁷³ Which is a forum of over 200 institutions including banks, insurers and fund managers for producing knowledge on the 'green economy' and promoting increased private capital into it.

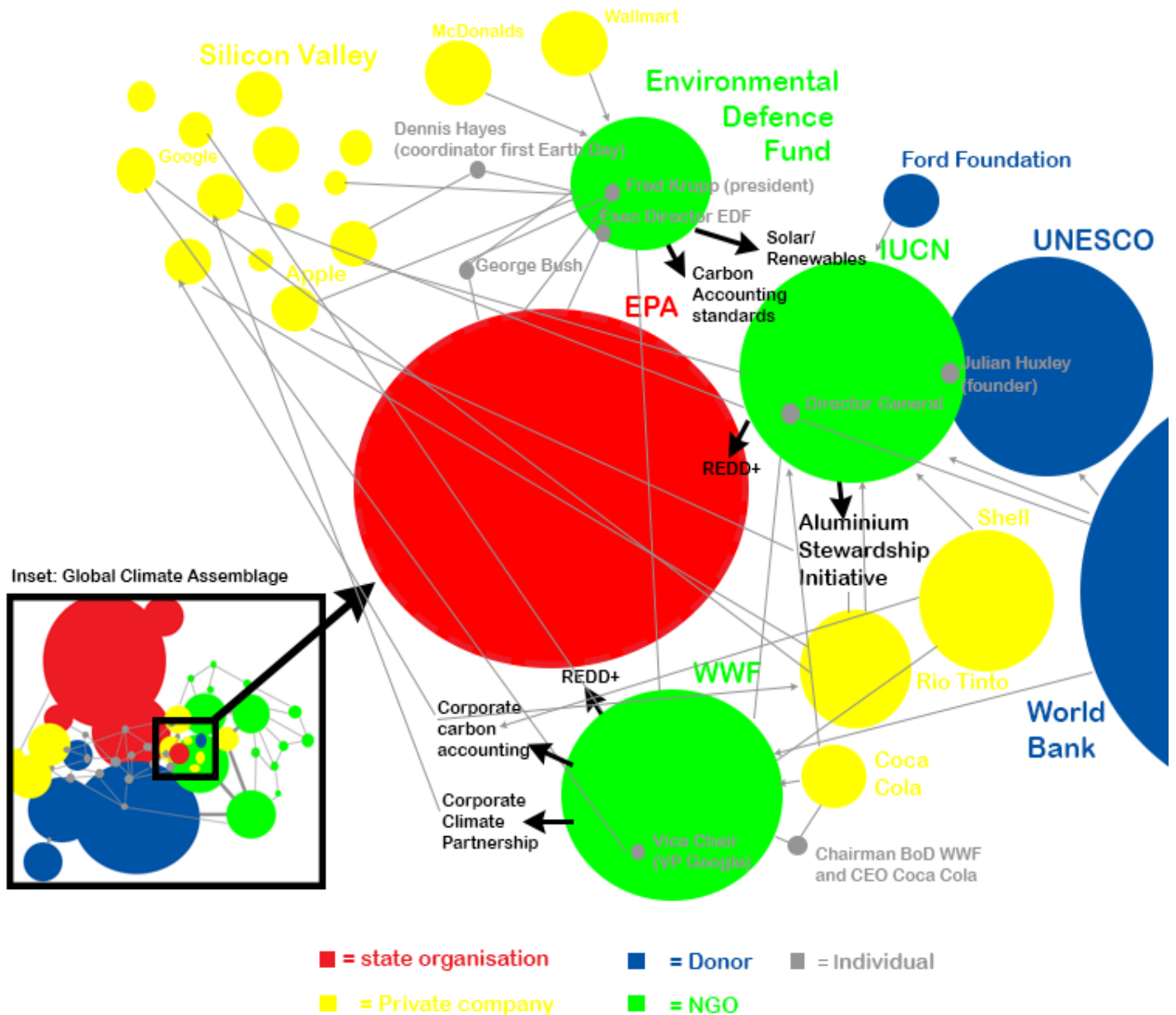
⁷⁴ As he explains in an interview, it 'was largely luck' that allowed emissions trading to be pushed through at the last minute in Kyoto where Brazil's proposal for a 'clean development fund' and the U.S's insistence on 'flexibility' for reaching targets opened up the protocol to carbon markets (IETA, 2016).

Truth (which according to Funk (2014) was probably one of the first commercially successful 'climate crisis' ventures) is also one of the first 'carbon billionaires'.⁷⁵ Richard Sandor, economics professor (and student of Ronald Coase)⁷⁶ who did much to theorise pollution entitlements as financial futures, was also a key consultant to UNCTAD during the Rio Earth Summit (and responsible for pushing carbon trading there) and the founder of the company Climate Exchange PLC which founded the Chicago Climate Exchange (which for a time was the biggest carbon market outside of the EU ETS). But much earlier than this, there had already been an entangling of governmental, NGO and business interests within the emerging global environmental assemblage which is perhaps epitomised by Maurice Strong, Secretary General of the Stockholm conference and first executive director of UNEP. Strong also had a long history in the energy and oil industry – starting his own small oil-consultant company in the 1950s, then becoming president of the Power Corporation of Canada and later head of Petro Canada. His appointment of Swiss businessman Stephan Schmidheiny as a chief advisor spawned the Business Council on Sustainable Development and set an important precedent in terms of business engagement in UN environmental processes (MacDonald, 2010).

⁷⁵ Al Gore's firm Kleiner, Caufield & Byers- one of Silicon Valley's top venture capital providers, has multimillion dollar deals with green energy companies and carbon trading firms (Broder, 2009). Also his generation investment company has become largest shareholder in Camco – which has one of the largest carbon asset portfolios.

⁷⁶ In 2013 Sandor and his wife gave a US\$10 m endowment to the University of Chicago Law school in honour of Ronald Coase (the institute for Law and Economics there was renamed the Coase-Sandor Institute for Law and economics).

Figure 3.5 Assemblage Map of Selected INGOs in the Global Climate Assemblage



Source: author

It only became a matter of time before scarce units of future carbon emissions became financialised. This went well beyond merely putting a price on them, but proliferated into a whole new host of financial mechanisms including avoided emissions, carbon accounting (e.g. carbon footprints) which in turn spurred on new forms of Corporate Social

Responsibility and new forms of speculation (A. G. Bumpus & Liverman, 2008; Lövbrand & Stripple, 2011; Lovell & Ghaleigh, 2013). This is part of a much broader process linked to the distinctly neoliberal search for new avenues of financial investment ‘where the earth-in-crisis is rethought and reworded such that it is brought further into alignment conceptually, semiotically, and materially with capital’ (Sullivan, 2013: 199). All of this though is not to argue that the process of embedding emission trading within the Kyoto protocol and other significant global institutions that facilitated the expansion of emissions trading as a standard mechanism for dealing with climate change was not without controversy and conflict – it was – but that the existence of an extensive body of literature and experience with emissions trading gave those promoting carbon markets an advantage in pushing emissions trading over other regulatory options.⁷⁷

New forms of speculation were spurred on by the expansion of the carbon market. For instance early on within the CDM market, speculation became an accepted part of carbon trading – between 2005-2006 one-third of all transactions involved the buyer selling the CER on a secondary market (Newell & Paterson, 2010). By 2008, 80 carbon investment funds were managing nearly US\$13 billion worth of CERs – all which were involved in speculation (Katherine Hamilton, 2009). Carbon as a ‘fully fetishized’ commodity (Paterson & Stripple, 2012)⁷⁸ has come into being only through the painstaking work of the climate assemblage. For instance, multinational coalitions such as the *Carbon Pricing Panel*

⁷⁷ For instance during the Kyoto protocol negotiations entered a deadlock spanning several days when the US, the EU Brazil and the G77 over disagreed over the admission of emissions trading into the final document which was only agreed upon after the US threatened to leave the negotiations.

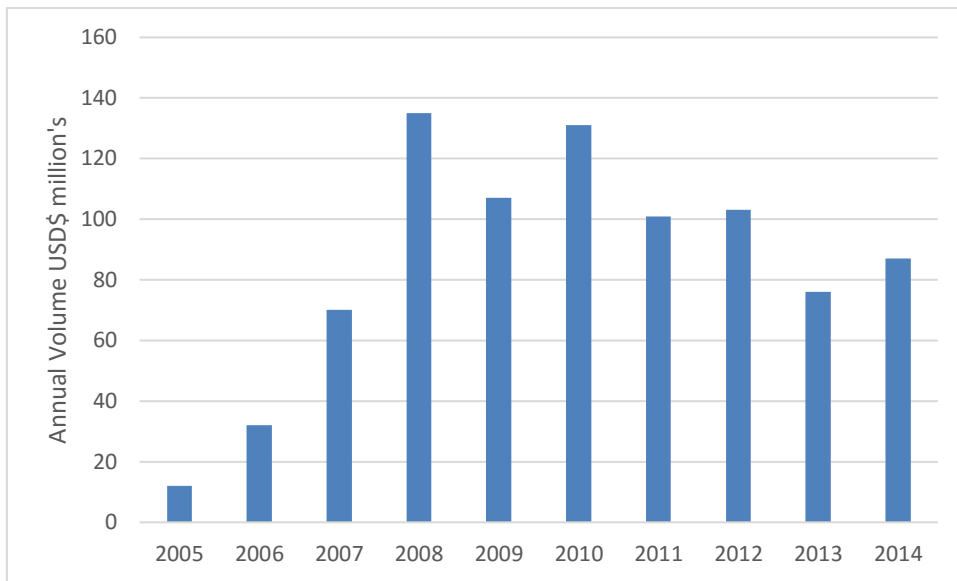
⁷⁸ Fetishized in the sense that the huge investments of analytical labour invested in the production of carbon are typically effaced within carbon markets where carbon is simply taken as an out there ‘thing’ which is merely being traded on the market. For a more general description of commodity fetishism within the field of green consumerism see (Carrier, 2010). Here Carrier considers fetishism of environmental commodities more broadly as ‘the ignoring or denial of the background of objects’ and ‘a concern with the general tendency to obscure the people and processes, of which labour power is a component, that are part of creating an object and of bringing it to market. This tendency is an aspect of the abstraction of things from their practical contexts that is both widespread in modern capitalist societies and seen as natural and valuable’. Commodity fetishism in this broader sense is employed here and chapters five and six attempt to detail some of the ‘processes and things’ involved in the production of carbon credits.

(founded by World Bank President Jim Yong Kim and IMF managing director Christine Lagarde)⁷⁹ and *Carbon Pricing Leadership Coalition*⁸⁰ which include NGOs, governments and large corporations, and multinational programs such as the World Bank's *Networked Carbon Markets Initiative*, have all been established to enrol important political figures, financial representatives and NGOs in the climate assemblage and establish carbon markets across the world. Once again, the actualisation of carbon markets has been far from a smooth process. The Clean Development Mechanism, and the European Union Emission's Trading Scheme, have both experienced spectacular technical and political failures and the US and Australia, are yet to pass a national level carbon tax. Yet as the global carbon assemblage increases its activities across the world, it is with increasing tenacity that carbon aid is channelled into the creation and expansion of carbon markets. The chapters on Cambodia will clearly demonstrate this.

⁷⁹ Created in 2015 leading up to the Paris COP, the Carbon Pricing Panel, not only includes the heads of the IMF and World Bank, but also the OECD secretary general Angel Gurría. The Panel was established to 'provide political leadership' on the establishment and strengthening of carbon markets around the world. Other members include: German Chancellor Angela Merkel, Chilean President Michelle Bachelet, French President François Hollande, Ethiopian Prime Minister Hailemariam Desalegn, Philippines ex-President Benigno Aquino III, Mexican President Enrique Peña Nieto, Canadian Prime Minister Justin Trudeau, Governor Jerry Brown of California, and Mayor Eduardo Paes of Rio de Janeiro.

⁸⁰ The Carbon Pricing Leadership Coalition is 'a voluntary partnership of national and sub-national governments, businesses, and civil society organizations that agree to advance the carbon pricing agenda by working with each other towards the long-term objective of a carbon price applied throughout the global economy'. It includes twenty two large states, 85 corporations including a number of mining and oil giants such as BHP Billiton, BP, Shell, Statoil and AGL, energy distribution companies such as Eskom, Fortum and Origin; Banks such as

Figure 3.6 Per Year Exchange Value of Carbon (within the three largest markets)



Data source: (Hamrick & Goldstein, 2015)

3.4 Risk Reduction and Finance Capital

The problem however from the perspective of northern capital is that overall, the carbon market, including the CDM market, the voluntary carbon emissions reduction market and long-awaited compliance markets, have all been highly disappointing in terms of providing new investment opportunities for finance capital. Although all these markets have seen growth (with highly volatile commodity values), they have seen only a fraction of the private capital investments that have been hoped for. According to IETA the total amount of capital investments needed to avoid dangerous climate change by transitioning to low energy infrastructure is US\$1 trillion per annum. According to the UNFCCC, investment required to make infrastructure climate resilient is US\$49-171 billion per year (UNFCCC, 2007) where there is an additional \$6.2 trillion investment required for new low carbon

infrastructure (Sonerud & Kidney, 2015). For REDD+, UNEP estimates that an additional \$40 billion in private investments are needed to ‘halve global deforestation by 2030’ (UNEP, 2011). Yet it has also been estimated that only \$4.2 billion has *actually* been invested into REDD+ markets since 2008 (Henderson & Coello, 2013). Similarly, according to UNEP there is an annual investment gap of around \$1 trillion into climate resilient infrastructure (Sonerud & Kidney, 2015). Other carbon markets have all seen disappointing rates of investments. The voluntary carbon market for instance since the late 2000s has seen a major oversupply of CERs due to a reluctance on the part of capital to invest in voluntary carbon saving schemes (Hamrick & Goldstein, 2015).⁸¹ The EU carbon market (the largest carbon market to date) has also been a particular disappointment.⁸² Capital has clearly not flowed into these new investment opportunities as hoped. This has been stated due to a range of reasons – from the difficulties that large pension and superannuation funds have in investing in the relatively small scale carbon projects with large transactions costs, the high risks associated with such investments (including both in terms of returns, but also in terms of project collapse due to unstable governments, conflict and corruption) and the lack of government regulation that would facilitate the creation of global, stable, carbon markets. Not least of these problems is the fundamental issue that many mitigation and adaptation activities do not always present opportunities for profit to be made and have since their creation been envisioned as operating within the framework of aid flows, rather than profitable ventures. This is in many instances a case of having the carriage before the horse where finance capital demands new avenues for investment in the form of commodities derived from carbon accounting before the techniques to make these novel commodities legible and commensurable have been fully developed yet alone actualised in

⁸¹ The value of the primary CDM market went from a high of \$6.5 billion in 2007 to \$1.5 billion in 2010.

⁸² Two years year after its launch in 2005 the price of carbon crashed to nearly zero (during the first ‘experimentation phase’). During the second phase it experienced major volatility before crashing in 2013.

particular places.⁸³ This represents capital's drive towards speculative futures in its attempts to overcome its limits in the present - a tendency which has become exaggerated since the neoliberal revolution (Cooper, 2008: 30).

In an age of neoliberal triumphalism UNEP, UNDP, UNREDD, the World Bank, ecosystems marketplace, even the UNFCCC now all insist that major changes need to be made to ensure the facilitation of private capital into the 'green economy'. And so underpinning the expansion of carbon markets has been an incredibly elaborate system of safeguards, risk-reducing strategies, laws, policies, accounting techniques and methods that ensure capital can flow into carbon schemes. Crucially, networks involved in the production of carbon markets cross the public-private divide. For instance, one of the outcomes of the Poznam CoP (Cop 14, 2008) was a US\$10 billion a year insurance pool funded by governments but run by one of the biggest re-insurers Munich Re, which would help countries in the south address climate change 'using innovative insurance policies'. Similarly, it is governments that have put up the lions share of investments into REDD+ and other funds for adaptation and mitigation (e.g. the Green Climate Fund) representing more than 90per cent of contributions to date. In 2015 REDD+ projects received the largest yet investment from governments. This has been justified on the deeply neoliberal logic that without public start-up funds, much larger volumes of private capital will be unable to flow into the 'green economy' once the basic institutions for carbon markets are established. For example Credit Suisse Managing Director, speaking at the 2014 Forest Asia Summit stated that much of the \$225 trillion of private capital in finance markets is 'keen to jump into the green

⁸³ It has been common for large scale financial institutions to provide 'start up grants' to conservation NGOs to trial REDD+ or PES type projects. As just one example Macquarie bank provided the conservation organisation WCS with a US\$1m loan to begin a REDD+ project in Cambodia which never got beyond initial project concepts. A similar thing happened in the Oddar Meanchey REDD+ project (chapter 5) where funding was given before the details of how to actually commoditise carbon were ironed out.

economy' and especially REDD+. But what is needed is 'action from governments, standards, and certainty' (CIFOR, 2015).

This is where some of the arguments for carbon markets over efficiency begin to unravel. Like any market, the carbon market does not evolve organically but rather in accordance to what David Graeber (2015) terms 'the iron law of liberalism' – that is, 'any initiative designed to promote market forces in the name of efficiency will have the ultimate effect of increasing the total number of regulations, the total amount of paperwork, and the total number of bureaucrats' (ibid:38). Similarly Peluso (2007: 137) notes that contrary to its own claims, neoliberalism as applied to environmental problems always involves 'layers of bureaucracy'. This should not be a revelation – as Foucault (2004) pointed out nearly 40 years ago, neoliberals have never understood markets as organic like their liberal counterparts belief in laissez-faire; but rather have always believed in competition as something that in practise is fragile and must be actively produced through state policy.⁸⁴ The fact that state bureaucracy props up fragile carbon markets has been made particularly clear in the case of crisis – for instance in 2012 at the spectre of the collapse of CDM markets governments in the OECD were urged to 'reassure investors, who have poured tens of billions into the market, by pledging a continuation of the system, and propping up the market by toughening their targets on cutting emissions' (F. Harvey, 2012).

To actualise risk-reducing strategies for capital as it enters into the field of climate change and environmental services, the very competition that the existence of markets is dependent upon requires a host of governmental programs and projects. There have indeed been phenomenal efforts on the part of governments, business, multilateral development institutions and NGOs to create new standards, safeguards, principles,

⁸⁴ As he states: "...it is a matter of a market economy without laissez-faire, that is to say, an active policy without state control. Neoliberalism should not therefore be identified with laissez-faire, but rather with permanent vigilance, activity, and intervention' (Foucault, 2004: 132).

accounting methods and best forms of practice. The documents and books produced on CDM and REDD+ coming from NGOs, universities, private carbon brokers and analysts and the UN and WB are almost endless and cover a proliferating array of topics; from how to incorporate the gender perspective into REDD+ programming, to the technics of creating government level benefit sharing systems, and reducing risk for investors in climate change schemes. What all these documents share in common – from the financial reports of ecosystem marketplace to the reports of small NGOs such as PACT, is that they all do work to facilitate the creation of a carbon market and facilitate flows of capital into it. They come up with new ways of reducing risk, they introduce new standards and safeguards that increase investor confidence.

It is here useful to switch from thinking of neoliberalism as a rationality of climate assemblages (the *virtual* project of neoliberalism), to neoliberalism as event. Rather than understanding investment shortfalls into carbon markets merely in terms of ‘market failure’ where businesses and consumers are unable or unwilling to ‘internalise’ climate externalities, it is important to consider this issue from the perspective of capital itself. Certain strands of northern capital are pushing for the creation of new spheres of commoditisation and profitability *against* a development industry that is structured around aid, *against* states that are reluctant to provide the upfront costs needed to establish and secure the day to day functioning of carbon markets (and simultaneously appease large carbon intensive industries),⁸⁵ and *against* the very material limits of commoditising ecological processes. All of these have to be understood within the context of the crisis of capitalism due to slowing productivity, the exhaustion of cheap nature and the over-accumulation of capital in the global north (see Moore, 2015). It is within this context that

⁸⁵ Salient examples here would be the coal industry in Australia which has exerted an enormous influence on the evolution of carbon regulation in Australia, and the mining and energy sector in North America which has also repeatedly succeeded in watering down carbon legislation.

Patrick Bond points out that investment into carbon markets has become an important outlet for over-accumulated capital in advanced liberal economies – even where this merely creates new speculative bubbles:

As productive sector profit rates in the North declined and financial returns boomed, financial expansion into various exotic derivative investments permitted virtually any notional value to be marketed as a credit for packaging and onward sale, including emissions of SO₂ in the US in the early 1990s and carbon in Europe by the late 1990s. (Bond, 2011: 66)

For Moore (2015), and others (Arrighi, 1994; D. Harvey, 2005; Peck, 2010), neoliberalism as historical process has to be understood within the general dynamic of over-accumulation. Over the last 40 years this has manifested in the specific form of neoliberal capitalism which in the absence of any obvious new frontiers of cheap nature, turns to financialisation and cheap credit. Yet even with savage attacks on labour (and stagnating incomes) and great optimism over new fields of capitalisation such as biotechnology and agro-industry, the tendency of over-accumulation has not been kept at bay – capital has hungrily been turning to new fields of investment, from land (White, Borras Jr, Hall, Scoones, & Wolford, 2012) to agriculture (P. McMichael, 2009). In particular, in the context of the 2007 Global Financial Crisis (GFC) there have been great hopes that the carbon market will help northern capital with a temporal fix where carbon futures, green bonds,⁸⁶ catastrophe bonds,⁸⁷ climate

⁸⁶ Since the late 2000s environmental or green bonds issued by states and large corporate entities have rapidly expanded in quantity where \$20 billion of Green bonds were issued just in the first half of 2014.

⁸⁷ Catastrophe bonds are risk linked bonds where a certain event triggers a clause where the principal is not repaid by the issuer. They are used by reinsurance companies to spread the risk of major events that companies would not have sufficient capital to put towards insurance pay outs. In the case of a 'catastrophe' the investor loses the principal. If no catastrophe occurs the investor makes profit from the premium coupon price.

bonds⁸⁸ and weather derivatives provide an outlet for pensions and superannuation managers to channel over-accumulated capital into the future (see Cooper, 2010; Johnson, 2013).⁸⁹ As one example, the 2009 American Recovery and Reinvestment Act, which was created to spur on capital fluidity in the American economy after the Global Financial Crisis (GFC), was heavily dependent on the carbon market - for instance it channelled \$6 billion into loan guarantees for renewable energy technologies and \$190 million for renewable energy projects. As another example, at a recent joint United Arab Emirates Ministry of Environment and UNEP conference, Sovereign Wealth Funds Managers were convinced to start up systematic plans for investing some of their US\$1.2 trillion of assets into the global 'Green Economy' – which was specifically brought up as a strategy to deal with the GFC. Then there is the Government Pension Fund of Norway which in 2011 was the largest pension fund in the world and which aims to find investment paths for surpluses from Norway's oil industry (an example of over-accumulated capital *par excellence*). This fund has invested heavily in the carbon market and by 2015 its contribution to REDD+ accounted for around two thirds of all money pledged to REDD+ dedicated climate funds. REDD+ investment has been an important outlet for capital after the global financial crisis of 2007/2008 where by 2012 it had come to represent more than half of all carbon traded (Hamrick & Goldstein, 2015).

⁸⁸ Green bonds and climate bonds are bonds issued from a qualified institution for the specific purposes of environmental or climate change related projects. The issuing institution issuing the bond then pays the investor a coupon (interest) until the maturity of the bond. Green bonds have rapidly grown in scale since the 2007/2008 financial crisis. From USD11 billion issued in 2013, \$42 billion were issued in 2015. Once again the World Bank played a pivotal role in popularizing green bonds where it was the first institution to offer green bonds on the market (utilizing its AAA rating) in 2007. In 2016, mining giant BHP Billiton issued the first REDD+ bond where the USD\$12 million bond was used to fund the Kasigau Corridor REDD+ Project in East Kenya (and where investors could receive their coupon in Certified Emission Reductions (CERs) generated from the project.

⁸⁹ When investors get together in various forums and push for political commitment to create a global carbon market they are not primarily concerned with avoiding dangerous climate change. They are concerned with creating a stable and transparent carbon market that would allow them to invest over-accumulated capital. For instance, at UN General Secretary Ban Ki-Moon's 2015 climate summit where 350 global institutional investors representing over US\$24 trillion of assets called on governments to 'provide stable, reliable and economically meaningful carbon pricing that helps redirect investment', they were primarily interested in future investments (UNEP, 2014).

On the other hand, carbon markets have also attempted to provide a spatial fix where CDM and REDD+ projects have provided a spatial outlet for capital. The commoditisation of avoided emissions from forests, and certified emissions reductions from green power plants, hydropower, village co-operatives and even development projects, have opened new spaces and frontiers for capital that were formerly outside of processes of value creation (Bridge, 2011; Fairhead, Leach, & Scoones, 2012). Rather than investing in expensive emissions reduction technologies or reducing emissions, northern capital has ‘taken the low hanging fruit’ by searching out new investment opportunities in the form of these new carbon assets (Larry Lohmann, 2012: 12).

Table 1. The Africa Risk Capacity Organisation

The African Risk Capacity (ARC) organisation perhaps perfectly represents the contradictory outcomes involved in actualising climate markets. The ARC organisation is a specialised agency of the African Union set up in 2012, covering 24 African member countries and which has received funding from DfID, the World Bank and GIZ. The ARC and its various programmes are a salient example of the coming together of risk, vulnerability and specifically neoliberal approaches to climate change as has been outlined in this chapter so far. Using satellite surveillance software developed by the UN World Food Programme to quantify the ‘impact of drought on vulnerable populations – and the response costs required to assist them’ (Syroka, 2015), ARC then provides index based insurance payments to all policy holder country governments where satellites show drought has reached a particular threshold. To get the system up and running, USD\$200 million in finance was provided by the British and German governments. The newest program of the ARC is ‘the extreme climate facility’. The facility offers climate bonds to private investors based on the likelihood of extreme weather events in member country regions. The interest going to investors is paid through member country contributions and initial start-up funds. In the case of extreme weather (quantified at a particular threshold based on satellite imagery), the investor loses the

principal and the money is channelled into 'climate adaptation plans' of members countries (which they must have as a condition of entry). Apart from the obviously neoliberal logic of making the 'vulnerable' responsible for and adaptable to climate change by utilising insurance policies and adaptation plans, this is also a novel attempt to link finance capital with climate change. The extreme climate facility not only creates a source of investment based on the poor's vulnerability to climate change but it links climate finance to convoluted financial mechanisms that prioritise investors. In this case, catastrophe bonds are essentially betting against African countries claiming finance – if member countries continuously claimed finance then the bond would not be attractive to investors. It is for this reason that the facility has put a ceiling on how much member countries can be granted.

New carbon bureaucracies have hastily been created across the world to help facilitate flows of money into the carbon market by creating new laws and providing the guarantees and regulatory environment that new markets are dependent upon – and this is the focus of the next chapter. A key claim here is that one of the key goals of the carbon assemblage which helps to coordinate the diverse interests of involved actors, is the facilitation of flows of private finance into the carbon market by reducing risk, and by creating new standards, safeguards, monitoring systems and accounting systems.⁹⁰ The proliferation of safeguards and best practise models represents a second layer of risk; that not only has the concept of risk helped to establish new commodities and scarcities within a whole new field of 'climate crisis capitalism' (Bond, 2011; Funk, 2014), but these new commodities themselves then face a whole set of financial risks as they enter the market that need to be addressed (primarily through public institutions). In other words, it was the very concept of risk that

⁹⁰ As just one example, the climate Investment Funds, administered by the World Bank, has three mechanisms for dispersing funds: grants, highly concessional loans and risk mitigation instruments.

facilitated the construction of a scarce ‘avoided future emission’, but once created, this commodity then faces a whole series of financial risks (as any commodity does) that need to be reduced and mitigated against. REDD+ is possibly the best example of this. It has taken ten years for an overall REDD+ framework to be agreed upon within the international CoP negotiations. This has not only been due to political deadlocks between payee and payer countries but the very complicated process of rolling out systems that can deal with the multi-faceted risks of private capital entering into risky developing countries. UNREDD puts it as:

Prohibitive risks associated with commercial REDD+ activities can easily inhibit private sector investment even in the presence of financial revenues associated with them. Examples of risks that are typical of investments in many developing countries are overall country and political risks, currency risks and, importantly, policy and regulatory risks, including those associated with land-use and REDD+ related policy frameworks nationally. The latter will be of particular potential detriment to private investment, given that it will be precisely through such national policy frameworks that international results-based payments will, in a second step, be passed on to the implementers of the underlying REDD+ activities on the ground, including private sector actors and financiers. If these frameworks are perceived to be opaque and risky, then private investment will not flow, whether an international system for results-based payments is in place or not. (UNREDD, 2015)

There has thus been a whole host of mechanisms put in place to deal with the risks of northern capital entering into REDD+ – from the complicated and rigorous accounting, monitoring and evaluation standards that have already been put in place within voluntary markets (such as the “Gold Standard” and the “Climate, Community and Biodiversity”

standards) to the very long and complex series of negotiations on safeguards starting at Warsaw,⁹¹ to the provision of state-backed political risk insurance such as that provided by the US-backed Overseas Private Investment Corporation (OPIC) and USAID to investors working in 'risky developing countries' (see example in chapter 5). These different mechanisms and associated financial flows have themselves spawned entire industries which have (and are set to) make significant profits from the public money flowing into carbon markets.⁹² Within adaptation and other mitigation finance, there has also been a major emphasis on using public finance to 'reduce the cost of capital'. As one research paper by the Overseas Development Institute puts it '[A] key task of public climate finance is, therefore, to reduce or mitigate the risks attached to low-carbon and climate resilient projects and technologies to leverage the private finance needed for investment' (Brown & Jacobs, 2011: 2).

The logic of risk reduction has had a major impact on the shape and day to day activities of carbon assemblages in recipient countries (i.e. on the way in which these rationalities are actualised). For instance it has been estimated that as little as 3% of the income generated on REDD+ credits may make it back to the village level producers of carbon credits (ClimateMarkets, 2015) due to the substantial costs of verification, monitoring, brokerage

⁹¹ As Chris Lang, author of REDD monitor points out REDD safeguards 'are not about upholding human rights. They are not about upholding indigenous peoples' rights. They are not about land rights. The UN negotiations about Safeguard Information Systems are about setting the boundaries for the story telling that REDD countries can get away with and still hope to get paid.'

It is also important to note that as to date safeguards within REDD+ programs have tended to be vague with minimal budgets. On the other hand, mechanism put in place to measure and verify carbon have tended to be well developed and well budgeted for. In the environmental NGO Ferns report on the World Bank's Forest Carbon Facility, it is concluded that 'In contrast to the confused and superficial attention given to environmental and social safeguards, and the potential risks from REDD, across all the R-PPs reviewed the proposals for Monitoring, Reporting and Verification (MRV) of carbon are well developed and well budgeted for' (Kate Dooley, Tom Griffiths, Martone, & Ozinga, 2011: 24).

⁹² For instance the World Bank's Forest Carbon Partnership Facility (with US\$1.1 billion pledged by 2016) had by 2013 spent two thirds of all its disbursements on World Bank administration, consulting expenses and transaction costs ("The World Bank's Forest Carbon Partnership Facility "has not saved a single hectare of forest", " Chris Lang).

fees and national level costs associated with rolling out REDD+ programs – much of which is taken up by companies and consultants based in the global north (the Oddar Meanchey REDD+ project examined in chapter 5 gives a salient example of this). As will be shown in the case study chapters, carbon assemblages in recipient countries also spend large amounts of time and energy on producing reports, attending workshops, meetings, doing consultations, monitoring and evaluation – much of which is concentrated around the logic of reducing risk.

Another strategy on the part of capital to deal with the risks of climate change has been to pool resources into climate trust funds. So far these funds have been integral to the establishment of carbon markets and the inflow of private finance in climate change projects. They have also played a significant on the global production of knowledge surrounding climate change. Bassett and Fogleman (2013) for instance suggest that the remarkable resurgence of interest in adaptation is directly correlated to the creation of the UN-backed Adaptation Fund in 2001.⁹³ Similarly, research on REDD+ and Payment for Environmental Services (PES) has been spurred on by the availability of major funds supporting these programmes.

Not only are these new funds set to form the main financial mechanisms through which adaptation and mitigation projects through the UNFCCC will be financed, but they have also been integral to providing start-up funds for projects in the voluntary market. The advantage of these funds is that they allow public and private investors to pool risks while capitalising on already existent mechanisms and management systems (typically within large multilateral development banks such as the World Bank). The logic for utilising these banks, as say opposed to direct payments to developing countries, is that they are better

⁹³ As they note '[A] staggering 85% of the articles published in Global Environmental Change on the topic of "adaptation" have appeared since 2005'. (42)

placed to 'leverage' private finance through access to concessional loans due to their AAA ratings as well as mitigating against 'irregularities' and non-transparency in fund distribution. As private finance by all accounts is set to represent the lion's share of all future climate finance, the ability to make climate change mitigation and adaptation an attractive arena for investment becomes crucial.

As a number of people have pointed out, the major trust funds set up to distribute climate finance also tend to concentrate decision-making power within institutions that are sympathetic to neoliberal agendas (Bond, 2011; L Lohmann, 2006; Müller, 2006; Rich, 2013). For instance, the World Bank now administers 18 global funds which collectively form the main mechanisms through which funds will be channelled from Annex One countries to non-Annex One countries under the UNFCCC agreements. Controversially, most of these new funds are highly dependent on private funds and concessional loans. The Green Climate Fund which was initially proposed at the 2009 Copenhagen CoP 15, is set to become the primary mechanism for transferring funds from Annex One countries to the global south for both mitigation and adaptation as part of UNFCCC process by mobilising a targeted US\$100 billion annually by 2020.⁹⁴ Since the fund's establishment in 2010, cumulative pledges have reached only US\$10.2 billion where the shortfall is hoped to be addressed by 'leveraging private sector funds' – especially pension and superannuation funds.⁹⁵ This involves making renewable energy projects, conservation projects and adaptation projects 'attractive to long-term institutional investors who are currently absent from many developing markets' (UNREDD, 2015). This in turn means the development of a whole host of mechanisms such as 'revolving funds' (which allow a business to borrow money from a fund to implement a renewable or adaptation project, and then replenish the fund once profits are generated), and of course 'risk

⁹⁴ Although within the media the \$100 billion dollar per year (by 2020) figure is often quoted as a formal agreement, in actual fact it was only an 'aspirational target'.

⁹⁵ For instance the Private Sector Advisory Group of the Green Climate Fund has made a number of recommendations (most of which are currently being integrated into the fund) for ways to 'leverage private funds'.

sharing mechanisms' such as insurance for 'green debts' so as to 'lower the likelihood that private investors will be exposed to losses' (Green Climate Fund, 2015). In effect, what all these mechanisms rely upon is 'a business model' capable of bringing returns to investors. All these investors looking to 'contribute' to the GCF are after all investors, meaning that at some stage between funding a project and completing a project, value must be created. Whether this is in the form of interest on loans, risk abatement services or through user-pays models, profit at some point has to return to the investor.⁹⁶

All this has little to do with Annex One countries paying off their 'climate debt',⁹⁷ or even the supposed organising principle of climate negotiations – 'common but differentiated responsibility'. There are major incompatibilities between securing profit and doing meaningful work which addresses needs in the global south, let alone dealing with the forces which produce the very inequalities which are at the centre of climate change. Instead, the global carbon assemblage is heading in the direction of a series of funds that will be leveraged from the private sector for projects which are demonstrably low-risk and can at some point ensure profitability to investors.

3.5 Neoliberal Governmentality

At this point, it is useful to consider in more detail what is meant by a neoliberal governmentality and the particular ways the carbon assemblage is embroiled in such a rationality. There has already been a discussion of the way in which capital constantly asks, if not demands, that the carbon assemblage can secure capital's reproduction within 'new green markets' so as to open up new spheres of capital accumulation. Yet the carbon assemblage is embroiled in projects and programmes, that tend to concentrate enormous amounts of development capital and resources within a vast sum of experts that far from opening up new spheres or circuits of accumulation for

⁹⁶ As a recent ODI paper puts it: '[A]t the individual project level, investors will be most motivated by the profitability of the potential investment, which is determined by whether the investment (either debt or equity) offers the right risk-reward ratios.'

⁹⁷ a notion that has progressively been sidelined from COPs (Bond, 2011)

northern capital, tend to absorb large amounts of northern capital, even becoming dependent upon it, with very few direct returns for investment. Climate change programs are progressively being rolled out to work on 'poverty alleviation', 'gender mainstreaming' and 'adaptation and resilience' – things that no matter how much neoliberal doctrine attempts to convince us can be achieved through profitable enterprises, very rarely actually generate significant, if any profit. Yet it would be impetuous to claim that neoliberal rationalities are not a significant operating rationale of the carbon assemblage – or that they are just one of many, or that in 'practise' there are more important institutional or 'local' rationalities that determine outcomes of the carbon assemblage. It is here important to understand neoliberalism as a rationality of government rather than merely the 'rollback of the state' or 'privatisation' (Peck, 2010).

Following Foucault, the key thing about neoliberalism is the *relationship* it institutes between government and the market.⁹⁸ Neoliberalism as an *art of government* certainly does not merely attempt to secure profitability above all else, or even to ensure the expansion of the market economy. Above all it is a *logic* of governance, that legitimises, even creates, the state along market principles. It is not merely rolling back the state to allow the expansion of the market into the former territory of the state (which has not anyway happened in any of the countries commonly deemed as neoliberal).⁹⁹ Nor is it the mere subsumption of 'nature' into capitalism – the production of nature or the neoliberalisation of nature. Rather it represents the expansion of government into an almost endless number of spheres, but based on the fundamental principles of competition, efficiency and freedom (Flew, 2014; Rose, 1999). Robert Coase's *The Problem of Social Cost* illustrates this point. What Coase's enormously influential essay argued for was not the

⁹⁸As he writes in the *Birth of Biopolitics*: '...the problem of neo-liberalism was not how to cut out or contrive a free space of the market within an already given political society, as in the liberalism of Adam Smith and the eighteenth century. The problem of neo-liberalism is rather how the overall exercise of political power can be modelled on the principles of a market economy'. (Foucault, 2004: 150)

⁹⁹ As Peck et al. put it neoliberalism 'never entailed an "absentee" state, but various kinds of reconstructed and reoriented states, dedicated to the ongoing tasks of market making and market-guided regulatory restructuring.' (Peck, Theodore, & Brenner, 2010: 106)

straight-out commodification of pollution or rolling back of the state – it was rather that the juridical apparatus that was in place to deal with pollution, needed to be re-territorialised to take into consideration economic activity.¹⁰⁰ It was this re-territorialisation that opened the law to new legal considerations around property rights and which played a major role in the proliferation of pollution markets. This section thus tries to move away from using neoliberalism as an ‘expression of the zeitgeist of global capitalism or as a conspiracy of ruling elites’ but rather views it in line with Flew who describes neoliberalism as ‘a project for institutional change grounded in particular ideas about the social and the nature of liberal government’ (Flew, 2014: 49). It moves away from looking at neoliberalism as ‘tsunami pummeling each country in its path and sweeping away old structures of power’, but following Ong presents ‘an analytics of assemblage over an analytics of structure, and a focus on emerging milieus over the stabilization of a new global order’ (Ong, 2007: 3).

What makes the climate assemblage inherently neoliberal is not whether or not it successfully commoditises or privatises things, but the expansion of government and the promotion of the market into an ever broader range of spheres. It is the attempt (and the word ‘attempt’ has to be stressed here), to work upon and understand social relations and even ecological processes in a way that opens them up to the possibility of being governed through markets.¹⁰¹ This does not imply that ecological processes are simply produced in line with the logics of capital - but vice versa

¹⁰⁰ As he puts it, it would ‘seem desirable that the courts should understand the economic consequences of their decisions and should, insofar as this is possible without creating too much uncertainty about the legal position itself, take these consequences into account when making their decisions’ (Coase, 1960a: 36). What is also remarkable about Coase’s work is his reworking of the earlier British Keynesian economist Arthur Pigou who in his seminal text *The Economics of Welfare* (1920) highlighted the need to ‘internalise’ external negative costs of production. It was his application of a tax (later to be famously known as a ‘Pigou tax – the basis for what would become carbon taxes) that would bring these externalities into production costs and ‘society toward equilibrium’. Coase departed from attempts to reduce ‘marginal social cost’ through taxes and even avoided Pigou’s language of ‘negative externalities’. Instead for Coase pollution was ‘not something bad’, but rather something that had to be priced in order to allow for its efficient allocation in accordance with the principles of competition and efficiency.

¹⁰¹ As Cooper (2008:10) puts it ‘what neoliberalism seeks to impose is not so much the generalized commodification of daily life—the reduction of the extraeconomic to the demands of exchange value—as its financialization. Its imperative is not so much the measurement of biological time as its incorporation into the non-measurable, achronological temporality of financial capital accumulation’.

– that neoliberalism understands ‘natural processes’ as following their own autonomous logic that needs to be understood on its own terms and is inherently resistant to top-down control or manipulation and is such best incorporated into the realm of governance, not by regulation but by financialisation.¹⁰² ‘Putting a price on nature’ is not seen as a manipulation or attempt to control nature, but simply a way of making the market aware of ‘nature’s’ presence and to internalise the material qualities of ‘nature’ in the profit calculus in order ensure the efficient usage of ‘nature’ across ‘society’. This is justified on ensuring positive ecological outcomes for ‘nature’s’ own sake (within the context of an already existent market system that will undeniably continue drawing upon ‘nature’) more than on ensuring profit. This in turn requires green bureaucracies and regulatory methods that are capable of setting up pollution markets but also producing detailed knowledge on the effects of things like climate change on population health (and critical infrastructure) and utilising the market to remedy these risks. This is what Luke (Luke, 1999) and others (Oels, 2005; Rutherford, 2007) term ‘green governmentality’ – where specifically governmental and market-based approaches to environmental problems come to the centre of state reasoning within liberal societies (there is a small but increasing body of work looking at how de-carbonisation through markets has become a central aspect of government reasoning within liberal societies) (Beck, 2010; A. Bumpus & Liverman, 2011; Oels, 2005; While, Jonas, & Gibbs, 2010). The various mechanisms that have emerged from the general idea of carbon markets such as REDD+, Payment for Environmental Services (PES) and carbon corporate accounting are not just pragmatic mechanisms that capitalise on the profit motivation or guilt so as to reduce carbon throughput. Rather these mechanisms, which would be inconceivable thirty years ago (for ethical and political economic reasons as much as technological), institute novel and broad ranging

¹⁰² It is also important to note that neoliberalism as formulated by its most famous proponents does not necessarily ascribe the expansion of the market into all relations – or insist that there should be state roll-back. As Mitropoulos points out neoliberalism is not merely compatible with patriarchy, the ongoing significance of the family-household to the reproduction of liberal societies, and strict and harsh border enforcement, but these things are fundamental pillars of neoliberalism. State rollback and the expansion of the market occur on the pillars of private property, gender and racial norms (Mitropoulos, 2012).

relations between forests, carbon, people and the market. REDD+ for instance as a decarbonising project not only attempts to commoditise the carbon found in forests in radically new ways, but links up with the desires of consumers in the Annex-1 world to live ethical low-carbon lifestyles.

It is here that neoliberal development institutions gain their remarkable immunising abilities -by being able to incorporate a diverse set of concerns into projects and programs that are fundamentally organised around market principles (see G. Harrison, 2004).¹⁰³ Thus climate change adaptation and mitigation are not merely tacked onto other concerns, or a cover to the instrumental goal of securing profit, but are new fields of expertise which are opened up to the domain of government and which legitimises its expansion. This is exactly what carbon funds achieve - the channelling of resources into new neoliberal experiments. And it is in this attempt to open up new spheres to the practice of neoliberal government that neoliberal governance often enters into the delirious; where the frantic efforts of experts to enrol ever more people and objects into their networks becomes almost schizophrenic as it reaches its limits. Patrick Bond (2011: 87) captures this in his pithy commentary on the World Bank at the climate conferences: 'like a drunken bilayer trying to hold a precarious rock climbers dangerously thin rope steady, the World Bank was everywhere in Cancun [COP16 held in Cancun, Mexico, 2010], staggering into various venues to apply neoliberal economic theory where it had rarely gone before; into new Chinese emissions markets, lurking within tropical forests, burrowing into the topsoils of agricultural land, and even tackling 'charismatic' endangered species'. So too the chapters on Cambodia will emphasise the delirious nature of the carbon assemblage as it tries to enter into an ever increasing number of issues and problems. As Foucault points out, this is absolutely in line with the neoliberal rationality of governance where 'governmental intervention must be light at the level of economic

¹⁰³ As Harrison (2004) states the World Bank 'is not merely concerned to impose neoliberal economic models on governance states, involving the roll back of the state. It is also concerned with the *ordering* of the effects of liberalisation, and the *institutionalisation* of market relations.' (121)

processes themselves, so must it be heavy [at the level of] technical, scientific, legal, geographic, say, broadly, social factors' (2010: 107).

Climate change thus becomes another field of intervention that liberal government takes responsibility for – something that must be made visible, knowable, 'rendered technical' (cf. T.M. Li, 2007) and incorporated into the calculation and micro decision making of government; to be mainstreamed, not as a controversy, but as a banal and everyday part of bureaucracy (cf. Latour, 1998)¹⁰⁴. Importantly, this is not an argument which claims that the entire UNFCCC apparatus is entirely saturated with a neoliberal rationality. Rather it is that the continual politics over finance, historic responsibility for climate change and ownership of climate finance which punctuate the bureaucratic UN-run process, are constantly being pushed and morphed in accordance with neoliberal doctrine's demands (Bond, 2011; Klein, 2015; Newell & Paterson, 1998). Yet, as will be shown in detail in the next chapter, and as has been highlighted by a host of anthropological work on development (Lewis & Mosse, 2006b; Van den Berg & Van Ufford, 2005), it is exactly this delirium or hubris over what development assemblages can achieve that opens up an unbridgeable gulf between the realities of people living in difficult circumstances vulnerable to the dangers of a changed climate, and the ever-proliferating goals and aims of development.

In terms of understanding how this neoliberal governmentality is actualised across space, Aihwa Ong's quip of *neoliberalism as exception* and *exceptions to neoliberalism* are particularly useful (Ong, 2006). *Neoliberalism as exception* refers to the introduction of market-driven calculations to the management of particular populations and administration of special spaces, while *exceptions to neoliberalism* 'exclude populations and places from neoliberal calculations and choices' (Ong, 2006). Ong's focus on neoliberalism as a certain calculation in order 'to induce self-animation and self-government so that citizens can optimize choices, efficiency and competitiveness in turbulent

¹⁰⁴ In Latour's seminal essay *To Modernize or Ecologize* he argues that the biggest threat to ecology is not being ignored but rather becoming a banal and managerial part of governmental decision making rather than a way of thinking which can expand the politics of nature.

market conditions' (ibid: 7) is particularly useful in the context of understanding climate change interventions and their relationship to neoliberalism. Short circuiting debates about the degree to which neoliberalism can be found in countries such as Cambodia (S. Springer, 2011), this thesis will focus on the manner in which climate change interventions employ *neoliberalism as exception* in an attempt to induce, in an Avante Garde fashion, distinctly governmental and market-based forms of calculation amongst target populations (in the hope they will spread to the population more generally).

3.6 The Biopolitics of Adaptation and Resilience

If the carbon assemblage gains one of its central rationalities, or its reason of being, from neoliberal doctrine with its emphasis on opening up new spheres to market relations, then it is also important to consider how this neoliberal logic specifically positions and understands the human subject. What is argued in this section is that as well as neoliberalism legitimising itself based upon a series of arguments about the competitiveness and efficiency of markets as a means of internalising and distributing the costs of climate change, much more fundamentally, and in line with advanced liberalism's modus operandi, it concerns itself with the protection and enhancement of life (Esposito, 2004). It is now common within popular climate change literature to view humanity not just as a geologic force, but a biological entity - 'species life' - whose very future biological existence is threatened by the spectre of climate change (Chakrabarty, 2009; Reid, 2014). It has now become common within popular climate change literature to speak of climate change in general terms of impacts on 'human species health' (Anthony J McMichael, 1993; Anthony J. McMichael, Woodruff, & Hales, 2006) or 'human life' (McCarthy, 2001).

At a broad level, the very manner in which key terms that have their origins in biology and ecology ('adaptation' and 'resilience') and have been applied to understanding the interactions between humans and climate change is indicative of a general biopolitics that takes the biological facts of

human existence as a key object of politics and governance which is in stark contrast to older notions of a fundamental split between the political/public/demos and the banal/private/oikos (Foucault, 1973).¹⁰⁵ Most alarming however, is that once power invests into, and hinges upon, the very basic biological functions of subjects, it is not only the case that there are renewed efforts ‘to make live’ but that simultaneously the production of death or ‘to let die’ also enter into political calculation and become a norm of governmental reasoning (Foucault, 2004). Particularly horrific is what happens when states view people in terms of their mere biological existence – as outside the normal legal sphere (Agamben, 1998, 2005) or as a threat to the political body (Esposito, 2008) and there have been widescale concerns that the issue of climate change and particularly climate-induced migration easily slips into this type of biopolitical reductionism (Arnall, Kothari, & Kelman, 2014; Baldwin, 2016; K. Grove, 2010). This section attempts to interrogate the specific modalities in which a broad array of climate change interventions attempt to govern over life.

If the climate has for centuries aroused anxieties on the part of liberal institutions over how to deal with both its effects on white constitutions, and on the vulnerable which come under liberal trusteeship (Frewer, 2016), it is no surprise that with the rise of anthropogenic climate change, liberal government has evolved a much more complex array of apparatuses and discourses to govern life in the context of dangerous climate change. Fundamental political-economic changes at the global level have re-orientated dominant notions of risk management away from geo-territorial strategies based upon bordered and contained national economies, towards a geographically dispersed notion of risk where risk is complex, emergent and a ubiquitous part of everyday life (Dillon & Reid, 2009; Duffield, 2007). The significance of this is that older governmentalities that emerged at the turn of the 18th century which took tropical life and specifically its improvement, as a

¹⁰⁵ See Sarah Radcliffe who refers to this as mainstream development thinking’s ‘new biologism’. As she puts it ‘Ways of thinking about adaptation and change are emerging into mainstream development from ecology and complexity science without any critical reflection on the specific consequences or the wider fields within which these concepts are being introduced’ (Radcliffe, 2015)

mandate of colonial government (cf. Lugard, 2013 [1922]),¹⁰⁶ have ruptured under the pressure of new political and economic demands. Cooper (2008) most articulately elaborates the co-evolution between neoliberal forms of capital accumulation with biopolitics where she sketches how life itself – and the uneven distribution of life chances – forms the basis of new speculative and risk-based modes of capital accumulation. In terms of climate change it is this uneven distribution of life chances, captured in the notion of the ‘vulnerable’ which is taken as an ontological given; inequality is a reality that cannot be easily ameliorated through state policies,¹⁰⁷ but could potentially be opened up to financialisation and speculation. The problem of contemporary liberal government in relation to climate change is no longer how to improve ‘backward populations’ who reside in the tropics, through modernisation and development, but the management of the failures of liberal modernisation; of how to deal with geographically dispersed ‘vulnerable’ populations who are exposed to climate change and for whom the hopes of having a living standard equal to that of those in the global north has largely been abandoned. To make this clear, this section will give a brief genealogy of how advanced liberalism has oscillated between two poles in relation to climate change – on the one hand seeing it as a security issue, and on the other seeing it as a development issues focused around the concept of resilience and adaptation.

By the late twentieth century, within many advanced liberal democracies, the climate became reinscribed as an issue of urgent military security. It was no longer an issue of securing European health in a dangerous tropical climate, but of a dangerous climate imagined as ‘a complex emergency’ (Dillon & Reid, 2009) which threatened national population security (Dalby, 2013; K.

¹⁰⁶ As Lugard wrote in the *The dual mandate* ‘[T]he twentieth century belongs to the heritage of the tropics and the task of their development’ (2013 [1922]: 36). For Lugard as much as for John Stuart Mill and Joseph Chamberlain, development was to occur in the ‘tropical zone’ rather than ‘proper colonies of the temperate zone’ and it was after all *Tropical Africa* where the *Dual Mandate* was to be applied (34). See (Cowen & Shenton, 1996)

¹⁰⁷ There have been no serious calls for instance for welfare type policies

Grove, 2010), economic security (Newell & Paterson, 1998; Yusoff, 2010), vital systems security (Baldwin, 2013; Braun, 2007; S. Collier & A. Lakoff, 2008) and human security (Bettini, 2013a). The publication of UNEPs 1985 report *Environmental Refugees* and the World Resource Institutes 1988 publication *Environmental Refugees: A Yardstick of habitability* represented the first wave of apocalyptic narratives which saw climate change and the flows of migrants it was likely to unleash as a threat to the security of northern states (Bettini, 2013b:21). After decades of the social state system that sought to manage risks and migrants at the border it was deemed that ‘the increasing trend of environmental migrants is clashing with widespread anti-immigrant sentiment in both developed and developing countries around the world’ (P. J. Smith, 2007:1).

By the turn of the century, climate risk had become thought of as a complex future scenario which required pre-emptive cooperative interventions from military, economic, state planning, public health, and international development networks (Baldwin, 2013; Dillon & Reid, 2009). In 2003 the Pentagon released a report detailing hypothetical scenarios from future climate change (Schwartz & Randall, 2003). According to this report, in the face of the failure of ‘human adaptation...borders will be strengthened around the country to hold back unwanted starving immigrants...’(18). But it is not just militarised borders that will be used against surplus life, but pre-emptive strikes:

As famine, disease, and weather-related disasters strike due to the abrupt climate change, many countries’ needs will exceed their carrying capacity. This will create a sense of desperation, which is likely to lead to offensive aggression in order to reclaim balance.’(18)

By the late 2000s climate-induced immigration and instability had become a major security issue of the U.S, Canada, Australia and Europe (Gupta, 2009). Not only had US President Barrack Obama slated climate change as an issue of national security – one ‘that no nation is immune to’, but by the end of the decade the US Pentagon, the UK Ministry of Defence and the Australian Defence Force had all released important strategic papers which recreated climate change as a security issue

(Gilbert, 2012). Not only are the US military and its allies trying to wage a geotechnical war on climate change in response to the threat it poses to 'vital systems' (Hulme, 2008), but it is also waging a war on 'climate migrants' who will be unhinged by climate devastation. This securitised militarised approach to climate change has spread to governmental networks well beyond that of the U.S. On 17 April 2007 the UN Security Council established climate change as a 'security issue' where it was argued that climate change went to the 'very heart of the security agenda' (Nordås & Gleditsch, 2007). Since that time climate change has remained an important security issue for the UNSC (Oels, 2013). At the same time not only have NGOs such as Oxfam, Christian Aid and Greenpeace raised global attention around the issue of climate migrants, but within academia scholars such as Homer-Dixon (1991, 1994) and Norman Myers (1993, 2005) have popularised the idea of the climate migrant representing a security threat. Such a connection became enshrined in a whole new host of governmental institutions through key reports from the Council of the European Union (2008), the United Nations General Assembly (2009), and the Stern Review (2007). As Giovanni Bettini (2013b) in his history of climate migrations states

Thanks to such dramatic emphasis, a topic previously familiar only to specialists reached the centre of climate politics. For instance, it [climate migration] is explicitly addressed in paragraph 14 of the so-called Cancun Adaptation Framework signed by the parties to the UNFCCC (2010), which is arguably the highest instance of international climate law. (2)

Walker and Cooper (2011) have eloquently argued that economic and security thinking has irreversibly shifted from a world of social welfare, equilibrium and limits, to a world of complexity, emergence, and resilience. Risky life has not been contained by states, but has proliferated. As climate change seemingly allows an ever greater number of vulnerable and risky forms of life to emerge, new technologies to spatially and temporally manage risky life are required. Now more than ever, non-insured, unhealthy, non-immunised, low skilled, under educated and non-sanctioned

mobile life has become a threat to security states. In response development and militaristic networks – often one and the same thing – have spread across the world to regulate life (see for instance: Bigo, 2006; Dillon & Reid, 2009; Duffield, 2007; Mezzadra & Neilson, 2013). In particular, border technologies such as customs agencies, detention centres, and screening technologies have become ever more ubiquitous as they are used in geographically complex ways which criss-cross nation states.

But as Bettini (2013) points out, the dominant discourse on climate migrants had seemingly shifted by the mid-2000s away from apocalyptic narratives of an impending flood of refugees, towards a much more seemingly benign, yet governmental discourse, which focused more on strategies to help and secure those affected by climate change within their own territories. Through a number of influential publications, a discourse on climate change and life in the global south began to stabilise, which demonstrated many continuities with the older colonial governmental rationality of working on populations to secure their adaptation. Take for instance the highly influential 1994 Human Development Report on Human Security that sowed some of the seeds for the evolving discourse on adaptation and resilience. At the centre of the report is the paradigm of ‘sustainable human development’ which ‘values human life for itself’ (United Nations Development Programme, 1994: 1). Such a paradigm focuses on bringing ‘human numbers into balance with the coping capacities of societies and the carrying capacity of nature. It accelerates economic growth and translates it into improvements in human lives’ (ibid: 3). Written in the context of the ‘world’s many conflicts and emergencies...and silent crisis of underdevelopment’ (ibid: 20), the report seemingly shifts away from the exclusion of life deemed a threat to the populations in the global north, and towards a biopolitics of improving the lives of ‘the vulnerable’. It presents a security paradigm not based on armaments or territory, but of humans and development. At the centre is a classic security logic of pragmatically managing ‘goods’ and ‘bads’; of ‘responding to the threat of global poverty travelling across international borders in the form of drugs, HIV/ AIDS, climate change, illegal migration and

terrorism' (ibid: 24). As such climate change and 'illegal migration' remain as 'threats'; just that the emphasis has seemingly shifted from violence and territorial borders to development and complex transnational solutions (ibid: 46). In actual fact, considering the increasing militarisation of borders and security procedures over the two decades following the release of the report, it could be argued that the human security paradigm sits comfortably with the proliferating apparatuses designed to restrict and quarantine 'bads' including refugees and migrants (Braun, 2007; Mezzadra & Neilson, 2013). This is certainly the argument that scholars such as Duffield and Reid put forward when they argue that older violent technologies of exclusion have become welded together in what they term 'the development-security' nexus. Hence, rather than seeing security and development as two mutually exclusive paradigms, it is important to understand them as complementary, or as Esposito puts it, the negation of life and enhancement and protection of life have to be understood 'as being located on the same biopolitical horizon' (Esposito, 2008: 14).¹⁰⁸

At the same time, the World Bank's world development reports were similarly helping to solidify a discourse that was governmental in nature and primarily concerned with life in the developing world and its relations to natural disasters, environmental degradation and other 'bads'. For instance the 1992 report *Development and the Environment*, produced at the height of the World Bank's neoliberal turn, but which was also obviously influenced by events leading up to the Rio declaration, awkwardly tries to suture over incompatibilities and conflicts between 'development' and the 'environment' by focusing on 'win-win solutions'; i.e. 'market friendly solutions' which can protect

¹⁰⁸ For Foucault, Agamben and especially Esposito this is a particularly important point. From a biopolitical reading the production of death is not in contradistinction or the opposite of the enhancement of life. Rather the removal of life is an immanent part of the enhancement and protection of life (for Esposito brought together in the figure of immunization) (Esposito, 2008). It is for this reason that liberal regimes are inclined toward the production of death at some point – to cure the political body requires the removal of life that is deemed a threat to the health of the 'political body'. Thus when it comes to climate change interventions it is crucial to point out not that adaptation, resilience and capacity development are the opposite of exclusion of climate migrants – but rather are located within the same logic. One could seamlessly slip - or simultaneously go - from being the recipient of adaptation and resilience projects to being a dangerous and excluded climate migrant.

the environment. It somewhat boldly announces that '[t]he world has learned over the past two decades to rely more on markets and less on governments to promote development' (World Bank, 1992: 7) but carves out a special role for the state as environmental regulator; 'environmental protection is one area in which government must maintain a central role' (ibid: 23). Yet it still remains fixated on individuals in the global south and the need to govern over their actions and behaviours. For instance in a chapter titled 'changing behaviours' it is stated 'that specific policies are required to induce or require resource users to take account of the spillover affects that their actions have on the rest of society' (ibid: 73) – and in this sense is not significantly different from older colonial discourse on development in the tropics.¹⁰⁹ Throughout the 1990s World development Reports continued to promote this three-pronged strategy of 'market friendly solutions', which were facilitated by eco-modernising state environmental bureaucracies, but which saw governance targeted towards communities and individuals in the global south. Parallel to this, USAID was crafting similar environmental policies which came to play an important role on NGO led conservation efforts over the next two decades (Corson, 2010).¹¹⁰ This is a very neoliberal vision, one which sees state bureaucracy as helping to construct the conditions of competition that will facilitate individuals and communities taking greater responsibility for environmental management. For instance the 1997 *State in a Changing World* report pursues a common trope of the time by stating that 'getting societies to accept a redefinition of the state's responsibilities will be one part of the solution. This will include strategic selection of the collective actions that states will try to promote, coupled with greater efforts to take the burden off the state, by involving citizens and communities in the delivery of core collective goods' (World Bank, 1997: 4).

¹⁰⁹ See for instance Lord Hailey's *An African Survey: A Study of Problems Arising in Africa South of the Sahara* (1938: 234). After spending five chapters carefully outlining the role of newly formed international organisations and national governments in expanding health education and vaccination programs he states 'the most difficult problem of the health services does not, however, lie in enforcing anti-epidemic measures, but in persuading Africans to adopt the recognized principles of hygiene as part of their social habit'.

¹¹⁰ Corson for instance notes how, since the early 1980s USAID began 'to provide assistance for the protection and management of "environmental and natural resources ... upon which depend economic growth and human well being, especially that of the poor"' with a focus on 'state intervention to manage natural resource supplies for the poor' (Corson, 2010: 578).

By the late 2000s world development reports and development orthodoxy in general, had softened considerably from the older stubborn faith in individual rationality and markets and started to discard some of the harsher aspects of neoliberal conditionality – at least at a discursive level (Craig & Porter, 2006). In its place was a seemingly kinder, more caring and multifarious form of development pivoted around ‘good governance’, ‘communities’, ‘civil society’ and ecological issues (G. Harrison, 2004) – what was referred to in chapter one as ‘millennial development’ (Roy, 2010). In particular the discourse of sustainable development already laid out at the Stockholm conference and further elaborated at Rio came to the forefront of liberal governments aspirations to be ecologically inclusive. Death (2010) for instance traces the significance of the 2002 United Nations World Summit on Sustainable Development which he views as ‘the coming’ of sustainable development discourse and which signalled the incorporation of, and stabilisation of ecological reason within powerful liberal governmental assemblages.

Throughout the 1990s and early 2000s the World Bank recreated itself as one of the most important producers of environmental knowledge in the world (Goldman, 2006; David Mosse, 2004). By 1987 the World Bank had gained a specialist environment department and by 1990 had adopted environmental safeguards that would be highly influential on other large development institutions (such as bilateral aid agencies and other multilateral aid agencies). From 1985, the bank went from having five environmental staff to 270, five years later (Rich, 2013). Across the same time period, lending for environmental purposes increased from US\$15 million to \$180 million, then to \$990 million in 1995 (ibid). It also became arguably the largest centre for environmental research in the world –from producing 57 reports on the environment in 1985 to 408 in 1995 (ibid). Another major change was that with Robert Zoelick’s term as president of the Bank from 2007, the flood gates were open to climate change, which before that point, largely due to the Bank’s heavy investments in coal and natural gas had remained a controversially peripheral subject for the bank.

The 2010 development report *Development and Climate Change* helped to establish the bank as a major knowledge producer on the issue of climate change. Yet in many ways, at its core, the report remains dedicated to its three-pronged discourse of market-friendly solutions to environmental problems, the expansion of 'good governance' within state environmental bureaucracies, and a focus on governing individual and community behaviours. What it introduces are two novel concepts, which since the 2000s have become increasingly dominant within global governmental assemblages; adaptation and resilience. Whereas resilience was mentioned twice briefly in the 1997 *State in a Changing World* report, and adaptation none at all, in this report both concepts formed the focus of several chapters (where 'adaptation' was mentioned 446 times and 'resilience' 60 times). The report displays all the hallmarks of the rationality of resilience identified by Chandler (2014) – a focus on 'bottom up', organic, community-focused solutions, a critique of rationality and expert-driven programmes, and an abandonment of linear solutions and in its place a focus on managing risk and complexity. This resonates with Valverde's concept of 'targeted governance'; 'the world of decentralised, networked knowledge/power, a world governed by benchmarks, audits and performance indicators' (Valverde, 2003:439). Here, development resources, in a very biopolitical manner, are channelled to those sub-populations deemed vulnerable and at risk.

The central theme of the *Development and Climate Change* report is developing strategies 'to help manage the risk affecting the most vulnerable and to empower communities to become agents in climate-change management' (The World Bank, 2010: 6). It places major importance on 'building resilient communities' and 'empowering' people to manage their ecosystems in a sustainable manner. At face value it purports not to a logic of state institutions and experts disciplining the poor, but rather it pivots upon the local knowledge and practice that 'communities' are already supposedly imbued with; 'local decision making, diversity, and social learning are key features of flexible, resilient communities.... and vulnerable communities can be effective agents of innovation

and adaptation' (ibid: 3). In this sense it follows a classic governmental logic not of direct intervention, but of carefully working on 'the conduct of conduct' of newly discovered eco subjects and on the myriad relations between man, nature and state (see Tavares, 2013); 'in many developing countries decentralized governance of forests based on principles of common-pool resources has given local populations the authority to manage forests, use their time - and place-specific knowledge to create appropriate rules and institutions, and work with government agencies to implement the rules they have created' (World Bank, 2010: 72).

By the time of the 2014 World development Report *Risk and Opportunity*, the three-pronged rationality had developed even further where the report called for 'individuals and institutions to move from being 'crisis fighters' to becoming 'proactive and systematic risk managers' (The World Bank, 2014b: 1). Development effectively becomes reformulated as the ability to make the poor risk adverse in the context of climate change; 'managing risks responsibly and effectively has the potential to bring about security and a means of progress for people in developing countries and beyond'(ibid: 3). In the context of the climate assemblage, and flows of money that support adaptation and resilience projects and programming, this reformulation of development has largely become a banal managerial exercise which has been '...accomplished through enrolling risk management and climate science in the development industry's efforts to transform an unruly world of difference into techno-managerial spaces of control and domination' (K. Grove, 2010:538). For instance the IPCC's 2012 report *Climate Change: New Dimensions in Disaster Risk, Exposure, Vulnerability, and Resilience* which offers a fairly dry, formulaic strategy for disaster risk programming has rapidly flowed through donor-NGO-expert- project chains (i.e. development assemblages) and is now referenced in NGO project documents across the world, including in Cambodia.

If it is this very fundamental ability to live in the context of a dangerous climate and even ‘adapt’ (and it may very well be asked if adaptation can meaningfully be thought outside of the biopolitical lexicon of the long-term ability of the human species to live and reproduce in the context of a changed climate), then the flipside is that this fundamental biological existence can also be posed as a risk. This refers not just to Malthusian concerns of a rising population on the environment, but the common problematisation of the relations between the poor and environment. One may well ask for instance what happens when ‘communities’ do not behave as good eco subjects; when they make decisions that are environmentally destructive, when they resist and evade state led eco-modernising programs, or when they fail to demonstrate ‘correct’ eco knowledge? This is when the pendulum swings to the security pole of the ‘development-security nexus’ or when the negating horizons of biopolitics throw off all political and discursive mediations to take control of life. As Andrew Baldwin (2013) has pointed out, in many cases it is not even that security is obscured within the new resilience and sustainable development discourses as it takes a prominent role sitting awkwardly alongside the more seemingly benign discourses of empowerment and capabilities.¹¹¹

It is also useful to consider here how the rise in resilience thinking understands the subject and her relationship to the material world. As Chandler (2013) points out, the resilient subject is very different to the old liberal subject of the colonial period. Rather than development being a mechanism to transform the colonial subject who is seen as lacking autonomy, so as to bring about social and economic improvement, contemporary development envisioned as freedom¹¹² works on the subjects inner capabilities and choices – i.e. their ‘resilience’:

¹¹¹ Baldwin (2013) has convincingly argued that conservation has increasingly focused on ‘vital ecosystems security’ where the difference between vulnerable subjects who are to take responsibility for managing vital ecosystems and subjects who are a risk and need to be disciplined in order to prevent them harming vital ecosystems is becoming increasingly blurred. See also (Luke, 1999) Luke talks here in detail about the policing and surveillance of ecosubjects.

¹¹² Chandler is here referring to Amartya Sen’s pivotal work *Development as Freedom* (Sen, 2001)

Development is judged on the basis of the individual's use of 'reasoned agency'. Development is the project of giving the individual the choice-making capacity necessary to adapt efficiently in today's globalized world. Development is the task of all stakeholders but can only be measured in the individual's inner achievement of 'freedom'. (ibid: 81)

It is here that Chandler helpfully pushes the debate beyond Foucault and Agamben by attending to the specificities of resilience and demonstrates the shifting trajectory of biopower. As he points out resilience thinking focuses on the governing of individual decision making in the context of the failures of liberal modernity where it 'manages for failure'. Resilience thinking is thus an 'outgrowth of neoliberalism' in that it pursues the critique of top-down, instrumental, state intervention to its full logical conclusion - that even the market is not a privileged field of reference (ibid 87). Rather, it governs by focusing on individual 'capabilities', 'decision-making', 'adaptation' and 'empowerment'. Yet it is still fundamentally biopolitical in that it focuses on the subjects vital life characteristics as an object of governance - but just that it expands what is understood as the fundamental characteristics of life that make it governable. It is here that the category of 'complex life' is employed as a counter-critique to reductionist representations that claim subjects need to adapt to the external rationality of the market or democracy (Chandler, 2014: 63).¹¹³ Hence '[D]rawing on the 'reality' of life thereby has a tremendous appeal, especially if reductionist short-termism is seen as palpably unable to govern the world today' (Chandler, 2014: 64). In this sense, it can be seen why risk and resilience have simultaneously come to the fore of liberal governance. Not only do they share the same ontology, but they are also appealing to policy makers and experts due to their

¹¹³ As Chandler states – 'For resilience-thinking there is no natural liberal world that can be 'adapted' to. There is no external rationality, which democracy and the market require obedience to. In the world of resilience thinking, reductionist representations such as the requirements of society, democracy or the market no longer exist separately to the reality of the complex social processes of everyday life' (63).

realist claims to be able to capture the realities of life while pragmatically managing for the failures of liberalism.

Most importantly, it is the reversal of the subject/ environment relationship which focuses governing apparatuses so much on the task of governing the capabilities and choices of individuals. Within for instance Amartya Sen's (2001) understanding of 'development as freedom', there is no longer any difference between the west and the rest – there is no outside to liberalism.

Development is not the external transformation of social relations amongst supposedly backward colonial subjects, but the internal enhancement of freedom and choice which is applicable to all subjects as all subjects are universally in need of expanding their freedoms. Yet, it is the post-colonial subject and 'their lack of capability to respond efficiently to their circumstances' which becomes the focus of development thinking (Chandler, 2013). In particular, it is the vulnerable subject, especially the vulnerable subject in the developing world who takes central stage amongst the new discourse on resilience. For instance the 2014 UNDP Human Development Report *Sustaining Human Progress : Reducing vulnerabilities and building resilience* is entirely fixated on the poor residing in the global south and focuses almost exclusively on those vulnerable to climate change, state failure and non-inclusive development, arguing that 'sustained enhancement of individuals' and societies' capabilities is necessary to reduce these persistent vulnerabilities' (UNDP, 2014: 4). The emphasis then is placed on 'human resilience—ensuring that people's choices are robust, now and in the future, and enabling people to cope and adjust to adverse events' (ibid: 23).

Yet there is no mention of the violent, cruel and expensive border policies that advanced liberal countries pursue that restrict the migrations of 'vulnerable' people across the global south.¹¹⁴ Nor is

¹¹⁴ For instance in Cambodia, Australia, who provides funding for various climate change related programming, has pursued a AUS\$40 bilateral deal with Cambodia whereby Cambodia will host Australia's unwanted refugees, rather than giving them right to reside in Australia as they are compelled to do under the terms of the UN Convention on Refugees.

any agency given to trade agreements and liberalisation policies that often devastate rural economies in the global south – i.e. those trade deals pursued by the U.S and EU which those states that are the target of resilience discourse, like Cambodia, are forced to enter into, and which often have devastating effects on certain sectors of the economy and people's livelihoods.¹¹⁵ Nor is there mention of the millions of dollars of loans and grants given to profitable entities under the banner of 'aid' rather than being directly provisioned to the poor through state programs.¹¹⁶

What development is attempting to secure then is on one side the ability of the poor and vulnerable to withstand and even adapt in the face of low carbon lifestyles, state abandonment, migration restrictions, limited economic opportunities, civil conflict and most importantly the effects of dangerous climate change and environmental degradation, while on the other side it attempts to make the poor responsible for managing and protecting the biosphere which is of global benefit and simultaneously induce them into market rationalities. As Reid (2013) puts it, the poor

...are the segment of population of which resilience is now demanded and simultaneously the population said to threaten the degradation of 'ecosystem services.' Increasing the 'resiliency' of the poor has become a defining goal, for example, of the United Nations Environment Programme (UNEP) in the years post-Johannesburg (UNEP 2004: 39). Alleviating threats to the biosphere requires improving the resilience of the poor, especially, because it is precisely

¹¹⁵ For instance in Cambodia the EUs 'everything but arms' bilateral trade agreement has been directly linked to land grabbing and gruesome labour practices. (Equitable Cambodia & Inclusive Development International, 2013)

¹¹⁶ For instance in Cambodia the World Bank and ADB all provide low interest loans (around 3-6% p.a) to Cambodian banks and microfinance institutions. Yet they insist that these institutions provide microcredit at domestic market interest rates (which are considerably higher in Cambodia due to the history of informal money lenders) which range from 8 to as high as 25% p.a. The logic being that to provide credit at the lower interest rate of multilateral banks would be an artificial market distortion – even though state provided low interest credit programs in other countries have been shown to have positive impacts on rural poverty. The effect of this policy is that not only do larger institutions make sizeable profits, but farmers are forced to endure excessive interest rates.

the poor that are most 'ecologically ignorant' and thus most prone to using 'ecosystem services' in non-sustainable ways. Thus does ensuring the resilience of the biosphere require making the poor into more resilient kinds of subjects, and making the poor into more resilient subjects requires relieving them of their ecological ignorance, and the means to that removal is argued to reside in building neoliberal frameworks of economy, governance, and subjectivity. (ibid: 27)

Equally important to the discussion at hand, is the manner in which ecological reason has been fused to neoliberal reason through the logic of resilience. As Reid points out, if the rise of political economy, as documented by Foucault, signalled the disassociation between economy and nature where economy becomes correlated to life and its maximisation rather than nature, then contemporary sustainable development discourse extends the concern for life from mere individuals to the entire biosphere. What Reid is emphasising here is that sustainable development is not merely a handmaiden of neoliberalism. Rather, there is a deeper and fundamental biopolitics to neoliberalism where nature is not merely an externality or a barrier to economy as some accounts would like to imagine, but rather neoliberal thought is founded on a concern for the promotion and enhancement of life, and in recent years the category of life has exploded from being confined to merely human life, to the whole array of life composed within the biosphere. Where ecological reason was originally employed as a critique of unhindered markets, it has now lent a pervasive and powerful lexicon to neoliberal thought. In particular resilience has come to the centre of neoliberal thought precisely because it broadens and repositions neoliberal orthodoxy as an all-encompassing doctrine that is best placed to secure the prosperity of humans and the biosphere through the deployment of competition and private property rights into an ever-expanding field of environmental problems. Neoliberal thought does not see the environment or life as a barrier to its own expansion. It sees these things as its reason of being – that only through the urgent expansion

of neoliberal experiments into carbon market schemes, payment for environmental services schemes and adaptation and resilience interventions run by states and governments, can human and biosphere life be adequately secured.

3.7 Conclusion

In conclusion, neoliberalism, which over the past three decades has helped to provide coherence to the evolving climate assemblage, formulates a powerful rationality that takes life (human and more broadly, the biosphere) as its main referent. The rise of resilience and the focus on 'complex life' pushes this realist ontology even further and has become an alluring rationality that provides coherence to climate change interventions. What this chapter has shown is the way in which an enduring biopolitical rationality, has become fused and bound up in neoliberalism and resilience thinking. Although 'risk', 'adaptation', 'neoliberalism' and 'resilience' have distinct genealogies and ontologies¹¹⁷ – and there are certainly tensions between them – they have provided a fairly stable 'discursive grid' (Foucault, 1973cf.) that has helped to direct flows of finance and labour into climate change interventions. These rationalities have provided a useful blueprint for dealing with climate change in the context of economic crisis. At the level of events, the quest for new domains of profitability – especially new outlets for over-accumulated capital in the context of global economic recession and the end of cheap nature - have also seen the mobilisation of neoliberal/biopolitical rationalities to open up carbon and people to financialisation. These biopolitical and financial logics are distinct – although with contact points – yet knotted together in complex ways. As capital demands the climate assemblage open up new spheres for investment and speculation, it falls back on an enduring biopolitical logic - seeking to induce people into markets by working on habits and

¹¹⁷ For instance Chandler views resilience as largely an 'outgrowth of neoliberalism' and distinct from it at the level of ontology (in that unlike neoliberalism, resilience thinking holds that there is not rationality that subject have to adapt to). So tooo Adaptation has its own distinct geneology which is comparable with resilient thinking, but inkey ways also in tension with it. For instance Taylor (2014) highlight how adaptation thinking falls upon a fundamental divide between human society on one side and an external nature on the other.

capacities as much as commoditising things. It is no doubt this ability of the climate assemblage to seamlessly slip between two worlds that enable it to reproduce itself – the biopolitical, where it claims to secure the adaptation and resilience of the vulnerable for their own right on one side – and the financial, where it claims to open-up spheres to speculation on the other.

But this tangled web of biopolitical, governmental and financial rationalities and incentives has been actualised in very distinct ways. In terms of how the climate assemblage has spread itself across the global south, it has been through the project and programme, supported by development aid (and increasingly financial capital) that has been all important.

In conclusion, this chapter has identified three key aspects of the climate assemblage; risk (as a technology for understanding and visualising climate change, and as a logic that opens up climate change to financialisation), neoliberalism (as a series of events where over accumulated finance capital pushes for new fields of investment, and as a rationality that seeks to experiment with market-based approaches to governing climate change), and biopolitics (as a form of politics that focuses on the adaptation and resilience of life to climate change and abandonment). This chapter has shown how key components of the assemblage – as outlined by Li in chapter 2 have been assembled. These are: **1) the forging of alignments** between corporate interests, experts, policy makers, NGOs, scientists, academics and economists around the carbon commodity; **2) Rendering technical** where a virtual digram that focuses on the extension of tradeable carbon pollution rights imagined as future emissions of 1tCO₂e, and projects and programs that work on the capabilities of the vulnerable in order to make them resilient to climate change, are being transformed into interventions replicated across the world; **3) Authorising knowledge** by infusing institutions involved in the assemblage with carbon market experts and adaptation and resilience experts; **4) Managing failure and contradictions** by presenting the failures of the carbon market as a reluctance on the part of the state to invest adequately in the setting up of carbon markets; **5) Anti-politics** – reposing political questions as technical issues around climate finance and the host of risk based mechanisms

needed for climate finance to flow; **7) Closing down debate about how and what to govern and the distributive effects of particular arrangements** by focusing on carbon expertise and limiting debate to merely the distribution of climate finance and particular arrangements in place to ensure the expansion of the climate assemblage; **6) Reassembling:** grafting on new elements of development buzzwords such as participation, gender, rights-based approaches while reworking older notions of vulnerability and development. The last section outlined a fluctuating, but generally stable tripartite approach to dealing with climate change which has been crafted within development literature over the last two decades. This consists of

1. **The state as the organiser and facilitator of climate interventions within state territories.**

Climate assemblages territorialise state space in the sense that they use national territories as their main frame of reference for understanding and acting upon climate change. The state is expected to create (and expand) an environmental bureaucracy which has an eco-modernising mandate. It is expected to use laws, regulations, monitoring and expertise to make visible and work upon the myriad relations between a changing climate and human and biosphere life- typically through risk analyses. State sovereignty here is left untouched and even strengthened as the state becomes the main vehicle through which climate finance is channelled. States thus accumulate new powers and responsibilities in terms of governing those within its territory. Security is also entrusted to the state, and just as the state supposedly brings development (or in a neoliberal era *facilitates* development) so too it now facilitates 'sustainability' and 'resilience'. At the other side of the security-development nexus the state also simultaneously takes on new powers to discipline and contain those deemed a risk to the biosphere and vital ecosystems.

2. **The expansion of markets.** The climate assemblage aims to govern climate change through markets. It spends huge amounts of capital, expertise and labour assembling bureaucracies (which cross the imagined state civil society divide) in order to facilitate the creation of new markets that can supposedly more efficiently deal with climate change. It also attempts to

actualise NGO run projects and programs that seek to conduct carbon market/adaptation and resilience experiments in particular localities or amongst particular target populations. In particular, the establishment of carbon accounting systems (including carbon inventories and carbon monitoring procedures) and mechanisms intended to reduce the risk of finance entering into new markets, has been a major focus of the work of carbon assemblages in the global south. Climate assemblages typically work through projects and programs that aim to induce target populations into entrepreneurial modes of being through new experiments where markets mediate people's relations with the biosphere (neoliberalism as exception).

3. **The focus on resilient subjects.** More than ever before, development fixates on the habits, capabilities and potentials of the poor. More than improving/ developing life or engineering the environments it inhabits in the tropics *cum* developing world, development aims to make risky life both responsible for managing local environments and simultaneously work upon its vulnerability while ensuring its adaptation to crisis and underdevelopment. There has been a particular fetish of vulnerable life where the climate assemblage legitimises its own expansion based on an ever widening mandate to govern over a proliferating array of vulnerable life.

Chapter 4. Building a Climate Assemblage in Cambodia

4.1 The rise of a Carbon Assemblage

The preceding chapter dealt with the global climate assemblage – how it has evolved and stabilised over time and space, and the discourses, rationalities and financial flows that sustain it. With these things in mind it is now possible to examine the climate assemblage in more detail by giving a thicker description of the bodies and relations in a particular space and time that are formative of the assemblage. The next three chapters will hence focus on the climate assemblage in Cambodia – looking both broadly at the actors, financial flows and rationalities which sustain it (this chapter) and giving a thicker description of the politics of two particular climate change projects (next two chapters). The space of Cambodia provides a bounded geography so as to offer useful insights into the politics of climate assemblages. The conclusions that the last chapter worked towards, will be examined as they are *actualised* in Cambodia. The convergence of a neoliberal rationality and biopolitical rationality that takes the biosphere at its referent and seeks to reorganise nature and life along the lines of the market through risk technologies will thus be the focus. These chapters will also examine the fraught process of actualisation – whereby concepts such as resilience and adaptation are stretched over space, where market logics are pushed into rural Cambodia through expert networks, and where expertise attempts to embed itself in the Cambodian government.

This chapter will give an overview of climate change activities and the institutions which support them. It will give a brief history of climate change programming and associated financial flows and move to considering how resilience, adaptation and vulnerability are strategically deployed within the assemblage through particular projects and programs. It will consider how risk technologies are employed within programming and how these programs broadly form part of a neoliberal logic. The chapter will finish by considering the politics of the carbon assemblage. This chapter draws upon 45

interviews with government staff, multinational donor staff, bilateral donors and NGOs and also draws upon participant observation of workshops and meetings. It is also draws upon a survey of 25 ‘carbon experts’.¹¹⁸ Five separate field trips (to Prey Veng, Ban Lung, Samroang, Siem Reap and Pursat) to directly view projects and interview recipients, are also drawn upon (see Appendix 1. for a full list of interviews).

As highlighted in the introduction, Cambodia, as a post-war economy in transition has become a particularly important space where carbon experimentation has occurred. After decades of Cambodia being viewed as an awkward problem for the international community due to its isolation, enduring instability, autocracy and socialist leanings, the pragmatic military man cum Prime Minister Hun Sen had built himself a patronage network which was finally able to dominate all other competing claims to power (Gottesman, 2004; Hughes, 2003; Ledgerwood, 2008). With peace and stability, the Hun Sen regime embarked on broad sweeping democratisation and liberalisation reforms which received substantial political and financial support from the OECD (Jennar, 1998). Cambodia became a clean slate for neoliberal aid interventions – where a government that during the 1990s and 2000s built its bureaucracy around donor concerns, yet managed to incorporate them into a strict patrimonial hierarchy that was willing to commit to any and all donor fads (Ear, 2013; Frewer, 2013; Hughes, 2009). Another critical factor was that Cambodia’s liberalisation and its opening to neoliberal development largely coincided with the crystallisation of the global climate assemblage and its geographic expansion across the world.¹¹⁹ Also, due to Cambodia having a large

¹¹⁸ Carbon experts were identified as those who had worked in an institutional setting within Cambodia on climate change (as the main part of their job description) for at least one year. A list of experts was compiled by examining various climate change networks and events (where participants were listed) and emails were sent out to experts inviting them to participate in the online survey.

¹¹⁹ Cambodia saw a major inflow of aid, NGOs and expertise, following the United Nations Transitional Authority Cambodia (UNTAC) tenure (1991-1993) and the subsequent 1993 national elections. Yet it was not until 1998, after which the Khmer Rouge entirely collapsed/ had been incorporated into the Royal Government, and after a 1997 bloody coup which saw the downfall of the competing Royalists (under the FUNCINPEC party led by Prince Ranarith), that development activities really gained momentum. As highlighted in the last chapter it was during this period that the climate change assemblage began to experiment with CDM, early carbon forestry projects, capacity building projects and adaptation projects.

stock of forest, with a high deforestation rate,¹²⁰ and a large stock of poor agriculturalists vulnerable to climate change, donor money naturally flowed into adaptation and mitigation activities (see chapter 1). For these reasons Cambodia has become an important space for experimentation and bureaucratic expansion that the global climate assemblage has territorialised.

In 1996 Cambodia ratified the UN Convention on Climate Change. With very little knowledge of the international negotiations, nor with bureaucrats who had the technical capacity to engage in the international process in a meaningful way, climate change remained a largely unknown and peripheral concern. Yet Cambodia still ratified the UN Framework Convention on Climate Change (UNFCCC) as a non-Annex One party in 1995. In 1999 the GEF and UNEP provided \$100,000 for a 'climate change enabling activity' which sought to sow the seeds of a climate bureaucracy in Phnom Penh while enabling key bureaucrats to more meaningfully participate in international climate negotiations (further discussed below). The government received a further \$230,000 in 2002 from GEF and UNITAR to prepare the country's first national communication (outlining its own carbon emissions and needs in terms of adaptation). In 2002 it signed the Kyoto protocol. This followed UNEP, EU and the Japanese agency (JICA) providing grants for capacity development on the Clean Development Mechanism (CDM). With money from a range of donors, Cambodia also began CDM projects including a multi-million dollar nationwide biodigester program (which never actually managed to achieve CDM accreditation).

After this, carbon aid came in greater quantities from a range of donors, and in response, the Cambodian government amped up its own carbon bureaucracy and carbon legislation. By 2003 the Ministry of Environment (MoE) had established its own Climate Change Office which became a fully-fledged department in 2008. By 2006, with money from the Least Developed Countries Fund (LCDF), a

¹²⁰ Since the 1970s Cambodia's primary rainforests have dramatically reduced in size from 70% of land cover in 1970 to only 3.1% in 2007 (although the country still has 40% overall forest cover). In the latter 2000s the deforestation was particularly high – within the top three countries in the world for most years.

National Adaptation Program of Action (NAPA)¹²¹ was completed and yearly climate change forums were organised between MoE, UNDP and the Danish donor DANIDA. In 2006, the National Strategic Development Plan (2006-2010) which directs overall economic and infrastructure priorities for Cambodia, had a strong focus on climate change adaptation and green growth – largely under the influence of foreign consultants and donors. The Strategic National Action Plan on Disaster Risk Reduction (and the National Committee for Disaster Management) as well as the Ministerial Green Growth Technical Working Group were also created in this period and conducted work on climate change related issues. As part of efforts to rationalise the expanding climate change bureaucracy, a National Climate Change Committee comprising senior bureaucrats from 20 ministries (with the secretariat comprising mostly Climate Change Department staff), under the honorary chair of Prime Minister Hun Sen, was created in 2006 with support from UNDP. The committee aimed to roll out sectoral climate plans for each ministry. This committee was later dissolved and replaced by a fully-fledged department under the ‘National Council for Sustainable Development’.

By 2013 there was a national Climate Change Strategic Plan (2013-2023), then a Climate Change Action Plan (2016-2018) which was followed by a US\$105 million program supported by the ADB through the Climate Investment Funds - the Pilot Program for Climate Resilience. As multilateral and bilateral donors continued to give aid, NGOs and a wide range of government departments initiated both small and large scale projects on climate change adaptation and capacity building which attempted to ‘mainstream climate resilience’ within the bureaucracy. For instance UNDP, DANIDA and SIDA (the Swedish aid agency) worked closely with the Climate Change Department to support the Bali action plan on REDD+ at COP13 in 2007.

After Cambodia joined the UNREDD programme in 2010, and the Forest Carbon Partnership Facility in 2009, forestry issues also began to increasingly come under the banner of climate change. With

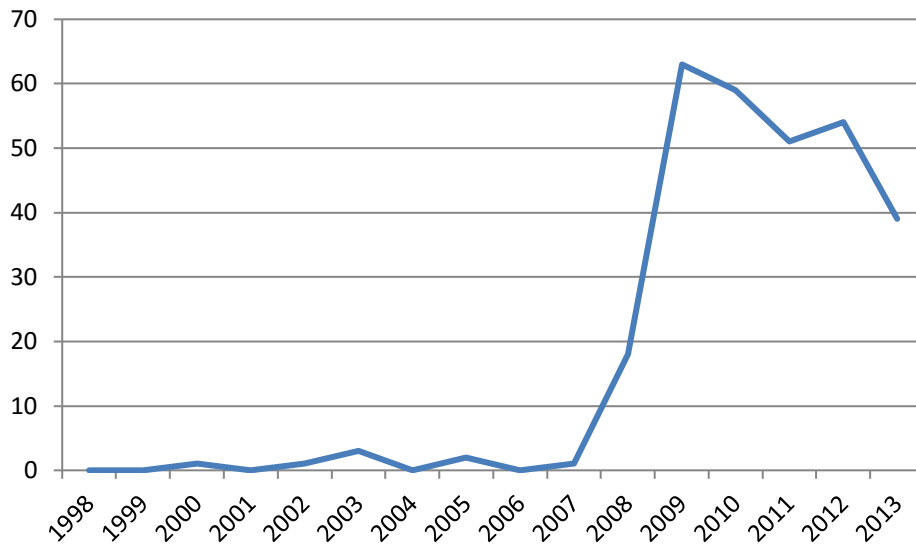
¹²¹ NAPAs were born from the 1992 Rio World Summit and are World Bank/ Global Environment Fund programmes that help to establish plans to prioritise adaptation projects in least developed countries. They have been rolled out in 39 LDCs.

the establishment of a REDD+ secretariat, a REDD+ taskforce, four technical REDD+ working groups and the development of a National REDD+ strategy, donor money flowed into both voluntary carbon mitigation projects, and national level REDD+ preparedness. By 2015, the Department of Climate Change, and the Forestry Administration were managing several large multi-million donor-funded adaptation and mitigation projects, coming from the Asian Development Bank, World Bank administered climate change funds and the European Union. Many of these programs engaged NGOs through small grants, through employing NGOs as advisers and through jointly organised workshops and conferences. By 2015, 14 government departments and institutions had developed sectoral climate change plans and were also receiving money to implement various climate change projects – thus becoming, to varying degrees, an important part of the climate assemblage. There were also over 80 NGOs involved in the climate change assemblage¹²² (including one NGO that was created solely to focus on climate change – the Cambodia Climate Change Network). Four different universities were involved with the assemblage (each being involved in several donor-funded climate change projects).¹²³ As figure 4.1 shows climate change rapidly became a popular issue spoken about by the media by the late 2000s.

¹²² Involvement is defined as having either held a grant that primarily focused on climate change and is over USD\$5000, or actively involved in consultations, capacity building or advocacy on climate change for more than one year.

¹²³ The Department of Environment at the University of Phnom Penh had ‘specialised’ in climate change projects – being involved in over 12 such projects between 2009 and 2016. The Royal University of Agriculture also received a \$300,000 grant from the Cambodia Climate Change Alliance trust fund to do capacity building with relevant institutions that can assist farmers to adapt to climate change.

Figure 4.1 Number of English Language Articles on Climate Change in the Phnom Penh post and Cambodia Daily (Cambodia’s only two English daily’s) (1998-2013)



Source: author

At the centre of the climate change assemblage is the ‘project’ and ‘program’ as a unique form of western bureaucracy used to actualise climate change interventions.¹²⁴ Projects and programmes, which have been executed by NGOs and donors on a large scale since the early 1990s within Cambodia, tend to be managerially structured by a series of steps (proposals, terms of reference, aims and outcomes, background analyses, theories of change, intervention methodologies and project evaluation). Projects and programming are important organisational structures linked to a suite of technologies that help to actualise the virtual diagrams explored in the last chapter. Flows of donor money bring together various actors by drawing them into specific climate change projects and giving them access to aid money. The general pattern of establishing and recruiting new actors in the climate assemblage is as follows:

¹²⁴ It is important to emphasise here that ‘the project’ is a relatively novel organisation form for actualising development which has its origins in North America and Europe in the 1970s and 1980s. For instance MacDonald (2010) traces the rise of the project in international conservation NGOs since the 1980s. Kovách & Kučerova (2009) note the rise of the project in rural development and a resulting ‘project class’; that is the experts, consultants and implementers of projects who can be considered a class due to having similar interests and standards of living.

- Donors who are part of the global carbon assemblage come with a pre-conceived funding area or set of strategic goals which focus on a particular aspect of climate change within Cambodia. Often this arises from global agreements and strategic priorities identified within the global climate assemblage.
- Donors make available to either government actors, consultants, private contractors or NGOs, funds so that these entities can pursue these goals through specific projects or longer term programming.
- For larger, long-term programmes donors often embed their own technical personnel within government departments or NGO networks to provide ‘capacity building’ and ‘technical assistance’ (although this varies with donors). UNDP, FAO and JICA have all embedded key technical assistants within the Forestry Administration (for instance within the REDD+ secretariat) and the Ministry of Environment (through the Climate Change Department and the Cambodia Climate Change Alliance).
- For larger programmes (e.g. the Cambodia Climate Change Alliance and the Strategic Programme for Climate Change Resilience and various REDD+ programs), donors such as UNDP, SIDA, FAO and the Asian Development Bank tend to play a coordinating role – hiring external consultants (sometimes entire companies, but most often individuals who provide technical input to specific projects or particular aspects), deploying internal experts and engaging relevant NGOs and government stakeholders. Often this leads to the creation of networks, committees, secretariats and working groups that coordinate and harmonise programmes and embed them within government/ NGO networks.
- Government departments and ministries at the national level are expected to embed donor goals within their own policies, strategic priorities and laws and create relevant committees or special working groups to ‘mainstream’ these goals, but under the financial and technical support of donors and NGOs. Often this process leads to entire new departments or

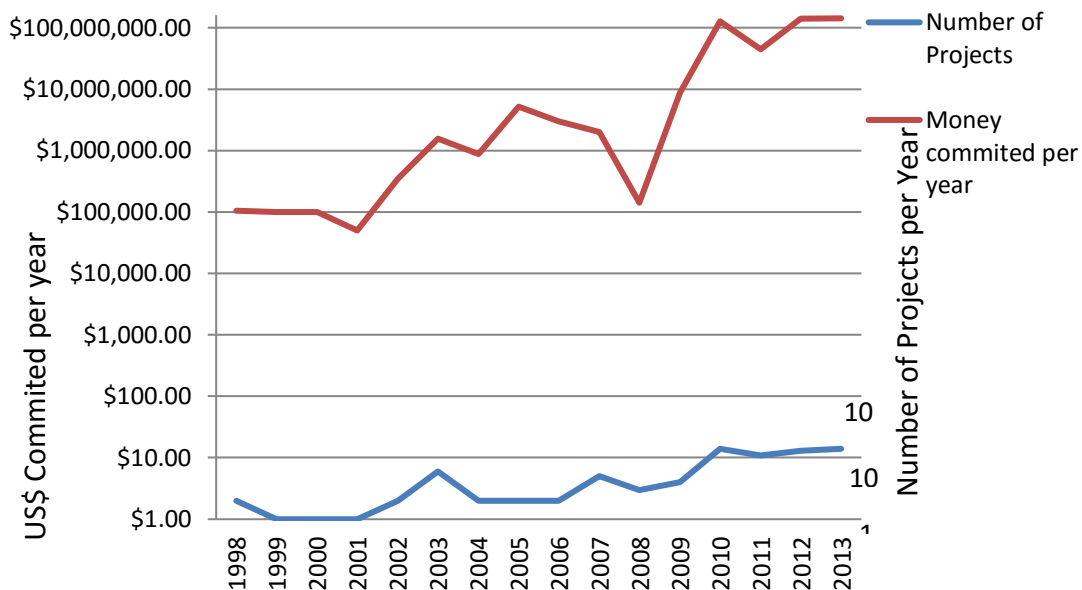
government offices that are highly dependent on donor funds (and technical assistance) to exist (e.g. the Climate Change Department or the REDD+ secretariat).

- Mostly, NGOs, low-level government entities, and private contractors are expected to carry out the actual 'transformative' action that works upon 'society' or 'environment' within one-off discrete projects. This is particularly the case with 'capacity building' activities at the village level and infrastructure provision. This is the model within the Climate Change Alliance and Strategic Plan for Climate Change Resilience. Grants and funds are provided to NGOs and private contractors to carry out small scale projects across the country. Donors such as DFAT (Australia), USAID, the EU and other smaller bilateral donors tend to prefer to outsource projects to NGOs and private companies rather than use their own personnel.
- Larger NGOs (typically international NGOs) often act as intermediaries, where apart from carrying out donor funded projects, they pass on donor funds to smaller NGOs. They also tend to cooperate closely with key government institutions (and individuals) within their particular sector of interest and often provide funding to government counterparts as part of their programming. Many of the conservation NGOs for instance support key government institutions such as the FA and the General Directorate of Administration for Nature Conservation and Protection in the Ministry of Environment (e.g. WWF, IUCN, FFI and WCI). Key examples of intermediaries include the larger more established INGOs such as Save the Children, CARE, Action Aid, Oxfam, PACT and PLAN who often outsource grants to smaller provincial NGOs who have well developed local level networks.
- People at the village level are expected to attend workshops, trainings and participate in various activities set up by local NGOs which range from acting as community forestry members, attending one-off workshops on disaster preparedness to 'participating' in vulnerability mapping sessions. This work is nearly always unpaid.

- Throughout the project cycle, external or short term staff are hired as consultants, technical assistants, evaluators and auditors to provide technical input or completion of the project’s various stages.

The number of these climate projects has rapidly increased from 2000-2015, which is a function of the increasing flows of climate finance. Figure 4.2 is a graph of all climate projects collected from various databases.¹²⁵ Since 2000 there have been 275 climate change projects. Just in 2011, total climate expenditure was \$170 million. For comparison, in the preceding decade (1990-2000) there were 98 projects which broadly dealt with climate change and disasters representing \$98 million (Minsitry of Environment: Royal Government of Cambodia, 2006).

Figure 4.2 Climate Projects (above US\$10,000) and Aid Committed for Climate Change Per Year



Source: author

¹²⁵ ‘Climate change project’ here means a project that has ‘climate change’ in its’ title and directly addresses issues related to climate change. In comparison, ODI in its review of climate finance in Cambodia which included ‘low relevance’ climate change projects in its analysis (projects that only address climate change as a secondary issue) concluded that there have been 750 climate change projects just in the period from 2009-2011. It is problematic to include these ‘low relevance’ projects because it gives the impression that Cambodia has received a much greater amount of ‘new’ and ‘additional’ climate finance than it actually has.

Two early donor led interventions that helped to establish Cambodia as a space of climate vulnerability were the FAO, UNDP and GEF supported National Biodiversity Strategy and Action Plan (NBSAP) (2002), and Cambodia's Initial Communication under the Framework Convention on Climate Change (UNFCCC). Both came directly out of the 1992 Rio Earth Summit where signatories to the Convention on Biological Diversity and the UNFCCC were expected to each produce a NBSAP and 'initial communication on the UNFCCC' which highlighted how they were going to fulfil commitments under the two conventions. Like other WB and GEF administered environmental interventions (such as the National Environmental Action Plans mentioned in the last chapter), NBSAPs embed specifically neoliberal/biopolitical environmental knowledge in bureaucracies across the global south. As a senior policy maker in the Ministry of Environment put it, 'it is not just that climate change was a low government priority before this [the project to support the writing of the two reports], most of us in the ministry didn't even really know what climate change was' (Interview 1). As the same official explained, after this point, the Prime Minister endorsed broad-scale action on climate change and encouraged both the Minister of Environment and Minister of Agriculture, Fisheries and Forests to pursue strategies to better understand the effects of climate change in Cambodia, and attract external funding for climate adaptation and mitigation activities.

In 2003, two USD\$325,480 GEF grants (with an additional \$100,000 top up) were provided to prepare the reports (where 10% of each grant was automatically taken as administration fees by the GEF), and more than 50% of the remaining money was given to foreign consultants from the global north (in UNDP, FAO and private companies). The rest of the money was provided to senior MoE bureaucrats for 'capacity development' which as senior Moe officials revealed in interviews meant attending workshops – including overseas workshops (Interviews 1,2). Both reports played an important role in establishing a firm link between the rising global concern over climate change and the particular ecological and social vulnerability of Cambodia to these effects. The UNFCCC report for instance employed the old biopolitical trope; 'since Cambodia is tropical, the direct impact of the climate on human health is significant' (Ministry of Environment: Kingdom of Cambodia, 2002). Both

reports also started to make crucial links between Cambodia's violent history, status as a poor developing country, and its vulnerability to climate change. The NBSAPs also made a link between Cambodia's biodiversity and vulnerability to climate change (which would be a major theme over the next decade) and established land use change and forestry as a future potential *source* of Greenhouse Gas Emissions (GGEs) with the corollary that Cambodia slowly became imagined not as a net sink of greenhouse gas emissions but as a net polluting country.¹²⁶

Both projects also emphasised the urgent need for capacity development and further inflows of aid to improve institutional capacity. Both reports, much like aid projects in other fields, also established a pattern whereby foreign experts dominated technical aspects of the project – especially in relation to reporting and even policy development, under the guise of the Ministry of Environment running the program (c.f Milne & Chervier, 2014), while senior staff opportunistically took advantage of benefits accruing from such projects (per diems, international travel) and channelled what they could to lower level and underpaid staff to secure their patronage. As a senior MoE staff put it 'we basically just let them [foreign consultants] write the policies because we had very limited ability to engage at the level that they could', adding that 'these programs were also beneficial to us because they brought in much-needed funds that could supplement our salaries which were so low' (Interview 1). Broad and vaguely stated budget components such as \$33,000 to prepare a review of

¹²⁶ For the first five CoPs Cambodia was considered as having zero emissions. Even though there had been no actual accounting of GHG emissions, the facts of Cambodia's small, predominantly rural population, extremely small number of motor vehicles, almost no industry and minimal energy production, made its zero emissions status a foregone conclusion. Indeed as the per capita energy usage in the US across the 1990s averaged 7,800 kg (oil equivalent), in Cambodia it was only 290kg. In 2000 US per capita electricity consumption was 13,671 kWh. In Cambodia it was a mere 32kWh (427 times smaller than the US). Yet by 2012 things had started to change as Cambodia's forests were now included within estimates of GHG emissions (owing to the fact that satellite images had made it possible to make estimates of the carbon content of terrestrial biomass). With forest cover change estimates (which were also made possible through satellite imagery) it became possible to not only calculate deforestation rates, but also the GHG emissions associated with deforestation. This saw Cambodia for the first time in its history become classified as a net GHG emitter where by the 2015 Paris CoP Cambodia was even committing to cutting down its GHG emissions as part of its commitments to the Paris agreement.

current and potential future programs to address climate change, provided ample opportunities to channel money into patrons and underpaid staff.

The next major important donor intervention was another GEF funded program (through the LDCF) – the National Adaptation Program of Action to Climate Change (NAPA) in 2006. The NAPA report produced in 2006 essentially acted as a shopping list for future donor funded climate change projects (under the finance from the LDCF) where it identified 39 such projects (worth \$300 million). Cambodia successfully attracted \$8,782,500 worth of funding to implement five of these projects. Although this represents only a small fraction of the requested money, Cambodia has received the second highest amount of LDCF finance of any country in the world and overall has received 5 per cent of all LDCF funds (for comparison, this represents the combined amount given to multiple African countries). The GEF took in close to one million in agency fees¹²⁷ and both UNDP and UNEP as administering agencies took between 10-25 per cent of the remainder (which does not include salaries paid to consultants or evaluators). The program was an important precedent in terms of bringing major climate finance to the upper echelons of multiple government ministries and gave key bureaucrats and government departments, under the tutelage of UNDP and UNEP, important experience in carrying out climate change projects. For instance the current head of the climate change department Som Thy, and Tin Ponlock, deputy director general of the MoE, head of the CCCA trust fund and Cambodia's most important bureaucrat in terms of global climate change negotiations, both played an important role in managing this funding package. The five projects also involved substantial NGO involvement. However, the overall NAPA process had very little scope for institutional development – something that would become a focus in the following years.

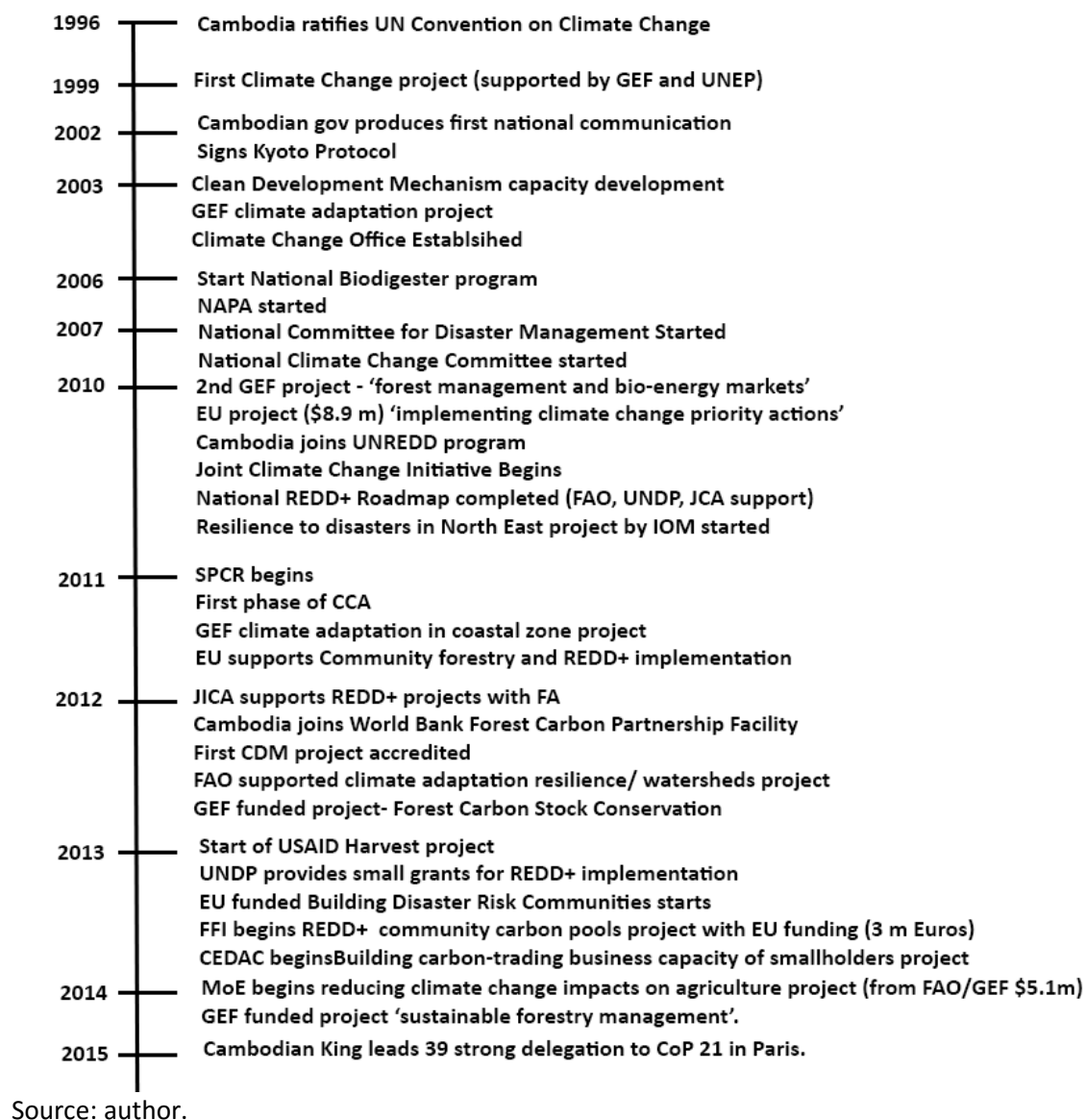
Throughout the mid-2000s the MoE, and especially the department of climate change, became entwined in a number of donor-funded climate change programmes and projects. To date,

¹²⁷ The GEF has made \$17 million from administering all its LDCF projects (which are financed from various bilateral sources).

Cambodia has been involved in 68 large-scale programmes that have received financing under various UNFCCC funds and which form a part of Annex- one country pledges to provide finance to non-Annex one countries under various agreements reached at the different CoPs.¹²⁸ Many of these programmes involved significant ‘capacity development’ and ‘technical assistance’ components. With these funds, and generally in line with the pattern of aid inflows over the last two decades, the government has tended to create new bureaucratic institutions to deal with new donor concerns (and corresponding inflows of finance and expertise) (Ear, 2009, 2013; Godfrey et al., 2002). There are now 19 Technical Working Groups (TWGs) which are government and donor platforms to address particular sectoral issues (i.e. forestry reform) but a much higher number of ‘technical teams’, committees and councils. For instance, just within the field of REDD+ there are five technical teams comprising numerous government and donor members which periodically meet together to deal with various aspects of REDD+. The MoE and FA have experienced significant bureaucratic expansion as conservation and climate change finance and expertise have increasingly flown into them. They currently have 30 and 41 different offices respectively. In 2016 the MoE hosting over 600 employees even had to be relocated to a new \$8 million dollar, 7 storey facility to cater for expansion. By 2013, climate change finance represented more than one-third of total resources managed by the MoE (worth \$4.5 million). In an MoE strategic plan, it is stated that the ministry will try and secure ‘several hundred million’ of climate finance in the upcoming years (Ministry of Environment: Royal Government of Cambodia, 2016).

¹²⁸ Most of these are actually regional programmes involving multiple countries. They work to differing degrees on climate change – for instance some of the projects listed on the UNFCCC website include a ‘forestry preservation programme’ with little reference to climate change and an urban planning programme with only peripheral reference to climate change, yet they are listed as official climate finance. This brings into question how ‘additional’ this funding is.

Figure 4. 3 Timeline of Selected Events within the Cambodia Climate Assemblage



It has not mattered greatly that many of the early programs have entirely failed to meet the initial optimism that project proponents proclaimed – a pattern that is being repeated with REDD+ and Payment for Environmental Services (PES) programs. A paradigmatic example concerns the projects

initiated around expanding the Clean Development Mechanism. In 2002, the Netherlands Ministry of Foreign Affairs granted the MoE \$250,000 through UNEP for a project titled 'capacity development for the clean development mechanism' (and topped up with another \$50,000 in 2003). The project worked with senior elements of the MoE to provide technical assistance, capacity building and training on identifying and implementing CDM projects. The MoE quickly established itself as the focal point for CDM in Cambodia (with the minister as the direct focal person) and created a CDM national authority. The expectation was that the CDM mechanism was going to unleash major inflows of finance that would be directed toward the MoE. The MoE with little understanding of how CDM worked enthusiastically began promoting CDM (see McDonald-Gibson, 2003). After spending \$300,000 on technical assistance and capacity development (not to mention assistance from other projects of which capacity development on CDM was a secondary aspect) Cambodia is left with a mere 10 registered CDM projects – all of which are small scale. 92 per cent of all Cambodia's generated CERs come from only 3 hydropower projects that are in no way 'additional'¹²⁹ as they are all financed through Chinese state based low-interest loans meaning the projects would have gone ahead regardless of carbon finance and were anyway all planned *before* official CDM registration.

Further, as flooded forest is a major source of methane (which has a Global Warming Potential 25 times greater than CO₂ across a 100 year period) it is likely that such dams are a net *source* of emissions rather than a net sink (Chen et al., 2009; Fearnside, 2013). The remaining seven projects are small in scale, run by private companies, and would be unsustainable without the provision of generous start-up grants. All are extremely questionable in terms of 'improving livelihoods' and 'reducing poverty' (which UNFCCC claims is an integral part of CDM) as they exclusively benefit private companies and one of the dam projects even involved forced relocation and massive clear felling of old growth rainforest on the scale of thousands of hectares (Interview 3,4,5 Atai relocation site, Titthara, Boyle, & Cheung, 2013). The MoE quickly discovered – as did others enthusiasts of

¹²⁹ i.e the carbon finance allows for a reduction in CO₂ emissions which would have not occurred without it

CDM, that Cambodia with its small-scale opportunities for emissions reductions and high transaction costs is not well suited to CDM. As Tin Ponlock who was intimately involved in CDM said - 'it [CDM] turned out to be a waste of time for everyone. We have largely forgotten about CDM now' (Interview 6). As will be discussed further below this has not stopped the MoE from taking up equally controversial donor inspired projects such as REDD+.

One of the most important donor-sponsored programs in terms of institutional development has been the 'Cambodia Climate Change Alliance' (CCCA) which is part of a much larger fund - the 'Global Climate Change Alliance' administered and implemented by the EU. The CCCA was also the largest dispenser of international climate funds at the Paris CoP 21.¹³⁰ After several years of UNDP and the Danish International Development Agency (DANIDA) supporting the Climate Change Office *cum* Climate Change Department, the CCCA was created as a multi-donor initiative, supported by UNDP, the EU, the Swedish International Development Cooperation Agency (SIDA) and DANIDA to more systematically 'strengthen the national institutional framework for climate change' (GCCA, 2011).

The CCCA worked in 2 distinct phases – phase one worth \$10.8 million worked from 2010 – 2014 and worked closely with the (now defunct) National Council on Climate Change to produce, amongst other things yet another strategic report - the Cambodia Climate Change Strategic Plan. In many parts, like other climate change reports it tended to focus on broad and vague goals and aims such as 'strengthen biodiversity conservation and restore ecosystems threatened by climate change'. During this phase another report was also commissioned - the 'Understanding Public Perceptions on Climate Change in Cambodia' which surveyed people's understanding of climate change across the country. It found that the vast majority of people in Cambodia had a very limited technical

¹³⁰ The GCCA was established in 2007. It operates 51 programs in 38 countries with a fund of US\$830 million (as of 2016). As of 2015 the Cambodia program was the largest 9 in terms of finance committed).

understanding of climate change.¹³¹ It has thus served as a key document that created Cambodia as a space of vulnerability and reinforces the seemingly urgent need to conduct capacity development and technical assistance around climate change. At the same time as these reports were being produced the CCCA also began to build new government networks across the bureaucracy by ‘mainstreaming climate change’ by pushing for ministry-specific climate change plans.

In the first phase, the CCCA also provided grants worth \$2.6 million for 11 NGO and government run climate change projects (that tended to involve capacity development or technical assistance at the provincial or village level). The quality and impact of these projects varied. For instance, one project run in Prey Veng (the ‘together addressing climate change project’) on a village level agricultural intervention by a Cambodian NGO appeared to fulfil most of the project goals – although whether it meaningfully addressed any climate change related issues is another thing.¹³² A different project however, run through the Ministry of Women’s affairs in Oddar Meanchey (Climate Change Adaptation for Livelihoods of Rural Women) appeared far less successful.¹³³

In the second phase (2014-2019) worth \$13 million, the CCCA provided another round of grants to NGOs, helped develop a ‘climate change knowledge platform’ (in the form of a website), and assisted with the completion of another MoE report – the ‘Cambodia Climate Change Action Plan’.

Overall the CCCA has been an important ‘experiment’ (a word used frequently to describe the

¹³¹ As part of the study 2401 participants from across all 24 provinces were surveyed. Questions included people’s opinions on whether the weather had changed dramatically over their lives, whether they had experienced severe weather events, their level of understanding of scientific anthropogenic climate change and where they get information on climate change and extreme weather events from. The report concluded that ‘Most Cambodians’ understanding of climate change terminology, causes and effects is low. Many recognise the terms ‘climate change’ and ‘global warming’. However, this recognition does not indicate understanding of climate change as a global phenomenon’ (18).

¹³² Interviews were conducted with NGO staff and 5 recipient farmers (Interviews 7-11). There was evidence that all activities according to the project document had been implemented. Farmers could recount that they had attended trainings on climate change but struggled to articulate any direct benefits of such trainings on their livelihoods. When asked if the trainings were beneficial (and how) one farmer replied ‘it is good to attend meetings and do things with NGOs because they help develop the country’ (Interview 11).

¹³³ For instance, in post completion interviews I conducted with officials at the provincial department of agriculture in Oddar Meanchey who had implemented the project, officials had difficulty in specifying the activities they had conducted and how they were beneficial to recipients.

program within project documents) which has allowed for abstract paradigms such as resilience to be put into practice as implementable policies and projects. It has also allowed for new neoliberal forms of expertise and reasoning to spread through NGOs and become embedded in government institutions - forming a testing ground for their efficacy in overcoming problems such as 'poor governance', 'low capacity' and 'lack of resources' and 'vulnerability'.

The largest package of climate finance to come to Cambodia however, has come through the Strategic Program for Climate Resilience (SPCR). Funded through the World Bank-administered Climate Investment Funds, SPCRs have been rolled out in 13 countries with the aim to 'pilot and demonstrate ways in which climate risk and resilience may be integrated into core development planning' (Ancha Srinivasan, 2012: 1). Due to a major controversy over land rights which occurred during a World Bank-funded land titling project and subsequent freezing of all World Bank projects in Cambodia, it was decided that Climate Investment Funds would be channelled and administered by the Asian Development Bank which had a long-established (and less controversial) history in Cambodia. In 2011 an SPCR was created and endorsed by the government and ADB which outlined four overall project areas comprising nine distinct projects worth a total of US\$531 million (\$120 worth of grants and concessional loans from the Climate investment funds and \$421 in co-financing). The SPCR outlined four main areas of focus to channel CIFs: water resource management (\$15 m), agriculture and landscape management (\$18 m), infrastructure (\$80 m) and technical assistance (\$11 m). Collectively these projects represent the largest quantity of climate finance to be dedicated to Cambodia as to date. Most of the 9 projects worked through either the MoE or the Ministry of Public Works and Transportation and once again the MoE quickly established itself as a key government actor in organising and facilitating the flow of this finance and implementation of projects.

Most of the SPCR projects were large-scale projects (in both terms of expenditure and geographic scope) in comparison to previous climate projects, and much of the expenditure was focused on physical infrastructure. The overall logic of the programme was to use grants from the CIFs to fund

‘soft interventions’ (capacity building, technical assistance, institutional development) and use concessional loans from the ADB and elsewhere to fund ‘hard interventions’ (physical infrastructure). Most of the projects were in fact already a part of the ADB’s existent portfolio in Cambodia – where CIFs were used to add on additional climate components to larger projects.¹³⁴ Each of the projects had ‘soft’ and ‘hard’ components which corresponded to the allocation of grants and loans. Even the rural roads improvement project included a substantial amount of capacity development and training (for village level participants and local level authorities) funded through a \$2 million grant to the Ministry of Rural development.¹³⁵ The only entirely grant funded component was the ‘technical assistance component’ which was initially funded through a \$7 million dollar loan but which later received an additional \$4 million. Seemingly overlapping with the activities of the Climate Change Alliance,¹³⁶ the technical assistance component aimed to ‘mainstream climate resilience into development planning’ (Ancha Srinivasan, 2012) and resulted in yet another strategic report authored by the MoE –the *Cambodia Climate Change Response Strategic Plan*.

As Cambodian NGOS pointed out, the decision to use CIFs to ‘add onto’ already existent ADB projects was a decision made in a top-down manner with little consultation.¹³⁷ It appeared to confirm a long-held view of some Cambodian NGOs that the bank prioritised the rapid rolling out of projects that were in line with its ideological priorities over more lengthy and detailed projects that took into consideration the priorities of people at the village level.¹³⁸ Overall, the SPCR has been an

¹³⁴ For instance the ‘climate-resilient rice commercialisation sector development program’ aimed to: rehabilitate 13 irrigation systems, increase paddy production from 8 million tons in 2012, to 9.5 million tons in 2018, as well as enhance the capacity and participation of the private sector in paddy crop risk mitigation and strengthen the capacity of provincial authorities working on irrigation issues.

¹³⁵ As another example, out of the \$7 million provided to the Climate Resilient Agriculture in Mondolkiri and Koh Kong project – seemingly a ‘hard’ project, over \$3 million out of \$7 million was allocated to capacity development, training, workshops and consultants.

¹³⁶ In a review of the Cambodian SPCR, the German government noted that they ‘expect the coordination between CCCA and the PPCR/SPCR to be challenging, and there is likely to be significant overlap and duplication in their respective work’.

¹³⁷ This concern was raised in three separate comments received from the UK, Germany and Cambodian NGOs by the ADB for the Cambodian SPCR document.

¹³⁸ As a junior Cambodian ADB staffer who worked as a project manager for the SPCR put it ‘the most important thing for them [senior ADB managers who were his superiors on the programme] was to get the money

important climate change programme representing the largest amount of climate finance to be dispensed to Cambodia and further legitimising the Cambodian government, and especially the MoE, as the main claimant to climate finance, even where inexperience, corruption and limited political will are widely acknowledged.¹³⁹ Like the Climate Change Alliance it also set a precedent for channelling climate finance into distinctly expert heavy neoliberal types of interventions (further discussed in the next section).

The last major climate change project detailed here is REDD+. As this is the focus of the next chapter, only a brief outline will be given here. REDD+ activities have occurred in two overlapping phases – the first was the piece-meal implementation of privately run commercial forestry carbon projects that utilised the emerging concept of REDD+ developed since the Bali 2007 CoP. All these projects involved major amounts of aid money and have involved significant investments (time, energy and finance) from NGOs, the Forestry Administration and MoE. The second phase of REDD+ involved an attempt to ‘scale up’ these different commercial projects to the national level in line with a new emerging agreement on REDD+ at the CoPs. Here countries would be provided with finance based on quantified and verifiable results that showed forests were being protected (and carbon conserved) above a baseline. This involves an enormous amount of expertise to establish an overall monitoring system that can accurately detail changes in biomass across the entire national territory, as well as a methodologically sound way of establishing a national baseline and the constant nationwide monitoring of any derivations from this baseline. At the same time, global negotiations also required a set of comprehensive safeguards, standards and monitoring instruments, evaluation and consultative processes, not to mention a financial mechanism capable of delivering significant flows of finance to different agencies and bodies. For these diverse tasks, a significant amount of donor funds have been provided. As mentioned above, Cambodia became a recipient of the Forest

flowing. What was important were deadlines and project documents and there was a lot of pressure to get things done fast’.

¹³⁹ In all project documents, ‘corruption’ is listed as a risk for successful project implementation.

Carbon Partnership Facility in 2009, which is administered by the World Bank, and which once again due to a freeze on World Bank funding to Cambodia, had to come through UNDP. As part of this the government (the FA and MoE) received \$6.7 million to pursue 'REDD+ readiness' which included the above activities. In addition to the FCPF, the FA also received funding for REDD+ readiness of \$10 m from the Japanese agency for development (JICA) through the Cam-REDD programme, \$4.2 million from the UNREDD programme and smaller amounts from UNDP (\$500,500 worth of small grants for REDD+) in addition to separate grants from bilateral donors such as the US, EU, Norway and INGOs. For instance, the EU provided \$1.8 million for a project titled *Sustainable Forest Management and Rural Livelihood Enhancement through Community Forestry and REDD Initiatives*.

Outside of these major climate change programmes, there have also been smaller projects run by NGOs that receive internal funding, funding from smaller donors, or bilateral funding separate to the large packages mentioned above. A number of donors have for instance given funds for small-scale disaster risk reduction and climate adaptation projects. International NGOs such as Oxfam¹⁴⁰ and Plan international¹⁴¹ have received funds from parent organisations, which in turn come from bilateral donors, to implement various adaptation projects in Cambodia. Australia, Norway and the US have also given funds to these NGO and others to implement small scale projects. The four-year SIDA, US\$2 million dollar Joint Climate Change Initiative programme, for instance, was an important early project (2009-2013) that was implemented by three NGOs (Cord, Forum Syd, and Dan Church Aid). With its focus on building the capacity of Cambodian NGOs to run and implement climate

¹⁴⁰ Oxfam has been one of the most active NGOs working on climate adaptation in Cambodia. It has provided funding to various provincial NGOs to run adaptation and disaster risk projects as well as producing numerous reports on climate change adaptation in Cambodia.

¹⁴¹ Plan international for instance has an Asia Pacific programme titled 'children centred climate change adaptation' which operates in Cambodia. As part of this program it has produced a policy brief on 'children in a changed climate' and ran various capacity development and training projects. Plan, along with the Save the Children, Oxfam and Action Aid has also been involved in a multimillion dollar EU funded project 'building disaster resilient communities in Cambodia'.

interventions, it acted as a catalyser in prepping NGOs in the language of adaptation and resilience and the actual technics of implementing climate projects.

What this overview shows is that climate change projects have not just arisen organically due to the needs of vulnerable Cambodians. Rather, through a whole series of interventions, spanning a decade, government departments and NGOs have slowly learnt to make climate change an institutional priority. From haphazard and disconnected interventions, key actors such as the Climate Change Department in the MoE, the FA and a network of NGOs, have come together, seduced by climate finance to form increasingly stable relations. It should also be clear that climate change interventions do not follow a logic established by the actual needs and desires of the people who are suffering from climate change – they rather attempt to establish carbon markets across Cambodia and work on making ‘vulnerable’ Cambodians more resilient to climate change.

4.2 Vulnerability, Adaptation and Resilience

At the level of discourse, the concepts of vulnerability, adaptation and resilience have been important for both legitimising the actions of donors, NGOs and government departments and providing organisational structure to the diverse activities conducted by the climate assemblage. Within every single project document associated with the programmes and projects described above, the three terms were used as key organising principles. So too in all the interviews conducted with senior project proponents of the CCA, SPCR and JCCI, these terms were frequently used (with varying degrees of complexity).

Nearly all interventions follow a similar logic: targeting *vulnerable* populations and employing technologies to work on their *adaptation* to a changed climate, in order to ensure *resilience*. This section will outline how vulnerability, adaptation and resilience are employed in the climate assemblage in Cambodia to push its neoliberal agenda.

One major focus of the assemblage has been to measure and make visible the degree to which the Cambodian population is *vulnerable* to climate change. As was highlighted above, various donor funded reports began to discursively elaborate an image of the Cambodian population as vulnerable to climate change, and began to focus on particular groups in order to more accurately quantify this vulnerability. Qualitative attempts to broadly highlight the Cambodian population as vulnerable within the UNFCCC report and NAPA were made more explicit and detailed within subsequent reports in the late 2000s that employed quantitative mapping technologies. For instance British firm Mapplecroft (which specialises in risk mapping) in 2011 created a 'climate vulnerability index' by ranking the exposure to climatic hazards and 'adaptive capacity' of different countries concluding that Cambodia was the sixth most 'at risk' country to climate change (out of 193 analysed countries). The UN's World Risks Report which also produced 'a world risk index' (in terms of vulnerability to climate change), ranked Cambodia as the 9th most at risk country in the world to climate change. The Global Climate Risk Index (which uses extensive data from the reinsurance company Munich Re)

ranked Cambodia as the second most at risk country in 2011. Risk as a technology for visualising and understanding climate change clearly played an important role in carving out Cambodia as a vulnerable space.

In many ways the notion of Cambodian rural farmers who are vulnerable to climate change has a lot of continuities with the notion of vulnerability developed in the context of colonising the tropics – as discussed in the first chapter. The main difference is that vulnerability has now become quantified and transformed from a general anxiety over tropical people and places to a complex technology linked up to major governance apparatuses and new forms of capital accumulation. The vulnerability paradigm as used within Cambodia is part of a map making process – both a broad discursive map that links together an imagined population to global climate change, and a more quantitative map that creates a geographical visualisation of the specific effects of climate change upon particular bodies and places. Vulnerability maps and statistics are particularly important technologies that travel through the climate assemblage and perform work by providing a seemingly a-political basis for climate change projects. The vulnerability map empties spaces of their history and complexity by reifying vulnerability into a quantitative assessment of how homogenous social units are vulnerable to the particular risks that a supposedly external climate poses to them.¹⁴² In place of a consideration of how different socio-natures are relationally produced as vulnerable through their histories of capital accumulation, state making, abandonment and agrarian transition, vulnerability maps present places as bounded regions, homogeneously vulnerable to the threat of the climate. It is through these alluring simplifications that vulnerability maps link up to the activities of the climate assemblage by providing justifications for particular activities and their geographical focus.

¹⁴² See for instance Taylor (2014: 7) who states ‘without linking localised expressions of vulnerability to broader, historically formed structures of power and privilege, the idea of adaptation can act as a fundamentally depoliticising concept that reduces complex and contested socio-ecological relations to an abstract appeal to defend communities from external environmental disturbances and threats’.

At a very broad level, all the above-mentioned programmes and projects depended upon this broad notion of rural vulnerable populations which had been created through vulnerability mapping and vulnerability indexes. Nearly all project documents inevitably featured maps of climate vulnerability. All programme proponents mentioned ‘vulnerability’ as an important reason for conducting their activities in the first place – often in a tautological fashion in that they were helping to visualise vulnerable subjects while at the same time claiming their interventions are needed due to the *a priori* existence of vulnerability. During an interview, a young Cambodian UNDP climate change officer responded to the question ‘why does UNDP feel the need to conduct climate change interventions at the village level?’ She replied ‘because as many reports have shown, Cambodians and especially rural Cambodians are vulnerable to drought and flooding. Cambodia has been listed as among the top ten most vulnerable countries to climate change and just in 2011, more than 200 people died in floods. Our work in the villages shows that people are very vulnerable to climate change’ (Interview 12). Likewise, proponents of the Cambodia Climate Change Alliance and Strategic Programme for Climate Resilience gave similar answers (and in both project documents, the Mapplecroft and UN University reports were specifically referenced) (Interviews, 13, 14). The senior UNDP officer working on the CCCA put it as ‘there is extensive evidence that climate change is having a serious effect on Cambodians and that they [Cambodians] are not particularly well equipped to deal with it’ (Interview 13). A senior ADB official also made reference to the usual quoted documents on climate vulnerability stating that ‘the ADB has a unique opportunity to meaningfully assist Cambodians affected by climate change and channel much-needed resources to where it’s needed most’ (Interview 14). The notion of climate vulnerability – established through expert labour, clearly legitimised the existence of these projects.

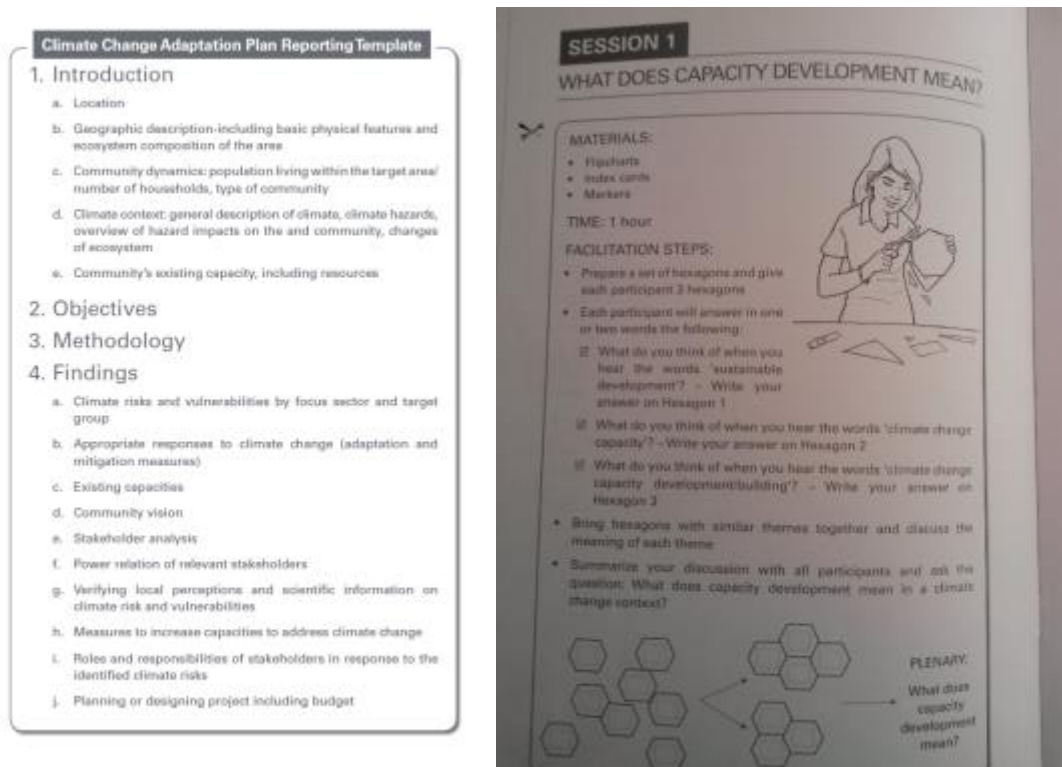
Smaller NGOs were also willing to assume the vulnerability of their constituencies without any critical questioning – even when it had never been a part of their agenda, or been identified as a priority of their constituencies. For instance at Cord and Dan Church Aid - the two proponents of the JCCI – it was expressed that climate vulnerability was now a major overarching concern of their

NGOs (Interviews 15, 16). Oxfam, Save the Children and Action Aid also saw themselves in terms of providing urgently needed technical assistance to vulnerable populations (Interviews, 17, 18, 19). But further questioning over the salience of technical climate change programs in regard to the priorities of local constituencies tended to result in two different answers. Firstly there was a paternalistic approach which saw people at the village level as 'lacking' in 'capacity' and 'knowledge' over climate change where NGOs, donors and government officials had the duty to impart such knowledge and skills. For instance, the young UNDP project manager stated that 'people at the village level have very low education and know nothing about climate change' and then referenced the *Understanding Public Perceptions on Climate Change* report. A young Khmer consultant who had worked for two NGOs on REDD+ put it as 'people in the village know nothing about climate change and always think it is just caused by local issues such as cutting the forest... we need to teach them to be more modern' (Interview 20). This was a common view amongst many NGO staff interviewed including Oxfam, CORD and Fauna and Flora International (Interviews 15, 19, 21). Government staff interviewed tended to be even more condescending. Two different senior staff involved in the SPCR in the MoE spoke of rural people as 'not so smart' saying that they do not have the capacity to think long-term and 'cut the forest and pollute' to meet daily needs where they erroneously suggested this was a factor in climate change (Interviews 22, 23). Similarly, in the FA a senior staffer was exhausted from efforts to try and teach people at the village level about REDD+ where they would immediately forget everything that had been taught after training sessions (Interview, 24).

The international NGO Plan who acted as an intermediary between the ADB/SPCR and local NGOs who were to receive \$1.8 worth of grants, spent extensive time training people in the language of 'adaptation' and 'vulnerability'. This included 'games', and 'in situation' exercises aimed at provincial NGOs who were to receive funds. Although Plan staff noted it was difficult for many provincial NGOs to understand 'adaptation' and 'resilience' – particularly at the village level (and staff admitted that there was no consistent way of translating 'resilience' into Khmer), it was stated that ultimately the training sessions 'would help them work on adaptation to climate change and better understand

it'(Interview 25). As the American manager of the grants process put it when asked how relevant these trainings were to local needs she replied that what they are doing 'is not about assisting communities to deal with climate change it is about increasing the capacity of NGOs so they can apply for funding' (Interview 25).

Figure 4.5 Pages from a training manual used by the JCCI and Plan on teaching NGOs and Villagers about climate change adaptation and resilience.



Some NGOs were more pragmatic and acknowledged the problematic nature of assuming the vulnerability of their constituencies, yet still took on such programs in order to access donor money. For instance, the senior climate change programme manager for Dan Church Aid felt that 'climate change issues are not really spoken of as a priority of the people where we work' (Interview 16). More important and immediate were 'natural resource management, the destruction of forests and the devastation of fisheries'. He still felt however that 'people need to know about climate change

because they already experience it but do not understand the bigger process' and hoped that climate aid could be used to address these other issues as well (ibid). Yet during a climate change workshop conducted in Phnom Penh his more nuanced understanding of the problems of rural Cambodia gave way to the more simplified discourse of adaptation and resilience.

Other NGOs were more overtly interested in accessing donor money and fulfilling donor requirements than with issues of representation and accountability. The director of the NGO Women for instance who had received a small grant from the CCCA to run a capacity development program targeting government officials in Prey Veng province admitted that the NGO had no way of knowing if the short training sessions to provincial authorities were actually taken up in any meaningful way, nor was particularly concerned to know. As he put it he had 'fulfilled the conditions of the project' which was most important (Interview 26). So too the head of the Cambodia Climate Change Network was much more concerned with accessing climate finance than working on local priorities. As he put it 'the big challenge is to get more [climate] funds coming though – especially to provincial level NGOs' (Interview 27). When asked to what degree climate change projects are in the interests of constituencies he simply replied 'they are very vulnerable and need adaptation and mitigation projects' (ibid). What was reiterated again and again was that capacity development and training were needed to make people aware of their own vulnerability. In the words of the senior programme manager from Cord, 'people need to be made aware of how they are vulnerable to climate change' (Interview, 15). Likewise the officer from Dan Church Aid felt that the most important thing was to do effective capacity development so that people at the village level can 'better understand climate change and adapt' (Interview 16). The preoccupation with capacity development tended to help cover over the contradiction that interventions in relation to adaptation and resilience were not actually a priority of the people that these programmes were supposedly assisting. By reframing the issues as a problem of vulnerability, local constituencies are presented as passive and in urgent need of technical knowledge that only NGOs, government officials and experts can provide. In 2014 the Cambodia Climate Change Network commissioned a

report to more accurately understand climate change issues at the village level with a particular focus on needs. The head researcher – a middle-aged foreign woman with extensive experience in Cambodia, made clear in the report that the major risk of large influxes of climate aid was that local agendas and needs would be distorted and ‘subordinated to donor driven buzzwords’ as she put it in an interview (Interview, 28). Yet neither the male Khmer head of the CCCN or the affiliated NGOs ever displayed any attempts to filter, limit or postpone climate funding – rather in interviews they all expressed that the problem was the need to expand and channel more, rather than less climate aid (Interviews 27, 19, 16).

Again and again - within the REDD+ programme, within the CCA, within JCCI and within the SPCR, people at the village level would complain about forests being cut, about declining fish stocks, about the mismanagement of natural resources, about tenure insecurity, about abandonment from the state, yet in all cases these concerns were translated into the technical, a-political language of adaptation, vulnerability and resilience (Li’s ‘rendering technical’ (2007)).¹⁴³ The discursive production of rural Cambodians as vulnerable to climate change through mapping and vulnerability indexes was thus a key move by government and NGO actors in the climate assemblage to govern over the rural poor.

At a broader level adaptation and resilience took on a biopolitical meaning as explored in the previous chapter where the poor who faced low standards of living were expected to ‘adapt’ to such living conditions in the context of a changing climate. A salient example of this is the Disaster Management Law (drafted with the assistance of NGOs such as Oxfam). Article 36 of the law states that ‘[E]very individual has the right to participate in the disaster management activities and promote self-protection, disaster risk reduction and ensure the sustainable livelihoods with safety

¹⁴³ For instance during provincial level consultations on the REDD+ process held in 2014, the dominant issue brought up by participants at meetings were tenure insecurity, forest loss and corruption. Although documents detailing comments brought up by stakeholders repeatedly mentioned these problems, they were given very minimal consideration within national level meetings and within the formulation of safeguards.

and resilience to disasters’ and article 37 goes a step further stating: ‘[A]ll individuals legally and physically recognised have the obligation to participate in disaster risk reduction by: - [A]biding by the law, [and] [M]aintaining the living environment, natural environment and solidarity in the community’ (Royal Government of Cambodia, 2015). Subjects not only have the right to be resilient in the face of disaster – a major discursive move with the corollary that subjects are not to place responsibility on states to manage disasters, but are even legally obliged to take responsibility for managing the biosphere and securing their own resilience.

NGO representatives interviewed were particularly enthusiastic when it came to adaptation. In its simpler articulation, the adaptation paradigm imagines the spaces where climate change interventions take place as a clean slate – where before the arrival of experts, people simply had no measures to deal with climatic events. A number of NGOs and government officials overtly or tacitly held this view. For instance, a senior MoE officer involved in the CCCA claimed that ‘people had no idea about climate change before the project’ and that they were not concerned with ‘adaptation’ (Interview 22). A number of NGOs and programme consultants for the CCCA and SPCR described their programs and projects as the first adaptation activity in a certain area which neglects that farmers have developed a whole suite of techniques to deal with climate variations. At the climate change adaptation capacity building project in rural Prey Veng run by a local NGO with funding from the CCCA grant, an NGO officer asked assembled farmers what they thought caused climate change. The farmers immediately mentioned cutting forests citing the obvious corporeal effect that localised forest loss caused on increased temperatures. The young Khmer NGO officer quickly informed them that they were, in fact, incorrect and began explaining, in a not particularly clear or coherent way how CO₂ is implicated in climate change and the importance of ‘resilience’. One of the farmers quietly replied ‘perhaps sir doesn’t know that forested areas are cooler because he has never actually been to a forest’ – a salient example of state expertise clashing with local experience. Many of the smaller NGOs as well as government officials involved in climate change adaptation or disaster

risk reduction, especially at the provincial level, when interviewed struggled to articulate any clear notion of either adaptation or resilience and often totally left it out of discussions in Khmer.

In their more complex articulations, adaptation and resilience took on its deeper biopolitical meaning. A good example of this more sophisticated articulation can be found in the 2011 Cambodia Human Development Report (produced by UNDP) – *Building Resilience- The Future for rural livelihoods in the face of climate change*. Very much a continuation of the development reports mentioned in the last chapter with their three-pronged governance/ markets/ communities approach, the report hones in on the adaptive capacity of subjects; '[L]imited adaptive capacity is arguably the main factor in Cambodia's vulnerability to climate change. It also sees that '[C]limate change puts risk and uncertainty at the heart of development' and simultaneously reiterates the importance of 'local action' and 'governance' where '[C]limate change is essentially a challenge of governance – about what development means, how it can be realised...'. Numerous project proponents made specific reference to this document. – and in many ways, it helped to guide their articulations of resilience. The senior programme manager of the CCCA probably best represented this more complex view of adaptation and resilience as was embedded in the HDR. He was highly critical of the SPCR, seeing it just as a 'large outflow of climate finance over a short period of time' (Interview 13). For him the CCCA was a much longer term programme concerned with capacities and the institutional embedding of the resilience paradigm in the Cambodian bureaucracy. It was far less concerned with channelling funds into rural projects, than with slowly and carefully building the capacity of bureaucrats, NGOs and 'local communities'. In this sense, resilience is entirely biopolitical (as discussed in the last chapter). What it problematises is not the actual condition of life, which may be geographically unequal due to war, government policies, the quality of infrastructure etc, but life's ability to evolve in such conditions and demonstrate resilience. As he was at pains to point out, the CCCA was not interested in merely 'giving out things or running short term projects'. It was 'something really new in Cambodia that takes time and effort' (ibid). Its central aim was to 'empower' people and 'improve capacity' so that they themselves could deal with climate change.

This however involved a significant investment in governance institutions (and specifically the National Climate Change committee) that would ‘help to ensure the population becomes more resilient’. Once again this ended up ‘being heavy at the level of expertise’ (Foucault, 2010:125) with a big emphasis on developing the capacity of the NCCC.¹⁴⁴ So too the senior climate change programme manager at SIDA (who was supporting the CCCA) stressed that the CCCA was primarily interested ‘in long-term outcomes’ (Interview 29). What it aimed for was the embedding of neoliberal approaches to climate change within the bureaucracy. Here it sought to create adaptive and resilient subjects by investing in governance.

Similarly, many of the bigger NGOs such as Save the Children, Oxfam, People in Need and Action Aid who were working on climate change held this more sophisticated view of resilience and adaptation. For them climate change was primarily biopolitical – ‘about the vulnerable’, according to Oxfam (Interview 19), and how they live in relation to climate change. As all project proponents within these organisations reiterated, their projects challenged modernist liberal assumptions that solutions to complex problems could be found through top-down linear methods. All the different diverse projects they were running were not large-scale programs that attempted to distribute a physical or social good. Rather all these projects purportedly worked in a networked fashion on improving local capacities in a way that acknowledged complexity. For instance the EU funded *Building Disaster Resilient Communities in Cambodia* employed complex training sessions, workshops, mapping exercises, phone apps, participatory planning and agricultural technologies in an attempt to make ‘local communities more resilient’. Typical of the resilience paradigm such projects seek to make the vulnerable themselves responsible for securing their own adaptation.¹⁴⁵

¹⁴⁴ The senior programme manager referenced the project document which states that the overall goal of the CCCA is ‘to strengthen the capacity of the NCCC to fulfil its mandate to address climate change and to enable line ministries and CSOs to implement priority climate change actions’.

¹⁴⁵ As David Chandler puts it ‘[R]esilience thinking tells us that for governance to mirror the achievements of complex emerging order, it is better to allow for flexibility and variation in approaches to problems; in this way ‘life’ produces the strategies of governance from the micro tactics of actors at the lower levels of engagement. ...In resilience framing’s, parochial or local knowledge’s are not a limit but a policy goal, once it is understood that all knowledge can only be local, contextual and time and space specific’(39-42).

From such a viewpoint the only way to achieve change is through working on capacities (whether it be institutions or 'local communities'). This tends to shift attention away from the politics of dependency, patrimonialism, kleptocracy and abandonment where 'participatory', 'grass roots' approaches which emphasise 'ownership' and 'civil society' take central stage.

4.3 Risk

As was stated before, an important aim of climate assemblages has been to financialise the risks that climate change poses to places and livelihoods. This is clearly evident in Cambodia where the climate assemblage has moved from broad notions of a vulnerable population at risk, to quantifiable risks that facilitate the creation of carbon markets. In this light, risk, vulnerability mapping and vulnerability indexes are more than merely attempts to quantify climate change – they also open up opportunities to financialise the risks that the poor face. This will become evident in the examination of the REDD+ scheme in Oddar Meanchey in the next chapter, but it is also broadly evident at the level of activities of the climate assemblage at the national level. For instance, one of the major climate vulnerability assessments which produced the much-quoted risk index which placed Cambodia as the 9th most climate vulnerable country was produced by a for-profit company that describes itself as 'a leading global risk analytics, research and strategic forecasting company offering an unparalleled portfolio of risk solutions' (Maplecroft, 2016). Its analytics are aimed at clients and financial investors who seek to understand and mitigate risks as they arise in particular places. So too the risk mapping activities of the world's largest reinsurance company Munich RE that ranked Cambodia as highly vulnerable to climate change, are clearly interested in financialising this risk for their own profit.

In many cases, after NGOs and government alliances create methodologies and tested best practices for mitigating or making communities adaptive and resilient, corporate entities which seek to make profit employ such methodologies, or work in alliance with the climate assemblage (for instance see figure 4.6). For example, the Prudence Foundation which is a charity set up by the

largest insurance company in Asia has invested in Plan International and Save the Children's disaster preparedness programs in Cambodia. The Ikea foundation has also invested in Save the Children and Oxfam and their climate change work in Cambodia and a number of corporations have invested in conservation NGOs that operate in Cambodia in support of their carbon forestry programs. Winrock International has for instance invested significant resources on researching 'public-private collaborations on Deforestation-free Supply chains' in Cambodia that can help 'companies achieve sustainability goals' and 'meet supply chain commitments' (Streck & Lee, 2016). Winrock's¹⁴⁶ own extensive support and research on the creation of technical instruments and methodologies for measuring carbon stocks and forest change in Cambodia directly feeds into these efforts. In all these cases, the risks that poor Cambodians (or Cambodian forests) face in relation to climate change become part of circuits of capital accumulation where efforts to abate these risks are transformed into testaments that support the altruistic credentials of companies, and hence help to mitigate the real and perceived social and environmental impacts that arises due to these company's activities.

¹⁴⁶ Winrock International was founded by Winthrop Rockefeller – grandson of John D. Rockefeller, the famous oil magnate and founder of the first wave of Rockefeller organisations that were amongst the first modern international humanitarian charities to come out of the U.S. It is worth noting the historical significance of the fact that Rockefeller organisations – who were at the forefront of the early 20th century climate assemblage conducting health and development work across the global south (as alluded to in chapter one)– continue to be at the forefront of the contemporary 21st century climate assemblage.

Figure 4.6 An Image Taken from Plan International’s ‘Global Corporate Partnerships’s Page’ Depicting Cambodian Children in Preparation of a Natural Disaster



EMERGENCY SUPPORT

By engaging your company and stakeholders with our emergency work, you can provide live-saving support in the aftermath of a disaster. We also work with companies to enable communities in disaster prone areas to become more resilient. [Read more about our partnership with the Prudence Foundation.](#)

Source: (Plan International, 2016)

In other cases, development agencies have gone beyond merely incorporating such risks into circuits of capital accumulation (commercialising them) by more directly commoditising them by transforming them into carbon credits. For instance Carbon Nexus, based in Phnom Penh, created by eight NGOs to act as a platform to ‘bring together businesses, local communities, and development entrepreneurs to improve lives and deliver sustainable climate benefits’ offers ‘superior, direct access to carbon credit projects that support long-term livelihood, health, and environmental benefits for communities in developing countries’ (Carbon Nexus 2016) . Carbon Nexus not only provides support to both NGOs and businesses running small scale carbon projects but also markets carbon products and allows companies to directly offset their emissions by providing carbon footprint analytics and carbon credits generated in Cambodia. Another Cambodia based carbon broker - Emerging Markets Consulting, has also worked with various NGOs and donors

to provide carbon analytics services and is orientated toward generating carbon credits (predominantly for foreign companies looking to offset their carbon footprint). Similarly, a number of 'social enterprises' have become involved in various projects that aim to generate carbon credits through the production of carbon saving products such as cook stoves, charcoal and cooking oil. Likewise, Cambodian agricultural NGOs such as CEDAC have received funding to pursue small carbon abatement projects and develop carbon accounting methods to generate carbon credits. As another example, in 2011 Australia's Macquarie Bank was in the process of negotiating a AUS\$1 million low-interest loan to the NGO FFI to develop a REDD+ type scheme in Cambodia's Cardamom mountains – with the assumption that the NGO would be able to repay the loan through generated carbon credit sales from the project. Similarly, the MoE has engaged with several private firms in order to develop for-profit carbon forestry projects across Cambodia (including the US firm Wildlife Works and a small Singaporean based carbon broker). All of these projects attempted to transform vague notions of climate risk into tangible commodities abstracted from the vulnerability of poor Cambodian's (and Cambodian forests) that would flow into the voluntary carbon market - and specifically North American, Australian and European companies looking to create themselves as carbon neutral. In summary, there is an important trend in terms of the interventions of the carbon assemblage where a host of new mechanisms and accounting procedures are being put in place in order to transform the risks that the poor face (the 'spread of unequal life chances'), into commodities.

4.4 Neoliberalism

As outlined in the last chapter, as much as economists, experts and analysts push for new waves of commoditisation and privatisation which they proclaim can ensure sustained financial benefits, this cannot be seen as the only or even primary focus of neoliberal thought. In most cases, the carbon assemblage has come up against a host of problems and material realities which have severely frustrated the optimism of transforming nature into commodities. Early attempts to transform energy saving technologies into Certified Emissions Reductions through the Clean Development

Mechanism resulted in very little – even after the millions of dollars pumped into this cause from a host of international donors. So too of the 13 REDD+ projects that have been drawn up only two have moved to the implementation stage (and neither of those two projects could be defined as being economically viable in the long term). Smaller NGOs have also faced insurmountable problems in transforming climate risk into carbon commodities. The head of Nexus expressed that mostly ‘entrepreneurs entering into the carbon market tend to overestimate their potential’ (Interview 30). Nexus has had to turn down a significant number of carbon projects simply because they are not economically feasible. He estimates that a project needs to be reducing at least 10,000 tonnes of carbon per year to make it feasible - which rules out most carbon saving products such as cook stoves and energy-efficient oil and charcoal products which all have carbon reductions which are significantly lower than this (ibid). Even where a project is able to produce above this threshold there is still the possibility that due to high transaction costs associated with geographically dispersed projects where carbon reductions are difficult to measure, they may still be unfeasible. In nearly all cases carbon enterprises are dependent on grants to sustain their activities. Even Nexus itself is struggling to operate without a dependency on grants – and it is increasingly hard to secure grants for essential core funding (ibid). In this way, far from being a cutting edge approach to development that integrates market logics, most of these programs are actually traditionally donor funded projects. Another example is the Sustainable Green Fuel enterprise which runs as a social enterprise outside of Phnom Penh and produces briquettes from recycled biomass waste that can be used in cooking. The aim of the enterprise is to reduce waste (through recycling coconut husks and other biomass) and promote a fuel efficient cooking method which can reduce carbon emissions. The problem, however, is that there is only a very minimal reduction of carbon emissions and the transaction costs involved in verifying such emissions would not warrant going through the process of applying for accreditation. Also due to the production costs it is difficult to provide a product that is competitive with other charcoal products on the market (currently the briquettes are three times more expensive than the typical charcoal products on the market). This is not just a problem of

‘start up costs’ but a fundamental issue with actually producing carbon saving products (cook stoves and water filters have faced similar problems in Cambodia).

At a much broader level the CCCA and SPCR are rarely able to produce any immediate circuits of profitability even where they proclaim markets as the new solution to climate change. Furthermore, even where the Climate Investment Funds have promoted at length the importance of private capital playing a major role in adaptation and mitigation projects, the reality is that the overwhelming share of finances to support the SPCR comes from traditional bilateral and multilateral aid sources. In a similar vein the Global Climate Change Alliance remains a traditionally financed development initiative consisting of grants and low-interest loans.

As was emphasised in the last chapter, the central logic of neoliberalism as *a virtual* program is to recreate social-nature relations along the lines of competition, efficiency and accountability. And under the logic of neoliberalism, publicly funded programmes are required to help instil the conditions required for competition, accountability and efficiency amongst particular populations and institutions. Neoliberalism in the field of development is as much an institutional orientation as outright expansion of the market. In this regard the SPCR, CCCA and many of the NGO run projects follow a clear neoliberal rationale. Most blatant of such attempts can be found within the SPCR. The SPCR dogmatically follows the logic of the promotion and expansion of markets by aggressively supporting those factors which are believed to facilitate the expansion of markets. For instance, it is no coincidence that the *Climate proofing Infrastructure* component is geographically focused on what the ADB has identified as an ‘economic corridor’; a group of areas sketched out by the ADB which are identified as being able to facilitate market growth across the country (a salient example of *neoliberalism as exception*), and to which the bank has already invested millions of dollars in grants and loans. Similarly, the primary logic of the rural roads improvement project is ‘improved access to markets and jobs’. One of the main indicators used to evaluate outcomes of the project were ‘percentage of rural people in Kampong Cham province with year-round access to markets’.

Analogously, the *promoting climate resilient agriculture* component had a heavy emphasis on developing business plans for smallholders, and expanding inputs needed for ‘high value crop production’ including fertilisers, irrigation systems and even insurance. What much of the logic of the SPCR interventions pivot around is not climate adaptation in its own right, but the time honoured extension of physical and social infrastructure which market expansion is dependent upon, but which will also be *resilient* to the effects of climate change.

The CCCA and most of the NGO programs such as JCCI and disaster risk reduction programming of Save the Children *et al.* are equally neoliberal but more directly concerned with resilience and adaptation in its own right (i.e. biopolitical). The CCCA for instance tends to be governmental in nature focusing on the creation of resilient subjects in the context of markets, rather than merely the expansion of markets. In the main project document it considers a number of indicators for the successful creation of resilient subjects including: the ‘number of men and women from local communities aware of climate change vulnerability and adaptation responses’ and the ‘number of men and women in the demonstration sites whose perceived vulnerability to climate change has decreased’. Yet it is still fundamentally imbued with a neoliberal logic¹⁴⁷ where market integration becomes a proxy for ‘resilience’. For instance in the same set of indicators, it uses: ‘the percentage change in the income of men and women in the demonstration sites’ noting that ‘this is a proxy for climate resilient income production’ and ‘the percentage change [decrease] in subsistence food production of male and female subsistence farmers in the demonstration sites’ similarly noting that ‘this is a proxy for climate resilient food production’. As the UNDP advisor for the CCCA put it ‘the aim is to make people themselves take control of how they deal with climate change by using their own skills and resources’ which on elaboration envisioned such people as primarily ‘market actors’ (Interview 13). This is also a salient example of *neoliberalism as exception* where market logics are

¹⁴⁷ As Evans and Reid note it is often the case that ‘resilience is more attuned to a neoliberal ethos allowing a freedom to embrace contingency as the essence of foresight and enterprise..’ (23)

directed to target populations and delimited geographic areas in the hope they will spread to the broader population.

A good example of this logic at work is UNDP and SIDA's *Community Based Adaptation Programme*.

In an article produced by UNDP entitled *villages take entrepreneurial step in solving water woes*, a village is described where 'entrepreneurs' took an NGO provided loan to expand a local water reservoir to establish a user pays system (UNDP Cambodia, 2016). The project was even extended by villagers to 'water uses' outside of the village. In the face of abandonment where even the most basic materials to support life are absent, it becomes the market which is left to fill in the gaps. In this framework, subjects are celebrated for their ability to withstand abandonment and embrace the market as a solution to their problems. Similarly, in a video produced by UNDP on *Building Resilient Communities*, a poor rural beneficial family is presented who received agricultural training and a gas stove. The video weaves together the family's vulnerability to climate change with the benefits of the program such as providing 'a clean source of renewable energy' that can 'reduce dependence on charcoal and the cutting of forests', who receives training on revolving funds, on the expansion of home gardens and the use of solar panels. This is the resilient subject *par excellence* – who is off the grid and uses market provisioned solar power rather than the state grid, who uses village raised revolving funds rather than low-interest state-backed loans, who purchases a gas stove to reduce their own impact on the biosphere, who voluntarily reduces their dependence on forests and who embraces the market to meet their basic needs, but who can survive at a low material standard of living. Neoliberalism in this case is not a top-down doctrine painfully disconnected from material realities – it is rather a set of ideas, practices and techniques which pragmatically attempts to govern over life in the most efficient way considering the circumstances. It is actualised through a series of technologies (solar panels, home gardens, cook stoves) which create the resilient subject. It is biopolitical because it hinges upon subjects in their very most basic biological relations to pollution, energy consumption and natural resource usage.

4.5 Capacity Development

One of the principal effects of the neoliberal and resilience rationalities is that in practice they end up channelling large quantities of development finance into the task of capacity development. Ironically, the desire to increase the resilience of communities tends to fall upon a 'top heavy' program of enrolling experts and state bureaucrats in capacity development programmes. The entrapment of development interventions within the logic of sovereignty (see James Ferguson & Gupta, 2002) means that it is typically state actors who are the target of capacity development programmes and who are in turn seen as the primary actors to take responsibility for ensuring the capacity of 'local communities'. At the same time, and as pointed out in the last chapter, one of the ironies of neoliberalism, is that the quest to open up new spheres to marketisation and commoditisation, does not end up in a streamlining of state apparatuses as neoliberalism claims, but in the expansion of bureaucracy. This is evidently clear in the case of Cambodia and neoliberal climate interventions where one of the main results of climate finance has been the rapid expansion of the MoE and FA bureaucracy which now includes a REDD+ secretariat, a Climate Change department (consisting of five offices) and the National Council for Sustainable Development (with 38 members).

In countries like Cambodia where there is a consensus that the state is generally lacking in capacity, development interventions tend to fall back on state focused capacity development programmes¹⁴⁸ (see Godfrey et al., 2002). This in turn requires a significant dosage of expertise – typically administered by foreign and local consultants. In the context of Cambodia this is exacerbated by the policies of agencies such as the ADB and UNDP which prohibit direct salary supplements to government staff, and which makes capacity development programmes even more dependent upon outside consultants for administering expertise. It is also the case that 'capacity development' is logistically a straightforward way of securing 'project success'. As many people

¹⁴⁸ For instance within the CCCA project document, under the section on 'projects risks', a major risk is listed as 'government institutions lacking capacity'. There is no mention of lacking political will or patron-clientism.

interviewed in these agencies pointed out, it is logistically easier to provide consultant expertise to high-level government officials, than large-scale capacity development activities at lower levels. As a Cambodian ADB climate officer stated 'it is much easier to hold a workshop at the Ministry of Environment for an hour or two and then say it is completed, than it is to actually make sure that the government is going to do something about climate change. The people working there [the ADB] most of all aim to finish projects. They do not want to be stuck with all the problems on the ground and with the government. So holding a workshop on good governance or adaptation or resilience is easy - things that sound nice and everyone agrees. But what the government actually does...'

(Interview 31).

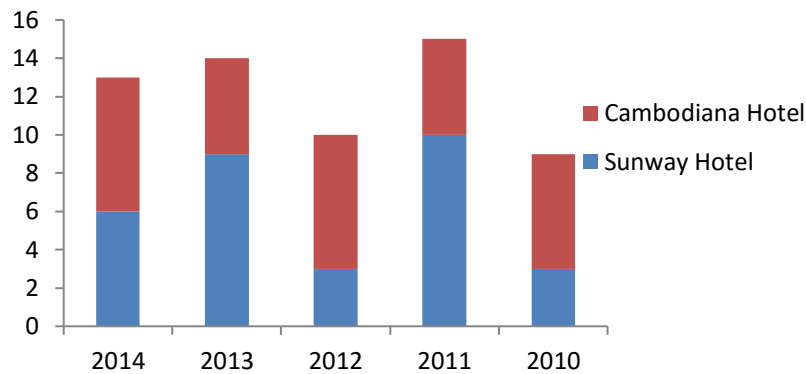
According to those interviewed in the ADB, the average payment for international consultants hired for the various components of the SPCR was US\$600 per day (which for reference would take the average Cambodian more than six months to earn) (Interview 31). In the *Mainstreaming Climate Resilience into Development Planning*, 170 person months of international consultants, and 720 person months of national consultants were contracted representing US\$11 million in contracts. Even 'harder' components such as the *Rice commercialisation sector development program* involved over 635 person months of consultancy (including 14 months for 'community mobilisation specialist, 8 for marketing specialist, 49 for policy development specialists, 39 for climate change specialists and 32 for gender specialists) where \$600,000 was spent on capacity development workshops. Project documents for the CCCA similarly display a remarkable dependency on foreign consultants and capacity development. US\$3.5 million was spent on consultants representing more than one-third of all money dedicated to the programme. Over \$500,000 was spent on MoE travel expenses, and \$50,000 on UNDP travel expenses, with \$224,000 spent on trainings and workshops. Analogously the 'REDD+ readiness' program spent over three-quarters of funds on consultants, workshops and training.

Based on my own attendance at 16 different climate change related workshops, meetings and project launches, it was clear that carbon experts attended a large number of trainings, workshops, roundtables, ceremonies and meetings. Some experts complained of having to attend multiple events per week which took up much of their work time. Workshops and trainings are a particularly conspicuous part of the development industry in Phnom Penh. Large workshops are commonly held in Phnom Penh's most prestigious hotels featuring buffet lunches and appearances by high-level government staff including different ministers and the PM. Such workshops – especially the larger ones – are typically of a performative nature in the sense that the emphasis tends to be more on the performances of individuals rather than the content of what they say. Large workshops are rarely a place to meaningfully debate political questions such as failures, contestations and conflicts. Instead, they tend to be tightly scheduled and largely monotonous with few opportunities for spontaneous debate. Government officials – especially high-level ones – are notorious for poorly prepared speeches (or speeches that merely recite ad verbum technical details of projects) while participants attentively sit quietly and politely listening. The head of the National Committee for Disaster Management was, for instance, notorious for impromptu additions to his speeches at the annual NCDM meetings. On numerous occasions he would focus speeches on his 'personal zoo' (his passion-but which had little to do with disasters). At one of the annual meetings he even ended the meeting a number of hours early asking everyone to bear with him - as he had to attend 'an important engagement of his daughter'.

Involvement of village level participants is often highly tokenistic with few opportunities for meaningful engagement. The REDD+ stakeholder meetings for instance went to pains to invite 'indigenous representatives' which were carefully selected through a special REDD+ indigenous people's network. Yet at the actual meetings indigenous representatives would typically sit passively listening to government speakers without speaking. High-level SPCR and CCA meetings also tended to be highly performative and appeared to be more about strengthening relations between the government, donors and NGOs – through the performance of attending workshops – than getting

into the nitty-gritty of projects. A number of foreign carbon experts complained that for many of their counterparts workshops were mostly about the free lunch.

Figure 4.7 Number of Climate Related Events at Phnom Penh's Two Biggest Hotels

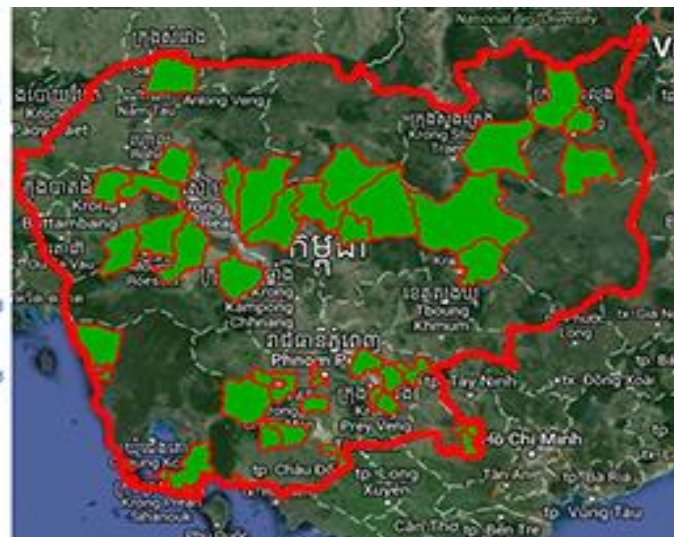


Source: author

The emphasis on workshops and capacity development tended to have the effect of concentrating finance in Phnom Penh. Although proponents of the CCCA and SPCR claim that finances were spread across the country, a disproportionate amount of funds went to consultants (and workshops and training) in Phnom Penh. Largely this was because the infrastructure that is required for development programming is concentrated in Phnom Penh (government ministries, NGO offices, fast internet etc.). For instance, within the Cambodia Climate Assessment (a part of the CCCA), it is concluded that only 3% of climate finance 'has gone toward 'capacity development' compared to 40% for 'agriculture, water and irrigation'. This entirely misrepresents the actual flows of climate finance by taking project documents at face value. For instance, within the SPCR, the *rural roads* component or *Biodiversity Conservation Corridors* component, it cannot be concluded that all the finance dedicated to these components will actually end up in rural areas merely because the project has the word 'rural' in its title. As was highlighted above, a significant proportion of the funds will be spent on workshops, consultant contracts, supplies and government ministries in Phnom Penh. Within the latter component for instance, out of \$11 million of funding, more than \$3 million

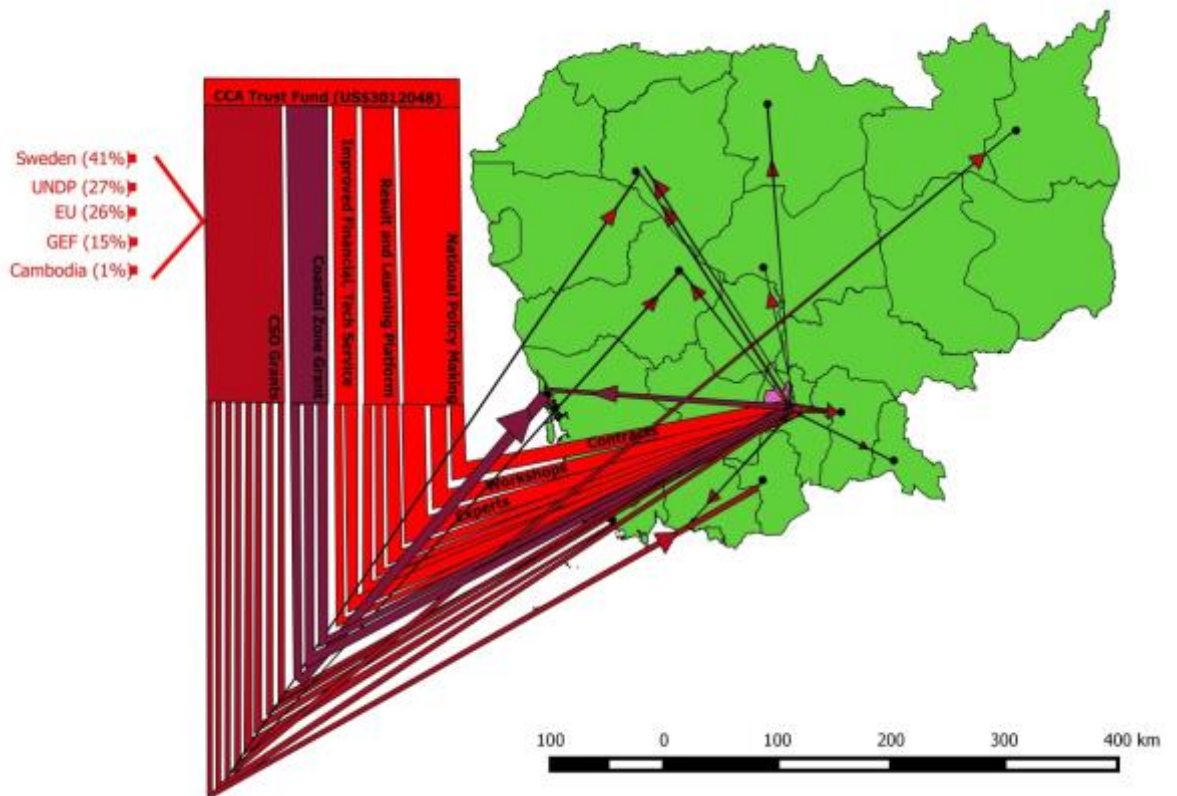
went to international consultants. So too proponents of the CCCA like to imagine that they are extending climate finance across the country. For instance, in the MoE's climate change website (supported by the CCCA) a map is produced showing the distribution of CCCA supported projects across 18 provinces. In actual fact, these programs collectively represent only \$2 million (less than what was spent on consultants), and once again within each project, a significant proportion of funding ends up in Phnom Penh due to workshops, consultant fees and money going to government officials. Figure 6.7 is an attempt to map the actual flow of funds from the first year of the CCCA. The width of each line represents the proportion of the budget dedicated to each component and the arrow heads show where these budgets actually ended up geographically. As can be seen most of the money will end up in Phnom Penh with very little money being directly spent in the provinces.

Figure 4.8 Map of CCCA Project Distribution Produced by Ministry of Environment



Source (Ministry of Environment: Royal Government of Cambodia, 2016)

Figure 4.9 Mapped Distribution of CCCA Funds Across Cambodia



Source: author

Workshops and trainings, although typically in Khmer (yet not always), still relied heavily on participants who could also speak English and who were familiar with technical concepts that had been imported from North America and Europe. For instance, often information about events was disseminated through English language emails chains or on English language websites. This meant that NGOs outside of Phnom Penh often felt excluded from workshops and meetings as well as funding opportunities. The head of the CCCN expressed the frustrations of provincial members who were unable to attend Phnom Penh workshops and meetings (because often there was no funding available for transport) (Interview 27). They also struggled to access climate finance because they did not have the resources to complete proposals (which were often required to be written in English).

Figure 4.10 – Typical Climate Change Meetings (as part of the SPCR and CCCA programs)



Strategic Program For Climate Resilience meetings (upper) and CCA meeting (lower), 2015. Source: (Ancha Srinivasan, 2012)

Outside of workshops, trainings and capacity development, another important financial trend influenced by the doctrine of neoliberalism, has been the disproportionate concentration of climate finance into private contractors. This is a pattern that goes beyond just climate aid, but applies to aid more generally¹⁴⁹ and is particularly evident in the expenditures of major donors such as the UK¹⁵⁰ and US (Essex, 2013) where large amounts of aid end up with private contractors. In Cambodia, it is

¹⁴⁹ For instance, in 2014, research shows that less than 6% (US\$9.5 billion) of overall official development aid (\$165 billion) went directly to governments in aid recipient countries (LA review of Books, 2015)

¹⁵⁰ A 2014 peer review of the UK aid program, by the OECD group of donors, reported that over 90 percent of the largest British aid-funded contracts go to UK firms (OECD, 2014).

clear that in many instances climate finance is also disproportionately benefiting contractors. For instance, the \$100 million USAID project HARVEST – ‘a five-year integrated food security and climate change program’ (which it considers as climate aid), is entirely run by the US agribusiness firm Fintrac. As another example the CCCA, under Danish aid has given a \$2.5 million contract to the Danish company DHI to carry out mangrove restoration projects (in a process that was not subject to bidding but written into initial project documents). The SPCR has also given multimillion dollar contracts to the Canadian firm Hatfield consultants and the international firm ICEM.

Apart from donors directing climate finance to firms and consultants from their own countries, it is also common for donors to repackage non-climate related programs and loans into seemingly new and additional climate aid. The Asian Development Bank for instance added on additional ‘climate components’ with finance from the Climate Investment Funds onto already existent projects that were not climate related and a significant portion was loans rather than grants. The *Climate Resilient Infrastructure* component for instance is worth \$178.31 million. Only \$9 million of this is an actual grant from the CIF (and \$7 million concessional credit). The rest is not additional and is part of a longer standing ADB project that has very little to do with climate change – although co-financiers such as Australia, Norway and France have still jumped at the opportunity to present their contributions to these broader funding pools as part of their commitments to funding climate change. USAID has also attempted to repackage bilateral programs as climate related. By defining the \$3.6 million HARVEST program as ‘agricultural *and climate adaptation*’ (even where the original conception note made no reference to climate adaptation), the US is able to count this \$3.6 million as fulfilling its climate obligations. Finally, the value of programs is also inflated by the supposed contribution of the Cambodian government. It is common practice on the part of multi-lateral financiers to ensure at least a symbolic level of recipient government contributions to major projects – which is done under the rubric of ensuring ‘ownership’ over programmes. For example within the SPCR, the Cambodian government supposedly contributed \$16.9 million. Yet when looking at the fine detail, this is not an actual monetary contribution but an ‘in-kind’ contribution. And this in-kind

contribution does not consist of materials or labour but solely consists of exceptions of inflated taxes and duties. The result of this is that it inflates the overall cost of the program and gives the false impression that the Cambodian government is investing significant resources into these programs.

4.6 The Politics of the Climate Assemblage

The actualisation of neoliberal climate programs and attempts to govern through resilience encountered major limitations and difficulties. The disjuncture between ‘ideal worlds’ and material realities (c.f Lewis & Mosse, 2006b:2) in Cambodia were often obvious. When the climate assemblage began its major operations in Cambodia, droughts and flooding were devastating rural livelihoods where disorganised and ineffective state responses were characteristic. Against the polite technical programme of building a carbon bureaucracy, the state has retained its neo-patrimonial tendencies and remained entwined within the often violent agenda of the ruling Cambodian People’s Party (Hughes, 2009; Pak et al., 2007).¹⁵¹ The Cambodian government was kleptocratic, built around patronage and had a strong tendency to utilise violence. But simultaneously, it enthusiastically took up its eco-modernising mandate through key technocrats who gave the lumbering bureaucracy a professional facade. This resulted in contradictions for foreign carbon experts engaged with the government where at a macro-political level the Cambodian government’s increasingly desperate and kleptocratic ways were in stark contrast to individual technocrats and working groups where donor-funded technical programs were rapidly being rolled out. For some, these contradictions were too much. One long term conservationist who had been in Cambodia for 20 years and had a lengthy and close working relationship with individuals in both the FA and MoE

¹⁵¹ Over the last twenty years the Cambodian People’s Party, headed by Hun Sen, and which is inseparable from the state (Un, 2015), has periodically been involved in violent crackdowns on opposition party members and protesters, ranging from a deadly 1997 purging of rival parliamentarians to 2016 crackdowns on human rights NGOs, land evictees, environmentalists and opposition members. Between 2015 and 2016 the Cambodian state entered into a particularly frantic period of jailing dissidents where 30 people were jailed for overtly political reasons.

admitted 'that for many years I was too optimistic – even naïve. There is a tendency to believe that things can be done – that the government will change, that given the right support they will do the right thing. Well now I support the activists. I feel better about involving myself with those who are critical of the government and the NGOs. Anything else seems to be a waste of time' (Interview, 32). He like many other long-term foreign development experts was leaving Cambodia with a feeling of exasperation. Those within the UN and other high profile positions who were embedded in the government tended to be more guarded about their views of the government – yet for some it was difficult to hide frustrations. One female carbon expert from UNDP who had spent three years working with the MoE and was preparing to leave to another job noted soberly that she felt her work 'had achieved very little' where 'it was next to impossible to change the way things are done' (Interview 33). It appears that the high turnover rate of foreign carbon experts (3 years average tenure for those interviewed) is an important factor in the reproduction of optimism surrounding technical programs (as those who stay longer inevitably begin to come to terms with the lethargic nature of the bureaucracy).

45 per cent of experts surveyed felt they were making 'slow and steady progression', yet 30 per cent felt their work was 'uncertain or unclear' or 'unlikely to be effective in the future'. Similarly, while 40 per cent characterised climate change interventions in Cambodia as 'moderately successful', 33 per cent saw them as 'problematic' or 'highly problematic'. 17 per cent of responses identified their biggest challenge was in working with 'an inefficient state bureaucracy' and another 17 per cent felt the biggest challenge was in working in a donor-driven environment. Many in NGOs were equally aware of the contradictions involved in climate change work, but had the possibility of buffering these contradictions with their role as 'civil society'. As one NGO officer in one of the JCCi organisations put it 'our role is to make sure the government uses climate finance in an accountable and transparent way' (Interview 16). This neglects the question of whether the government could

ever be realistically expected to do this, let alone considering the problematic logic of climate change interventions. Several government officials in the climate assemblage were fairly blatantly pursuing their self-interest. A number of officials involved in the CCA and SPCR had seamlessly slipped between government roles and private contractor roles. One former academic who came to play a key role in the SPCR immediately upgraded his car upon receiving this new work, telling associates the new work had 'made him a rich man' (Interview 31).

The example of the Cambodia Climate Change Alliance, as one of the more successful climate change interventions, reveals the degree to which success is built upon contingency and political manoeuvring. Unlike the SPCR which was largely based on consultant outputs and the rapid completion of projects, the CCCA had better managed to build up a government institution that is capable of autonomously managing future inflows of climate finance. By 2016, it was clear that the Climate Change Department had won out over the Forestry Administration as the main focal point for future climate finance where it was preparing to receive formal accreditation from the largest climate fund – the Green Climate Fund – while the FA was under an awkward process of restructuring. Even with what its proponents labelled 'it's often painfully slow progress' (Interview 13), the CCCA had managed to promote climate change adaptation and resilience as an important institutional priority – at least at the level of discourse - of both the MoE and government more broadly (although it could be countered, that in donor-dependent Cambodia this does not count for much). But there were very specific factors that facilitated this modest success. Firstly, was the fact that climate change programming was a seemingly a-political issue backed up by not only hundreds of millions of dollars of finance but an army of consultants and technical experts who were willing to beef up Cambodia's 'green' credentials. Unlike highly politicised areas such as land reform, forestry and good governance, which had seen the mass exodus of donors due to the obvious lack of political will on the part of the government,¹⁵² climate change was a seemingly much more banal and a-

¹⁵² Land reform in particular has seen the exodus of three major donors: Australia, the World Bank and finally Germany. After multi-million dollar projects spanning several years all three donors have essentially given up

political issue where donor and government agendas could more easily be aligned. Climate Change for instance was a major topic at a 2016 ASEAN meeting, where Hun Sen reportedly directly appealed to President Obama to increase climate finance – one of the few areas of mutual agreement between the two countries whose relations have often been serendipitous (Soksreinth, 2016).

Secondly, climate change discourse was easily articulated in order to recast the problems of the rural sector – which largely came about due to neglect, major mismanagement, nepotism and the unleashing of market forces with very few protections – as an a-political problem which was not the fault of the government, or the neoliberal policies it has uncritically subscribed to, but due to a malevolent and distanced climate. Hun Sen had taken the opportunity on numerous occasions to link drought and flooding events to climate change – even though the devastation caused from such events are due to the *interaction* between climatic events and the problems of the rural sector, rather than merely the ‘external’ climate. For instance in the wake of the 2016 drought, and accusations that Cambodia’s dam-building program was inhibiting an honest assessment of the drought’s devastation, Hun Sen stated ‘[T]he issue of having water or not having water depends on the sky; the sky brings rain where they don’t need it until people die’ (Narim, 2016). So too in the 2013 droughts, Hun Sen was quick to assign all blame on climate change (Wight, 2014).

The Climate Change Department had thus seen high level support since the origins of the climate change assemblage in the early 2000s where Hun Sen has publicly endorsed the climate change agenda at national climate change forums and other high-level meetings – where in the context of Cambodia, Hun Sen’s speeches are often literally taken as policy and law.¹⁵³ The Cambodian King led the 2015 39 strong Cambodian delegation to the Paris CoP and Cambodia’s activities at the CoPs

on land reform due to numerous controversies and major difficulties in working with the government (see Zsombor, 2016).

¹⁵³ There are numerous instances where Hun Sen’s speeches have literally been taken as law leading to a unique category of law in Cambodia ‘law by dictum’. For instance the 2015 traffic law where numerous articles were overturned through impromptu speeches, a law regulating sexual relations between Cambodians and foreigners, and parts of the Land Law – e.g. the ‘leopard skin policy’.

have seen strong support from Hun Sen. More specifically, the climate change department has grown under the leadership of two key brokers. The first is the ex-deputy of the Climate Change Committee, and now deputy of the powerful National Committee for Sustainable Development, Tin Ponlock, and the second is the head of the climate change department, Som Ty. Both are highly educated, fluent in the language of adaptation and resilience, have good relations with donors and international brokers and also have connections to those in power in the bureaucracy – and especially the new reform-minded Minister of Environment who is very close to the PM.¹⁵⁴ As a senior technical assistant for the CCCA put it - ‘the climate change department is like an island in a sea of well you know how it is’ (Interview 13). The Climate Change Department also benefited from a 2016 institutional reshuffle in the ministry where it was put under the National Council for Sustainable Development, which was technically an inter-ministerial body under the honorary chairmanship of the PM as opposed to the Climate Change Council which was still under the MoE. Indeed the climate change department had managed to secure some autonomy from the patron-client chains that dominate other departments within and outside the MoE.

Yet even inside the MoE, progress was still painfully slow. The senior technical assistant admitted that there’s ‘probably really only two people who could have a structured conversation over resilience’ (Interview 13) – the two above-mentioned brokers. Although the MoE took more ownership for climate change activities under the CCCA as compared to the SPCR, key strategic documents such as the Climate Change Strategic Plan were still highly dependent upon consultants and many of the technical aspects of the Department of Climate Change were driven by foreign consultants – as is evidenced by their repository of documents which are more often than not translated from English to Khmer rather than vice versa, and where there is a large backlog of untranslated documents. Outside the Climate Change Department things were even more dire. For instance, according to the technical assistant ‘very significant inputs’ were required from consultants

¹⁵⁴ The New Minister of Environment Say Samal (since 2015) is the son of Say Chhum – president of the senate and a long term powerbroker within the powerful central committee of the Cambodian People’s Party.

in order to produce the climate change sectoral plans which were 'written' by each of the ministries. Yet 'nineteen out of twenty ministries didn't understand the significance of the plans' seeing them as largely shopping lists for donor funding rather than actual plans' (Interview 13). Other ministries which should – according to the CCCA - play an important role in dealing with climate change remained mired in patron-client relations and forms of leadership which prioritised hierarchical acquiescence and the pursuit of personal interest. The Ministry of Water Resources and Meteorology for instance was criticised by several interviewees due to slow progress on various climate-related programs.

So too the National Committee on Disaster Management (NCDM), which had been emasculated by the much more powerful Cambodian Red Cross, was ineffective in dealing with climate change – which was painfully evident by April 2016 when the worst drought in 40 years struck Cambodia and the Cambodian Red Cross was sporadically distributing drinking water to the rural poor in televised displays, rather than the NCDM. In 2015 a senior Oxfam official who had been providing input into a draft law on the National Committee for Disaster Management and who was aware of its numerous shortcomings and the obvious problem that the underfunded committee was competing with the Cambodian Red Cross (headed by the PM's wife Bun Rany and which is closely aligned to the political agenda of the Cambodian People's Party) nonetheless concluded at a meeting to draft the law that it was 'a move in the right direction' (Naren & Wright, 2015). So too the ADB which had conducted a six-month study into the NCDM which concluded 'funding for NCDM tends to be ad hoc, and there is no systematic funding for development of robust preparedness and response capacity', has tended to frame the fundamental problems of the NCDM in terms of the euphemism 'lacking capacity'. It has continued to invest more than \$4 million in the problematic institution. At the height of the drought in May the NCDM was nowhere to be seen and Hun Sen even suggested that the opposition party 'should take responsibility for drought relief' (Naren, 2016). At this stage senior MOWRAM officials were still claiming that the drought had largely bypassed Cambodia even though media reports were stating that thousands of people were without access to clean water across Siem Reap

and Banteay Meanchey provinces. The drought was in fact part of the highly predictable El Niño/ La Niña cycle which MOWRAM officials had been warned about more than a year in advance. In early May the provincial governor of Banteay Meanchey province admitted that the provincial capital only had 'a few days supply of drinking water available' and bottled water had to be urgently trucked in by the military (Naren, 2016). This was even though millions of dollars had been spent on disaster preparedness (specifically to drought). In Siem Reap province a trip to the worst hit commune in April 2016 revealed that only sporadic assistance had come through. The FAO had established two water tanks in two villages but both villages and communal representatives of the NCDM did not actually know of any immediate plans to alleviate water scarcity (a large portion of people in three villages visited were dependent on purchased bottled water for drinking at the time which was a major drain on household finances) (Interviews 34-37).

Similarly, the lead programmer for IFAD (the UN-based International Fund for Agricultural Development) was frustrated working with the Ministry of Agriculture Forests and Fisheries, where he was the sole technical staff representing IFAD. For him, there was 'still a culture of government staff chasing the big funds' which got in the way of 'of broader policies and institutional sector-wide change that could actually address the impacts of climate change'. IFADs highly technical and broad understanding of climate change programming struggled to gain ground in MAFF where personal interests, patron-clientism and aid dependency still characterised the ministry's day to day institutional structure.

In the case of REDD+, another foreign UNDP technical consultant played a key role as a broker helping to provide some discursive coherency to the disparate activities carried out under the banner of REDD+. Embedded in FA's Phnom Penh office (along with the rest of the REDD+ secretariat) he played an important role in ensuring standards, commitments, best practise and safeguards that came out of the international CoPs (Interview 39). In a similar vein, Japanese technical staff embedded in the FA helped to produce important resolutions and reports on

safeguards that would allow for the progression of the REDD+ Readiness programme and which represented a step toward Cambodia receiving payments for reducing its deforestation level. A European FAO technical consultant over a number of years did the bulk of analytical work that would help to create a practical methodology for actually establishing an overall deforestation/carbon emissions baseline and a monitoring system to measure any derivations from it. While this work – due to its highly technical and abstract nature was insulated – although not entirely – from political concerns, the UNDP technical adviser was much more acutely aware of the deeply complex political situation he was embedded in (Interview 39). Not only was the REDD+ national program being presented with the increasingly critical literature on the first REDD+ project, but it had to deal with NGOs, financial backers and government departments which were pushing individual REDD+ projects with little regard for the national level. Even more challenging was dealing with the various government departments who were clearly failing to slow down overall deforestation within FA and MoE managed forest reserves. Across the span of the REDD+ project more deforestation had occurred in government forest reserves than outside them (Zsombor & Pheap, 2015). Even though there were a number of technocrats in the FA and REDD+ secretariat who worked directly with him and were both knowledgeable and dedicated to the REDD+ scheme, as he put it ‘there are major and constant challenges in actually getting solid and practical commitment from some parts of the government’ (Interview, 39).

Although the government and FA were willing to discursively commit to REDD+, as a different UNDP technical assistant pointed out it often appeared that this commitment ‘was hollow’ where a number of senior government staff were more interested in the short-term benefits arising from start-up and support grants than any serious long-term commitment to REDD+ (Interview 33). This is exemplified by the flurry of short-term REDD+ individual projects which are in direct conflict with the national level programme as carbon credits generated from these individual projects would have to be deducted from national level accounting. The UNDP technical adviser in the REDD+ secretariat was also increasingly frustrated with the large number of ritualistic ‘consultations’, ‘workshops’ and

‘national meetings’ which he described as ‘a waste of time’ as there was often very little space to deal with the challenges and problems that REDD+ was obviously facing. Similarly a foreign technical assistant on REDD+ who had been embedded in the FA showed increasing scepticism toward the program. After being involved in a major report on safeguards for REDD+ she noted that ‘what happens at the other end, we have no idea. That is how it works. We write reports with a lot of good ideas, but whether it is implemented or not we do not really know’ (Interview 40).

A number of low-level Khmer and foreign consultants and NGO workers displayed an openly cynical attitude toward REDD+. One foreign consultant working for a conservation NGO who had worked extensively on REDD+ stated ‘REDD+ is bullshit and every single person who attends those boring meetings knows it’ (Interview 41). A Khmer worker for the same NGO put it more diplomatically as ‘REDD+ is struggling enormously and doesn’t seem to be a realistic mechanism for stopping the cutting the forests’ (Interview 42). A number of people intimately involved in the REDD+ process – including the UNDP technical adviser in FA- were openly dismissive of REDD+’s concern with carbon, which they saw as a distraction and waste of time. Yet they still saw the programme – due to its high-level backing and modest budgetary inflows, as being a pragmatic way to force what they openly admitted was a kleptocratic government, into doing something meaningful about deforestation. Yet due to the focus on their work being on analytical tasks – and largely confined to Phnom Penh, they were largely unaware and insulated from the actual on-the-ground realities of deforestation. The reality is that regardless of individual attitudes much of their work was orientated toward both presenting REDD+ as a success and making incremental steps in commoditising carbon. All experts involved in REDD+ complained about not having enough time to go to the provinces and being largely unaware of what was happening at the village level. This is epitomised with the EU ambassador to Cambodia who during a meeting where I explained research findings, was shocked to learn that REDD+ was encountering problems on the ground. After very briefly running through some of the problems in Oddar Meanchey he replied – ‘wow this is all new to us. We had largely assumed – from the advice we got from the donors and FA – that REDD+ was generally going well -

although to be honest we don't actually go there [to Oddar Meanchey and other implementation sites] ourselves' (Interview 43).

Similarly, there were a number of brokers who acted as gatekeepers to the inner working of the REDD+ process. In particular, a small number of highly educated and very hard working Khmer bureaucrats in the FA worked to manage the various contradictions of REDD+ and keep nosy outsiders at bay. One senior FA staff for instance, due to his deep knowledge of the REDD+ process did the bulk of presentations and workshops for the government. Two other young Khmer staff who worked in a number of government and non-government positions associated with the REDD+ process did an enormous amount of work in terms of writing documents, giving presentations and running workshops that gave REDD+ and its logic a certain visibility amongst relevant institutions and publics. In this way the Cambodia REDD+ website accumulated a large number of publicly available documents, meeting minutes, reports, photos of field trips and even youtube clips and podcasts that made REDD+ a seemingly successful and evolving programme – but which systematically filtered out any serious issues or political problems. Upon first having good relations with these three, relations soured after the UNDP technical assistant shared with them a summary of my research finding from Oddar Meanchey which they claimed 'were exaggerated'. After this point, I was unable to attend any workshops or meetings and it seemed even the UNDP technical assistant who was sympathetic to my research was careful to keep me on the outside of the inner workings of REDD+. So too the manager of NGO Forum's REDD+ programme became sceptical of my work after seeing that it concluded that the REDD+ Oddar Meanchey was fundamentally flawed – rather than suffering from minor technical or circumstantial problems (Interview 44).

In the same vein, many NGOs have become distant from the needs and desires of those who they supposedly represent at the village level as they became entangled in the climate assemblage. The Cambodia Climate Change Network (CCCN), whose director stated that the main priority of the

network was ‘to ensure more money got out to the rural members’, and who complained bitterly about the logistical difficulties of this, was less concerned over whether resilience and adaptation as formulated by the SPCR and CCCA were actually priorities of provincial NGOs (Interview 27). What this demonstrated was that the network was largely set up to expand donor agendas through the channelling of climate finance.

Likewise, NGO Forum on Cambodia had gradually risen to become an important intermediary between the Climate Change Department, donors and smaller NGOs. It had not only received numerous grants from a range of donors to support networking activities and its ‘climate change monitoring unit’ but occupied seats on monitoring panels of the Adaptation Fund, the SPCR, and had been funded to act as Cambodia’s ‘civil society’ representative at a number of the CoPs. It had also played a significant role in the preparation of Cambodia’s nationally intended target, and has released several reports on climate change which are supposedly ‘representative of civil society’. Yet the NGOF has uncritically pushed the discourse of resilience and adaptation – being involved in a number of trainings with the CCCN aiming to make provincial NGOs more aware of these concepts. In this role it has failed to address crucial issues surrounding the SPCR and CCCA. For instance although it has been involved in the production of a review on climate finance it has failed to advocate for reductions of loans (in the place of grants) nor has it questioned the large outlays on expertise and consultants. Instead, as the head of the climate change monitoring unit put it ‘our advocacy focuses on ensuring that civil society is consulted with and that civil society receives a fair amount of finance’ (Interview 44). As with the CANN, the aim is to extend the flows of finance and discourses that are formative of the climate assemblage, rather than interrogate or scrutinise them.

The NGO Plan international, was also acting as a major broker where it was managing the distribution of grants within the SPCR (component 4- *mainstream climate resilience in development planning*). As part of this, Plan was distributing information on the process of applying for grants

and providing trainings to those NGOs writing grant proposals. These trainings were heavily focused on the concepts of resilience and adaptation – and once again there was no space to question whether these concepts were in the interests of, and part of the priorities, of rural Cambodians. Like other small grants provided by the UNDP and CCCA, this was a case of climate finance infusing rural NGO networks with the symbolic language of resilience. This language is symbolic because it was the ability to perform resilience and adaptation within trainings, workshops and project documents which would ultimately lead to funding. In aid dependent Cambodia where NGOs are more accountable to donors than local constituencies, it is this ability to perform donor driven discourses which is all important for the reproduction of NGOs.

Within the UNREDD programme, NGOs were also used to expand the climate assemblage across rural Cambodia. Like many of the early REDD+ projects in Cambodia, UNREDD used NGOs which were sympathetic to neoliberal forms of resource governance such as RECOFT and Oxfam to present REDD+ to people at the village level not as a contested experiment, but as an inevitable progression in forest policy. A good example of this is the EU-funded EURO3 million project which supported conservation NGO Forestry and Flora International (FFI) to trial a REDD+ project in Siem Reap. The project was attached to community forestry work in the province and used these networks to push REDD+. Similarly UNDP/UNREDD's small grants (of between \$75,000 - \$150,000) encouraged NGOs who had connections to those managing forests at the village level to develop potential REDD+ projects and hence push REDD+ at the village level. Once again aid is here being used to re-orientate already existent arrangements and institutions towards neoliberal ends. For instance the director of one small NGO in Cambodia's northeastern province of Ratanakiri which is staffed by indigenous groups distinct from the Khmer majority and which works on indigenous agricultural issues, was applying for one of UNREDD's small grants. He stated that 'although we have no experience and limited understanding on REDD+, our funding situation is bad and it makes sense to apply for the grant... I think we can adapt ourselves to do this and satisfy the donor' (Interview 45). In this instance aid money was facilitating REDD+ as a neoliberal donor agenda to be pushed into rural

Cambodia and incorporated into an organisation that was specifically set up with to deal with indigenous issues.

The donor driven REDD+ readiness programme also colonised NGOs and any opposition to the REDD+ agenda. With the creation of donor funded organs such as the CSOs REDD+ Network, and a donor funded REDD+ monitoring project run by NGOF, NGOs became an intimate part of the climate assemblage. Rather than articulate and provide a critical perspective on the evolution of REDD+ and forestry policy, thus far the CSO REDD+ network has been orientated toward expanding the climate assemblage through NGO and village level networks (where much of the day to day running of the body is done by one of the three young Khmer REDD+ experts previously mentioned). It has not only been involved in the promotion of REDD+ through reports and brochures, but even TV commercials and radio shows. So far the REDD+ monitoring project and the CSOs REDD+ network (also facilitated through the NGO forum on Cambodia) has failed to challenge those involved in REDD+ over the very serious problems of the first two REDD+ projects (the focus of the next chapter), or be able to critically engage with the overall logic of REDD+ (in that there is no evidence that it can actually reduce emissions *or* bring benefits to the village level). Instead, the CSOs network has a mandate to 'promote participation of network members in the Cambodia REDD+ readiness process' and 'strengthen collaboration with government, development partners and other relevant stakeholders' and hence helped to legitimise the REDD+ agenda rather than facilitate critical discussion of its aspirations (NGO Forum on Cambodia, 2015).

4.7 Expertise

Timothy Mitchell (2002) has convincingly argued that the allure of expertise does not merely reside in the difference between representation and reality. As he emphasises, pointing out such a gap only strengthens the discursive power of expertise as new and more 'representative' models and concepts that are supposedly closer to reality will inevitably be drawn upon. For Mitchell, as for critical development scholars (Lewis & Mosse, 2006b; Van den Berg & Van Ufford, 2005), it is precisely the monopolisation of representation and the continual, although contingent and unavoidably political process, of maintaining the supposed gap between representation and human intention on the one hand, and reality and outcome on the other,¹⁵⁵ that gives power to expertise. Within the climate assemblage, major investments are made into the continual creation, adjustment and configuration of representations that claim to model reality. As was shown above a huge amount of finance is dedicated towards expertise. Programs such as the CCCA are almost entirely based on the outputs of experts. Yet even where the paradigms of resilience and adaptation fail to be spread as intended, and even where neoliberal programs struggle to commoditise and marketise as intended, expertise retains its privileged position due to its promise to overcome and incorporate new problems into programming – and it here that programming often enters into delirium.

What can be seen across all climate change programmes and projects is a major focus on the production of representations. Due to the structure of projects and programming, the production of brochures, project documents, evaluation documents, strategic reports and trainings, meetings, workshops and conferences have all become institutionalised norms of the development industry that are linked to flows of finance. It is after all these things that leave a trace within development

¹⁵⁵ For Mitchell, although expertise attempts to maintain a fundamental divide 'between human agency and non-human agents' expertise 'is an alloy that must emerge from a process of manufacture whose ingredients are both human and non-human, both intentional and not, and in which the intentional or the human is always somewhat overrun by the unintended' (42)

networks, as opposed to the abstract goals pursued under resilience and adaptation of which the immediate material effects are often difficult to observe. Whether a project meets its own goals or not, what really counts are the artefacts that are left behind in its wake in the form of documents, pictures, brochures and websites. What this means in practice is that analytical labour becomes crucial for securing project success.

It is also the case that successful implementation of projects is not only based upon analytical labour to represent the real 'out there' of projects in the 'field' but in many cases, abstract analytical work is itself the output. This includes: programming based on expanding the climate bureaucracy where studies and evaluations of institutional capabilities are required, strategic reports and carbon accounting which are all crucial for any carbon mitigation scheme.

There is a very specific geography to all of this. At the level of representation, the carbon assemblage takes as its site of intervention the rural spaces where the climate vulnerable are supposedly concentrated. Based on the analysis of climate change projects (figure 4.1) over 90 per cent of all climate change projects thus far have focused on the rural. It is not only the aesthetic portrait of poor rural farmers in underdeveloped spaces that is used as a device to legitimise these interventions, but also the quantitative vulnerability indexes, maps and reports which create rural Cambodia as a problematic space where interventions are urgently required. The discursive importance of poor, rural, climate vulnerable farmers to the climate assemblage cannot be understated; even programs such as CCCA or the NGO forum, could claim to be working in the interests of the rural poor when in many cases no mechanisms for materially providing them with goods or services actually existed.

Yet expertise continuously attempts to conceal its own materialities and geographies of production. For instance, while the climate assemblage could produce a seemingly never ending set of maps which interrogated the effects of climate change on the rural poor in ever greater detail, it could never make explicit the geography of expertise; where they came from, how much they were paid,

and where they are based. This was made explicit at a meeting of mappers in Phnom Penh, who had various affiliations with NGOs and government bodies and who had all been involved in climate change mapping. After a session on new mapping projects, it was asked what other features the mapping website *Open Development Cambodia* could focus on. I suggested a map of NGOs. The organiser laughed; ‘we already know where NGOs are, why do we need a map of that?’ Although Open Development could produce intricate maps detailing things as diverse as soil types to instances of female illiteracy and unimproved water sources, the idea of mapping the thousands of NGOs in the country seemed untenable precisely because it was no longer in the realm of representation, but revealed something of the actual material production of expertise itself. In this sense, what is obscured in the climate assemblage’s fetish of the rural, is that the climate assemblage itself – as a network of people and objects – is actually predominantly concentrated in urban areas, specifically Phnom Penh. And it will be in Phnom Penh where most NGOs have their offices, where most climate finance will pass through, where most workshops and trainings will occur and where a large bulk of the analytical labour will take place.

The irony is that as the climate assemblage consistently struggles to leave any meaningful trace within the rural – maybe with the exception of the infrastructure projects of the SPCR¹⁵⁶ - changes in Phnom Penh due to gentrification, caused in no small part from the expansion of the development industry over the last two decades, are conspicuous. For instance figure 6.5 and 6.6 below are based upon a survey of where carbon experts stay overlaid with house prices and the location of NGOs and government departments involved in the carbon assemblage.¹⁵⁷ Figure 6.5 shows that carbon experts are confined to a small pocket of the city (inner Phnom Penh) which is associated with the highest land prices. It can also be seen that services and businesses orientated towards

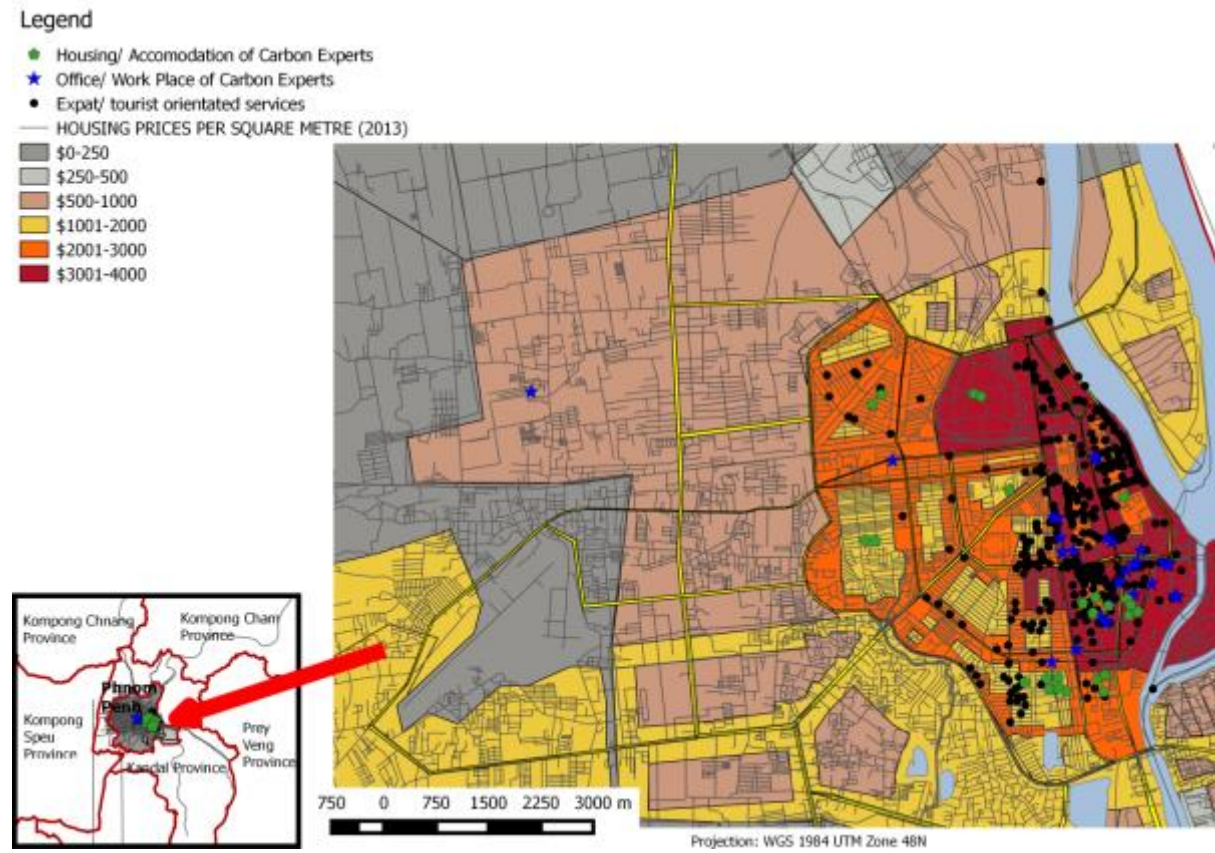
¹⁵⁶ Although even roads and irrigation infrastructure in Cambodia often degrade to the point of leaving little trace.

¹⁵⁷ Surveys specified housing areas based on particular streets, or neighbourhoods/*sangkats*. House prices were

tourists/expats are clustered within this area. Figure 6.6 overlays the amount of carbon finance with the individual locations of NGOs and government departments involved in the climate assemblage. It shows that carbon finance is once again heavily concentrated in inner Phnom Penh and highly correlated to high land prices. The third map (figure 6.7) shows the change in tourist/expat orientated businesses between 1995-2014.¹⁵⁸ It can be seen that the boom in tourist/expat spaces has similarly occurred within central Phnom Penh and is highly clustered around five main areas. Once again the geographic expansion of these places is highly correlated with the physical geography of the climate assemblage in Phnom Penh. The climate assemblage thus territorialises the places it works in very distinctive ways.

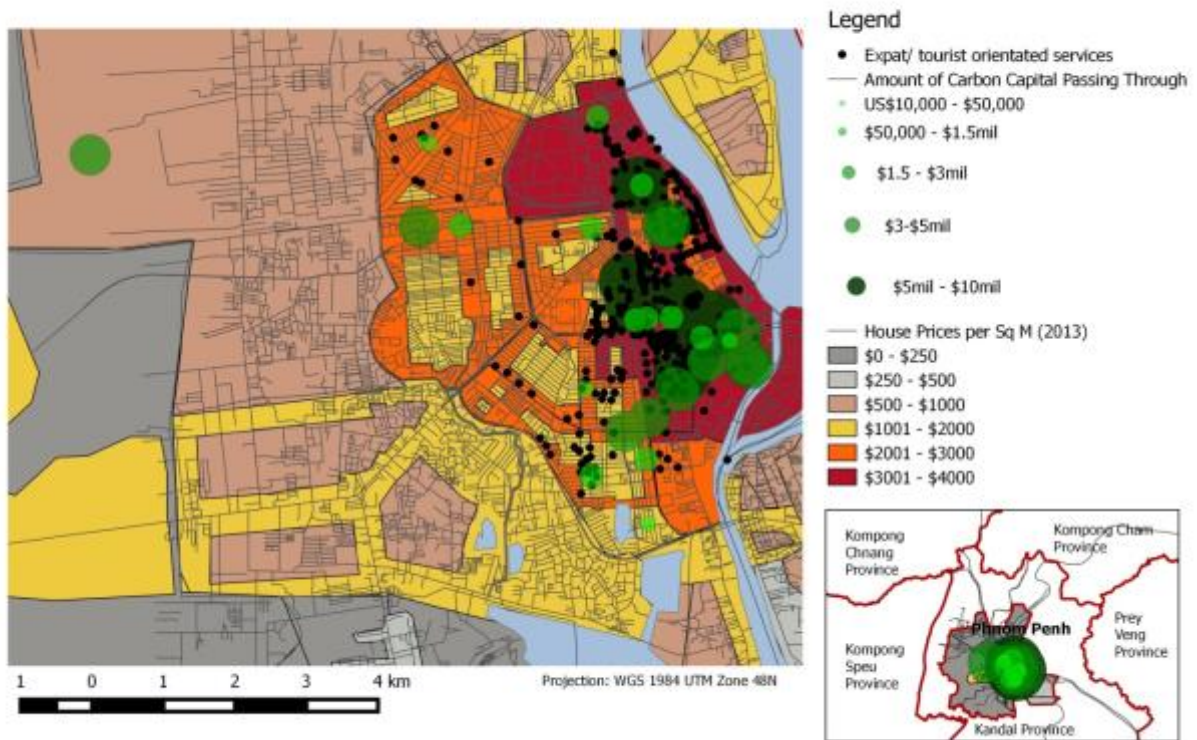
¹⁵⁸ Tourist and expat located businesses had to meet one of three criteria: 1) they were listed in a guide book as a place for tourists (the annual Lonely Planet and Rough guides books were analysed as well as online databases such as Trip Advisor), 2) the predominant clientele was non – Cambodian which was determined by visits to the site 3) They were obviously orientated towards non- Cambodians which was determined through site visits or online reviews.

Figure 4.11 Location of Institutions in Phnom Penh Involved in the Carbon Assemblage and where Carbon Experts Reside in Phnom Penh



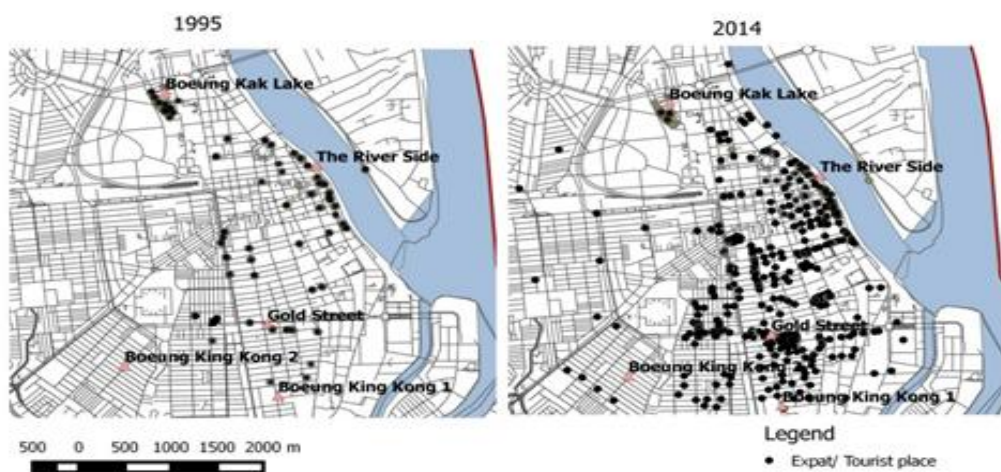
Source: author

Figure 4.12 Quantity of Carbon Finance That Passes Through Each Institution



Source: author

Figure 4.13 Gentrification in Phnom Penh



Source: author

Table 2 Gentrified Spaces of the Climate assemblage in Phnom Penh

On any one lunchtime, Java café in central Phnom (not far from Gold Street in the map above) is likely to be occupied by numerous carbon experts. I frequently went to this café to conduct interviews with participants as it was a favoured and convenient location of expats to meet up. Java is a boutique café offering a large variety of speciality foods and beverages (i.e. boutique coffees and teas, breads and meals with gluten-free, vegetarian and organic options). It is a haven from the hot and busy Phnom Penh streets – with a downstairs air-conditioned section and an upstairs colonial style patio with high rooves. The interior is decorated according to a cosmopolitan aesthetic – with local and foreign artworks covering the walls. Outside, moto drivers patiently wait as the café’s predominantly white patrons feign indifference to their howls ‘ – “you need a moto?” Moto drivers, beggars and most Cambodian’s dare not enter Java – not only because it is unaffordable (with a coffee 15-20 times the price of a street coffee) but also because it is an upper-class space that is clearly designed for expats and the wealthy rather than poor. Inside, expats furiously tap away on mac-books, stare intently at iphones and have loud conversations with other experts. Across central Phnom Penh, a wave of gentrification is rapidly leaving boutique coffee shops and restaurants, deli’s, expensive gyms, yoga studio’s, and even pet grooming centres, in its wake. In Bung King Kong (one of the most gentrified areas of the city (see figure 4.13), which is a popular home to expats and where expat services are clustered), a large number of different coffee shops have gone up in the past few years – fuelled by increasing investment opportunities and the rising demand from expats and the elite. Costa coffee is one of the preferred places for the Khmer elite – especially those in the climate assemblage. Large Lexus four wheel drives (I even observed a Bentley on one occasion) can be seen out the front of the establishment with a line of security guards carefully ushering patrons in and out. Inside the café, swish, modern interior design forms the backdrop to countless well-dressed groups of predominantly Khmer men loudly discussing business matters while sipping overpriced coffees.

People from the FA and MoE involved in REDD+, the SPCR and the CCA can often be observed.

These 'exclusive spaces' of expert networks are an immanent part of the climate assemblage that allow for experts to comfortably live in Phnom Penh, pursue analytical work and maintain relations.

What this shows is that the actual material geography of climate experts is one where the majority will spend most of their day to day time in small enclaves in Phnom Penh. From a geographic perspective, the main dividing line within the climate assemblage is not between 'civil society' and 'government' or even between 'foreign experts' and 'local experts'. It is rather between urban-based experts who focus on analytical tasks and the reproduction of the logics which drive the global climate assemblage (in its neoliberal, risk and biopolitical forms), and those based in rural areas who are to be made climate resilient and who are largely unexposed to these logics and for whom these logics will bring few tangible benefits (examined in the next two chapters). In the words of Eyben (2011: 146) these development 'professionals are a subclass of a global elite of cosmopolitan citizens, a class of professionals whose commitment is to their profession rather than any particular locus'. For climate experts, the language of resilience and adaptation, or the logic of carbon markets brings tangible benefits in the form of not only work, but travel (national and international) and workshops and meetings in luxurious locations with extravagant lunches and dinners. Most carbon experts surveyed had for instance travelled overseas during their working period in Cambodia. This resonates with Grove's reference to the 'the mobility of the global elite, that characterises contemporary practices of development' (K. Grove, 2010: 539) and speaks to Virillio's diatribe against an emerging 'technocracy' where 'new affluent communities...segregate themselves from the urban centres and live in remote areas hassle free. For those with technological means, new town and suburbs spring up anywhere and everywhere, complete with golf courses, swimming pools and shopping malls' (cited in Conley, 2012: 121).

Many climate change experts had made significant investments into these logics and genuinely desired to create themselves as climate experts. Throughout the research I encountered both young Khmer experts who zealously guarded their positions as climate experts and the benefits it afforded them, and young foreign experts who openly admitted that ‘Phnom Penh was more like a play Penh’ (Interview, 41) and that their position in the climate assemblage afforded them a lifestyle unavailable in their home countries. Similarly, government officials enjoyed the prestige and formality of occupying official positions in the assemblage.

4.8 Conclusion

This chapter has considered a diverse variety of interventions conducted in the name of climate change within Cambodia. Although these projects are seemingly disconnected, the assemblage approach used here has attempted to highlight how different actors have been seduced to the logics of the climate assemblage. Climate change is not just an issue that has become apparent to Cambodians as drought and flooding increasingly wrought havoc on the rural sector. Rather, over almost two decades very specific ways of understanding climate change and acting upon it have been established within the state bureaucracy and NGO networks. The infusion of climate finance has helped to push the language of adaptation and resilience into the furthest corners of Cambodia. So too it has helped to push carbon markets across Cambodia – even where large scale failure has been encountered. The MoE and FA have jostled for funding, NGOs and government officials have forged relations through climate change programs and frequently come into contact through meetings and workshops. Although there are institutional differences between different programs, it has to be emphasised that similarities in terms of the neoliberal logic of climate change interventions, the deployment of the language of vulnerability, resilience and adaptation, and the

fact that funds often came from only a handful of donors with similar agendas (the World Bank, the ADB, EU, UNDP and USAID) meant that there were often more similarities across programs than differences. There tended to be a pool of consultants that different programs drew upon, and in many cases people would switch between state, NGO and private companies which were involved in climate change interventions.

Chapter 5 – The Oddar Meanchey REDD+ Project

Conservation NGOs, as well as the foundations, government agencies and for-profit companies that support them, engage in spectacular performances in conjuring spaces for effective conservation interventions-cum-profitable investments. In their performances, images of dramatic landscapes and exotic people and animals are used to conjure urgent problems in desperate need of the timely solutions that the organization is uniquely qualified to offer. They present an audience of potential supporters with compelling virtual opportunities (problems that need to be solved) and the resources necessary to realize these opportunities (landscapes and animals in need of protection) if they will only make the necessary investment. (Igoe, Neves, & Brockington, 2010: 503)

5.1 Introduction

This chapter moves on to examining a project of the climate assemblage in detail. It focuses on the problematic nature of actualising virtual diagrams (in this case a carbon mitigation project) in rural Cambodia. The chapter highlights how Oddar Meanchey's historical geography subsumed the technopolitical logic of REDD+ bursting through the cracks of risk and commoditisation, dragging the orderly logic into a plethora of insurmountable and highly political problems. The chapter shows how virtual logics crafted by the climate assemblage, which have little regard for the particularities of place, came crashing into the material realities of rural Cambodia. After first giving a detailed outline of the project and its logics, the chapter moves to considering three events that interrupted and severely curtailed projects actualisations. These are – militarisation of the project site, land conflict and cash flow problems. After tracing the actual process of creating carbon as a commodity, the chapter concludes not that the project was a failure due to the myriad of technical and political problems it encountered on the ground – but that in the tangled web of unexpected outcomes a partial type of success was abstracted. This was namely the progress made in commoditising carbon where the project served as an important experiment for the climate assemblage.

This chapter draws on project documentation and media as well as primary data collected during field research including: 96 interviews with stakeholders in Phnom Penh, Samroang and project site villages from 2012-2016 (see appendix 2. for a full list of interviews), a survey of 276 people in project sites,¹ ethnographic work² and mapping work which involved riding/walking around the borders of all 13 Community Forest (CF) sites.³ Time was spent at all 13 CF sites talking to various participants (and villagers who had no formal involvement in the project) as well as observing project activities where possible. Relationships were built with CF heads and key informants across the four year period where regular visits were made to informant villages. Impromptu visits to villages and informal discussions were also a key way of building base information. Most fieldwork was done independently in Khmer, however, part of the survey was done with the assistance of a local Khmer man from Oddar Meanchey. Time was also spent with participating NGOs and government actors in Oddar Meanchey (e.g. attending meetings, attending demarcation and verification activities). Events described below were always triangulated by cross-referencing data with not only those involved in events, but those who had observed events or knew participants.

¹ People in project villages were randomly selected (representing 10 per cent of all project households) by randomly approaching every second house in village tracts. All surveys were conducted in Khmer and transcribed in Khmer and later translated back in English during data analysis. Effort was made to maintain gender equality in participant selection. Pilot surveys revealed that there was a major sampling bias where participant age was heavily skewed toward older age groups as many younger household members had either migrated to look for work or were working on distant farms. Older people looking after children or the elderly were thus over represented (mothers and grandparents who would stay in the household to look after children and maintain the house). This was compensated for by adjusting most survey questions to focus on the household rather than individual.

² At least one night was spent staying at a house in a village from each of the 13 Community forest site villages. For bigger CF sites such as Ruka Vorn and the Monks CF multiple days were spent staying at different villages (8 days in the case of the later). All CF chiefs (and most deputies were interviewed) often multiple times. Time was also spent discussing REDD+ and forestry issues in local coffee stalls, at people's houses when events were on, and with people I came across in the actual forest. Time was also spent with CDA/ CDO attending meetings with village heads and accompanying them on trips to villages, as well as multiple trips to visit Bun Saluth.

³ GPS points of key features around and within CFs were taken with a hand held GPS device. These points served as the main data for the maps used in this chapter (which were overlaid with CF boundaries, ELC boundaries and land cover maps). Points of interest displayed on the maps used in the chapter were always based on actual field visitation and verified through direct observation and interviews. For example, to understand exactly where military owned land was, multiple people in the field would be asked, and observations of fences or contiguous areas of land cultivated in a single crop, would be taken.

5.2 Origins of the Project

The genesis of Cambodia's first REDD+ project and the start of Cambodia's engagement with REDD+ is located at the confluence of: a rising interest in community forestry in Cambodia on the part of donors, the discovery (through satellite imagery) that Oddar Meanchey and much of rural Cambodia still has substantial forested area (but with high deforestation rates) and lastly, an increasing international and national interest in climate change.

By the early 2000s there had been substantial interest in the evolving concept of community forestry in Cambodia (from NGOs such as WCS, RECOFT and Community Forestry International [CFI] and PACT) which resulted in evolving Community Forestry legislation.⁴ With new GIS-RS techniques being used within Cambodia (due to the availability of accessible high-quality satellite images) it was found that although rural Cambodia still had a significant level of forest cover, it was being deforested at an alarmingly high rate – in fact one of the highest in the world.⁵ New satellite imagery also made NGOs aware of particular areas of forest cover and places where deforestation was most severe.⁶ Oddar Meanchey caught the attention of the international NGO Community Forestry International

⁴ For instance the 2002 Forestry Law and 2003 Sub Decree on Community Forestry which created a legal arrangement that would allow for community forests. In 2006, the Ministry of Agriculture, Forests and Fishery's (MAFF) (under the Forestry Administration) released a government announcement (*prakas*) on Community Forestry Guidelines which specified the actual procedure through which community forests would be established. Throughout the 1990s and 2000s the above mentioned NGOs were heavily involved in natural resource management in Cambodia and experimented with a number of village level 'community based arrangements'. These NGOs, through channels such as the government-donor Technical Working Group on Forests gave substantial support to the evolving institutionalisation of Community Forests. By 2010 Community Forestry initiatives had been started in approximately 420 sites covering 400,000 ha.

⁵ From 2000-2012 Cambodia lost 7% of its forest cover (12,000km²) mostly of dense forest. Only four other countries in the world had similar (slightly higher) deforestation rates (M. C. Hansen et al., 2013).

⁶ For instance in 2002 the Japanese aid agency (JICA) released a national forest cover map of Cambodia, followed in 2005 with the Forestry Administration releasing its first forest cover change map (from 2002-2006). During this time a number of the conservation NGOs such as WCS and CI also became interested in forest cover change and land use mapping.

(CFI) who at the time was looking to run a large scale prototype community forestry programme (although without an explicit interest in climate change).⁷ Oddar Meanchey, as a remote province with a small (but rapidly increasing) population, which still had substantial forested land (although increasingly fragmented and decreasing in size), emerged as an ideal site to test out a large community forest project.⁸ When the CFI executive director, Dr Mark Pofenberger came across a group of local Monks who were already heavily involved in protecting a large stretch of evergreen forest in Oddar Meanchey (at the time around 20,000 ha), he decided to go forward with a project to establish Community Forests (CF) in the province under a large multi-donor funded programme – the Natural Resources Management and Livelihoods Programme.⁹ Under the US\$60 million programme, 400 CF sites were to be established across the country. CFI as a successful recipient of funding from this programme began establishing CFs across Oddar Meanchey – in 2006 providing \$4000 to the Monk’s Community Forests to demarcate the *Song Rokavorn* forest. As mentioned in the introduction, this forest was being managed by charismatic head of Samroang pagoda Bun Saluth. Venerable Bun Saluth had been organising conservation activities since 2001. At the same time, CFI started to engage with the Samroang based NGO Children’s Development Association (CDA) – one of the few existing NGOs in the province. CDA under the leadership of the charismatic and locally born Chee Boreth, had been conducting small-scale village level projects around education and natural resource management since early 2000. CFI, with no experience working in Oddar Meanchey itself, essentially sub-contracted out work to CDA to begin establishing CFs in Oddar Meanchey. CDA already had some basic experience in supporting a number of communities

⁷ CFI had been operating in Cambodia since 2002. It worked at the national level on the National Forestry Programme (and played a significant role in the evolution of Community Forestry legislation and practice) as well as running a provincial level programme in Ratanakiri focused on ‘building the capacity’ of forest dependent indigenous people.

⁸ In an early inception note on the REDD program written by the NGO CFI it notes that Kompong Thom province was also being considered, but that due to the contentious nature of establishing CF sites, Oddar Meanchey became the key target area.

⁹ As an early project inception notes “a country-level analysis of forest cover change for the period 2002-2006 financed by Danida/DFID/NZAID, revealed that deforestation rates in the northwest of Cambodia were the highest in the country. This finding, as well as the potential to bundle together a number of larger CF sites, was among the reasons for the selection of Oddar Meanchey as the target province for the REDD project.”

to conserve forests and by 2005 had even established basic 'conservation groups'. CFI then began to expand on this work (Interview 1).

Early on Mark Poffenberger had been interested in carbon forestry and the evolution of REDD+ at the CoPs. At the 2007 Bali CoP which saw the beginning of REDD+, Cambodia's Minister of Environment expressed direct support for the evolving concept of REDD+ and Cambodia's openness to REDD+ projects.¹⁰ By the end of the year Mark Poffenberger had begun to engage US firm Terra Global Capital about the possibility of transforming the Oddar Meanchey CFs into a fully-fledged REDD+ project. Terra Global Capital, a San Francisco based carbon broker, was started in 2006 with a mandate to 'facilitate market and results-based payment approaches for forest and agriculture emission reductions' by 'providing technical expertise and investment capital to their global client base in a collaborative and innovative manner' (Terra Global Capital, 2016). It was at the time looking for projects that it could add to its small portfolio. The 13 Oddar Meanchey CFs were an ideal place to conduct a REDD+ project since: a REDD+ project could work on the back of a CF Programme, was in an area of forest large enough to justify a REDD+ project (64,000 ha), with a high deforestation rate that could seemingly be reduced, and which already had formal support from the government.

In November 2007 CFI presented a concept note to the Technical Working Group on Forestry and Environment (TWG-FE) in Phnom Penh. The TWG-FE is an important donor- government body that harmonises work in the forestry sector and sets the agenda for Cambodia's forest-related activities. It includes the Forestry Administration, NGOs and donors such as DANIDA (Danish aid agency who over the last decade have been heavily involved in forestry issues in the Kingdom). At the time

¹⁰ Stating that 'Cambodia strongly supports the inclusion of Greenhouse Gas (GHG) emission reduction from forest conservation and avoided deforestation in post-Kyoto regimes'. According to an interview with a senior MoE figure, there was not a deep level of understanding surrounding REDD+ at the time but it was seen as a 'possible opportunity to access funds'.

DANIDA's researcher, and co-chair of the TWG-FE, British-born Dr. Andrew Wardell – was also heavily interested in REDD+, and was immediately eager to support the development of CFI's concept. The FA, as a largely donor dependent organ which had over the years weathered major controversies due to the Cambodian government's mismanagement of forests,¹¹ was eager to jump into the program which seemingly offered not only a potential source of funding, but a simple way to demonstrate its credentials - in terms of actively coming up with innovative ways to protect Cambodia's mismanaged forests. The head of the Forestry Administration Ty Sokhun was especially eager to take up the proposal by Mark Poffenberger and Andrew Wardell and get the FA involved (Interview, 2). By December the TWG- FE and FA had formally endorsed the project and by February of 2008 DANIDA provided a major grant to support CFI in starting the REDD+ project. By April 2008 the council of ministers had released an official government order that authorised the FA to act as the government intermediary (and provided formal government support of the project).

By the early 2000s forestry issues had come to the centre of donor-government relations due to the mass failures and controversies of the preceding decade of natural resource mismanagement.¹² As such the REDD+ project came at a crucial time as it offered the government an opportunity to engage in a technical project that could potentially quell international concerns over mismanagement of forests and re-establish the FA as a legitimate agency capable of managing forests. Ty Sokhun immediately gained the support of PM Hun Sen (whom he acted as an official adviser to, and had strong political connections to). Hun Sen was no doubt eager to support REDD+

¹¹ An ADB report from 1999 described Cambodia's management of forests during the preceding decade as a 'total system failure'. PM Hun Sen himself in 2007 stated that 'mismanagement of forests under my first term from 1993- 1998 was the greatest mistake I have ever made'.

¹² In 2003 the government controversially sacked the independent forest monitoring agency Global Witness, which under pressure from donors had been contracted to monitor forestry, due to a report which made extensive links between the Cambodian elite and government officials to illegal logging activities. In 2005 the NGO had to close its Phnom Penh office due to harassment from the government (including death threats). Then in 2006 another major controversy erupted when the World Bank's Inspection Panel ombudsman delivered its report on the US\$5 million WB forestry program which stated that the project violated six of its own internal safeguard policies where mass corruption and violent evictions had taken place.

as forestry issues had also become a major domestic issue. As such, in the early years of the program he publicly endorsed REDD+ a number of times.¹³ Ty Sokhun had also been personally implicated in wide scale corruption where the much-publicised document *Cambodia's Family Tree* (2007) written by outspoken forest monitors Global Witness, not only implicated him (and head of the Ministry of Agriculture Chan Sarun) in demanding payments in return for positions in the Ministry – worth millions of dollars - but also linked Ty Sokhun to logging syndicates which included senior government figures. As such Ty Sokhun immediately made a close connection to Mark Poffenberger (and was already close to Andrew Wardell) in order to promote the project. As the main institution with a mandate to manage and secure Cambodia's forests, the FA was under increasing pressure to at least be seen to do something about the anarchic logging and mass pilfering of Cambodia's forests which had characterised the 1990s and early 2000s (Le Billon, 2002). Oddar Meanchey in particular seemingly provided the opportunity to conduct a fairly straightforward conservation project, where unlike other areas, all major valuable trees had largely already been extracted, where the population density was low and where there were few overlapping interests of the political elite.

In 2008, the Clinton Climate Initiative – a major programme of the Clinton Foundation, provided funding for CFI to implement REDD+ activities in Oddar Meanchey.¹⁴ CFI promptly engaged Chee Boreth and his four staff at CDA to go out and conduct one-day workshops in all villages involved in the CFs which would explain the REDD+ concept and supposedly 'get their input' on REDD+ and its implementation. According to one old male CF member in his late 70s who was present at this original meeting 'we didn't really understand what they were talking about – all this business about

¹³ For instance, not only through government circular 699 which officially supported the program but through public forums such as the national forum on climate change (2009).

¹⁴ The initiative provided funding for carbon forestry across South East Asia and gave money to CFI to support CF groups for the implementation of REDD+ as well as the verification process. It should also be noted that there is a particular irony to the Clintons attempting to establish their climate credentials when under Bill Clinton's presidency, US emissions were the highest since the 1960s and where he personally negotiated a number of trade deals which specifically excluded climate change considerations, and which locked in the US (and other Annex 1 countries) into even higher emissions over the following decade (see Klein, 2015: 12-27).

selling air. But we were interested in having community forests so were in it for that. Even now we don't really understand REDD' (Interview 3). Venerable Bun Saluth enthusiastically took up the REDD+ concept as 'it was a good way to attract funds and attention' to his forestry activities (Interview 4). At the end of that year (2008) (the FA had created a site verification and enforcement team to help push the 13 communities through the bureaucratically lengthy process of being registered as a legal community forest. Rapid progress was made in establishing CF committees (composed of a CF leader, secretary and patrol team) as well as establishing rules for the management of each CF. In the meantime, Terra Global Capital was making progress in preparing for verification, including starting the project verification document which would be submitted to the Voluntary Carbon Standard (VCS) and Climate, Community and Biodiversity standard (CCB). The Clinton Foundation continued to provide financial support for this part of the project – giving funds which ultimately ended up with Terra Global Capital who were preparing the project verification document. By this time, Andrew Wardell had moved on to a regional position within the Clinton Climate Initiative which no doubt accounts for the organisation's continual patronage of the project.

By October 2008, Terra Global Capital had submitted the verification document to the VCS. This included an extensive methodology for establishing a deforestation and emissions baseline, and a monitoring system that could accurately take account of any deviations from a baseline. It also included a significant social component. As an early project document put it '[T]he REDD strategy not only assists rural people to gain legal tenure rights over local forests, it also creates a thirty-year income stream that will significantly enhance household livelihoods and natural resource management capacity' (Poffenberger, Gryze, & Durschinger, 2009). Typical of development projects, early project documents promised broad reaching, but vague benefits to participants;

[C]arbon financing will be used to support rural communities in developing a range of livelihood activities, including non-timber forest product enterprises, community-based eco-tourism infrastructure, and water resource development. Participating forest communities will work with the Forestry Administration and commune, district, and provincial government to formulate long-term plans for sustainable natural resource management to foster economic growth' (Poffenberger et al., 2009: 3).

The methodology set out in the project verification document specified a diverse range of activities – especially periodic monitoring and surveillance that was to occur over the project life-span. This included a social assessment and participatory rural assessment that was to occur every two years, (to be conducted by CDA), a biomass inventory of 100 plots that were to be sampled every three years (by professional ecologists at first and then to be handed over to FA once their 'capacity was sufficient'), a land use and land class change analysis to be conducted every two years, an ongoing biodiversity assessment, and periodic social assessment (the frequency of which was never specified). The document set out several responsibilities of the CF groups including regular monitoring, constant reporting of fires and logging incidents, participating in trainings related to patrolling, upkeep and maintenance of physical infrastructure such as fences, trenches and fire-breaks, signs and community huts and regular meetings and elections of the CF committee. In return 'communities' were promised 'at least half of all the revenue generated from the sale of carbon credits' as specified in government order 699.

In December 2008, Mark Poffenberger and CFI officially left the project as CFI had made the decision to nationalise its operations (under the banner of an NGO based in Ratanakiri working on natural resource and indigenous issues) and close its Cambodia office. Washington-based INGO PACT took over as the main implementing partner. PACT – which mainly worked on natural resource

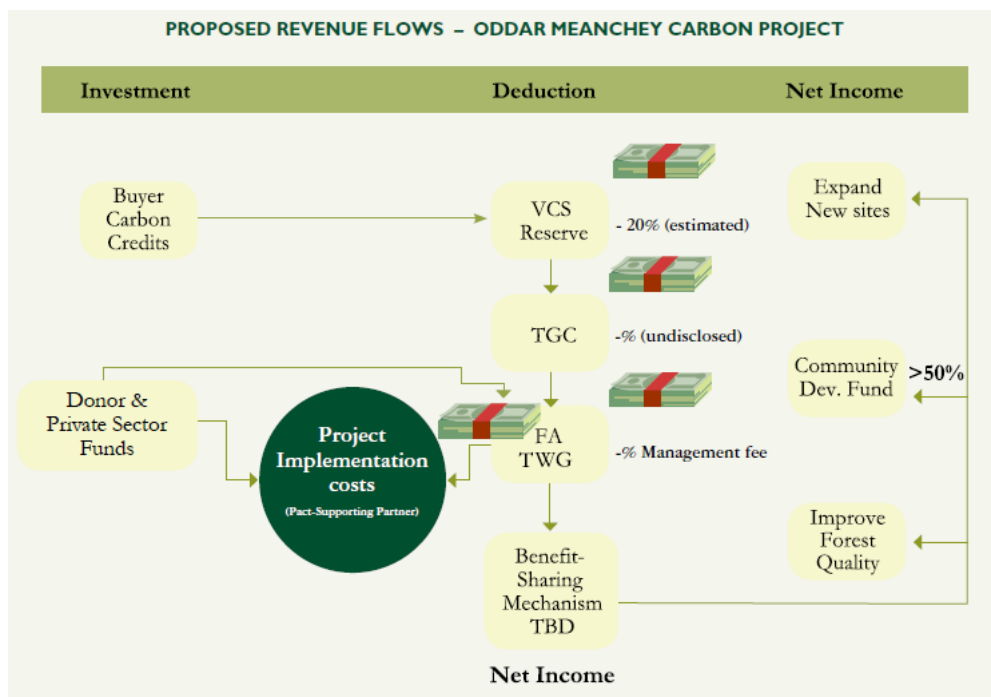
management issues and community development had been working on Community Forestry issues in Cambodia alongside CFI for several years and PACT's American director of forestry, Amanda Bradley was a close associate of Mark Poffenberger (as from 2005 to 2009 she worked for CFI and was involved in the development of the Oddar Meanchey Project). Amanda Bradley began working on the project with Terra Global Capital, FA, CDA and the CF groups in Oddar Menachey and played a significant role in the ongoing process of preparing for project validation under the two standards. PACT, under the leadership of Amanda Bradley began to promote the project as one of the organisation's centrepiece activities and became involved in projects with additional funding streams, but which fed into the project.¹⁵ Head of the FA, Ty Sokhun and head of the FA's Community Forest office Long Rothangoma, who were both close to Bradley, also continued to be pivotal players in the project's progression.

By October 2009, PACT and Terra had submitted a project implementation report for verification to the CCB standard on behalf of FA – whom both referred to as the 'main implementer of the project' (even though Amanda Bradley and Terra's director Leslie Durshinger were the sole authors of the report). At the same time Terra Global Carbon and the FA had reached agreements on how the income would be shared. Under this arrangement it was stated that 'FA Head H.E. Ty Sokhun agreed to include terms in the FA-Terra Global Agreement indicating that a minimum of 50% of the project's net income be directed to local communities' (Terra Global Capital, 2009: 31). Among other rationales, this division importantly satisfies the requirements of the CCB, as well as those of socially responsible investors, who will base their decision on whether to invest on the degree to which benefits accrue to communities. Being seen to provide benefits to 'the community' was clearly an important process of commoditising carbon. Yet it remained unclear how much money would be

¹⁵ For instance, in 2009 Bradley authored a report *Communities and Carbon*, supported by the University of Copenhagen's *focali* research centre, in 2011 authored a report with funding from Japan's Institute for Global and Environmental Strategies, and in 2012 received funding to produce a report on gender and REDD+.

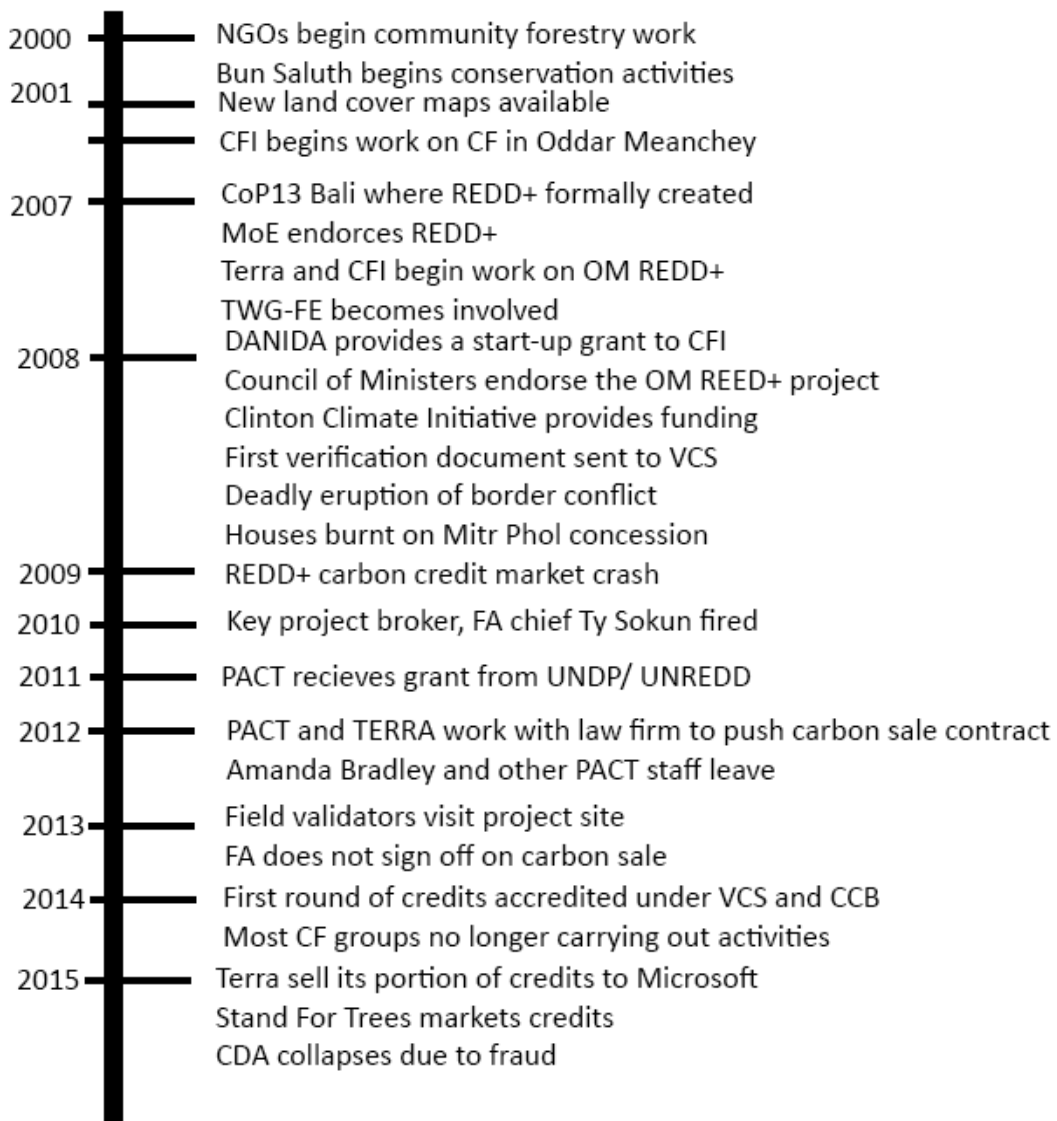
generated and how exactly it would be channelled to the ‘local community’ (or even who exactly constitutes the local community). Before revenue found its way to the TWG/FA, 20 per cent was being placed in the VCS reserve to ‘eliminate the possibility for major under delivery of credits’. Terra also took ‘an undisclosed’ percentage of credits generated over the life-span of the project, the TWG-FE would also receive 5 per cent for managing funds and PACT asked for \$600,000 per year for the first five years to cover its costs. The net revenues would be managed by FA. CDA and the Monk’s Community Forest are notably absent from these costing estimates. As the director of CDA Chee Boreth somewhat bitterly put it in 2015 ‘PACT used us to do all the hard work on the ground while they wrote documents’ (Interview 1).

Figure 5.1 Diagram of Proposed Revenue Flow (from Project Document)



Source: (Terra Global Capital & PACT, 2012: 12)

Figure 5.2 Timeline of Project Events



Source: author

5.3 Dealing with risk

At the centre of the project is the logic of creating an avoided emission of unitised greenhouse gases (the 1tCO₂e). This seemingly paradoxical task of creating a thing that is actually a non-thing (a lack of an emission) in turn depends upon a complex set of accounting procedures, risk technologies, and a healthy dose of analytical labour and imagination. The key task is to create a baseline scenario, to which the project will be shown to be ‘additional’ and hence successfully avoid emissions that would have otherwise been emitted. The verb ‘create’ is purposefully used here. As will be shown,

assembling a baseline from national poverty statistics, surveys, maps and biodiversity assessments involves a high degree of analytical and creative labour - to the point where differences between legitimate baselines, counterfactual baselines, additionality and non-additionality are inherently blurred. As Larry Lohman has pointed out, in practice there are no criteria for establishing what composes a correct as opposed to counterfactual baseline and hence the establishment of all baselines should be treated as creative accounting.¹⁶ As was outlined in chapter five the switch to considering forests as a source of emissions, equivalent to emissions from the burning of fossil fuels is not without its own controversies and contestations – but these were ultimately controversies that the project did not concern itself over. Nor was there mention of the controversial issue of permanence and equivalence – that in order to commoditise an avoided emission, it can only be considered over a limited temporal period (in the Oddar Meanchey case, credits are generated over the 30 year project span) after which time what happens to the forest is no longer of concern. The problem here is that when an avoided emission is used to offset a very real emission of greenhouse gases, these gases will stay in the atmosphere for approximately a century contributing to global warming, while the forest may only stay for 30 years – after which time it too will more than likely no longer hold carbon. Or even worse, as in the case of Oddar Meanchey, a credit may be generated in an initial verification period even though by the time it reaches the market the actual forest could be cut down – but which is ultimately not the care of the buyer (as the purchaser is buying ‘a verified carbon unit’ in the jargon of the VCS, which is only a proxy for an actual material reduction in

¹⁶ As he said in a post on REDD-monitor: ‘[S]ince no intelligible distinction could ever be made out between additionality and non-additionality, which means there is no such thing as non-additionality, either. So when academic and policy authors say that this or that REDD project is bogus or a fraud because it is non-additional, they are talking nonsense. No REDD project could ever be either additional OR non-additional. To put it yet another way, the problem is not “bad baselines” but the concept of counterfactual baselines itself. That reality does more than invalidate any particular REDD project. It invalidates REDD (and all other offsets) as a whole’ (Lang, 2016).

emissions). However, putting aside these broader questions, it is important to examine the process of commoditising carbon.

Most important for the project is the identification of risk. Within the logic of carbon commoditisation, risk is a key part of all activities, without which the project would be unable to go ahead. As was highlighted in chapter 4 risk performs two tasks in the commoditisation of carbon; firstly, discrete and quantifiable risks help to carve out an imagined and future avoided emission, which can be financialised, and secondly a whole suite of mechanisms such as reports, safeguards, and even risk insurance, ensure that capital can flow into the newly created commodity.

Oddar Meanchey was chosen as a project site precisely because its forests seemingly faced several risks that were possible to be visualised, quantified and ultimately mitigated. It was exactly poor migrants coming to clear land, fires, and a lack of governance that were supposedly the cause of Oddar Meanchey's high deforestation rate of 3 per cent per year, which would form the baseline against which the project would make its interventions. In early project documents there was a particular focus on migrants as the main risk to deforestation -¹⁷

Oddar Meanchey Province, like most of Cambodia, has never had its extensive state public forest lands demarcated and due to its relatively low population density, it has been a target for migration and land claims. Each year tens of thousands of hectares of forests are felled by migrants with rough shacks constructed to claim occupancy... As a consequence, without the project to

¹⁷ In another 2009 document, written by Amanda Bradley, it states that of all the pressures on forests in Oddar Meanchey 'chief among them is population growth' (Bradley, 2009: 4).

establish control over “contested domain,” migrants will likely continue clearing forests often financed by land speculators. (Poffenberger, 2009: 9)

The document then goes on to outline the project’s ‘mitigation strategy’;

where migrants have settled and communities can accommodate them, they need to be included in CFMC activities and participate in land use planning activities. Where no available forest or unused land exists, migrants need to be informed by communities of that situation and encouraged to communicate the information to their home villages so that no further in-migration to that area occurs. (ibid: 21)

A blunt, if not vague mechanism for dealing with this risk, the question of migration would come to plague the project throughout its life-span. Yet what was important in terms of the project logic was that migration could be shown as a continual and real risk to the forests that the project was going to remedy – i.e. that eight to nine thousand migrants were moving into this rural province every year where the population increased nearly three-fold from 68,000 in 1998 to 185,000 in 2008 which gave the province a population growth rate of 9.23 which was amongst the highest in the country,¹⁸ but which the establishment of law and order and CFs could ultimately remedy.

¹⁸ This figure is somewhat misleading due to the fact that the province’s most populous area – Anlong Veng, which was still under Khmer Rouge control in 1998 was omitted from the survey, giving an artificially higher population rate when Anlong Veng was suddenly included in the 2008 census. This forms just one example of the ‘creative accounting’ which helps to establish a baseline.

The second risk was driven by large-scale economic interests; land speculation, cash crop farming and economic land concessions. Early on it was identified that due to the forested nature of the province, and the presence of good soils ideal for agriculture, yet where tenure was unclear, the province was attractive to those wishing to make quick money through land clearing. Economic Land Concessions (ELCs) in particular– which plagued the country over the 2000s resulting in mass deforestation and land loss by smallholders - were identified as a major risk to Oddar Meanchey’s forests; “[W]ithout the project, there is a reasonable likelihood that a large proportion of the community forestry project areas would be leased to (ELCs), cleared by land speculators, or claimed by soldiers, migrants, or local communities within the next five years”. Just between 2007 and 2008, 44,000 ha of forest land was given to concessionaires representing nearly 7 per cent of the province’s land area (Poffenberger, 2009). Ironically it was the same ministry that was awarding these ELCs deemed as a risk to the project, that was also the main proponent of the REDD+ project and whose responsibility was to mitigate the risk of these concessions. Between 2006 and 2013 MAFF and MoE¹⁹ granted 17 ELCs in Oddar Meanchey totalling 108,019 hectares, including 20,000 to ‘sugar baron’ Ly Yong Phat and his Thai business partners and which ended in an international boycott of the Thai sugar buyer Mitr Phol due to violent evictions, and 10,000 to infamous tycoon Khun Sea for a rubber plantation.²⁰

Project documents talked of three strategies that would mitigate against the risk of ELCs: 1) ‘reinforcing land tenure’ – which in practice referred to the 15 year agreements between the FA and CF committees that gave committees the rights to manage the demarcated CFs, 2) ‘forest and land use plans’ which referred to a participatory mapping and a planning process that was to happen for

¹⁹ Under Cambodia’s 2001 Land Law, MAFF has jurisdiction for approving ELC’s (over 1000ha). The exception is for ELCs granted on ‘state forest land’ (i.e. protected areas) which come under the jurisdiction of the MoE. As The Kulen Prom Tep national park covers a large portion of southern Oddar Meanchey, and which 10 ELCs overlap, many of the ELCs were granted by the MoE rather than the MAFF.

²⁰ Khun Sea and his company Khun Sea Import Export Company had been involved in a long running and contentious and violent dispute in Phnom Penh over a small patch of highly valued land.

the CFs (which technically were a standard part of the procedure for establishing CFs rather than anything additional) and 3) 'forest protection' which referred to patrols run by CF committees and 'a long-term strategy to reduce forest crime through prosecution and deterrence' (Bradley, 2009) which was once again a standard part of the process for running CFs. In fact, there should have been concerns about how 'additional' these activities were, as CDA had already begun formulating CF groups in 2002 well before the establishment of REDD+ (Interview 2). Yet this was never raised during the verification process. It also had to be questioned from the outset to what degree project proponents understood that these mechanisms would never actually be able to counter drivers of deforestation and land contestation. For instance, in one document it was admitted that:

Mitigating the impact of ELCs on deforestation is certainly beyond the capacity of communities and REDD project teams. ELC issuance takes place at senior levels of government, often with the backing of powerful political forces. In the case of the Oddar Meanchey REDD project, because this initiative had the support of the Office of the Prime Minister and the Director General of the FA, discussions were held with MAFF to ensure that ELCs did not conflict with the project area. The potential for REDD projects to generate carbon revenues allowed policy makers to view this strategy as comparable with other income generating development initiatives that would compete for land in the project area (Poffenberger, 2009: 12)

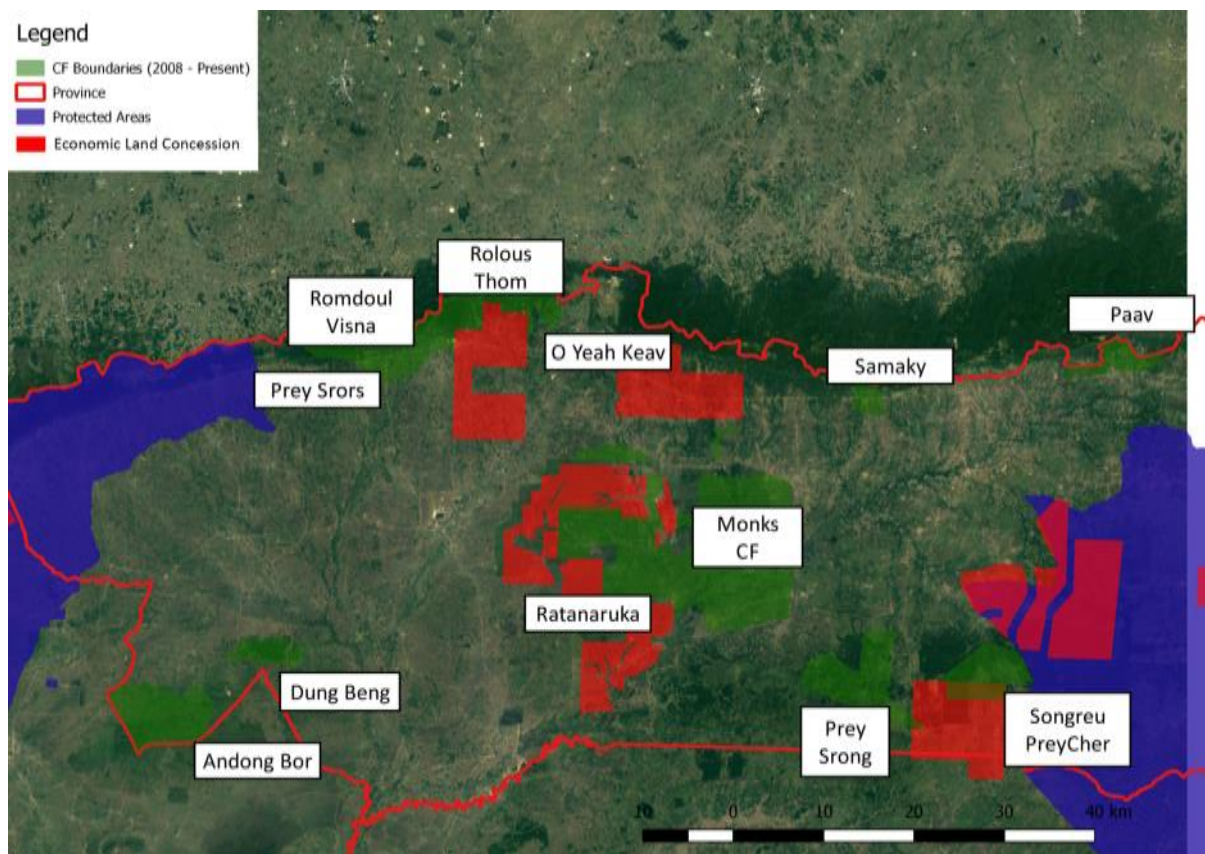
Under the influence of both Mark Poffenberger and Amanda Bradley, an enormous amount of trust was placed in the project's affiliation with FA head Ty Sokhun and his connection to the all-powerful PM. It was seen that such a high-level affiliation, in a country 'of hierarchies', would provide some political backing to the project, according to Amanda Bradley (Interview 5).

Finally, the project grouped together several 'local level risks' such as forest fires, selective logging, and charcoal production. For instance, a project document estimates that '[A] typical household might consume between 1 to 2 mt of fuel wood annually, reflecting a 6,000 to 12,000 mt of fuelwood used in the project area each year'. All project documents also list logging as a major risk - one document mentions that approximately 10-30 per cent of timber within CFs was logged in the 1990s and later documents give incidences of illegal logging recorded during patrols. Finally, forest fires – both natural and lit as part of attempts to clear agriculture are mentioned as a risk. These risks in turn are to be mitigated through the above mentioned three strategies as well as through the provision of fuel-efficient stoves which 'are likely the most immediate and cost-effective approach to reducing fuel consumption' which can 'decrease wood use by 25 to 50%'. Forest fire brigades were also set up by local CF committees. Hence it was these risks – and the mitigation strategies created to deal with them, that formed the key basis of the project.

Under the Voluntary Carbon Standard (VCS) and Climate, Community and Biodiversity standards (CCB), two separate methodologies must be followed which details how the project has monitored and established project interventions as against the baseline scenario. If this is approved, a third-party validator will then check the methodology employed and attempt to verify that a) activities laid out under the methodology actually occurred, b) that observed reality correlates with what is seen on the ground and c) the methodology is adequately able to capture important changes on the ground. By October 2008 the first methodology was sent to the VCS, and within a year these methodologies were accepted (with minor amendments) and validators prepared to send out independent verifiers. Yet it was only by May 2010 that PACT had set out a detailed project implementation plan of how it was going to address the multiple risks that Oddar Meanchey's forests faced. At the same time (early 2010) PACT began the process of a large household survey of

300 households, and biomass sampling, both of which were essential for the establishment of the baseline conditions that the project was to improve. Much of the actual work involved in these activities was outsourced to CDA where CDA staff (and locally hired surveyors) collected all the data for the household survey, and did much of the data collection for the biomass samples (Interviews 1,2). Simultaneously Terra Global Capital pushed on with the validation process – expanding the project implementation document in line with requests from the validators. Once again it can be seen that the baseline scenario was established in a piece-meal fashion after and during, not before, actual verification and project implementation.

Figure 5.3 Project Intervention Sites



Source: author

The project implementation document sent to the verification body essentially contained the same broad baseline scenario and strategies as outlined in previous documents – but started to incorporate data from the household survey. It still relied on the provision of ‘land tenure’ through 15 year CF agreements as the main community benefit, and was careful to point out that it was only through the benevolence of the program that communities received such tenure.²¹ The document also once again spoke of providing cook stoves – although by 2011 there was still no mention of any actual provision of cook stoves. It also stated there would be provision of mosquito nets – not for people but for cattle, which would help reduce dependence upon charcoal as household surveys found most participants use charcoal to burn during the night to deter mosquitos biting their cattle. Yet like the cook stoves there was no actual details on distribution. Some one-off trainings on ‘resin enterprises’ were also conducted in four villages by CDA, beefing up the ‘community benefits’ section.

The document made a simple but alluring argument. Drawing on nationwide poverty statistics and the Participatory Rural Appraisal, it was demonstrated that target communities really were poor and struggling to manage forest resources. But with simple and wide-ranging interventions this situation could be changed. Interestingly, to receive the highest status of validation under the CCB standards, more than 50 per cent of target households have to be living in poverty. In Cambodia the government has set the poverty line extremely low (living at a consumption level of US\$1.25 per day) which has the effect of providing an overly conservative picture of poverty in the country. The project however, needed to demonstrate that unlike the national statistics which suggested only a mere third of Cambodian households were living in poverty, more than 50 per cent of participants in the project area were in poverty. This was achieved by adding a question to the PRA where

²¹ As it states in the project document; ‘[T]his process, requiring multiple government approvals and a formal zoning process to demarcate CF areas, is costly and time consuming, and would be otherwise unavailable to the communities in the project zone without project support. This is particularly true for poorer households who often lack education and resources allowing them to make informed decisions related to securing formal land tenure.’ This is a somewhat tenuous claim as 450 communities of 2016 have managed to start the CF process.

participants were asked whether they considered themselves poor or not, rather than classifying them based on consumption and income levels. Participants had an interest in characterising themselves living in poverty (in order to access project benefits) and so unsurprisingly the majority described themselves as poor. So too, the project document made a simple argument about deforestation. Drawing on the household surveys, PRA and satellite images, a baseline scenario was created which showed that the province's forests were undergoing rapid destruction due to migrants, land speculation, agricultural expansion, ELCs and poor governance. Through project interventions – and professional surveillance and monitoring, this baseline scenario could be averted resulting in 'exceptional benefits for the climate, poor communities and biodiversity' (Terra Global Capital & PACT, 2012: 23). Terra, gave credence to these claims through sophisticated modelling procedures and calculations of the precise amount of biomass (and stored carbon) that would remain in forests due to these activities (per year), and which if certified would be transformed into Voluntary Carbon Units (the ultimate tradeable commodity that comes out of the whole process).

What is significant about the whole verification process, is that poverty alleviation and conservation are intimate aspects of value creation. To create a premium and boutique carbon credit it is not enough to avoid emitting a tonne of CO₂ that can be used to offset the emissions of wealthy individuals and corporations in the Annex 1. world. Assisting poor farmers and conserving rare animals is also a key aspect of what gives Oddar Meanchey carbon credits their unique value – part of a story of poverty, conservation, Monks and NGOs. Since the inception of the project, the Monks Community Forest, run by Bun Saluth, came to the centre of the project for this reason. Not only the largest CF in the project,²² it was also the best protected. Bun Saluth was active in protecting his CF – not only spending much more time doing patrols and managing his CF than other CF heads,²³ but

²² *Song Rokavorn* as the CF is called is roughly three times the size of the next biggest CF.

²³ Throughout 2012, on an average month the Monks would spend 120 hours patrolling. The other CFs paled in comparison – spending between 4 and 23 hours per month.

also was busy gaining the patronage of key political figures in the province and outside. The Monks Community Forest not only became the focus of key reports written by PACT and Terra, but was also the topic of several media articles including from *The Age*, *Time* and *Ecosystems Marketplace*. The site itself also increasingly played host to a number of important visitors – from NGOs, to student groups to dignitaries – including the secretariat of the UNREDD+ programme and director of the EUs office on REDD+. Hence the project – through the Monks CF – came to be increasingly well known within Cambodia and internationally as a cutting-edge project - not only the first of its type in Cambodia – but one of the first in the world. It's focus on poverty and conservation – and its claims to be able to generate a sustainable income stream for poor farmers - while tackling drivers of deforestation made it particularly appealing. It also appealed to a certain biopolitical sentiment. Namely, the project promised to create resilient subjects who not only chose carbon efficient fuel stoves over dirty charcoal, who used innovative methods to avoid cutting forests and ultimately agreed to live at semi-subsistence levels in the name of protecting the biosphere, but who actively engaged the community to prevent deforestation and protect carbon and biodiversity – and even assisted in the regeneration of new forest.

The REDD+ project in Oddar Meanchey represents the actualisation of two decades of neoliberal development ideology – a cutting edge project focused on 'local communities' and their relationship with forests and the biosphere, which employed the market rather than the state as a medium for maximising resilience and which was empowered by a green state bureaucracy. It was this combination of an appeal to biopolitics, of a neoliberal logic which instituted market mechanisms into the conservation of communal forests, of a desire to reduce poverty and act on climate change, but all supplemented by cutting-edge science, risk analytics, satellite images and complex project plans, which made the project appealing. Due to the work of key brokers – from Mark Poffenberger in CFI, Amanda Bradley in PACT, Bun Saluth as head of the Monks community forest, Chee Boreth as

head of CDA, with the help and patronage of key donors such as Andrew Wardell in TWG-FE and the Clinton Climate Initiative, Ty Sokhun (and his connection to the PM), the project went forward and by the end of 2012 was the first project in the world to get triple gold verification under both the VCS and CCB standards.

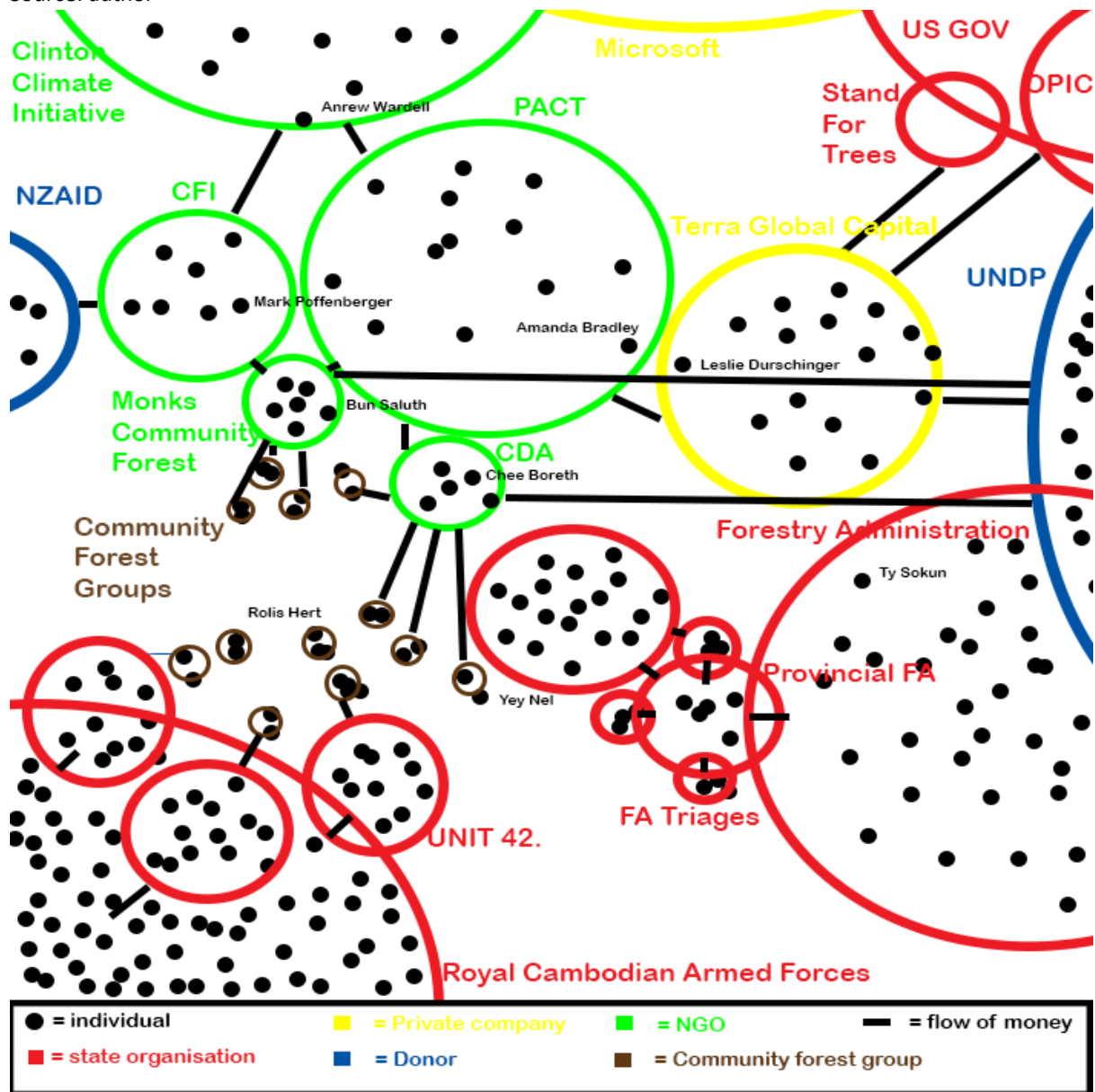
Figure 5.4 Venerable Bun Saluth



Taken from an online blog 'climate heroes' which profiled Bun Saluth's work in an article titled 'Bun Saluth, Guardian of the Cambodian forest' (2013).

Figure 5.5 Assemblage Map of Key Actors

Source: author



This section has largely focused on the ‘official transcripts’ (c.f James C Scott, 2008)– that is project documents, reports, media articles, newsletter and verification documents – through which project proponents represented the project. These constitute the virtual component of the project. The next section will delve into the politics of actualising the scheme, considering the perspectives of those who did not have the privilege of being major brokers or translators, as well as major events which shaped the project, but which only took on marginal significance within official transcripts.

5.4 The Unravelling of the Oddar Meanchey REDD+ Project - Part 1. Militarisation

Behind the shiny reports that gave the impression of a cutting edge programme receiving wide scale support and success, the Oddar Meanchey project faced a number of crises from its inception. By 2012, the project had essentially been abandoned by all its proponents – maybe except for Terra who saw the initial validation process through, but who were facing major uncertainties about the future of the project. By 2013, there were a string of critical pieces in the Cambodian and international media which challenged the alluring narrative that the project was putting forward and brought up important questions about how the project had managed to go through the verification process.

The first of these problems concerned militarisation and war. Since the program's official inception in 2008, the Cambodian army had been involved in several deadly skirmishes with Thai forces along the Thai border. The genealogy of the conflict goes back to the colonial period, but due to a series of events within Thailand during 2008, the particularly contentious issue of who has ownership over the Prey Vihear temple (and surrounding land) had become a key political issue in Thailand and saw an uprise of support amongst Thai nationalists for reclamation. This culminated in a number of skirmishes across the first two weeks of October 2008 at Prey Vihear leaving dozens dead. In terms of the project, this not only saw rapid military build-up within CF sites along the border, but deadly clashes in Oddar Meanchey (only 16 kilometres from the nearest CF). Starting from 2008, under the command of Hun Sen's son General Hun Manet, thousands of poor soldiers from across Cambodia were stationed in Prey Vihear and Oddar Meanchey along the border. Ostensibly under the mission of protecting Cambodia's border, the opportunity was also taken to settle soldiers on the land

frontier along the border. Since the early 2000s The Royal Cambodia Armed Forces struggled to demobilise thousands of soldiers that it neither had the budget to support and no longer required. A hangover from ongoing civil war in the 1990s and the build-up forces associated with the competing CPP and Royalist party, over the 2000s military commanders and the higher echelons of the government had struggled to clean up the RCAF (Hughes, 2003). The PM had also secured his own dominance and that of his party through control of the armed forces and remained wary of relinquishing such power.²⁴ Controlling and reforming the military so it is organised along patrimonial lines where Hun Sen is at the apex has also been a key part of Cambodian state making. When the Thai border conflict flared up key regional commanders were given orders to not only increase numbers of military personnel in existing regiments along the borders,²⁵ but to create new regiments and 'border outposts' across Prey Vihear and Oddar Meanchey.²⁶ This was followed by 'social economic land concessions' provided to the families of both old and newly settled soldiers. In addition – and under the patronage of local commanders, soldiers in many instances claimed land adjacent to military bases – both farmland and forest land.

²⁴ Running up to the 1997 CPP coup against the Royalists where Hun Sen ordered the armed forces to attack key Royalist outposts across Phnom Penh he stated 'Power is based on reality – what you dare to say you must dare to do ... When they listen to what you say, this is power, and when no-one listens to you, this is no power. If [they] demand the dissolution of the National Assembly or the Royal Government or to affect the Constitution, Hun Sen would like to declare to use armed forces to suppress [them] ... I have the strength to do ... I have the power to order troops, armed forces, that power entitles me to protect the Constitution' (quoted in Hughes, 2003: 82).

²⁵ In December 2008 the RCAF created a new division (third division) under the leadership of Srey Doek that was positioned along the Dangrek Mountains along the Thai border in both Prey Vihear and Oddar Meanchey. One of the first activities of division three was to establish housing and farmland for soldiers as well as building a border road that directly cut through a number of CFs.

²⁶ In an interview with a two star general who served as assistant commander for the North (Siem Reap, Oddar Meanchey and Prey Vihear) he stated that 'there were orders from the top that stated that expanding the army in Oddar Meanchey was considered a national security issue. Even before 2008 [when the conflict with Thailand occurred] this was already happening. We [the RCAF] worked with the provincial governor's office to find adequate places for soldiers... we had to consider how they would support themselves and we knew they would need land for farming... it is not policy to allow soldiers to cut trees or take land but in reality local commanders ensure that soldiers can still have livelihoods'. Deputy Supreme Commander of RCAF Kun Kim, who is also in the CPP central committee, has also directly presided over the creation of new soldier settlements in Oddar Meanchey (in Anglong Veng district and Samroang).

Although militarisation had been fleetingly mentioned in project documents, by the time of final verification in 2013, it was the number one issue that threatened success of the overall project.

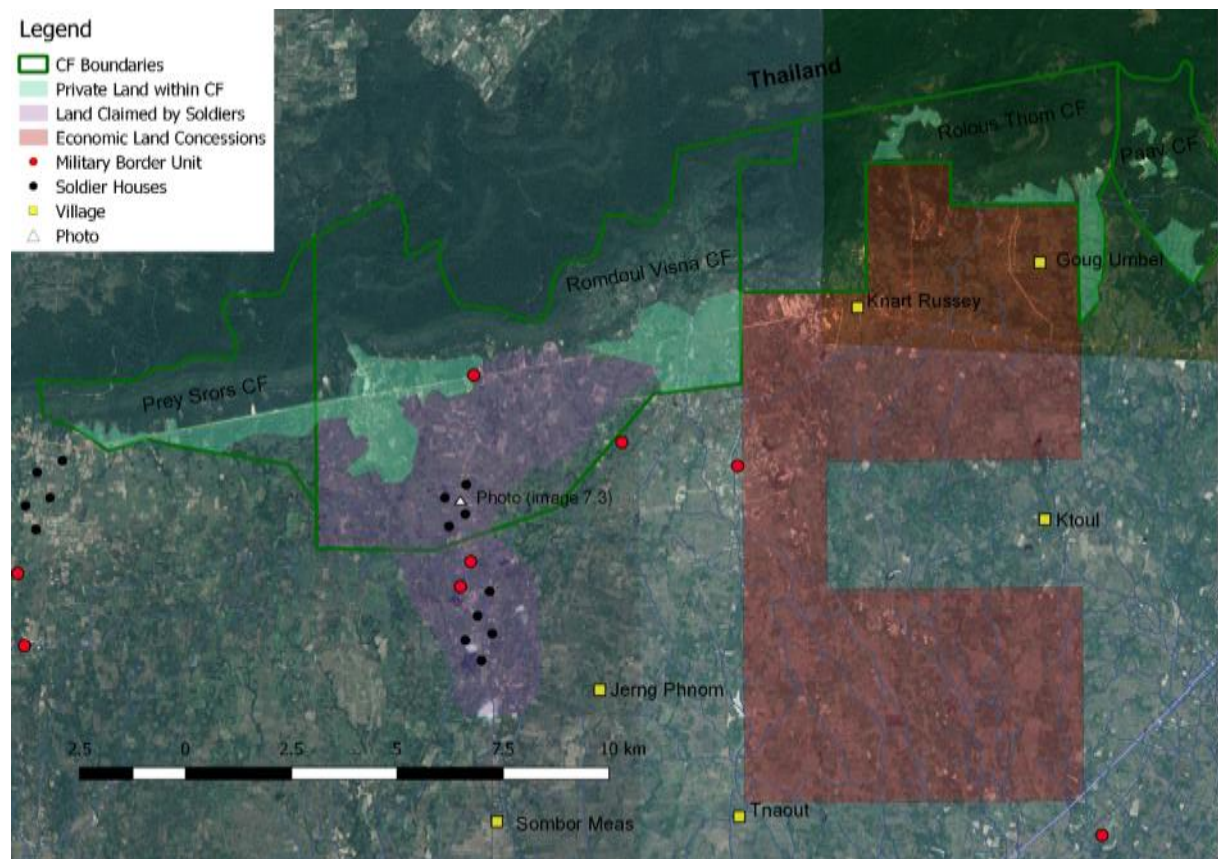
Nearly all the forest in the third largest CF *Romdoul Visna* was gone and the CF essentially collapsed, half of the forest in the second largest CF had been claimed by soldiers, where the CF had ceased all activities for two years, and 6 other CFs had reported major problems with soldiers. More disturbingly, there had been numerous violent incidents between CF groups and soldiers as well as threats and extortion that project proponents had kept from public view and failed to act upon.

In the *Romdoul Visna* and *Rolous Thom* CFs (which are adjacent – see map 5.1), the CF committee (and the surrounding villager's more generally) had been in a protracted conflict with soldiers who had settled in the area. The CF head of *Romdoul Visna* Rolis Hert, who had continually been elected head of the CF since its start had personally been attacked by soldiers in retribution for challenging soldier settlements, as had a member of his CF committee and a member of the *Rolous Thom* CF. Hert, like most CF members was an immigrant (from neighbouring Siem Reap in a district adjacent to Oddar Meanchey) who had come to Oddar Meanchey in search of land in 2002. The final fall of the Khmer Rouge in late 1998, and the simultaneous collapse of the Royalist's one-year armed resistance in nearby O'Smach, as well as the fixing of key access roads to the area, saw the border area opened to land poor immigrants such as Hert. Hert brought five hectares of land for a cheap price from a villager from nearby Romdoul Visna village (which the CF is named after) (Interview 6). At that time land in the area was plentiful as there was only one major village in the commune. Most land was a thick evergreen and secondary shrub mosaic – having been logged of all valuable timber since the 1990s by a Thai timber company, and patches having been farmed and abandoned by villagers. Due to the fact that Hert was literate, and had experience doing administrative work (in a minor clerical position back in Siem Reap) he immediately took on a number of roles in the new village including CF chief.

The problem from the start was with intermediate levels of authority such as the commune chief – who since the 2000s had been selling off CF and village land - and the district governor who was in cahoots with the commune chief as well as the soldiers when they arrived. When two border units were set up just outside the CFs in 2008, and a new village established of soldier families in the middle of *Romdoul Visna*, the problems of the CF committees started (Interview, 7). Having a national level agreement on the CF that the CF committee felt trumped the soldiers claims to the land (which was secured through the district governor) the two CF committees continued to patrol. Hert and his deputy were particularly adamant that the soldier families had no right to occupy the CF land and continued to patrol and confront those living in the new village. This culminated in an attack on Hert and other CF members during 2009. After walking around the perimeters of the village with the CF patrol group, and after several arguments between Hert and soldiers over the preceding few months, the group was confronted by a group of armed soldiers/civilians while walking back to the village. After a heated argument over whether the CF group had the right to conduct patrols in their village, one of the villagers came forward striking Hert with the butt of his rifle and in the process breaking Hert's collar bone (Interviews 7,8,9). Ruos Sok Phally, head of the *Rolous Thom* CF had encountered similar issues including threats and intimidation from soldiers and admitted in 2015 that his CF had been almost entirely inactive over the previous 2 years because 'we can't do anything – we are powerless. The soldiers received orders from the top, how can we stop them?' (Interview 9). Other members of the *Romdoul Visna* CF spoke of intimidation – even of two CF members being 'temporarily detained' in the forest by soldiers while going to collect mushrooms. Similarly, the village chief of Romdoul Visna complained bitterly about the presence of the soldiers who had not only encroached upon CF land but village rice and cassava fields - yet felt powerless to do anything about it as the commune and district chief made it clear that any attempt to challenge the land transactions could result in retributions – legal or other (Interview 8). Hert had also been

warned by both that continuing to pursue the issue would see them labelled as ‘opposition supporters’ – which in rural Cambodia is a far from trivial accusation (Interview 6).

Figure 5.6 Militarisation Along the Prey Srong, Romdoul Visna, Rolous Thom and Paav CFs



Source: author

Around the *Romdoul Visna* CF 14 families directly lost farming land due to the presence of the soldiers – ranging from 3 to 7ha. For some of the families, especially those who had made a claim to land earlier on and had other patches of land, they relinquished the land to soldiers and started cultivating new land in a different area. However, five families – all immigrants who had arrived since 2005 - lost the entirety of their agricultural land to the soldiers and had either no other land to cultivate and were too poor to purchase new land. One 68 year old man bitterly complained about his family’s loss of five hectares; ‘not a day goes by when we don’t suffer because of what the

soldiers did to us. We have tried everything to get out land back, but we are exhausted...how are we supposed to live without land?' (Interview 10). In 2009, several key figures surrounding the two CFs, led by Hert and with the support of Chee Boreth, took the case to the Oddar Meanchey provincial court and to the Siem Reap provincial court, but the case had made almost no movement in over six years (Interviews 6, 7). They also conducted a village level protest against the settlers (which saw a few ha returned to families). PACT (or any other NGO) provided no practical support for them, and the issue was never raised in any of the project documentation (Interviews, 1, 6).

Figure 5.7 Worn Project Signs of the CF Area in a Village Settled by Soldiers (Romdoul Visna CF)



Source: author

In the soldier village itself (*O- Bateav*) newly arrived settlers had a different perspective. People acknowledged that they had received land from the top levels of the government – many referred to ‘Samdech’ (all powerful) Hun Sen as directly granting it to them – and they regretted that the

government had given them contested land (Interview 11). They, however, insisted they were owed land, and were still struggling to escape poverty (Interview 12). The first settlers were only given 1.5 ha each – which is difficult to sustain a family on (due to living on marginal lands). Furthermore, since O-Bateuv was a new village it was still lacking basic medical and educational facilities. The result was that most people settled there had little to think about apart from day to day survival. Soldiers who had seen years of combat, and whose families had lived a life of poverty, felt they got a poor deal. As one soldier put it – ‘I have been a soldier almost my whole life moving around the country, getting shot at and at the end I get this – this distant Malaria ridden place’ (Interview 13). The situation was further complicated by the presence of civilian settlers, who in most cases had purchased land from soldier families and in most cases appeared in the most desperate situation.²⁷

²⁷ One such family in *O-Bateuv* hailing from Kompong Cham province explained their situation to me – ‘years ago we had about 3 ha of rice land in our homeland. But we got in a debt and due to this and that – and especially my husband’s sickness – we had to sell our land. We tried different jobs but it was too difficult to make money so we came here in search of land. But now we are just in debt again. And even worse – everything is expensive. What can we do? We try to sell a little bit [of wares in a small shop] but we don’t make any money. And what are we to do with our children when they can’t even get an education?’ (Interview 14).

Figure 5.8 Soldier Settlement in Romdoul Visna CF (see map 5.6 for location)

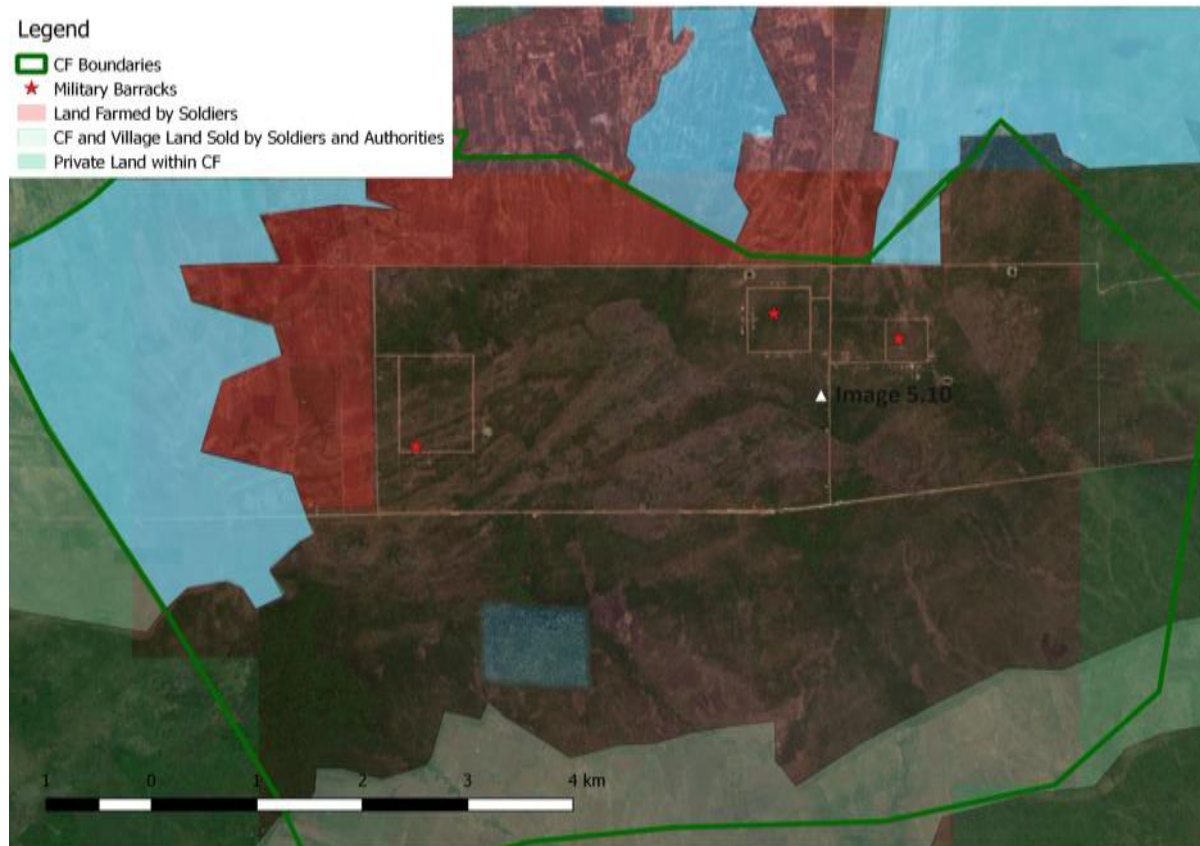


Source: author

In *Andong Bor* CF the situation was little different. Here Brigade 4 under Major General Sorn Sea (who is a member of the politically elite CPP central committee) had occupied a large section of the CF and surrounding areas since 2011 (interview 15). Brigade 4 immediately set up a barracks in the middle of the CF, which included a large road and began distributing around 3000 ha of land to soldiers (Interviews 16, 17). From interviews with district authorities (Interviews 18,19,20) it appeared that General Sorn Sea more intentionally planned the use of the CF as a territory to

expand troop settlements. Due to the more organised nature of the settlement and the presence of a large number of soldiers, the military quickly established immediate control over the area and the CF ceased all activities after being threatened by soldiers. According to the new CF head and deputy, members of the older CF also conspired with local military leaders to sell recently cleared land (Interview 21,22). Unlike in *Romdoul Visna*, the soldiers took only minimal village land that was already cultivated (although they did take privately owned fallow land) but focused largely on establishing control over both CF forest land and unclaimed forested land. This included restricting access to remaining forest where anyone seen leaving with forest goods would be forced to give a payment to soldiers, as well as establishing land title over cleared land through district and provincial authorities (Interview 23). Although the CF community had effectively dissolved, the CF deputy Din Heng continued to speak out about the military occupation. As a result he faced continual threats from soldiers in his local area (Interview 22). Local villagers also faced a serious rise in harassment from soldiers including sexual assaults and violent incidents due to drunkenness (Interview 24,25). There were numerous attempts to resolve the issue by meeting with military commanders in the hope of getting them to relocate the base – which never resulted in anything (Interview 24). Soldiers interviewed stated that they had the right to occupy the land as it had come directly from an order from 'samdech' (Hun Sen) (Interview 26, 27, 28). There was visibly much more wealth amongst the soldier settlers here compared to *Romdoul Visna* including the presence of numerous luxury SUVs and well-constructed brick houses.

Figure 5.9 Militarisation within the Andong Bor CF



Source: author

Figure 5.10 Soldiers Erecting a House in Andong Bor (see above map for location)



Source: author

But there were many instances where military barracks pre-dating the Thai conflict had been the cause of the problems for villages. Larger infantry battalions such as no. 41 and 42. in Anlong Veng district had plagued villagers for years. People across dozens of villages in these areas complained of soldiers coming to forests to hunt and fell timber, as well as demand informal taxes from people (Interviews 29, 30). In *Goak Sompur* village many CF members complained of a small band of soldiers who had taken over a small area of cassava and rice land from villagers (Interview 31). The soldiers erected a small house from which they would guard their new land. Defiant villagers continued farming the land in a cat and mouse like game – departing just before soldiers returned. *Boo Mup* a CF member of *Prey Srong*, was adamant that even after the soldiers repeatedly threatened to evict him – which included holding a gun to his head and cocking it – he would continue to farm; ‘this land is my life. Life is struggle – if I don’t continue to struggle to farm I have nothing – no life. It doesn’t matter what happens I will continue to farm this land’. *Boo Mup* was a poor 39 year old with a wife and two young kids who had sold his last remaining hectare in Siem Reap to buy 4 ha on the then land frontier in *Goak Sompur* village in 2006. With no income outside of farming (he had previously gone to Thailand as a laborer, but sworn never to go back after working a month without pay) his life was centred around his 4 hectares of cassava and rice (which he had just taken out a microloan to

finance) (Interview 32). No one was particularly interested in his land conflict – neither the Monks, CDA or PACT and it lingered for a year or two until district authorities threatened to arrest him for illegally encroaching on private land (actually his own land – but by that time soldiers had gained land title to it).

Figure 5.11 Soldiers Travelling to Anlong Veng



Source: author

The same soldiers from Battalion 41 were also causing problems for other CF groups such as those in the Monks CF and the adjacent *Ratana Ruka*. Numerous people complained of meeting soldiers in the forest whom made them 'fear their life' according to one mid aged female CF member (Interview 34). Soldiers were nearly always armed and villages often complained of them being drunk and aggressive. When CF groups tried to apprehend soldiers, it was particularly dangerous. In *Kown Domrey* Village three members of a local CF had been detained for several hours by soldiers in the middle of the forest late at night, after the CF approached the soldiers over the fact that they were logging. They were all visibly terrified and said it was only by phoning through to 'high ranking people', which resulted in the soldiers commander ordering them back to base (Interview 33). Several women also reported incidents of feeling terrified and threatened by seeing armed males when they were alone or in small groups collecting mushrooms or other forest goods (interview 34, 35).

The Forestry Administration faced major difficulties in dealing with soldiers. As the head of the provincial FA stated 'there are a lot of issues with soldiers in the province. The problem is that we don't have the authority to apprehend soldiers on CF land when higher order laws and policies allow them to occupy these lands. The best we can do is try and cooperate with local commanders' (Interview 36). FA staff in the Anlong Veng triage spoke of many difficulties in dealing with forest crime due to the fact that even when the law was on their side, their five unarmed FA officials were no match for dozens of armed soldiers (Interview 37). A salient example of this occurred when FA impounded a truck with RCAF number plates carrying illegally felled timber (which FA officials in Anlong Veng said they had frequently seen carrying illegal wood). Hours later, armed soldiers laid siege to the FA compound as they tried to retake the truck (ibid). The FA never pursued any legal actions against the soldiers but instead allowed 'commanders to discipline the soldiers' (Khouth Sophak Chakrya, 2016). So too FA officials in Trapeang Prasat triage stated that 'we just follow the provincial governor. The area and activities of soldiers is under a different jurisdiction' (Interview 38).

In actual fact militarisation is nothing new in Oddar Meanchey. The recent history of Oddar Meanchey and how land and natural resources have been distributed – and in turn how livelihoods have formed around a certain pattern of resource distribution – is deeply implicated in local histories of armed conflict. This started with the early takeover of Anlong Veng by the Khmer Rouge five years before the rest of the country in 1970, and the fact that the Khmer Rouge had exerted a significant influence across the highly forested, and low populated areas for many years before that. The *Dangrek* mountains which form a natural border between northern Cambodia and Thailand (also the location of the Prey Vihear temple) was the home to the Khmer Rouge's most important base when it was waging war against the Republican Lon Nol regime (1970-1975). In terms of the REDD+ project and contemporary livelihoods, it was the post-Khmer Rouge regime which has most directly shaped livelihoods in the province. After the fall of the Khmer Rouge regime in 1979 due to a large scale Vietnamese military intervention, northern Cambodia went from being a remote, forested and largely inaccessible jungle area, to an important corridor for soldiers and refugees (Diepart & Dupuis, 2014). With the fall of the KR regime, flows of refugees from across Cambodia though to the north to refugee camps on the Thai border went from a constant trickle to a large flow (Van der Kroef, 1983). As the Vietnamese quickly took control of most of Cambodian territory, both regular people caught up in fighting between the two forces, or who decided to escape what was obviously to be a precarious situation for anyone staying in Cambodia, as well as those loyal to the Khmer Rouge, fled to the borders in the millions (Gottesman, 2004). Very quickly, refugee camps along the border of what was to be called Oddar Meanchey (then Siem Reap), became largely separated along different allegiances. In 1979, pro-west, ex-prime minister Son Sann visited camps along the Oddar Meanchey border convincing civilians and ex-soldiers to join the US backed Khmer People's National Liberation Front (KPLNF).²⁸ By 1981 the 6000 strong KPLNF had formed a three-way alliance between the

²⁸ By 1982 the US was covertly transferring US\$5 million per year to the KPLNF. By 1988 this had jumped up to \$12 million.

Khmer Rouge and another group loyal to King Sihanouk. Border camps along Oddar Meanchey and Banteay Meanchey became the springboard for the coalition's resistance to the Vietnamese and by 1981 each individual camp was under control of a different army.

Over the next two decades, Oddar Meanchey formed the front lines between the resistance forces on one side and the Vietnamese and Government of Cambodia (GoC) on the other. Differing factions not only used the *Dangrek* Mountain's as a natural barrier and safe haven from Vietnamese and government offensives, but used the Thai space that these mountains backed onto as an escape and transportation route (as during the 1980s the different Thai regimes were anti-communist and provided financial support and sanctuary to Cambodia's non-communist forces, and even at times the Khmer Rouge). Anglong Veng district in particular formed the geographical heart of the Khmer Rouge's 'second life' (Rowley, 2004). After regrouping at its old military base from where it had launched attacks against Lon Nol's Khmer Republic (Mountain 1001 and 1003 only a few kilometres west of Anglong Veng) the KR re-organised itself and began receiving new funds and armaments from China.

Throughout the 1980s, the KR unleashed a brutal guerilla war from this base on government forces where roaming units of KR penetrated as far south as Kampot. Militarily it used guerrilla tactics to destabilise and demoralise the Vietnamese forces²⁹ So too the KPLNF and Sihanouk forces began to

²⁹ By the mid-80s the Vietnamese backed GoC were under severe supply shortages where Vietnamese soldiers were feeling the effects of being in a foreign country for a protracted period of time, and the Cambodian forces were war weary and opposed to compulsory conscription) (Gottesman, 2004). Utilising their smaller numbers, the KR focused on ambushes, mines and booby-traps (especially poison tipped bamboo spikes), small hit and runs, disturbing supply lines and disrupting agriculture. Although the government forces would take (and re-claim) large swathes of territory through dry-season offensives (especially the Vietnamese 1985 dry season offensive that pushed the KR out of the *Dangrek* mountains into Thailand), these guerilla tactics wore down government forces - especially after the withdrawal of the Vietnamese in 1989 - with the result that by 1990 the Khmer Rouge could retake Anlong Veng and much of the surrounding area (Slocumb, 2003).

hold swathes of territory around O'Smach and Samroang. Throughout the 1990s these territories were held largely through the mass laying of mines and booby traps in surrounding forest land with the result that by the end of the war Anlong Veng had become one of the most heavily mined places not only in Cambodia but in the world. Surrounding forests, and the forests surrounding the base of the *Dangrek* Mountains on the Cambodia side in particular formed an important defensive mechanism which were covered in hundreds of thousands of mines (and countless poison bamboo traps) which took the lives and limbs of tens of thousands of government troops who year after year attempted to retake Anlong Veng (and O'Smach).

By 1997, the Khmer Rouge movement began to peter out. With support from China having dried up since the early 1990s, the war-weary supporters began defecting on mass as the Hun Sen government turned to a political policy focused on enticing the KR into the army through amnesties and promised army positions and even land.³⁰

The significance of all this is that the creation of Oddar Meanchey as a territory is deeply implicated in the local history of militarisation and war. Even the decision to separate the territory from Siem Reap (which was made official in 1995 through a Royal decree, but did not practically begin to occur

³⁰ After Ieng Sary's 1996 defection, the Pailin stronghold fell, not long after the Veal Veng (Pursat province) also fell, leaving Anlong Veng cut off and isolated. In late 1998 KR soldiers rebelled against KR leader Ta Mok. Soon after Anlong Veng fell and the last remnants made their way to the top of the adjacent *Dangrek* Mountains to stage their last resistance against the government. By October 1999, all of the remaining KR had been reintegrated into the RCAF signalling the final and complete end of the Khmer Rouge. Around the same time, a smaller rebellion led by the Royalist general Nhek Bun Chay also came to an end. In 1997, five years of building tension and militaristic competition between Hun Sen's CPP and the Royalist FUNCINPEC came to a bloody end when Hun Sen employed the RCAF and large numbers of KR soldiers (who had defected with Ieng Thiery) to purge the government of high ranking FUNCINPEC figures. In a remarkable story of luck and desperation, the FUNCINPEC general Nhek Bun Chay escaped by foot along with 200 soldiers to the Thai border. He then established an armed resistance at the old camp in O'Smach, holding out against the government for more than a year. Finally, a peace deal was negotiated, although almost half of his 8000 loyal soldiers were not reintegrated into the army and left to fend for themselves – many choosing to occupy land and begin farming in the area around O'Smach.

until 1999) was purportedly an attempt to separate Siem Reap (and its burgeoning tourist potential) from conflict-ridden and Khmer Rouge-held territory (Stephans, 1999). The choice to make Samroang (a FUNCINPEC stronghold) rather than the more populous and larger Anglong Veng the provincial capital was similarly an attempt to isolate the Khmer Rouge. In many cases district and commune borders emerged along the logic of front lines between competing armies (Kamboly & Dearing, 2015). Defection – and access to land and natural resources became particularly important for the fragile peace that was emerging in the late 1990s. In particular, Khmer Rouge and FUNCINPEC fighters were given de facto access to large swathes of land – that due to fighting was still one of the least populated areas in Cambodia- in return for loyalty to the new CPP government and the RCAF (interview 39).³¹ In many instances, in an attempt to avoid the possibility of future rebellion, these former resistance fighters received administrative positions or RCAF positions and were able to exert a large degree of formal and informal authority over local politics (Kamboly & Dearing, 2015). What is crucial to point out is that it was a mere 8 years between the final end of the KR resistance and the beginning of the REDD+ project (and 9 years since the end of the FUNCINPEC resistance). As such the REDD+ project inevitably built upon soldiers and ex-soldiers to secure local authority for the project. Nearly all CF committees in Anlong Veng for instance, had influential ex-KR fighters in them just as the CF committee in O'Smach and Kown Kriel contained influential ex FUNCINPEC fighters. So too several Monks in the Monks CF were ex-KR as was the head of the Oddar Meanchey CF network which was created to coordinate between the 13 CF committees. As is demonstrated below, past resistance and struggles to control natural resources deeply influenced

³¹ For instance, a male 64 year old ex-Khmer Rouge soldier named Chet, told me he had reintegrated into the government in 1998 and immediately become a low level soldier for RCAF battalion 42. Although he was a village chief under the Khmer Rouge, he lost all formal authority, and in the 18 years after, has not risen in rank in his battalion. He also noted with some regret that when he reintegrated he was forced to purchase land in Anlong Veng from people associated with the RCAF. He now owns 3ha. Another ex-Khmer Rouge soldier Sojeat was the head of the Khmer Rouge's 'special intervention force' based in Anlong Veng (1990-1998). After Reintegration – which for him was some months earlier than the final collapse of the Khmer Rouge – he managed to secure around 30ha of land at the foot of the *Dangrek Mountains*. Although he was highly respected in the local area, he occupied no formal administrative position. As such he saw much of land claimed by well-connected people. According to him by 2015 he had lost 2/3 of his original land to outsiders.

how these people used their authority in the CFs (c.f Diepart & Sem, 2016)– especially in the rapidly changing post-conflict environment of the 2000s.

This was most obvious amongst ex-KR fighters – who were the most active CF members across Anlong Veng district. For instance, the *Samaky* CF established along the foot of the *Dangrek* mountains (see map 5.3) headed by local village chief Yey Nel (and former KR district chief) exemplifies this. Yey Nel defected to the government in 1998 after forming part of the KR’s last struggle from the mountain tops (Interview 40). A smart and fierce lady, she exerted significant informal power in her local region that went well above her official bureaucratic position. As a commune chief in the area put it ‘these ex-Khmer Rouge continue to wield significant influence and loyalty – that is the way it is and no wants to mix–up the balance’ (ibid). When interviewed in 2015 Yey Nel was openly dissatisfied with the REDD+ project. She openly told me in front of other CF heads and project proponents ‘all these people from Phnom Penh have no idea. All they know is documents and meetings. They have never had Malaria, they have never held guns, they have never walked in the forest full of mines. We are the ones who actually protect the forests, we are the ones who have struggled all these years, taken time from farming and everything else – who have suffered, in the end we get nothing’ (ibid). Yey Nel was particularly upset that after eight years of protecting the forest it appeared that she and her community were going to get very little benefits. She expressed regret that after her struggle with the Khmer Rouge, she had only managed to secure a small patch of land that was surrounded by land concessions, RCAF military bases and land of wealthy individuals who were connected to patrons high up in the CPP hierarchy. She often seemed to conflate her struggle (កំហូរ) with the KR and her struggle to get land and secure her patch of forest in the post-KR regime (which she similarly referred to as កំហូរ). In 2011, Yey Nel, using her influence

amongst former local KR cadres, expelled other influential members of the CF committee (who were not ex-KR) and decided to 'give' half of the CF land to residents for farming while creating an enlarged CF committee composed entirely of her new village that would focus on protecting the other half. The other 3 villages held a large protest of over 200 people claiming that Yey Nel had staged a coup to sell CF land for her own benefit (Interviews 41, 42, 43). So contentious were her actions that her own village essentially split along those who supported her and had received land (and set up a new settlement in the CF) and her old village who were ex-CF members and did not receive land (Interviews 41, 42, 43). People in the three other villages were unanimously against her. The old deputy resigned from the CF in protest and said 'she thought she was Hun Sen. She is like a local despot, even more powerful than Hun Sen' (interview 43). The FA had been unable to resolve the conflict and it appeared that her influence went all the way up to the provincial level where commune and district authorities gave tacit permission to set up her 'social land concession' (Interview 41, 43). In her new settlement, of which most people were land poor immigrants, people were not only extremely loyal to Yay Nel, but also actively involved in the CF (Interviews 44,45,46,47, 48). It was the only CF I visited where I could find people actively conducting patrols and even building local infrastructure for the CF (including a patrol house and ranger station and fence) which were all collected from local funds.³² Staying with the CF patrol one night, who were based along a small road which formed an important path between the district and Thailand, it appeared that the CF under Yey Nel was also involved in at least informal taxing of goods across the border.³³ It was

³² Although most people had indeed appeared to be given 1.5 hectares of land for free by Yey Nel in exchange for loyalty, it also appeared that there were several landholders surrounding the core settlement who had brought larger patches of land from Yey Nel. More recent immigrants also admitted that they in fact had to purchase their land from Yey Nel (Interview 49, 50).

³³ One night, after having already talked with Yey Nel and being invited to visit the CF I spontaneously arrived at the CF camp around 7pm – which was accessible by motorbike. The entire CF were extremely welcoming and happy to assist in my research. However, after half an hour of chatting they all produced numerous reasons for why I should leave. This included that it was about to rain (it was the middle of the dry season), that it could be dangerous to stay in such a remote area (which one individual said in a very ambiguous manner that could have been interpreted as a threat), that I was at risk of Malaria, and that they were all about to go to sleep. Having spent a long time riding in the forest to get there I was resistant to immediately leave, but promised them I would head off after five minutes. Half an hour later, after a quick and discreet phone call to a CF member, I was immediately led away from the camp by two insistent CF members saying nothing other than 'now you have to come over here now'. Two 4WD land cruisers then came across the

also noticeable that the CF committee had no problems with soldiers. I asked Yey Nel 'so a lot of the other CFs have had a lot of problems with soldiers coming to cut timber and hunt, what is it like here?' She replied 'ha ha we don't need to worry about the soldiers – I tell them what to do and they follow' (interview 41).

In the *Prey Srong* CF, also in Anlong Veng, ex-Khmer Rouge who made up most of the CF committee, felt a high level of disdain toward immigrants who they blamed for forest clearance. As two younger ex-Khmer Rouge soldiers, who were amongst the only ones who still did patrols put it 'we fought for this land, we struggled and went through a lot. When we came back to farming after the war we had to clear this land by hand. Malaria and land mines everywhere. We farmed just what we could manage – so we could live and get by. At that time there was still a lot of forest here – thick forest and secondary forest – right up until 2002. Then when the road from here to Siem Reap was paved immigrants just began flowing in. And the government carved up all this land and gave it to big companies – companies who steal the land we had spent years clearing, but because they knew some big person they could do what they want. And that's how it is this era – it's all about big people. We still struggle to protect the forests, but every single day people from Siem Reap, Kompong Cham, Takeo – they come in herds to cut the forest and take land' (Interview 51). The two families of the men had lay claim to around 15 ha of land each after the fall of the KR regime which received tacit legitimisation from the newly established government authorities in the area. Over the 2000s these relatively large parcels of lands (for an average Oddar Meanchey household who typically has around 3-5 ha) was progressively lost to economic land concessions and new immigrants – mainly because it took more than a decade to receive formal land tenure.³⁴

border stopping briefly to talk with the CF members. It was also notable that one of the CF members were armed – even though they did not appear to be police or military.

³⁴ This refers to land registration documents issued by cadastral office at the provincial level (since the 2001 land Law).

Figure 5.12 Former KR soldier CF Member of Prey Srong



A CF member and ex-Khmer Rouge soldier in Champa Sok village angrily explains about immigrants cutting CF forest and the lack of money and support from NGOs (Interview 52). Source: author

Many FUNCINPEC resistance fighters also felt they had lost out from the political-economic changes sweeping post-conflict Oddar Meanchey. Although Oddar Meanchey at its administrative inception had been put under the administrative duties of largely FUNCINPEC loyalists – for instance the first

governor Chamroeun Cheath was a FUNCINPEC general who had been active in the O'Smach resistance – by the mid-2000s it was overwhelmingly dominated by those loyal to the CPP (and its patronage networks) in not only military and administrative affairs but land distribution. A 76 year old man in Samroang district, living directly opposite the Monks CF, was a previous FUNCINPEC commander and senior advisor who had been active in the O'Smach resistance. Although he now resigned himself to religious duties he still held considerable authority amongst local villagers who held him in high regard (Interview 53, 54). He had played a decisive role in establishing the village he lived in (and even ones nearby) and it was through his patronage that newcomers initially were given land. After the collapse of the resistance he decided to stay in the area, claiming around 10 ha of area to start farming. Like many farmers he de-mined and cleared secondary forest land by himself for subsistence rice production. Local administrators accepted his land claims and as was policy of the time, gave him a level of autonomy and local power within the new regime. But by the late 2000s his land had also been chipped away by the Monks CF on one side and cassava plantations of politically connected wealthy people on the other (Interview 53).³⁵

The final factor to consider in terms of the history of conflict, and its impacts on the REDD+ project, is the history of refugee resettlement in the province. With the serendipities of the Cold War, Cambodian refugees amassed along the Thai border were at times welcomed by Thailand, and

³⁵ In particular, a certain Oknya (formal title of wealthy individual) had managed to gain several hundred ha of land surrounding his village for cassava production which resulted in the loss of farming land from 16 families in his village. Initially a supporter of the CF, he came to deeply resent the CF which did not allow him to farm a small parcel of land within its borders which he laid claim to before its establishment. Nor did the CF help in any way to solve the land conflict impacting his village. As he put it 'I don't have anything to do with the CF anymore, nor do I want to. I am now just a simple old man, focusing on Buddhist teachings. When I was younger I was active, I was involved in many things because of everything that happened in my life – especially about the war. I had a lot of duties and experience and people listened to me – but now I am just a poor old man barely able to get enough money to get food. I am in poor health and can't even afford decent medicine' (Interview 53). A similar situation had occurred with senior CF members in Paav in O'Smach who were also previous FUNCINPEC veterans but who had seen land loss and loss of authority. They also had attempted to regain some territorial control and local authority through the CFs, but due to a lack of funding and competition with land concessions and powerful individuals, had largely failed in both respects.

at times seen as a major political problem that needed to be quickly resolved (i.e. removed from Thai soil). UNHCR and NGOs also tended to see Cambodian refugees in a problematic light – as ‘expensive and a drain on resources’ and who needed to be repatriated (Cambodian refugees on the Thai border where never technically ‘refugees’ but considered by UNHCR as ‘displaced persons’ who were waiting on repatriation). Throughout the 1990s there were major efforts to speed up the slow repatriation process where in many camps refugee numbers continued to grow even with increasing stability inside Cambodia. By the late 1990s Thailand was no longer interested in supporting the non-communist resistance (nor were other backers) and was seeking a solution to the protracted Cambodia conflict that had dragged on for 30 years.³⁶ Oddar Meanchey, as a land frontier which was not distant from border camps, formed an important place to resettle refugees. Unlike rice producing provinces further south where land claims were heavily contested, refugees could be provided with 2-5ha parcels of land, largely without contestation.

In summary, this section has attempted to give a more human-centered settlement history of Oddar Meanchey in contrast to the lifeless quantitative risk assessment form of analysis presented in project documents. It has showed how a patchwork of competing claims to land have emerged out of brutal conflict and resistance along a land frontier. War and militarisation were not just a thing that happened before the implementation of REDD+; a mere factor in the past that contributed to deforestation and poverty and that REDD+ interventions would ameliorate. Militarisation was rather an ongoing process formative of the REDD+ project itself and deeply implicated in how the project played out amongst the people who have made a claim to land and resources in Oddar Meanchey. In contrast to the project documents and satellite images which present the CFs as carefully chosen patches worthy of conservation due to exemplary biodiversity, such patches emerged along the lines

³⁶ The US had largely lost its appetite for supporting rebels who opposed the Vietnamese and as such no longer put pressure on Thailand where many high level political figures had trade ambitions with the Hun Sen regime to avoid relations with the CPP regime (Gottesman, 2004).

of conflict and competing claims to land on the part of different militaries. It is no coincidence that several the CFs are directly along the base of the *Dangrek Mountains* where the Khmer Rouge staged their final resistance. These are not just empty forests, but areas of land that were strategically filled with mines and booby-traps to defend the territories of armies caught up in the cold war. They formed an important buffer zone that afforded the Khmer Rouge and FUNCINPEC both access to Thailand and some level of shelter against government offensives. Other patches of forest such as the Monks CF were formerly buffer zones between different groups – in that case the Khmer Rouge, FUNCINPEC and government forces. And to this day war continues in these remote forests where those who dare to collect timber, or clear forests, still face mines and improvised bombs. Anglong Veng has the highest per capita incidence of amputees anywhere in Cambodia. During research countless participants were missing legs, arms and eyes. People in villages surrounding *Rolous Thom*, *O Yeah Gaev*, *Romdoul Visna* and *Samaky* (all on the border) stated that mines still lay dormant in the northern sections of these forests. In other areas forests were buffer zones between competing armies and provided defensive habitats as well as important areas for guerrilla offensives. These forests too remained littered with mines and improvised mines.

Figure 5.13 *Improvised Mines in Prey Srong*



Bombs (used as improvised mines) collected in a single morning by de-mining group HALO Trust from the *Prey Srong* CF in Anglong Veng in October 2015. Villagers stated that mines were still prevalent in the CF and it was only safe to travel on well-worn ox cart tracks. But even this was not safe. One old couple in *Dey Thmay* village (who were former government of Cambodia soldiers) spoke of one day in 2006 when after driving their tractor along an ox cart track they had travelled across '100 times before' were unlucky enough to hit a partially exposed tank mine. The entire tractor was blown apart, one person was instantly killed and the wife broke her back (Interview 57). Such mines can lay dormant for long periods of time, only coming to the surface after large rain events. Source: author.

In many cases it was the very fact that mines were still present within these forests that allowed them to stay as forests – rather than being cleared for agricultural land. Disturbingly, one project document even admitted this, acknowledging that within the Monks CF, Venerable Bun Saluth 'relies on land mines laid by the Khmer Rouge to deter encroachers' where according to him 'we know where they are as one of our monks had been in the Khmer Rouge and helped place them' (Poffenberger et al., 2009:6).

That the REDD+ project was totally blind to these dynamics shows in its continual denial and downplaying of the effect of militarisation on the project. While early project documents attempted to portray militarisation as just another quantifiable risk that the project was going to mitigate against, by 2012 it had become clear that militarisation was a major threat to the overall project. The Cambodia Daily ran articles titled *UN Confirms Logging in Carbon Trading Zone* and *Firm Says Logging Won't Derail Carbon Credits* which dealt with military logging in *Romdoul Visna* and *Andong Bor*. Project documents also mentioned conflicts with the RCAF, but which it always promised to resolve through 'conflict mediation', 'stakeholder meetings' and 'high-level interventions' from the FA and high ranking officials. By this time Chee Borteth from CDA, and Sar Thlay, head of the CF network, had constantly been warning PACT and the FA of the large scale problems the RCAF was causing (Interviews 1, 55). Both felt PACT and the FA were largely despondent.³⁷ In the official Project Document submitted for verification under the two standards, military encroachment was barely mentioned where it was once brought up that militarisation 'has been driven by the recent military border conflicts between Cambodia and Thailand, which have taken place primarily within Preah Vihear and Oddar Meanchey provinces. This conflict caused a large influx of military personnel and their families into some of the CFs in the project'.

By this time the project had lost FA head Ty Sokun and his supposed links to the PM – which none of the project documents or newsletters mentioned.³⁸ Similarly the old FA head of Oddar Meanchey –

³⁷ Chee Boreth talking about that time stated 'we told them 1000 times how serious the problem was – what was happening to Hert [head of Romdoul Visna CF] and the others and the problem in Andong Bor. They would always say 'yes yes' and that they would work it out with high ranking people, but on the ground nothing changed' (Interview 1).

³⁸ In April 2010, after warning three months prior that government officials had to step up their efforts to reduce forestry crime, PM Hun Sen abruptly removed Ty Sokhun as FA director citing his failure to tackle forestry crime (yet technically he was promoted to undersecretary of state rather than demoted). A number of people in Oddar Meanchey including CF heads and Chee Borteth stated this was because he pushed high ranking RCAF officials over their occupation of forest land in Oddar Meanchey too far (especially in the *Romdoul Visna* and *Andong Bor* CF) and lost. According to Cambodia researcher Sarah Milne (pers comms) who had examined the legacy of Ty Sokhun, it was more – or also – in relation to Ty Sokhun's involvement in the mass logging of rosewood in the Cardamom Mountains in southern Cambodia.

who was much more active on the issue of soldiers, also very suddenly lost his job – purportedly for confiscating a truckload of rosewood from a high ranking RCAF commander.³⁹ Once again this important political change – which effectively signalled the FAs inability to meaningfully tackle forest crime - went unmentioned in project documents, meetings and newsletters.

5.5 The Unravelling of the Oddar Meanchey REDD+ Project – part 2. Land Contestation

Land contestation was so wide scale in the project area that it touched every single project village in some way or another. Out of 276 people surveyed, 197 (71 per cent) were or had recently been involved in a land conflict. Far from being a problem of ‘poor migrants’ coming to occupy land, land contestation emerged from overlapping claims to land and natural resources that had their origins in war, and new bureaucratic and legalistic land regimes that emerged in the 2000s. Contestations over land, especially in the context of the rise of ELCs and formal land tenure, were not merely an exogenous factor of the project but a phenomenon that was constitutive of the project itself and set it on a particular trajectory. Land contestation was also something that the project’s interventions could not control, and by 2012, like militarisation, threatened the continual validity of the project. The last section considered how war was a constitutive part of the project. This section will consider how ELCs and a new tenure regime shaped how the project was actualised.

Militarisation and the creation of a formal tenure regime in Oddar Meanchey were deeply implicated. National parks, community forests, economic land concessions and small agricultural plots emerged from a period of conflict - the contours of each were largely influenced by Oddar

³⁹ This was according to Chee Boreth and a number of CF heads. Supposedly, the commander simply made a call to Phnom Penh – which ended up with Hun Sen, who immediately transferred the FA head.

Meanchey's geographies of conflict.⁴⁰ But in the early 2000s as returning soldiers, refugees and migrants came to stake out a claim to land and forests, they found themselves competing with another claimant to land – the owners of Economic Land Concessions. In the early 2000s under the provisions of the 2001 Land Law, and under a new government and investment policy that sought to entice foreign investors into Cambodia's agricultural and natural resource sectors, the old colonial concession system was revised. Very rapidly, large swathes of agricultural land, secondary forest and primary forest were classified as state private land and leased to foreign companies (for between 50-99 years) for a range of agricultural purposes. Typically, minimal taxes were collected (from US\$0.5 to \$2) per ha, and companies were exempt from import taxes for equipment used in these concession zones. According to the 2001 Land Law, concessions were to be less than 10,000 ha, all activities had to be confined to the delineated concession area, and concessionaires had to fulfil several obligations such as: preparing environmental and social impacts statements and creating a master plan for activities to be conducted (which they would legally be obliged to follow). Oddar Meanchey, with its proximity to Thailand (and key agricultural commodity markets), its good soils, timber resources and low population, quickly emerged as an attractive area to grant ELCs. In the early 2000s the provincial government, in cooperation with the Ministry of Agriculture, Forestry and Fisheries (and Ministry of Environment) began drawing up possible areas in the province to grant as ELCs (under requests from Cambodian investors – many of whom were working in partnership, or on behalf of foreigners). Between 2006 to 2012 19 concessions representing approximately 133,653 ha were granted (for comparison, the size of Oddar Meanchey is 615800 ha).⁴¹ Representing such a large area of land, these concessions had a major impact on other claims to land and natural resources.

⁴⁰ *Geographies of conflict* here refers to the way in which war is implicated in the production of space in Oddar Meanchey as described above. That is how different armies, their front lines, and mine laying shaped territorialisation in the area.

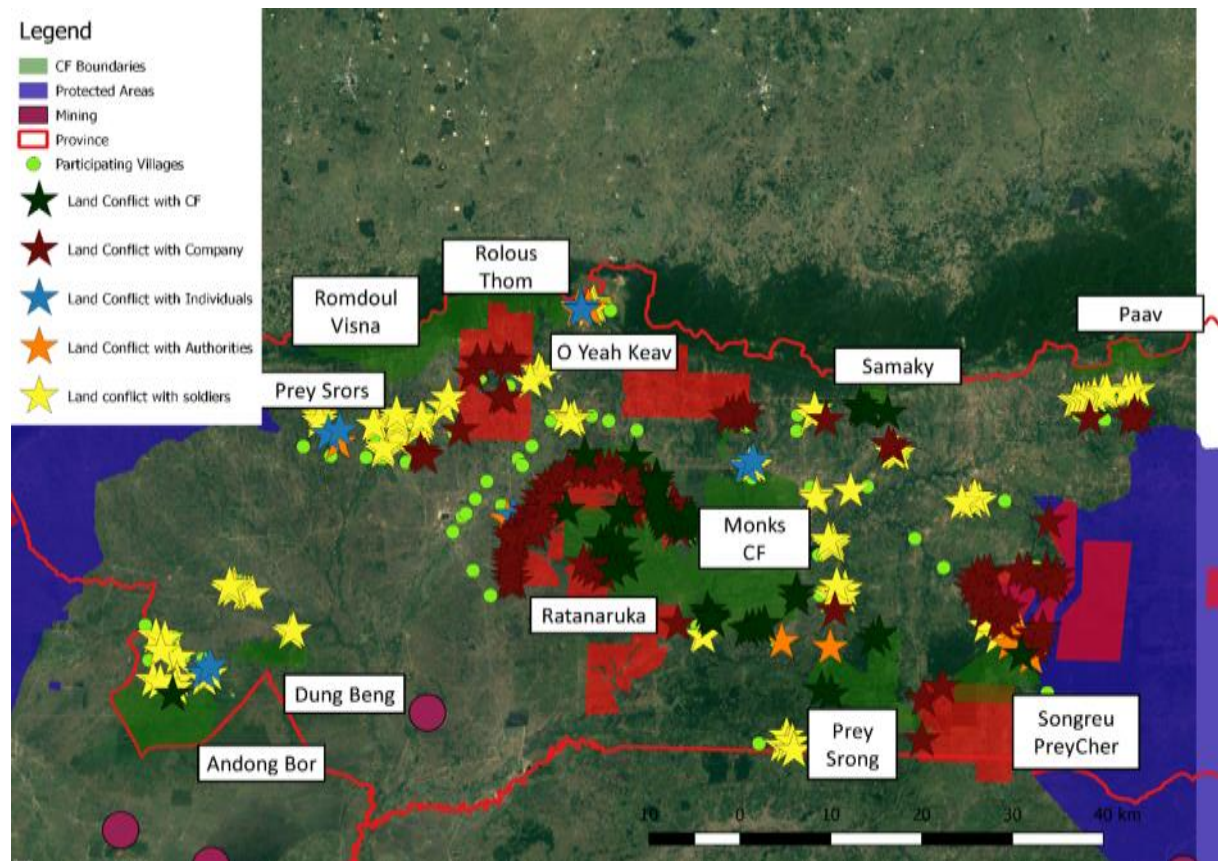
⁴¹ Due to incomplete data, and the fact that some concessions had land excised, or were stopped after 2012, this figure is not an accurate total of concessions at the time of writing (2016).

Table 3. Key Survey Data on People Living in the Project Sites

Percentage of respondents born outside of Oddar Meanchey	69
Percentage of households who did not have secure tenure over agricultural and residential land	89
Percentage of respondents who had never heard of REDD+	76
Percentage of households who had at least one family migrate to Thailand in search of work	61
Percentage of respondents who felt the REDD+ project had not provided them with any benefits (including being able to collect NTFPs)	86
Percentage of people who felt they had been 'unjustly' fined or approached by forestry officials or CF committee members	49
Percentage of respondents who had 'little' or 'no trust' in local authorities'	72
Percentage of household in debt to microfinance institution	96

The problem was that by the mid-2000s there was increasingly few large chunks of land that had no claimants to it. As previously mentioned, significant numbers of smallholder farmers had come to remote areas of Oddar Meanchey to clear small parcels of land and do rice, vegetable, soy and cassava farming. The haphazard way they acquired land – sometimes through the informal patronage of a village or commune leader, or sometimes purchasing from individuals (with differing degrees of formality and documentation), placed them in a particularly weak situation in terms of land claims. Across the province it was common for smallholders to lose chunks of farming land to soldiers, ELCs and well-connected individuals.

Image 5.14 Land Contestation Across Project Sites



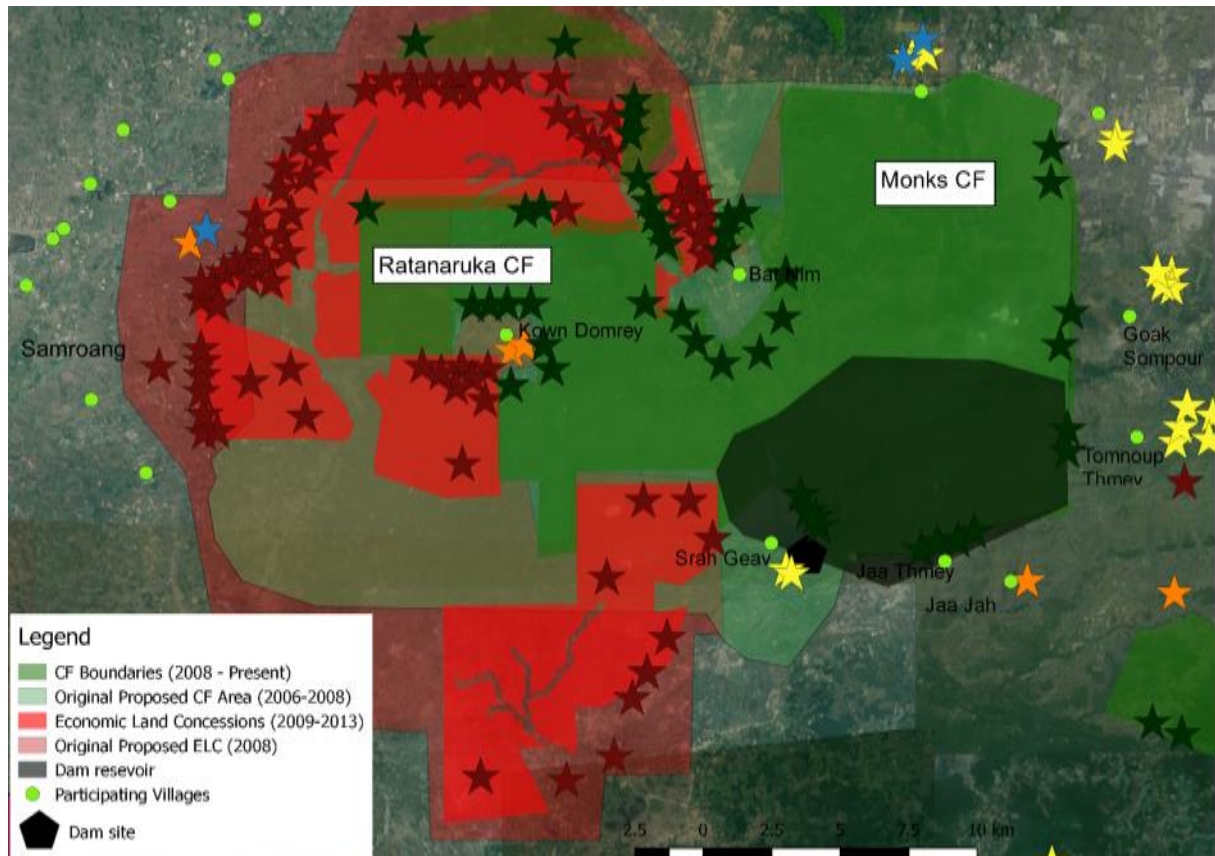
Source: author

A salient example is the 20,000 ha ELC granted to Thai company Mitr Phol in *Samroang* and *Jongal* districts in 2008. In 2007 MAFF in collaboration with a provincial working group and district level authorities began drafting up three distinct concessions under seemingly different company names in order to skirt the 10,000 ha limit. At the time the *Ratanaruka* and *Prey Srong* CFs were still in the process of being formalised (having gone through 6 of the 8 stages) and the provincial working group did not consider the CF as a competing land use (although it was already demarcated, and technically under a sub-decree on community forestry, there are provisions that prevent competing land claims while a CF is in the process of being formalised). By 2008, village level chiefs had

composed a list of all villagers who had land claims within the boundaries of the concession. This included 2,070 households from 26 villages who claimed 9,4800 ha of land that overlapped with the concession. Villagers composed of ex-Khmer Rouge, FUNCINPEC and government soldiers, but mostly immigrants who had settled the area since 2000, quickly mobilised in response to the concessions which by January 2008 was preventing people from accessing farmland. In February over 500 people conducted a protest at the company office on the concession site. In response the provincial governor instructed commune authorities to 'cut out' farmland that was actively being cultivated by villagers – although according to villagers this process was haphazard and only some of the villager land was exercised from the concession. In April workers from the Angkor Sugar company, with the assistance of police, FA officials and RCAF soldiers from nearby Battalion 42. then came and forcibly evicted people from O'Bat Moan village by burning 154 houses. In October, another wave of 150 armed officials (once again from battalion 42, the police and FA) came and burnt down a further 100 houses. A representative of affected villagers, was forced to flee on foot, over 70 kilometres to Siem Reap province, as RCAF soldiers searched him out for arrest – although he was told on the day they planned to 'do much more than arrest him' (Interview 56). He had to stay in hiding for three years, including months within the forest, until the provincial governor dropped his arrest warrant. Although the original size of the concession was reduced after complaints from villagers, from 33,000 hectares (requested in 2007) to 19,700 hectares in 2008 because the concession overlapped considerably with settlements, farmland and evergreen forest (concessions can only be granted on 'degraded land'), this still left over 2000 households with unresolved land conflicts and 39 per cent of the original *Ratanaruka* CF land granted to the concession. The concession also resulted in another adjacent proposed CF (which was submitted to the FA at the same time as *Ratanaruka*) being abandoned as all of the 1000ha were lost to the company. The effect of losing such a large chunk of land was that dozens of villagers to the west of the CF who were originally on the perimeter of the CF, were now cut off from the forest. Very

quickly nearly all these villages lost interest in the CF as they were no longer willing to travel the distance to collect forest products.

Figure 5.15 – Land Contestation Around the Monk’s and Ratanaruka CFs.



Source: author

It was the FA – as the major proponent of the project and the entity responsible for establishing the very community forests the project was dependent upon - who had assisted in delineating the concession, and had even sent officials to assist in the violent evictions of 2008 and 2009. Yet within project documents Amanda Bradley spoke of the *Ratanaruka* CF as a ‘moral victory’ noting that ‘[W]hile the end result saw 39% of the forest awarded to the ELC, the successful fight against powerful private interests to retain the majority of their forest represents a considerable victory for the communities of Ratanak Ruka. Their efforts provide a model for emulation for other rural

communities' (Bradley, 2009: 17). The head of the Ratanaruka CF had a different perspective. As he pointed out 'we were powerless to stop the company taking both farmland and forest land. They did not come to work things out with us at all. The company land split the CF into little patches that made it hard to manage. It created endless headaches for us. Not only did people who wanted to save the CF face threats and intimidation from the company, but then we had the problem of thousands of landless people who wanted the CF land' (Interview 57).

A new problem quickly emerged. For those on the boundaries of the CF who had lost farmland to ELCs, with nowhere to farm they turned to CF land hoping that small patches of land would be granted to them for the purposes of farming. In many instances, surrounding villagers still held claims to small patches of land within CFs, which they were not allowed to expand (and in some cases which the CF did not formally recognise). In many cases they had laid claim to these patches before the establishment of the CF. Villagers who had lost land to the ELC who were also involved in the CFs quickly emerged into conflict with the CF. In the *Ratanaruka* CF villages of Bat Nim, Kown Domrey, O' BatMoan and Tuol Bongro – places which had all seen violent evictions on the part of the RCAF, including the burning of houses, became mired in conflict over the CF. In all these villages, the CF had essentially crumbled by 2010, as villagers were increasingly aware that they could not rely on CF agreements to protect land from concessions or claims from well-connected people. In many cases, the land poor wanted CF land for farming and became increasingly resentful of the CF that prevented them from hunting, timber felling and land clearing – all things they felt could relieve their poverty. In Bat Nim – which backs onto both the Monks CF and *Ratanaruka* CF, by 2014 people were asking to formally dissolve the CF in the hope of being able to claim CF land and rush through the formal tenure process (Interviews 58, 59). This was complicated by the fact that the village chief – who was urging villagers to withdraw from the CF so as they could gain land, also had an interest in selling off CF land to outsiders for personal profit (Interview 60). So too in *Kown Domrey*, which is

surrounded by the CF on all sides, except to the west where the company concession is located, villager's feelings of being boxed in were exacerbated by the fact that the village chief was actively involved in selling both village and CF land (Interviews 61-65). Those who lost farming land in this manner had no choice but to begin clearing CF land to compensate for lost land. Several landless or near-landless households had then come into conflicts with the CF committee over land claims (Interview 63, 65).

Finally, after major advocacy efforts on behalf of affected communities under the support of international NGOs, the ELC was withdrawn in 2014 as part of a major tightening up of ELCs occurring at the national level orchestrated by the PM. However, two years later in 2016, the land still sat idle and villagers were prevented from farming.⁴²

In Samaky Yey Nel had also been forced to give up 1200 ha of the CF for a logging company – which she grudgingly gave up on account of it being heavily mined (Interview 40). *Rolous Thom* had also been adjusted to accommodate the 8000 *Real Green* concession (granted by MAFF in 2006) which project documents falsely claimed had been cancelled due to the intervention of Ty Sokhun.⁴³ When originally established, numerous villagers in the CF lost fallow land to the company. Around ten families then lobbied the CF head for small parcels of land in the CF to farm, which he informally agreed to (Interviews 6,7,8). *Prey Srong and Songreu Prey Cher* had also seen reductions in CF size due to the establishment of the 10,000 ha *Samroang Rubber Industries* concession, which was also granted by MAFF (in 2006). On top of that, two concessions outside of the CFs - the 7,700 *Data*

⁴² The land had officially been put under the administration of the provincial governor, yet he continually deferred demands by villagers to give the land back (Interview 62). In many instances soldiers could be observed farming small patches of land in the former ELC – yet villagers, who in many cases were facing food insecurity due to a lack of land (combined with low cassava prices) were still prevented from farming the land.

⁴³ In a project document authored by Amanda Bradley it is claimed the concession was cancelled in 2008. Yet Two sub-decrees were released in 2014 which excised 1000ha from the concession.

Rubber concession and 7,700 *Tomring Rubber* concession – had been granted on large swathes of land that were claimed by villagers involved in the *Songreu Prey Cher* CF (Interviews 66-73). 23 families in Dey Thmey village for instance had lost a total of 120 ha to the concession (Interview 69,71). By 2010 the *Songreu Prey Cher* CF was plagued with problems including: soldiers asserting control over the CF, difficulties stopping large numbers of loggers and settlers coming to clear the CF (from Siem Reap which it backs onto), conflict within the CF and between participating villages over governance, and the *Samroang Rubber Industries Concession* encroaching on CF land (Interviews 70, 71). In this context, the CF head expressed that it was hardly reasonable that ‘the CF was being attacked by all sides, but the people who have tried to protect the forest themselves go landless’ (Interview 73). So he also began to informally allow CF members who had lost land to rubber concessions to clear and farm small patches of CF land (which created resentment amongst CF members who had not lost land).

At the same time as people were increasingly losing land, the REDD+ project began toughening up on enforcement and focusing on demarcation and the policing of CF boundaries. Maps as a technology to help actualise the lofty goals of the project were particularly important here. As Terra pushed the project through the verification process, CFs that were clearly and neatly bounded from surrounding land became an important focus – to maximise carbon stocks and facilitate the process of measuring and validating these carbon stocks. The challenge of the project was to actualise a reality based on the maps produced within project documents; discrete slabs of contiguous green that were clearly delimited from other land uses. Things however were a lot more complex, as all the CFs were mosaics of secondary, evergreen and fallow forest – many with actively cultivated patches in the middle of boundaries, and which transitioned into surrounding fallow and agricultural land, rather than having obvious borders. Project proponents had been willing to cut out large chunks of CFs that overlapped with ELCs – with negotiation – as the logic was that it is better to focus on

uncontested land (Interview 61). However, small encroachments distributed in a patchy manner across CFs presented a challenge for project proponents as unlike ELC encroachments, such small patches destroyed the contiguity of clearly delineated CF patches presented in maps.

Since the inception of the CFs, mapping boundaries had been a major focus and simultaneous challenge. For most CFs, from 2008 – 2010, mapping teams composed of FA staff, village chiefs, CDA staff and CF committee members had walked the boundaries of the CF taking GPS samples of boundaries. Based on interviews with all 13 CF chiefs, in nearly all cases real life CF boundaries – i.e. the actual edge of claimed village land, were different on the ground to the original CF boundaries presented on maps. In some cases these were only minor changes on the scale of a few ha, while in other cases they were over 100ha. Yet after going through the long and bureaucratic process of establishing formal boundaries through the FA, formalised maps were produced which in many cases appeared to differ from the GPS points taken on the ground. Whether this was an attempt to include as much land in the CF as possible to maximise carbon stocks (as in every case, the final maps *extended further* than GPS points) or a technical error, remains unclear. For the head of *Ratanaruka* CF Ta Joung the whole delineation process ‘was a major headache’ which he compared to ‘someone doing rice farming on my head’ (Interview 59). He was highly critical of CDA and PACT who left him with the impossible task of creating accurate and static maps (with very limited support) for a CF that was constantly in fluctuation. Similarly, in *O’Srah Geov* the CF committee were frustrated that when they received new GPS coordinates to put in boundary posts, the new boundaries overlapped with village land. According to the deputy of *O’Yeah Geav* ‘it was just another headache for the CF which already had a lot of problems. People here have already lost land to companies and powerful individuals and then we were supposed to put boundaries in people’s land... the problem with the project is that it is based on people making documents and maps in Phnom Penh but with no concern for what is happening here on the ground’ (Interview 74).

In other cases, more determined attempts by CF groups to delineate these new boundaries exacerbated existing conflicts. Bun Saluth was particularly enthusiastic about demarcating his forest and even sought out external finance to dig a two-metre deep canal around the forest that aimed to prevent tractors from accessing the CF – and was successful in receiving funding. In digging this canal he followed the maps produced by FA, claiming that any cleared land inside the CF boundaries had been cleared by villagers after the establishment of the CF and villagers should thus relinquish all individual claims to it (Interview 3). Villagers in Poom Ja Thmey, Srah Geov and Goak Sompour had different ideas. In Goak Sompour, the village chief was adamant that he never relinquished around 30ha of land to the CF – which he subsequently went on and sold. He was later apprehended by soldiers (upon Bun Saluth's request) and taken to court and prosecuted for infringing on CF land illegal land selling. He received a jail term of 9 months and was fined 1 million Real (Interview 75). In Srah Geov the village chief and two other households were also furious at the monks for including their fallow and rice land within CF boundaries (Interviews 76,77,78). It did indeed appear in 2015, when villagers showed me, that rice land that had been cultivated for several years was just within the CF boundaries. Yet it was from Jaa Thmey village which the most organised resistance to the monks came. Jaa village was established in 1999 by a group of small farmers who came from Siem Reap's adjacent *Gralanh* district. The majority had come from the number two border camp and had been resettled in their homeland starting from the late 1990s up until 2000 (Interviews 79, 80, 81). Upon arrival back in *Gralanh* many people had found former land claimed by earlier settlers and hence moved northwards to find free land. Mostly these land poor small-holders came in family groups and then along friendship lines to *Jaa* under the patronage of RCAF officials from neighbouring *Tomnoup Thmey* settlement. Each family was allowed to claim 3-5 ha. After 2006 when land became increasingly scarce, people had to buy land. The village split in 2005 over a dispute between the village chief and deputy village chief over contested farm land. The later decided – along with about half the village, to move around 5km northwards (to the land frontier) to start

clearing and farming unoccupied land. This area was bordered by the Monks CF to the north which villagers agreed to avoid (at the time it was still an informal forest area).

Very quickly the Monks began toughening up on CF encroachments which put them in conflict with a number of villagers from Jaa Thmey (*new Jaa*). Many people were fined and arrested for seemingly trivial forest offences such as cutting small amounts of timber with saws and axes, collecting forest products, hunting and even resin collecting (Interviews 79, 82,83). Bun Saluth adopted a 'no tolerance' policy and often called on soldiers and FA staff to deal with small scale perpetrators – who would often end up in jail. From 2011-2015 13 people in Jaa Thmey were arrested and received jail sentences from 6 months to two years. One 36-year-old male who admitted to cutting down two trees was arrested and put in jail for 7 months with a US\$400 fine. He claimed he was only using the timber to build his house (he was still living in a thatch hut 3 years later) and would 'sell the remainder', but admitted he did not request permission from the CF committee as required (as it was in a different village he no longer had connections too) (Interview 84). There were also numerous accounts of people including children having small farming equipment confiscated by CF patrols who found them in the forest. In June 2014 however, when the Monks arrived – with soldiers – to dig the canal to delineate the CF, villagers were enraged that the border cut through rice and cassava land (interviews 79-82). Rather than negotiating with the villagers, the Monks led by Bun Saluth – who had come to see Jaa Thmey villagers as 'problematic', 'tricky' and mostly composed 'of bad people' (Interview 3), pushed ahead with demarcation even to the protest of villagers. Very quickly key people in the village who were directly losing land to the CF mobilised 200 people who occupied the contested area and refused to allow the monks to continue their activities (Interview 79).

The message was clear; villagers wielding farm equipment (including scythes, cutting knives and axes) were going to protect their claims to land at all costs and willing to use force if necessary. As Ta Gosal, a key figure who mobilised people said ‘we are just farmers. We want to protect forests as much as anyone. We want something left for our grandchildren so they know what forests and forest animals are like. But we have to have land to farm and support our livelihoods. We can hardly protect the forest on an empty belly. We are Buddhist and we respect Buddhist law. We are Cambodian citizens and we respect Cambodian law. But we have to protect our land’ (Interview 79).

Figure 5.16 Protest in Jaa Thmey Over Project Demarcation



Villagers in Jaa Thmey mobilised against the demarcation. Source: Oddar Meanchey CF Network

Figure 5.17 Ta Gosal and his Contested Land



Ta Gosal showing me his contested rice land within the monks CF boundary. Source: author

Figure 5.18 People from Jaa Thmey Caught Logging in the Monk's Forest



Five people coming to log in the Monks CF caught by a contingent of CF committee members and soldiers in November 2015. Source: Bun Saluth.

Figure 5.19 Soldiers on patrol in the Monk's forest



Soldiers on patrol in the Monks CF. November 2015. Source: Bun Saluth.

Table 2 – Examples of land conflicts in Prey Srong and the Monk’s CF

<p>Demarcation/ forest law issue</p>	<p>Ratanaruka/ Monks CF</p>	<p>Poom Jaa Thmey</p>	<p>Soldiers (under Bun Saluth’s guidance) attempted to arrest deputy village chief accusing him of logging and opposing the CF group. Around 200 villagers mobilised and confronted the soldiers – the soldiers stood down. Bun Saluth was furious with the villagers saying he ‘would rip the head of those Jaa villagers if they tried to do something like that again’.</p>	<p>June, 2016</p>
<p>Demarcation issue</p>	<p>Prey Srong</p>	<p>Lomhal and Koki villages</p>	<p>The CF committee (then based in Koki village) went to demarcate the borders of the CF in Lomhal village. According to maps provided by FA, CF appeared to overlap with rice lands of Lomhal villagers. The CF committee then proceeded to burn down 15 huts on the rice lands that were supposedly inside the CF boundaries. This directly affected 23 families. The issue was never properly resolved but after CF responsibilities shifted to another village, the issue quietened down (interview Lomhal deputy village chief).</p>	<p>March, 2011</p>

Demarcation issue	Prey Srong	Trapeang Thom village	Trapeang Thm is composed of new immigrants (most of whom arrived since 2000) as well as older ex-KR soldiers. According to villages a group of FA officials from the Siem Reap cantonment turned up in the village to patrol the CF borders and in the process accused a number of villagers of encroaching on CF lands. Villagers mobilised, blocking any exit of the FA and threatened to set the FA vehicle alight before the commune chief negotiated for the safe exit of the FA, if they promised not to return (as villagers already had a relationship with local FA triages).	April, 2013
Land selling	Prey Srong	Trapeang Thom village	after nearly all villagers had received secure land title to agricultural land, it became clear that the Anglong Veng district office of land planning was in collaboration with a land broker who was selling off land well within the CF (with land titles) at US\$2000 per hectare. Most buyers were land poor immigrants from Takeo, Kampong Cham and Siem Reap. When these people were repeatedly approached by the FA, the CF committee (then based in Koki kandaal village) and told they were to be arrested if they did not leave the land, the	May, 2015

			<p>land broker organised a group of men, who were payed to secure the land (<i>day gaang</i> in Khmer/ 'land gangsters') to confront anyone who attempted to evict people from the land.</p> <p>When a group of soldiers, FA officials and CF members came to evict these people they arrested a number of poor settlers and also reportedly took the opportunity to take VCR, television sets and other valuables from the settlers. A group of people in the village – whipped up by the land gangsters, approached the CF/FA holding sticks and weapons.</p>	
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Figure 6.20 Poor, Recently Arrived Cassava Farmer Family in Trapeang Thom Village



Source: author

Figure 5.21 Land documents

Right: Land title document for a patch of 900ha of Prey Srong CF. The document was produced by district authorities working in the department of land management.

Source: author



Figure 5.22 'Land Gangsters' in Trapeang Thom



'Land gangsters' confronting CF committee members, soldiers and FA officials who had come to evict people from CF land near *Trapeang Thom* village. Based on interviews, these gangsters were more explicit about the use of violence – 'look at us with our knives and batons, do you think we are scared to use them to protect ourselves?' screamed out the man on the left according to a villager (Interview 87). Being outnumbered, it ended up being the soldiers and FA who were detained by these gangsters and other villagers. After hours of negotiation, a settlement was reached that they would leave and resolve the issue through the courts (Interviews 85, 86, 87). Source: Trapeang Thom villager.

Like the community forests, ELCs were carved out of the contested spaces that emerged from decades of conflict. Land Concessions were not granted just anywhere - they are conspicuously absent from the populated areas of the former strongholds of Anlong Veng, O'Smach and Samroang. Rather, they were carved out of the very same forested areas that CFs emerged from – the large swathes of forest between different military territories. It is thus no surprise that these two land claims were overlapping in many cases. Starting from the 2000s, former refugees, soldiers and land poor immigrants laid stake to these areas on the land frontier as Cambodians had done for thousands of years – by using active cultivation as a marker of land use, tacitly backed by local level patrons and authorities (Diepart & Sem, 2016). By the mid-2000s two major changes were occurring.

Firstly, the central government was attempting to re-territorialise land in the province – carving up all land into clearly demarcated land uses. When in 2007 the PM ordered provincial governors to implement policies and actions to prevent and abate forest incursion, more than 20,000 ha of land in Oddar Meanchey was classified as state private and state public land, and placed more firmly under state control. Much of this was then carved up into the ELCs mentioned above. Some of this land that people were supposedly encroaching upon was also classified as protected areas. For instance, in 2007, in two separate incidents, 300 families were violently evicted from the Kulen Prom Tep Wildlife Sanctuary in Southern Anlong Veng. Much like the case of the Thai sugar company, RCAF, MoE and FA forces beat people and burnt houses with little or no warning (300 houses were burnt where people reported large losses of personal property within the houses). So smallholders in forested and semi-forested areas with customary claims to forested land often found themselves in a tenuous position when a detailed and formal map based tenure system came into fruition. The second major change to occur around the mid-2000s was that the land frontier in Oddar Meanchey came to an end. This meant that people could no longer simply expand small parcels of land, nor claim new land when former land was lost. People increasingly found themselves ‘hemmed in’ on all sides from CFs, ELCs, private land and protected areas (c.f Tania Murray Li, 2014). 23 People from O’Umbel village for instance who were violently evicted from their farming land due to technically being in the Kulen Brom tep protected area then went to settle in nearby Romjeik village bordering the *Songreu Prey Cher* CF (Interviews 66, 88). All land had to be purchased, and the CF committee did not allow them to freely clear CF land as they requested. For those who could not afford to buy new land (between \$1000-2000 per ha), they stayed on tiny settlements along the main Anlong Veng Road, landless and dependent on small scale selling (ibid).

Figure 5.23 Evictees from the Kulen Brom Tep National Park



Evictees from the Kulen Brom Tep protected area try to get by without farming land living in small huts on the main road from Siem Reap to Anlong Veng. All the families in the picture had their houses burnt and farming land (3-5 ha per family) confiscated. Many also lost property and one male (sitting on the motorbike in the picture) was seriously beaten by soldiers. Technically their small huts are still in the protected area – as is an entire district (Trapeang Prasat), as well as 7 villages from Along Veng), and three economic land concessions. No other settlement (or land concession) however was challenged for being inside a protected area. Local officials and evictees suggested this was because the provincial government was eager to protect the narrow strip of evergreen forest that flanked the road coming in from Siem Reap (as this thin strip of forest gave the impression that there was a vast track of forest on either side of the road – where in reality it was less than 50m wide on either side before hitting land cleared as part of ELCs). Source: author.

The REDD+ project clearly failed to understand the basic dynamics of land tenure and land contestation in the area. The sheer scale of land contestation – which the project was directly exacerbating – shows how the virtual plans crafted through risk analysis and a neoliberal logic were unable to tame the complexities of the project site. Rather than looking at how war had geographically shaped patterns of land use, and how subsequent migration had opened up a frontier area to agriculture, the project simplistically based its interventions around a binary of ‘insiders’ vs ‘outsiders’. Insiders were to be the beneficiaries of the project and were supposedly ‘forest

dependent' people who were protecting forests for the 'community'. Outsiders on the other hand were 'outside immigrants' who were illegitimately and 'illegally' clearing forest land and using forest resources for personal gain. Clearly the different 'powers of exclusion' (Hall, Hirsch, & Li, 2013) different groups had at their disposal was a much more useful way of understanding how certain claims to land won out over others.⁴⁴ Informal authority coming from previous positions in rebel armies was - at least in the late 1990s and early 2000s - a strategy for gaining access to land, as demonstrated by ex-KR leader Yey Nel in the *Samaky* CF. However, generally this informal power was eroded through new land claims coming from the highest echelons of the political hierarchy – e.g. military claims to land backed up by powerful figures such as RCAF regional commander and CPP central committee member Kong Kim. Similarly, concessionaires were legitimised through bureaucratic procedures and state laws – especially maps - that could be violently actualised by hordes of soldiers and forestry officials. In some cases village chiefs and commune officials could use their petty authority to capitalise on low-level state bureaucratic procedures to gain access to contested land (e.g. producing land sale documents). In other cases, villagers through the sheer threat of force could still resist what they saw as attacks on the land they lay claim to – as in Jaa Thmey and Trapeang Thom villages. What is clear though is that the project never took into account tenure over agricultural land – which is most important for the poor living in Oddar Meanchey. Rather, the project – due to its logic of focusing on carbon stocks – was exclusively orientated toward securing forest areas where it was repeatedly stated that 15 year CF agreements with the FA constituted 'secure land tenure'.

⁴⁴ Hall et al. understand powers of exclusion to mean the actual contested and 'intimate' processes deployed to ensure that one group can exclude others in order to secure access to specific parcels of land. They focus on regulation (state-backed legal instruments as well as local rules and norms), markets, force (violence and the threat of violence) and legitimation (the moral basis to land claims) to give a clear picture of these various powers of exclusions. They emphasise that these powers are used as much by small scale peasants as against them.

Due to the above-highlighted problems, the project was already collapsing by 2012 where nearly all participating villages were involved in a land dispute of one sort or another. While the REDD+ project was busy promoting its 'exceptional benefits' in terms of alleviating rural poverty, reducing greenhouse gas emissions and protecting biodiversity, project participants were left to deal with land conflicts and contestations. In a 2012 project implementation report sent to the verifiers, it was noted that:

[M]ost conflicts are from "outsiders" encroaching on the project area, as the communities themselves are involved in boundary demarcation, project actions, and protection. During the PRA 11 out of the 13 CF experienced boundary conflicts in the past. For each boundary conflict, specific measures were taken by the community to resolve the conflict. These measures have included increased patrolling, direct mediation, collection of evidence and preparation of incident reports to the FA, and petitions to higher levels of government such as the Ministry of Agriculture, National Assembly and Council of Ministers. Boundary conflicts will continue to be an ongoing issue as 10 of the 13 CFs indicated that they are currently experiencing boundary conflicts. The project has provided support to the CFs to resolve some of these conflicts by coordinating with authorities and by supporting the CF Network to undertake advocacy efforts". (Terra Global Capital & PACT, 2012:16)

Yet, as was detailed above, project proponents in Oddar Meanchey felt they had no practical support. CF groups were largely left to deal with soldiers, local authorities and concessionaires on their own.

5.6 The Unravelling of the REDD+ Project Part Three – Dwindling Finances

By 2011, PACT had essentially run out of money for the project and was increasingly losing interest as the project became ever more complex and difficult to implement. In 2011 PACT received a \$150,000 grant from UNDP/UNREDD and a further \$50,000 in 2012. These funds however were mostly used to pay for verification activities (including the re-sampling of biomass plots, household surveys) and working with lawyers and other experts in preparation for the sale of carbon credits. This was even after the Clinton Climate initiative had already provided \$75,000 specifically to be used in the verification process. Terra had resigned itself to the tedious and seemingly never ending project verification process, and the FA under the leadership of the politically subordinate Cheng Kimsun, (and with Oddar Meanchey under the leadership of an equally subordinate director) had essentially lost interest in the Oddar Meanchey REDD+ project. By early 2011 PACT had essentially stopped giving any financial support to CDA which would be passed onto the CF groups. Without money for fuel, food, and general maintenance, CF groups were under increasing pressure.

At the peak of financial support from PACT (2009-2011) Chee Boreth claims that CDA was only receiving a total of \$500 per month to support all 13 CF groups (Interview 1). All CF heads interviewed stated that at the most they had received \$50 per month (for patrols) for 'a few months' and some CF heads stated they had never seen any financial support for patrols at all. Over at the FA, the provincial head when interviewed in 2015 claimed that they had not received a 'single riel from any NGO or from central FA to conduct the REDD+ program (from 2011-2015) (Interview 9). So too FA staff at the various triages across the province could not recall receiving any specific money for REDD+ (and most were vague on what REDD+ was) (Interviews, 37, 38). In fact, many CF heads

stated they had to pay FA staff from their own pocket when they called the FA to intervene (e.g. Interviews 29, 30, 33). Bun Saluth had managed to get external assistance from UNDP and private donors for specific activities, but by 2013 he was also complaining that he was not seeing any financial support from PACT or Terra (Interview 3). So what had happened to the more than US\$2 million that PACT had received in start-up grants – especially since major project activities like the distribution of cook stoves, mosquito nets, trainings, paid labour and even money for patrols had never actually happened? Furthermore, what had happened to the millions of dollars in carbon revenue that were to be generated from the sale of the project? By 2012 it had already been 5 years without any hint of when such money would materialise.

Part of the problem regarding the latter was that the project put an enormous amount of trust into a phenomenon it did not actually clearly understand – namely carbon markets. This is where the project entered into its more delirious nature – where government officials, NGO staff, consultants and advisers could solemnly stand by the projects neoliberal rationality of depending on markets to conserve forests, while carbon markets were simultaneously doing backflips. By 2009, the voluntary carbon market had crashed from a high of \$12 dollars in 2006 to \$3 due to an enormous oversupply of credits from REDD+ projects. Project proponents claimed to be surprised and caught off guard by the sudden turn of fate in carbon markets (Interviews 89, 90), yet this avows why the project was *ever* confident that the market would stay stable (especially in the context of the EU-ETS and CDM crash). Early project proponents had visions of the project taking advantage of an ever-growing carbon market. Vice president of PACT for instance stated in 2010 that '[A]s soon as legislation is enacted [in major industrialised countries], there are going to be private sector companies looking for validated REDD projects' and that the 'demand in five years will be much higher than supply' (Doherty, 2010).

It also appears that validation took much longer than was originally expected. Although early project documents never gave a timeline for when revenues may actually begin to flow (or for that matter of the verification process at all), project proponents, such as a PACT staff member heavily involved in the project iterated in an interview in 2013 that he along with others 'were surprised that the process was taking so long' (Interview 89). Indeed, the verification process did take in full five years from when Terra began working on the project implementation document to final and full accreditation in 2013. This was mainly due to the technical demands of verification where detailed project documents are scrutinised by verifiers, followed by third party examination of all documentation as well as field visits.

Following this is the problem of actually selling the generated carbon credits. This seemingly self-explanatory process ran into numerous bureaucratic and technical hurdles. The first problem was exactly who was doing the selling (what government body), where exactly the revenue would be stored (in which account, managed by who) and how the revenue would be spent (which ultimately remains undecided). Although the FA, in accordance with Government decision 699, was to act on behalf of the government in carbon sales, it became clear that this did not necessarily mean they would have administrative control over funds. Once credits were ready for sale, officials from the Ministry of Finance insisted on all funds going through a central account that the FA could then gain access to. Eventually, after clearance from the Ministry of Finance, it was settled that the funds would be put into an account, after coming through the Ministry of Finance, administered by the TWG-FE. Coming to an agreement on the financial arrangement (as well as completing a legal contract with the buyer) was assisted by a legal firm from the US and a local Cambodian firm (contracted by Terra and PACT). In the final arrangement, Terra could deduct its 'undisclosed share' of credits *before* revenues were put into the fund and was also then to be provided money from the fund for ongoing project implementation costs. Terra was after all the 'authorised representative of

the FA' in all 'sales and marketing of carbon credits' as per an agreement at the projects inception in 2008.

The fact that the price of carbon had plummeted however led to other problems. The FA was under legal counsel that suggested it should not sell credits for under \$4 (per unit). Initial expectations were based around 2008 prices which were considerably higher at \$9-13. PACT and Terra had however by that time resigned themselves to the considerably lower price and even secured two buyers who were purportedly interested in buying a large chunk (worth US\$910,00) of the first verified carbon credits (of a total of 597,210 units). When it came to signing off on the project, the incredibly convoluted process of exchanging credits for money came to the fore. Credits are not simply deposited with a project representative, but deposited in a registry, where upon receipt of payment, credits can be transferred to an intermediary and then to a project account. The whole process is complicated by the fact that a number of complex legal contracts are required between different stakeholders (a registration deed of representation, registry of communications agreement and an emissions reductions purchase agreement) all of which are in English and in line with the norms of North American law. This is further complicated by the fact that this was the first such agreement in Cambodia where Cambodian law simply made no mention of carbon rights. As the Cambodian lawyer working on reviewing these agreements stated: '[T]he process is, admittedly, very convoluted and so novel for the world as a whole. In Cambodia, it is totally unheard of outside a small circle of the FA and there is not a single staff at FA nor in the country who understands the whole process' (Bradley, 2013: 6). When it came to signing off on the sale of credits, the FA hesitated and the deadline came and went without a sale. PACT blamed the FA for failing to sign off on the sales 'in a timely manner' (Interview 5). FA blamed PACT for attempting to negotiate a 'management fee' that was to come out of the deal that 'was too high' and pressuring the FA to enter into an agreement purchasing credits at a deflated price (Interview, 91). After a string of critical media

articles, PACT essentially entirely abandoned the project. Amanda Bradley left PACT in October 2012, as did another important long term Khmer staff member (who had been involved in field activities since the start of the project) and an Australian volunteer (who had also played a significant role in the project), meaning all staff who had been working on the project left PACT.

Terra went on and successfully sold its portion of carbon credits to Microsoft corporation who bought the credits as part of attempts to make the company 'carbon neutral'. After this initial sale Terra had no plans for continuing the next verification (which was supposed to occur every two years). Although it kept the project up on its website, in practise it abandoned the project and stopped talking to media and researchers about it and had almost no effective contact with people on the ground in Oddar Meanchey.

Meanwhile, CDA and Chee Boreth in Oddar Meanchey had their own problems. Rith Bo – a long term staff of CDA, anonymously alerted one of CDAs donors to financial irregularities (Interview 90). The donor – ActionAid, took the claim seriously and ordered an independent audit. The audit was unable to account for more than \$3000 and suggested that Chee Boreth had been conducting single projects which he would simultaneously get funding from several different donors (Interview 91). Other donors then begin to audit CDA and similarly found irregularities. By 2015 his NGO had entirely collapsed and he had set up a small restaurant in Samroang. His old staff Rith Bo then went on to open a local office of another NGO named CTO which was given ActionAid funding and able to support a small portion of the villages in the REDD+ project through various projects. It was clear that REDD+ funds channelled to CDA had been improperly spent (and not passed on to CF groups and villagers) yet by this time none of the other donors had any interest in this.

Even the Monks community forest - as the flagship CF, was struggling under multiple pressures by 2015. It too had run out of funding. By mid-2016, with a new provincial governor who was no longer interested in the Monks CF, Bun Saluth was supporting all activities through donations collected through the Samroang Pagoda. Bun Saluth had become visibly exhausted from his obsessive forest patrols (Interview 3). He was in conflict with most villages around the CF; not just Jaa Thmey but Tomnoup Thmey, Goak Sompur, Srah Geav, Bat Nim and Poom Thmay. In July of 2016, Bun Saluth in an interview stated that he was so exhausted from patrols that he had collapsed (and remained unconscious for some time) and had to be rushed to hospital. He had also become noticeably thin. Another major issue was a small dam (for irrigation) built by controversial Chinese company Sino Hydro. The dam would result in the complete inundation of all residential and farmland in Srah Geov, 500 ha in Bat Nim and another 500 ha in Goak Sompur and Jaa Jah. Not only this, but the dam would inundate 5000 ha of the Monks CF. Bun Saluth was powerless to stop the dam as the provincial governor was fervently in favour of the project. In 2015, people in Srah Geav were in despair. With no talk of compensation or replacement land, they did not know what to do. Srah Geov's CF leader, Ta Sern began speaking up about the problem demanding clear information from district and provincial authorities. In response, provincial authorities called him and two other representatives for 'a meeting' in Samroang. Upon arrival, rather than being provided with information they were arrested. The one armed, one eyed Ta Sern humorously recalled his arrest; 'those idiots [the police] even insisted on putting handcuffs on me. Great lot of use when you only have one arm!' (Interview 93). In July 2016, people in Srah Geav were facing food insecurity – knowing the dam was to be completed in the next month or two they no longer bothered planting rice or cassava crops. With uncertainty surrounding replacement land and compensation, they had been directly threatened from provincial authorities not to raise up the issue; if they did so, five people – it did not matter who – would again be arrested (ibid). By this time all hope of assistance from CDA, PACT or the monks had entirely dissipated. Villagers had spent 8 years carefully protecting the CF land – running patrols, clearing firebreaks and dealing with land conflicts. Now, not

only the CF, but their agricultural land that their livelihoods were dependent upon were to be wiped out without a murmur from all those who had boldly claimed that REDD+ was going to ensure tenure security and protect forests.

Figure 6.24 Construction of the Chinese Dam Near Srah Geov Village (November, 2015)



Source: author

Figure 5.25 Ta Sern and his CF on Patrol in the Monk's Forest



Ta Sern (right) patrols the CF in the area surrounding Srah Geav that was to be flooded by the Chinese dam. Source: author.

5.7 Commoditising carbon – part 2. Whose labour counts? Who profits?

It has to be emphasised, that as the project became increasingly focused on the task of going through the double verification process (through VCS and CCB), it became analytical tasks associated with report writing that most labour became concentrated around. Here it is possible to take an insight from Bruno Latour (Latour, 2005) – that within assemblages, what becomes more important than the actual day to day banality of events is the way the assemblage represents itself; how it describes activities done under its name and its own history, the traces and marks that it leaves behind in the form of documents, maps, statistics, pamphlets, videos and articles.

Under the logic of the REDD+ project what counted more than whether an actual community meeting occurred or not, more than whether CF groups were actually stopping those coming to cut forests, or preventing forest fires, or even whether or not the FA actually did anything on the ground to support CFs, was that fragments of these events could be recorded and abstracted into statistics in reports, or captured as pictures, or written as case studies. These ephemeral events were materialised within documents that would move around the assemblage and contribute to the process of commoditising carbon. As would become very clear, a CF patrol that was not recorded, that only the people conducting it knew about – whether it prevented illegal logging or not – was worthless within the context of the project because it left no material trace that could be used as evidence to show that the project was mitigating the risks that it set out to. On the other hand, a single patrol recorded in the CFs monthly log book, whether it actually happened or not, did have value because it contributed to the production of artefacts used within the carbon verification process. The day to day logic of the project was not to *actually* reduce the cutting of forests, but to produce artefacts that could compellingly demonstrate that a specific imagined scenario could be altered through a number of specific interventions that would lead to the production of the carbon commodity. In other words the project produced an abstracted scenario about deforestation in the province rather than directly stop deforestation. In the words of Gutiérrez this speaks to the “involved” quality of the commodification of nature pervading the process of capital accumulation today: the system grows ever more intricate, relationships more complicated, arrangements more complex—all in order to extract ever more profit which benefits ever fewer people’ (Gutiérrez, 2011).

Much of the critique of forest carbon - academic and popular alike - is situated within the framework of natural resource privatisation. Hence much of the critical work around REDD+ has come to narrowly focus on ‘carbon rights’, ‘green grabs’, and ‘exclusion of indigenous people from forests’

(Agrawal & Redford, 2009; Duchelle et al., 2014; Larson et al., 2013; Sunderlin, Larson, & Cronkleton, 2009). Thinking along these lines still adheres to the idea that the carbon commodity is fundamentally derived and abstracted from an actual real world material entity (carbon stored in forests). According to this logic forests *produce* carbon credits. Forests are commoditised, transformed into carbon credits for the profit of transnational entities much in the same way that the timber and agro-commodity boom has seen the mass transformation of forests into physical commodities that are shipped across the world (e.g. Mahanty, Dressler, Milne, & Filer, 2013). I want to argue that abstract avoided emissions are not abstracted from real forests – they are rather created in a complex production process where forests are a relatively minor and passive actor. The problem is that critique along the lines of forest privatisation tends to focus on the risk of ‘local communities’ losing access to forests as carbon commodities are placed within the hands of outsiders. Rather than outright reject these concerns – as there certainly are numerous examples of obvious ‘green grabs’ done in the name of REDD+ purely for the profit of entities in Annex One countries (Lyons & Westoby, 2014)– I want to complicate this narrative by considering the case of Oddar Meanchey and shifting the focus to *labour* rather than forests (see Tania Murray Li, 2011; Sodikoff, 2009).

My first reason for doing this is political. At a discursive level REDD+ is not blind to indigenous issues, the concerns of local landholders, land and carbon rights and exclusion. Rather, these concerns are exactly what has spurred the expansion of REDD+, which has given forest-carbon projects a new life and which keep busy the proponents of REDD+ and legitimise their experiments that supposedly strive to overcome these issues.⁴⁵ One of the enduring claims of the REDD+ Oddar Meanchey project

⁴⁵ Both the UNREDD global programme and the national Cambodia program have created several forums to specifically promote their engagement with indigenous groups and spend substantial energy on promoting their participatory nature. They have also spent a substantial amount of time producing safeguards which specifically deal with the question of tenure.

– and REDD+ more generally in Cambodia – is that in the context of country wide tenure insecurity, REDD+ is a potential mechanism for delivering small-scale tenure security (Yeang, 2012). As was outlined in chapter three, in the context of neoliberal approaches to development it is exactly ‘local forest dependent communities’ who are now supposedly at the centre of development discourse and at the cutting edge of human-biosphere relations. It is exactly the problematisation of the poor and resilient subject, and their relationship with the biosphere that neoliberal schemes like REDD+ discursively base themselves around. Critique that REDD+ is blind to poverty will only spur on their endeavours in new sites encouraging them to forget and abandon experiment in places like Oddar Meanchey (and this has already happened in Cambodia).⁴⁶

The second reason is analytical. The above examination of the Oddar Meanchey REDD+ reveals it not as a land grab or mere privatisation of forests. From the above observations of the REDD+ project, the main sin of REDD+ is not that it excludes indigenous people from land, or even that it commoditises a formerly communal natural resource. It is the opposite – that it fails to commoditise forests; that it never delivers on what it promises and instead abandons people in forest areas to languish in poverty and land contestation. But this is not to say that the project is not productive. REDD+ indeed produces things and effects – and directly benefits some more than others, yet it is mostly outside of Oddar Meanchey where they effects are registered (cf. Garland, 2008).⁴⁷

⁴⁶ REDD+ projects are currently at various stages of implementation across six different sites in Cambodia. Many of the same people at the national level who lent support to the Oddar Meanchey project are now promoting these other projects.

⁴⁷ As Garland (2008: 63) notes ‘emphasizing the fundamentally productive nature of wildlife conservation draws direct attention as well to the labor and relations of production necessary to generate the value created by conservation processes.’

Cassava and resin should help to illustrate this. There was not a single CF household interviewed that did not engage in cassava production. Cassava had spread across rural Cambodia in the late 2000s in a major way (see Mahanty & Milne, 2016). By 2014 it was Cambodia's largest export crop by weight accounting for 68% of export tonnage by weight in 2015 (Sokhorng, 2016). It was not facilitated by government policy, by multi-million dollar development projects, by NGOs or social enterprises. It spread on the back of the global commodity boom, on a Chinese subsidisation policy that favoured imported cassava, on Thai middlemen seeking to buy up the crop in neighbouring countries, on Thai processing factories and government policy that favoured export of processed Tapioca starch, on Cambodian middlemen who set in motion transport operators who would send thousands off trucks across the country searching for raw cassava, on networks of money lenders and agricultural suppliers who could provide seed and fertilisers for a small portion of the purchased crops, and on microfinance institutions that have seen a remarkable expansion across rural Cambodia since the early 2000s. But most importantly cassava spread on the back of the poverty and desperation of rural Cambodian farmers who have been abandoned by the state. For years cassava held out the promise that small-holder tracts of land could actually generate a profit. It was the ideal crop of poor farmers – being an annual, it could bring in income within a single year unlike other popular high-value crops such as rubber (7 years), pepper (3 years) and fruit trees. It also had minimal input requirements – once again in contradiction to other crops – and could be grown on almost all soils in Oddar Meanchey with minimal fertiliser (at least at first).⁴⁸ Furthermore the ubiquitous presence of seed suppliers, buyers and transportation networks made it an attractive crop. The cassava boom saw the mass conversion of forests across the province and was one of the underlying reasons for why land conflicts were so fierce – RCAF soldiers, village authorities, refugees, ex-Khmer Rouge, ex-FUNCINPEC, poor Siem Reap immigrants and people born in old villages alike were trying to alter their destinies by engaging in cassava production. People in Oddar Meanchey are well and truly

⁴⁸ Based on interviews with farmers and agronomists (based in Oddar Meanchey) cassava is rapidly depleting the nitrogen content of soils. If grown 3 years in a row, people reported more than half the crop of the first year.

situated within capitalist relations, and cassava could seemingly provide them with some relief from indebtedness, land pressure, from undergoing exploitative or dangerous labour in Thailand⁴⁹ and the general systematic lack of viable livelihood options that could ensure households have dignified lives. When the REDD+ project began, people across the province were already well and truly involved in the commoditisation of forests – converting fallow rice and farmland as well as shrubland and even evergreen forest into cassava land. Household units had no problem commoditising forest land, nor was this seen as an attack on communal land – which few people seemed to have any conception of prior to the project.

Resin trees were also a clear example of commoditising the forest. In all areas where resin had been collected, it was collected on a household basis where individual trees were marked as the property of particular households. Tragically, nearly all resin trees across the 13 CFs (and in surrounding areas) had been cut down by 2015 which represented a major loss to household incomes. In addition, Bun Saluth prevented households surrounding the Monks CF from collecting resin as he saw it as destructive.

⁴⁹ More than one third of survey respondents (270 people) had directly worked in Thailand and more than 2/3 had a family member who had worked in Thailand. Illegal labour work done in Thailand in Cambodia is notoriously dangerous and precarious. Speaking to a Samroang based human rights NGO in 2016, the director informed me ‘that on average he receives cases of between 15-30 people per year just from Oddar Meanchey who go missing while conducting labour work in Thailand. The most notoriously dangerous work in Thailand is rosewood harvesting that typically happens just across the border in Thailand’s *Phanom Dong Rak* protected area (Surin province). In 2013 a record of 63 deaths from incidents of Thai military shooting at Cambodian loggers was recorded.

Figure 5.26 Cassava Being Cut and Dried



October, 2015. On the main road linking Anlong Veng and Samroang, just in front of the Monks CF households are busy chopping and drying cassava. Source: author.

In opposition to accounts of REDD+ which have emphasised the risks that REDD+ poses to indigenous people dependent upon forests with the implicit suggestion that REDD+ is blind or ignores indigeneity, it appeared in the case of Oddar Meanchey, that project proponents actually had a vested interest in presenting participants in an entirely misrepresentative fashion where they were supposedly ‘forest dependent’ and had strong spiritual and practical connections to forests at the communal level. Project documents even seemed to exaggerate the presence of indigenous people⁵⁰. By misrepresenting people in this manner, a number of simplifications that ultimately

⁵⁰ Early project documents spoke of multiple indigenous villages. I could only find one village who had a few ethnic Kuy families.

facilitated project interventions could be made – namely the distinction between legitimate forest dependent insiders on the one side and profit seeking forest destroyers from ‘outside’ on the other, that fragile 15 year management rights to forest were in the interests of participants, and that poorly thought through interventions that would maintain people at a subsistence level of existence were a suitable trade-off for the labour and energy invested in forest protection.

People in Oddar Meanchey were not living bucolic forest dependent lives which would be secured through project interventions. Nor were they rapacious opportunists who could only think in terms of generating profit from forest conversion for their impoverished families. Rather people were living within capitalist relations where relations to land and forests, and household strategies for utilising family labour were all deeply implicated within the logic of capital re-production. At the same time, the allure of the state, of conservation discourse and the desire to protect forests for the benefit of their descendants and for personal satisfaction was also a major motivation for engaging in the project. Ta Sen a 66 year old one-eyed former FUNCINPEC commander epitomised this. Ta Sen was working as the deputy head of *Ratanaruka* CF but as his friends and family put it he ‘was dedicated to nature and forests’ (Interview 94). Ta Sen was constantly in meetings with the CF Oddar Meanchey network and his own CF group and had played a significant role in village level activism surrounding the Mirtopl sugar concessions. During meetings he would quietly, but earnestly look through maps and documents ensuring everything was up to date and as others had said. He took to almost daily trips to the forest and even traded in his motorbike for a bicycle as he felt ‘it was more natural and nicer to ride so you could better see the forest’ (Interview 95).

So too the motivations of Bun Saluth and his followers for protecting the Monks CF could not be reduced to either an instrumental desire to produce carbon credits or due to being dependent on the forest or even having some long term ancestral claim to the forest. Bun Saluth had a very limited

understanding of carbon credits (which did not get in the way of him wholeheartedly supporting the idea of carbon markets). Rather, for him forest conservation was a deeply Buddhist endeavour. Influenced from his experiences of residing in a pagoda in Thailand, the Monks CF and the REDD+ project gave him an opportunity to pursue the conservation of a nearby patch of fairly intact forest that was clearly under threat. Within interview after interview, people in CF groups would state that one of their primary motivations for involvement in CF groups (and the sacrifices and labour investments that go alongside it) was to 'protect nature' and 'conserve local forests for future generations'. Part of this has to be understood as part of a larger picture of a rising conservationist discourse in Cambodia which sees the corrupt and kleptocratic Hun Sen regime as systematically pilfering forests which can only be remedied through local activism. Indeed many farmers expressed that the end of the land frontier did bring forth a sombre that Oddar Meanchey's forests very well could slip away, never to be retrieved. People were simultaneously allured by a massive state-backed program, accompanied by experts, people in authority and seemingly benevolent NGOs which supposedly offered solutions to all these problems – and could even bring various benefits including revenue to local villages. People were caught in capitalist relations, but simultaneously desire – they desired a fix to the very havoc that capitalist relations had departed on the province's forests – and which people themselves had been an intimate part of.

People made sacrifices for the project. People attended boring and inconsequential meetings. People did patrols, cleared fire breaks, answered tedious survey questions (including researchers such as myself) and confronted those who came to encroach on CF land or exploit resources found within CF boundaries. Remarkably, even after all the above-described problems, some dedicated people continued to do forest patrols and confront those who threatened CFs. Yet within the commoditisation of carbon this labour was a peripheral and undervalued part of value production.

This is far from uncommon within conservation projects.⁵¹ To view carbon production as we do other commodities - i.e. as part of a commodity chain, it quickly becomes clear that most of the value added is not coming from poor farmers or those actually protecting the forests. It is not in CF villages or even Oddar Meanchey where value is being created. It is rather in the offices of PACT, of Terra, in the offices of the validators where countless hours of unseen analytical labour discreetly produce VCUs through seemingly endless reports, graphs, satellite and risk analyses. It is hence important to locate the value of the commodity – in the this case the ‘whole package’ of the Voluntary Carbon Unit which encompasses the narrative of poor forest protecting peasants as much as the actual avoided tonne of emitted carbon - within the labour invested into it rather than the commodities superficial properties (cf. Carrier, 2010). Once again what wealthy carbon polluting corporations such as Microsoft are actually purchasing is a story – composed of techno-scientific elements as much as emotional and discursive elements. To take this story at its face value – to believe that its uniqueness and value comes from the noble efforts of Monks and peasants protecting carbon in trees totally avows the enormous amount of analytical labour which *actually* produces VCUs. This is not to argue that people in villages did not invest significant amounts of labour into the project. They did. It is to note that this labour is peripheral to the commoditisation of carbon that the project hinged around. Here Jason Moore’s (2015) arguments introduced in chapter three about commodity frontiers and the expropriation of cheap nature provide a useful insight. The creation and expansion of circuits of capital accumulation is not just dependent on the commoditisation of things formerly outside the realm of capitalisation; so too it is always dependent upon the expropriation of large inflows of resources and labour that are not capitalised. Cambodia’s

⁵¹ As Sodikoff (2009: 446) states ‘[T]he gray literature of development institutions scarcely makes mention of labor tensions in conservation projects or the contributions of manual workers. The silence here reflects a development culture that emphasizes success and downplays failure. Project managers seek to safeguard their good standing with funding agencies because their livelihoods depend on winning job contracts and renewals. Their decision to hush up labor disputes is pragmatic. Labor unrest may suggest mismanagement and could jeopardize consultants’ and managers’ job prospects’.

forests are not only providing a severely undervalued input in the carbon commodity production process, but huge amounts of unpaid labour are drawn upon to produce carbon credits.

After years of investing labour into the project, people were outraged that the project had not managed to even give minimal support for fuel and food subsidies when doing patrols. Instead, as core funding dried up, new grants were pumped into the verification process which by 2010 had entirely surpassed all on the ground activities. As the commoditisation process dragged on, PACT, Terra and the FA largely availed themselves of all responsibilities to people in Oddar Meanchey and instead focussed on the technically laborious process of completing the verification process and securing a sale. During this phase it was not deemed important to inform all the people in Oddar Meanchey of what was happening and even in 2016, people highly involved in the project in Oddar Meanchey still had no idea if the carbon had been sold, if it was going to be sold, if they would ever get anything from the sales and what had happened to PACT and Terra. PACT produced newsletters (in English) until 2014 mainly for consumption of investors, the NGO community and those outside Cambodia, and Terra continued to promote the project in various international forums and websites – yet the people supposedly at the centre of the project had no idea what was going on. Probably the most shocking realisation of the projects intentions occurred when a senior UNDP staffer embedded in the FA in Phnom Penh explained to me that REDD+ had never intended to channel revenue to individual households as ‘this would be impractical’. The whole logic of REDD+ suddenly imploded on itself. If the programme never actually intended to provide an incentive to people to preserve forests rather than convert them to cash crops (as it claimed) what was the purpose of going through the tedious, expensive and foreign consultant-heavy process of verifying carbon? REDD+ was not a cutting-edge market-based mechanism that was providing meaningful income to the poor so much as a traditional and poorly thought through aid based approach that was more focused on opening up Cambodia’s forests and the poor to financial inflows. Even worse than being

an attempt to commoditise something that was formerly outside the realm of markets was the *failure* to do so. REDD+ was not like cassava – it had no real potential for generating profits for desperately poor people living in forested areas.

In February 2013, I was sitting drinking coffee with PACT staff, Terra staff, FA staff and a validator from US company SCS in Oddar Meanchey's main hotel. They had come for the final field validation visit that would complete the dual validation process. The validator – a stern American man in his 30s, was supposed to be 'independently' verifying forest plots and the various 'exceptional social benefits' of the project. In reality he was dependent on his FA, PACT and Terra guides at every step of the way – to lead him to the physical location of the site, to secure transportation and accommodation and to act as a translator. The staff member from Terra was a down to earth American woman in her 30s. She had been on multiple visits to the site and was aware of the complexities of REDD+. She told me that 'I have seen a lot of dodgy projects and everyone now is jumping into REDD but I have pretty much drank the cordial on this one' explaining that she didn't really believe in all that 'green capitalism stuff' but felt the project held out the potential to reduce deforestation and help the poor. The PACT staff – a friend from Australia in his late 20s – was also aware of problems with the project, but was similarly optimistic that once money started flowing, benefits would flow to people to the villages. They were not woefully ignorant and distanced from local conditions as development professionals are sometimes made out to be. They had a careful and pragmatic optimism, that was insulated by cynicism – as nearly all professionals involved in REDD+ interviewed seemed to possess. As Slavoj Zizek (1989) points out, cynicism has become an important medium of ideology that allows a subject to maintain a critical distance from beliefs – even to entirely disavow the discursive elements of ideology, while fully investing in the very same structures at the level of practice and labour. Numerous professionals in REDD+ even claimed that they were not interested in carbon and the only potential REDD+ held out was to bring in funds for

conservation or help people secure land tenure. Cynicism – at least at the level of ‘informal transcripts’ - was a useful method for resolving the seemingly contradictory position development professionals found themselves in as the conduits of REDD+ with its delirious and lofty aims and outcomes.

The validator from SCS however did not engage in cynicism. As the project proponents described him – he ‘was a bit of a stiff’ who ‘could only think in terms of data’. As the group sat around drinking coffee waiting for the validator to come down from his hotel room they were nervous. This was the final event in the five year validation process that seemingly rested on the observations of the validator who was to spend a mere two days visiting the field. The validator, due to time constraints had settled on visiting only two of the 13 field sites. This in itself was remarkable that the validator as the crucial agent for commoditising carbon would never actually come into physical contact with most of the forests at the centre of the project. And for those that he did, he would merely spend half a day as part of a highly-prepared trip. Even the Terra and PACT staff present had not physically visited every site. The forests existed more in their virtual forms in documents, satellite images and power point presentations than in their actual material form.

The FA, PACT and Terra staff knew they faced a problem. If the validator ended up going to Romdoul Visna, Andong Bor, Prey Srong, Samaky or Rolous Thom, the project would be in trouble. In those CFs previous biodiversity sampling plots were now located within soldier’s barracks, private farms and land cleared for cassava. It would be highly likely that would trigger a major revaluation (and reduction) of the supposed quantity of carbon that was not emitted due to the project. The validator was to choose two sites based on a random selection. The other members of the trip especially the Terra staff, had been working hard to strategically eliminate the possibility of him visiting one of the problematic CFs. Initially - the night before, he declared that his selected field site was, in the words

of the Terra staff 'one of the problem ones'. The other members of the group had subtly made it clear to him how logistically difficult a last-minute trip to this site would be due to the presence of landmines, long distances and the difficulty of securing official permission from military commanders. He agreed to randomly generate a different site. As he emerged from his hotel room, the other members of the group were holding their breath with anticipation. He immediately sat down at the table, pulled out his laptop and began furiously typing away. He then announced that it was the *Paav* CF he was to visit. The other members sighed in relief.

Anna Lowenhaupt Tsing (2005) has described a contemporary and common logic of capital accumulation she names 'spectacular accumulation'. She describes the 'conjuring' and 'dramatic performances' which 'aids the gathering of investment funds' into natural resource projects (ibid: 124). REDD+ could also be thought of as a conjuring trick, a dramatic performance, conducted to facilitate the flow of funds into carbon projects. The role of documents, brochures, reports, videos, workshops, even TV commercials which were all produced to promote the Oddar Meanchey REDD+ project, have to be seen as having a dramatic and performative aspect whereby they convince investors and stakeholders that there really is a possibility of making profit from poverty and deforestation in Oddar Meanchey. What counts is the spectacle that these things create, more so than on-the-ground activities. In many cases, these activities existed solely in documents and promotional videos, never to be actualised in Oddar Meanchey. This corresponds to Igoe et al.'s (2010: 163) observation that 'spectacular accumulation is not geared towards direct financial returns. Rather it revolves around parlaying success as symbolic capital into other forms of capital and values that not only help grow specific conservation NGOs, but are also in the interests of a whole array of other agents and institutions'. Even in instances where REDD+ fails to create substantial spaces for finance to jump into; where the grandiose hopes and desires of experts, government officials and NGO workers come crashing into the material limits of commodity

creation, it still keeps alive the virtual possibility of transforming relations between the market, forests and people in distinctly neoliberal ways both through the production of spectacle that convinces investors and speculators of new financial possibilities, and through more sombre and technically informed promises to fix and improve project implementation. This is exactly what Sullivan coins 'the spectacular frontier of financialised environmental conservation' (Sullivan, 2013: 199).

The final verification report written by SCS is thus telling. As the final test to which the credibility of the project rested, nowhere was it required that the project actually generate income. Profitability did not formally determine success. In looking at the social benefits of the project it notes that 'it was indicated to the audit team' that 'no cook stoves had been provided, no mosquito netting had been provided and no agricultural intensification activities occurred'. The document concluded:

'due to reasons that are stated in other findings, the overall net climate, community and biodiversity benefits appear to be very weak (if not nonexistent) on at least some of the Community Forests that are part of the project. The audit team is concerned that, if action is not taken soon to provide substantive material benefits to the local communities, the net climate, community and biodiversity benefits of the project, if not the project itself, may be fundamentally threatened'.

The document also recorded the response of these concerns by project proponents. Terra wrote in reply:

‘When the PD was written, the Project Team expected carbon revenues to commence earlier, and based the timelines in the PD around these predictions. These delays in bringing the project to the market have been caused by a variety of unanticipated challenges, **and are attributable to the groundbreaking nature of the project**. Unfortunately, the project has also faced challenges in securing donor funding to implement project activities, due to the hesitancy shown by the donor community to invest in REDD+’ (emphasis in original).

What is remarkable is the final response of the auditor:

‘The audit team understands the constraints faced by the project, and it is clear that a genuine effort was put forth to provide some level of climate, community and biodiversity benefits with the limited financial resources that were available to the project during the monitoring period. The audit team is hopeful that, as indicated in the Client Response, additional benefits will be possible after the project begins to receive revenue from the sale of Verified Carbon Units. Closing Remarks: The Client’s response adequately addresses the finding’.

None of the things outlined in the original document were ever delivered. That project proponents could avail themselves of all responsibilities through reference to the ‘ground breaking nature of the project’ reveals how the project often slipped into delirium and spectacle.

Yet just like the stock market, conjuring and performance within the carbon market is nearly always accompanied by material arrangements which secure capital for some at the expense of others.

Central to the commodisation of carbon is risk, where it is both a mechanism which helps to make out the contours and quantify an imagined future carbon scenario that can be transformed into a commodity, *and* a suite of mechanisms to ensure that the carbon commodity will generate profit.

The latter becomes a major problem in the context of Cambodia which is well known for corruption, political instability, a lack of transparency and a whole host of other factors that inhibit investors who require stable and transparent returns. It was here that Terra became the first company in the world to receive political risk insurance from the US government backed Overseas Protection of Investment Corporation (OPIC) for a REDD+ project. In November 2011, Terra was provided with US\$900,000 of political risk insurance from OPIC. OPIC - which has been pushed away from mining and oil projects which it has backed in the past - supported the Oddar Meanchey project based on its 'sustainable credentials' and that it would assist those living in poverty. The agency's president in 2011 stated "[t]his project represents a milestone in the development of the forest carbon sector. Tens of thousands of hectares of forest will be preserved while creating new opportunities – such as training in forest management, the establishment of microfinance organizations, as well as the creation of 355 new jobs – that will support both local communities and the environment at the same time"(OPIC, 2011). The US even counted its political risk insurance policy given to Terra as official 'climate aid'. Whether Terra made a claim against the policy is unknown (neither party would submit to questions citing confidentiality). Yet ultimately it was the financial risks of Terra that mattered and were secured. No such thought was ever given to the risks that people in CFs faced. Two people had reportedly died during patrols – one from malaria and one from an overturned tractor. No financial assistance was given to either of the families.

Accounts of the Oddar Meanchey REDD+ project travelled around the world as part of the lofty ideals of western multinationals attempting to offset their high carbon emissions. Microsoft used the project as part of its claim that 'it has been 100% carbon neutral since 2012'. The left-over credits that Terra had generated even made their way to the US government-backed carbon offsetting platform 'stand for trees'. Stand For Trees - an NGO, corporate and state-backed marketing platform aims to sell carbon credits to individuals on behalf of NGOs and corporations encouraging people to offset their individual emissions. As it states on the website:

Stand For Trees. Think of it as a global, grassroots intervention to halt deforestation. Stand For Trees empowers everyday citizens – all of us – to take direct action to protect endangered forests and reduce the impacts of climate change. Every time you buy a Stand For Trees Certificate, you help local forest communities around the world keep a specific forest standing and prevent a tonne of CO₂ from entering the earth's atmosphere. (Stand For Trees, 2014)

In 2015, a Stand For Tree's video – which ultimately was promoting the Oddar Meanchey REDD+ project - featuring US hip hop artist Prince Eu went 'viral' on social media with over four million views. The video passionately urged 'us the grass roots' to 'stand up against crooked governments and corporations' and 'take a stand' (by purchasing avoided emissions credits from the stand for trees website). The Stand for Trees website sold individual tonnes of carbon at a price of US\$10 providing examples of lifestyle activities (overseas flights, the use of mobile phones) that could be offset through the purchase of avoided emissions.

Figure 5.27 Still from Stand For Trees Promotional YouTube Clip



Source: (Prince Ea, 2015)

This is a salient example of what Anaya Roy terms ‘millennial development’; a seemingly kinder, gentle, yet entrepreneurial form of development that works through ‘business models’ and ‘relies greatly on the modern, Western self who is not only aware of poverty’s devastation but is also empowered to act upon it in responsible ways’ (Roy, 2010: 12). Oddar Meanchey’s forests and the struggles of smallholders trying to secure small patches of land against economic land concessions, and soldiers, and the incredibly messy and contested process of running a REDD+ project, had been abstracted into a spectacle of western individuals making consumption choices to abate their guilt over high carbon lifestyles.

In Phnom Penh experts tried to distance themselves from the REDD+ project – numerous FA staff were openly hostile to researchers (such as myself) and reporters who had a critical perspective on REDD+. PACT disowned the project entirely refusing to acknowledge its failures and went on to

promote REDD+ in other areas. NGOs who had received funding to be involved in REDD+ such as the NGO forum on Cambodia – which was supposedly a ‘civil society observer of the entire process’ took little or no interest in reports I presented to them on problems with the project. Whether Terra Global Capital ever managed to recoup costs from its share of credits remains unknown – although the company went on to establish a number of similar REDD+ projects across the world. The national REDD+ process in Cambodia under the patronage of the UN, Forest Carbon Partnership Facility and various bilateral donors clumsily went forward promising to be ever more ‘participatory’, ‘inclusive’ and sensitive to indigenous people and their rights. Yet there was never an acknowledgement of the failures of the Oddar Meanchey project – instead it was still represented as ‘securing tenure’ for smallholders and being an overall important ‘learning experience’ (Interview 96).

5.9 Conclusion

The project has to be understood as an assemblage of unstable connections between technocratic power, informal power within the Cambodian political hierarchy, of NGOs trying to serve the poor and stop deforestation, of capital trying to reproduce itself in a risky environment, of experts using risk technologies to solemnly verify imagined carbon scenarios, of refugees struggling to secure their land, of soldiers taking what they can, and of individual desire to protect forests. Actualising carbon as a commodity ended up being far more fraught with problems than expected - and as was shown, relations between different actors were stretched and withered to breaking point. Yet even where actors slowly abandoned the project one after another, it was still possible to actualise carbon as a circulating commodity that travelled across the world (even if it was ‘sub-prime’ carbon (Chan, 2009)). What allowed such a contentious project to be conceived as a success – even where on many of its own accounts it clearly failed – was that it made ground in the commoditisation of carbon.

Chapter 6 - Community Adaptation Project, Mondolkiri

This chapter switches to examining an adaptation (rather than mitigation) project that was conducted across rural Cambodia from 2012-2017. Rather than focusing on the process of commoditising carbon, this chapter focuses on the biopolitics of adaptation by examining how the climate assemblage attempts to make visible and rule over the 'climate vulnerable'. Once again, the chapter will focus on the actual material geographies of people living in the project area to consider how project rationalities are deliriously pushed and stretched across space and the contradictions which occur as people's livelihood struggles contrast starkly to depictions made in project documents. This chapter also moves away from the type of spectacular failure examined in the last chapter and instead looks at a project that has uncontroversially been deemed a success and the types of simplifications it employs to ensure success. This chapter draws upon 57 in-depth interviews conducted mostly in one of the project sites in Mondolkiri. Over three different trips spanning three years, relations were built with key informants in and outside of the village. Mapping was also conducted using a hand held GPS device where on the ground observations were overlaid with ELC, mining and deforestation maps.

6.1 Origins of the Project

In 2012, the United Nations Environment Programme, in cooperation with the Cambodian Ministry of Environment successfully applied for financing from the Adaptation Fund for a project titled 'Enhancing Climate Change Resilience of Rural Communities Living in Protected Areas of Cambodia'.

The Adaptation Fund began operations in 2008 as an official mechanism of the UNFCCC to channel climate finance into medium and small adaptation projects in the developing world. The World Bank was made trustee of the fund – putting yet another fund under the management of the World Bank. The fund is primarily financed by a 2 per cent levy on Certified Emissions Reductions from the Clean Development Mechanism (as well as from pledges) and has supported 44 projects across the world worth US\$265 million (up to the end of 2016). The fund provides administrative control to certified entities in project countries which conduct ‘projects and programmes that help vulnerable communities in developing countries adapt to climate change’ (The Adaptation Fund, 2016). Although the Adaptation Fund will be dwarfed by the much larger Green Climate Fund, it has and continues to be an important model for channelling climate finance into small and medium scale adaptation projects and has generally be viewed as one of the more progressive modes for operationalising climate finance (Heinrich Boll Stiftung, 2016).

In 2010, officials at the Asia Pacific regional office of UNEP began discussing with MoE officials a proposal to the Adaptation Fund to conduct a project in protected areas throughout the country. UNEP was looking to expand its climate projects and the Adaptation Fund – which gives regional multilateral entities such as UNEP near total administrative control of funds- was a useful means to increase funding to UNEP. By 2012, UNEP regional officials had contracted a consultant company to work on a proposal to the AF. Since project inception, UNEP had a key role in shaping the contours of the project by bringing in experts who had experience on other similar climate programs (such as the National Adaptation Programs of Action – NAPAs). MoE officials and consultants helped to give specificity to broad adaptation goals by providing background information on particular areas and focusing broad activities on more specific implementable project components. The South African Consultancy Firm Ecosolutions played a major role in developing the details of the entire project in

its position as chief technical advisor (contracted by UNEP). It not only produced the original project note and project document so as to receive funds from the Adaptation Fund, but also conducted a baseline study that was integral to the project. From its very start the project was already heavily dependent upon experts from outside Cambodia.

Figure 6.1 Image of Project Launch at the Himmawari Hotel in 2013.



Source: (C4 EcoSolutions & Ministry of Environment - Royal Government of Cambodia, 2012)

A Project Management Board was assembled out of senior members of the climate change department and General Department of Administration for Nature Conservation and Protection. Ouk Novann - a deputy director of the Ministry of Environment - was chosen as the project manager

as he had extensive experience in other climate-related programs being executed by the MoE. An Ecosolutions consultant visited Cambodia in 2011, and again in 2014 and 2015 and coordinated with UNEP and the MoE to conduct a baseline and more detailed study of the community protected areas. The original project document was finalised in 2013 and the project formally initiated in April of 2013 (with an inception workshop at the four star Himawari Hotel in Phnom Penh).

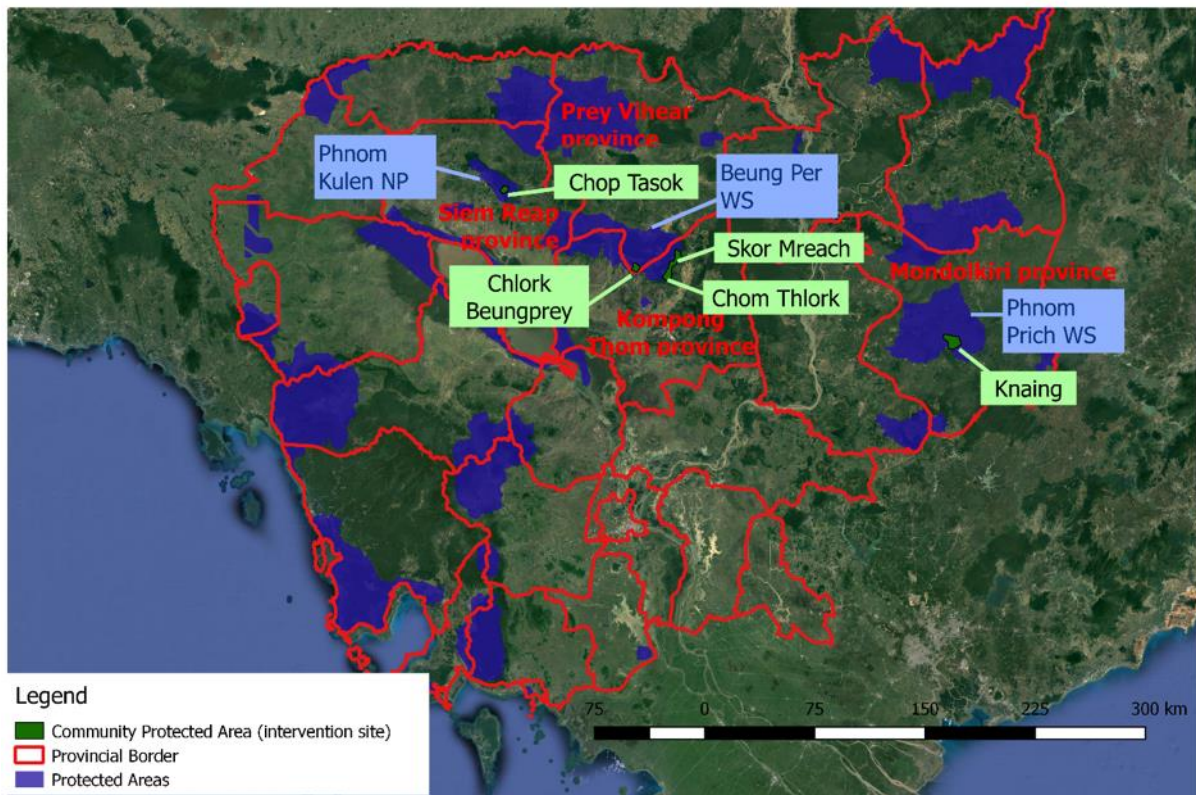
The logic of the Adaptation Fund is that it supports projects that can demonstrate tangible ‘adaptation benefits’ that would not have occurred without the project, to those who are the most vulnerable to climate change. The choice to focus on protected areas was made both because the MoE already has administrative control over these areas and due to one of the conditions of receiving funding being that projects are carried out in areas with secure tenure - which in many cases, is not existent in forested areas throughout Cambodia. Community Protected Areas (CPAs) – which are formally recognised communally managed zones within protected areas, and which have formal tenure status, proved to be a useful target area for the program. In 2011 an Ecosolutions consultant had a two week trip to Cambodia including visits to three CPAs upon recommendation from MoE officials. A list of further CPAs was then created. A further survey of the list which used criteria of: 1) vulnerability to climate change, 2) how degraded the CPA was, 3) management capacity and 4) ease of access, narrowed the intervention site down to 5 sites - three of which ended up being the original sites the MoE recommended.⁵² The five sites were –

- 1) Chiork Bung Prey, Bung Per Wildlife Sanctuary, Kompong Thom, Prey Vihear Province’s

⁵² It is important to note that the intervention sites appeared to have favorable scores within the vulnerability matrix that was used to select of the 33 sites. For instance under ease of access Knaing CPA scored a ‘1’ (scores ranged from 0.5 - most inaccessible, to 2 – most accessible). Knaing is a 40km trip from Cambodia’s most remote provincial capital through thick forest, mud, steep mountains and is inaccessible most of the year, except by 250cc motorbike (taking a full day). A number of other CFs scored a ‘1’ including those in Phnom Kulen (which in all cases are a mere 2 hours along a paved road from Siem Reap).

- 2) Chom Thlork, Bung Per Wildlife Sanctuary, Kompong Thom Province
- 3) Skor Mreach, Bung Per Wildlife Sanctuary, Kompong Thom Province
- 4) Ronouk Knaing, Phnom Prich Wildlife Sanctuary, Mondolkiri Province
- 5) Chop Tasok, Phnom Kulen National Park , Siem Reap Province

Figure 6.2 Project Site

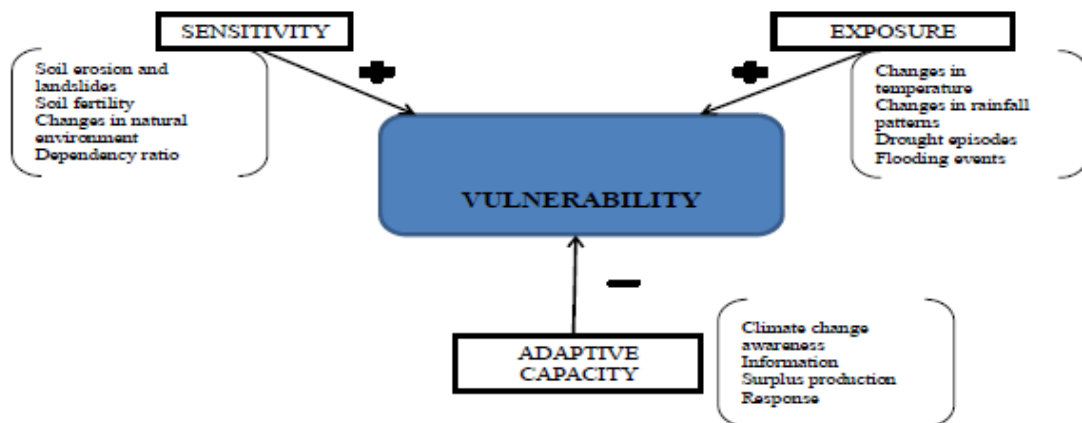


Source: author

According to Serey Marona – an MoE official at the GDANCP, the sites were seen as important sites that the MoE wanted to increase its presence within, but that were also ‘not too difficult’ in terms of implementing activities (Interview 1). Under the direction of ecosolutions, a further vulnerability assessment was conducted within the five CFs followed by a detailed project document. The vulnerability assessment focused on calculating ‘climate risk’ for each community through quantitative scores based on three factors (sensitivity, adaptive capacity and exposure) (See figure

8.2). All five sites were found to have exceptionally high vulnerability (and Ronouk Knaing ('Knaing' here on) was particularly high out of these five.

Figure 6.3 Concept of Vulnerability Employed by Project



Source: (C4 EcoSolutions & Ministry of Environment - Royal Government of Cambodia, 2012: 31)

The project document itself focused all interventions around a singular vulnerability – erratic rainfall. As its key mission statement put it – ‘[T]he problem that the AF project seeks to address is that the climate change-induced hazard of erratic rainfall is causing a reduction in agricultural productivity and forest-based income as a result of droughts and loss of topsoil during intense rainfall events/floods. This is increasing the vulnerability of rural Cambodian communities, particularly those living in protected areas’ (C4 EcoSolutions & Ministry of Environment - Royal Government of Cambodia, 2012: 3). The document went to great lengths to carve out those living in the five protected areas as extremely vulnerable to ‘the climate change-induced hazard of erratic rainfall’. The document quoted regional and national level statistics in order to demonstrate the vulnerability

of project participants. For instance, it cites a decline in annual average rainfall between 1951-1998 (although noting that 'mean annual rainfall over Cambodia does not reflect any consistent increase or decrease since 1960'), references an 0.1-0.3°C per decade, mean regional temperature increase between 1951 and 2000, and cites loss and damage associated with previous flood and drought events (ibid: 35). In a section discussing the broad impacts of climate change across different sectors in Cambodia the document even suggests that climate change is impacting tourism 'due to loss of wildlife' caused by increased temperatures (ibid: 67). The document then turns to more specific and detailed quantitative risk matrixes developed for each of the five intervention sites which gives a detailed breakdown of vulnerability in each site. Just like in the discussion of climate change mapping in chapter five, climate change here is a complex, multifarious problem that makes visible a particular type of population ('the climate vulnerable'). The logic of the project is not merely to provide or solve vulnerability in a top-down linear matter but to work on the myriad relations between the vulnerable population and the climate.

The project hinges around three broad interventions. The first component consists of an assessment of climate change impacts, preferred interventions, an economic assessment and the development of protocols to measure the success of the project. The second component is a capacity building component focused on increasing 'climate resilience at the local community level' as well as sustainable livelihood diversification. The third component aims to increase awareness at the 'local level of the importance of ecoagriculture for protecting and enhancing commercial and subsistence activities' as well as building institutional capacity to replicate and scale up local level adaptation and ecoagriculture interventions. Each component consists of specific activities that are to occur within the CPAs including:

- An assessment of commercial crops suitable in each village as well as possible weather insurance products and microfinance for farmers

- 'Developing business plans for alternative livelihoods
- Production and intensification of homegardens using the 'ecoagriculture approach'
- Trialling of GE rice species
- Construction of canals, ponds or other forms of irrigation
- Construction of fire breaks in CPA
- Replanting of trees in degraded forest areas
- Improving crop disease management and post-storage
- Training communities and local authorities on climate change and importance of protecting CPAs (including exploring ecotourism potential) as well on the potential of REDD+ or PES
- Linking farmers to farming schools, and scaling up successful ecoagriculture interventions to be demonstrated at the national level.
- Supporting a select number of masters and PhD students to study subjects related to ecoagriculture.

In line with the doctrine of resilience, the project involves a large array of activities that seek to make 'communities' more resilient to climate change. To do this the project looks to the market – developing the capacity of farmers to engage in cash crop networks and utilising insurance and microfinance, as well as REDD+ and PES. But it also seeks to make communities more responsible for managing the biosphere through expanding village-based forest protection activities and increasing local understanding on climate change and ecoagriculture. It also seeks to secure non-market activities that support the reproduction of peasant households such as the expansion of homegardens and the intensification of NTFP collection (although both these things are mentioned as having market potential). The logic of the project is thus not only to help the vulnerable adapt to climate change, but to outsource management of degraded forests to those living in villages – a process that was already initiated by the CPA system where day to day forest management activities are placed on villagers instead of the central MoE. In line with the logic of neoliberal climate

interventions highlighted in chapter three, the project works through the '3 pronged approach' (communities, the market and green bureaucracies) and hence sought to ensure that the MoE would be able to replicate and expand project activities (by documenting project approaches, successes and failures, producing videos and other material on ecoagriculture and holding workshops and training sessions around the country).

In terms of money and energy spent at CPA sites, the project hinged around two interventions in particular – the forest replanting and restoration, and the provision of irrigation infrastructure and other materials to support agricultural intensification/ extension (both together accounting for \$2.8 million of the \$5 million). Both activities also formed the central tenets of the ecoagriculture approach which was to secure poor vulnerable farmers from erratic rainfall. Yet as was stated in chapter three and demonstrated in chapter four, resilience programmes also tend to be largely reliant upon generous doses of expertise and analytical labour to actualise their programs. In the first year alone the program spent \$360,000 on experts including adaptation experts, 'socio-economic experts', 'business consultants', 'insurance experts', botanists and 'institutional experts'. The program spent another \$300,000 on consultants for component two and three, in addition to the \$500 per day fee for the chief technical adviser (to a total of \$175,000) and \$80,000 for the project manager. Overall 49 expert consultants were employed which cost more than USD\$1 million. Yet within the Knaing CPA only a total of \$36,918 was spent for all actual project activities. In comparison, the 2-week mission to Cambodia by the ecosolutions consultant in 2011 cost \$40,000. Or as another example, UNEPs fees, where UNEP essentially acted as a middleman between the Adaptation Fund and MoE, were over ten times the amount spent in Knaing at \$380,000.

6.2 Land problems.... again

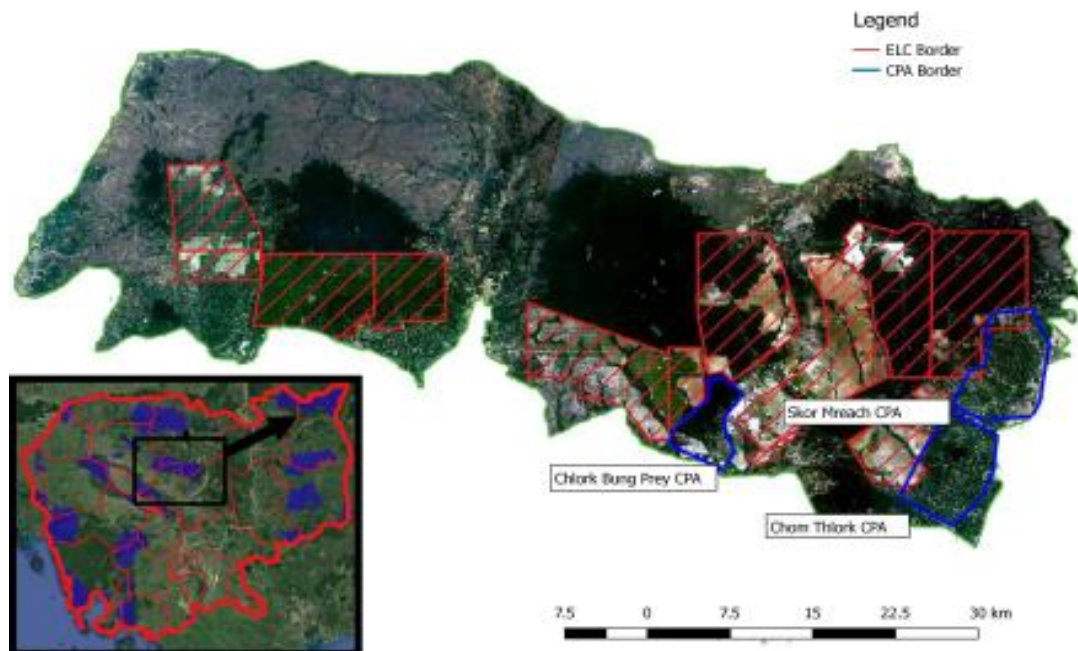
By the time of the project's second vulnerability assessment in 2013, major problems – not dissimilar from those that occurred with the REDD+ project in Oddar Meanchey – were visible at three of the CPAs in central Cambodia (in the Bung Per protected area). Upon the ecosolutions consultant travelling to the three sites to examine forest areas in more detail and interview those involved in the CPA, it was discovered that all three CPAs had experienced major deforestation. This involved the awkward discovery that Skor Krouch CPA no longer actually existed on the ground, as it had been entirely cleared for farming. As with other areas, Kompong Thom and Prey Vihear had seen the sudden and aggressive expansion of Economic Land Concessions (ELCs) in a short period of time where 13 ELCs had been granted inside the Bung Per Wildlife Sanctuary all between 2010 and 2011. Among the concessionaires were the infamous Try Pheap and An Mardy concessions – Cambodia's best-known 'timber barons', who cleared forest and farmland with little concern for local livelihoods, conservation or compensation. Once again, just like in Oddar Meanchey the very agency put in charge of the project – who was to pursue conservation and poverty alleviation in the intervention sites (the Ministry of Environment) – was the very same entity that had granted ELCs which resulted in forest destruction and the exacerbation of poverty. As farming land in the CPA villages fell to ELCs, villagers quickly set about clearing and establishing ownership over CPA land that had not been claimed. The reality was that ELCs were better protected (or better actualised according to state plans) than community protected areas, and as such smallholders were much more easily able to convert these (already degraded areas) to cash cropping, than attempt to get their land back from powerful, well-connected elite. The allure of cassava, and the rising price of cashew (which had been particularly popular amongst ethnic Guoy farmers in the area) saw farmers

quickly make a claim to the area (Interviews 2,3,4,5,6). Although clearing CPA land for private land was technically illegal, within the amorphous CPA system, there were few actual barriers to staking a claim to the land.

The problem was that reforesting CPA sites could not be conducted if there was no forest area left to restore. When examining the five CPAs Ecosolutions consultants found that in fact there was almost no degraded forest that had not been claimed by farmers (Interview 7). They found a total of only 30ha throughout the five sites that would be suitable for reforestation. Even in the Mondolkiri and Siem Reap CPAs where there were no ELCs, of the little-degraded land that could potentially be restored, most was under cultivation. The consultant's report, euphemistically turned to "*chamgar*"⁵³ based agroforestry" which meant planting trees on individual plots instead of communally owned forest.

⁵³ *Chamgar* in Khmer refers to plots cleared from forest for fruit, vegetable and cash crops (but not paddy rice).

Figure 6.4 Satellite Image of the Bung Per Wildlife Sanctuary with ELCs and CPAs



Source: Author

Yet it was difficult to hide the fact that there was little potential for ‘conservation’ or ‘adaptation’ within those participating villages who had lost substantial amounts of farming land. Viewing the most recent satellite image of the area (2016), it can be seen that there is more forest in the Economic Land Concessions than in the CPAs. In this case, people’s interest in communally protected areas immediately diminished. As one senior woman who was a former CPA member in *Chlork Beung Prey* who had lost farming land to the land concessions (but had not managed to acquire CPA land), put it ‘why should I care about that protected land? It is now just the land of powerful people who came to take our farmland and cut our resin trees. All we can do is sit and cry’ (Interview 5).

When NGO Forum on Cambodia, who was acting as an official partner for the Adaptation Fund to monitor and conduct ‘baseline mapping’ on the project, went to visit the Bung Per CPAs, they were confronted with pleas from villagers to assist on the issue of land conflicts. When NGO’s climate

change policy officer Peou Sey went to visit the site, he stated 'deforestation and land problems were obvious. On one side of the road was some secondary forest where the project was supposed to happen. On the other was just cleared land owned by the company' (Interview 8). However, NGO were explicitly told by the Minister of Environment to ignore land conflict issues where they were repeatedly told to 'just look at that side of the road [where there was remaining CPA forest] and do not concern yourselves with that other side [where the land concessions were]' (ibid). When the NGO forum came to write a report on the project for the Adaptation Fund they put just a single line in the middle of the eighth page mentioning the issue which merely stated 'Economic Land Concessions still exist in the community' (Ung & Sey, 2014: 8).

Just like the case of the Oddar Meanchey project, the problem of land conflict somehow largely managed to escape official documentation and evaluation. In the first evaluation and risk assessment of the project, it was mentioned that '[T]he perceived threat of CPA land being sold as an Economic Land Concession has led to communities clearing land within the CPA for farming activities, which threatens the project's restoration objectives'. This risk was classified as a 'medium level risk'. The document however highlighted that this risk was being mitigated by applying the 'agroforestry approach' to agricultural lands within the CPA. The risk assessment transformed a major flaw in the logic of the program – that Economic Land Concessions were devastating livelihoods, not climate change - into a discrete risk that could simply be mitigated against through additional activities and slight changes in implementation. By the time of the second risk assessment in 2015, the section on land clearing within the CPA remained the same, word for word, even though people in *Skor Mreach* had totally abandoned the CPA two years earlier. Meanwhile, those in *Chom Thlork* were forced to sign contracts with the Ministry of Environment promising that they would not clear anymore CPA land (Interview 8) – a rough deal considering that they were powerless to challenge the Ministry of Environment on the loss of their farming land due to the land concessions.

The rest of this chapter however, will move away from the contentious issue of land conflict and focus on one particular CPA site – *Knaing* in Mondolkiri. Rather than examine the type of spectacular failure seen in the previous chapter, this chapter looks at *banal* failure; the small-scale misrepresentations, exclusions and simplifications that ensure project success but none the less leave project outcomes on the ground vastly different from projected outcomes. It considers once again how capitalist relations shape livelihood trajectories, but within the context of a state-run programme attempting to secure resilience and adaptation, rather than mitigation and profit as in the REDD+ scheme.

6.3 Phnom Prich – Isolated Rural, Forested Cambodia

Mondolkiri province, unlike Oddar Meanchey, is an isolated⁵⁴ mountainous region which is still predominantly populated by AustroAsiatic minorities – the Bunong being the largest group. Although it only takes 2 hours from Siem Reap to the capital of Oddar Meanchey (Samroang), it takes seven hours from Phnom Penh on the recently paved road from Phnom Penh to the capital of Mondolkiri (Sen Monorom) which is predominantly forested and mountainous. Villages in Mondolkiri also tend to be isolated and accessible only by roads which cross difficult terrain. As such education⁵⁵ and healthcare remain at a low standard where illiteracy⁵⁶ and infant mortality⁵⁷ are

⁵⁴ According to the 2008 census (the last national census) Mondolkiri had a population of 60,811 (0.04% of the population) in comparison to Oddar Meanchey at 185,443 (1.4%). Mondolkiri is Cambodia's largest province by land area.

⁵⁵ Seventy seven percent of schools are without water (with a fifty per cent average nation-wide) and fifty four per cent are without toilets (with a thirty four per cent national average). The upper secondary completion rate for is 10.1 for girls and 12.4 for boys against national averages of 20.1 and 20 respectively (Ministry of Education Youth and Sport: Kingdom of Cambodia, 2015).

⁵⁶ In 2011 the adult literacy rate in Mondolkiri was fifty six per cent. Literacy in Phnom Penh averages around ninety five per cent (UNEP & MOEYs, 2014)

⁵⁷ The infant mortality rate in Mondolkiri is eighty two deaths per one thousand births (second equal highest after Prey Vihear and Stung Treng) (National Institute of Statistics, 2011).

amongst the highest of anywhere in Cambodia. Poverty is also rife where incomes tend to be amongst the lowest of anywhere in Cambodia (although unlike lowland provinces people can utilise forests to support themselves in myriad ways). Until relatively recently the majority of the province's population has largely focused on subsistence agriculture, supplemented by trade in forest goods and minor cash crops (beans, cashew nut, fruit, vegetables, tobacco). Unlike Oddar Meanchey, which is dominated by the Khmer, highlander groups such as the Bunong tend to have forest-based livelihoods and have traditionally focused on highland 'dry' swidden farming as distinctive from lowland irrigation fed rice paddy. The Bunong language is also distinct from Khmer (where some older people and those in isolated villages are unable to speak Khmer), and many Bunong villages have a number of cultural markers and traits such as animist beliefs and practices,⁵⁸ and a matrilineal social structure, that makes them distinct from Khmer. Since the upgrading of the main road from Phnom Penh (firstly widened in 2002, then paved in 2011), there has been a large influx of migrants and business people coming to settle in the province for small -scale agriculture, land speculation, larger cash cropping, timber trading and gold mining. Like other rural areas of Cambodia, the province has also been opened up to agricultural and mining concessions over the last decade where the government has encouraged agro-investment in order to 'develop' the province (see Frewer, 2013).

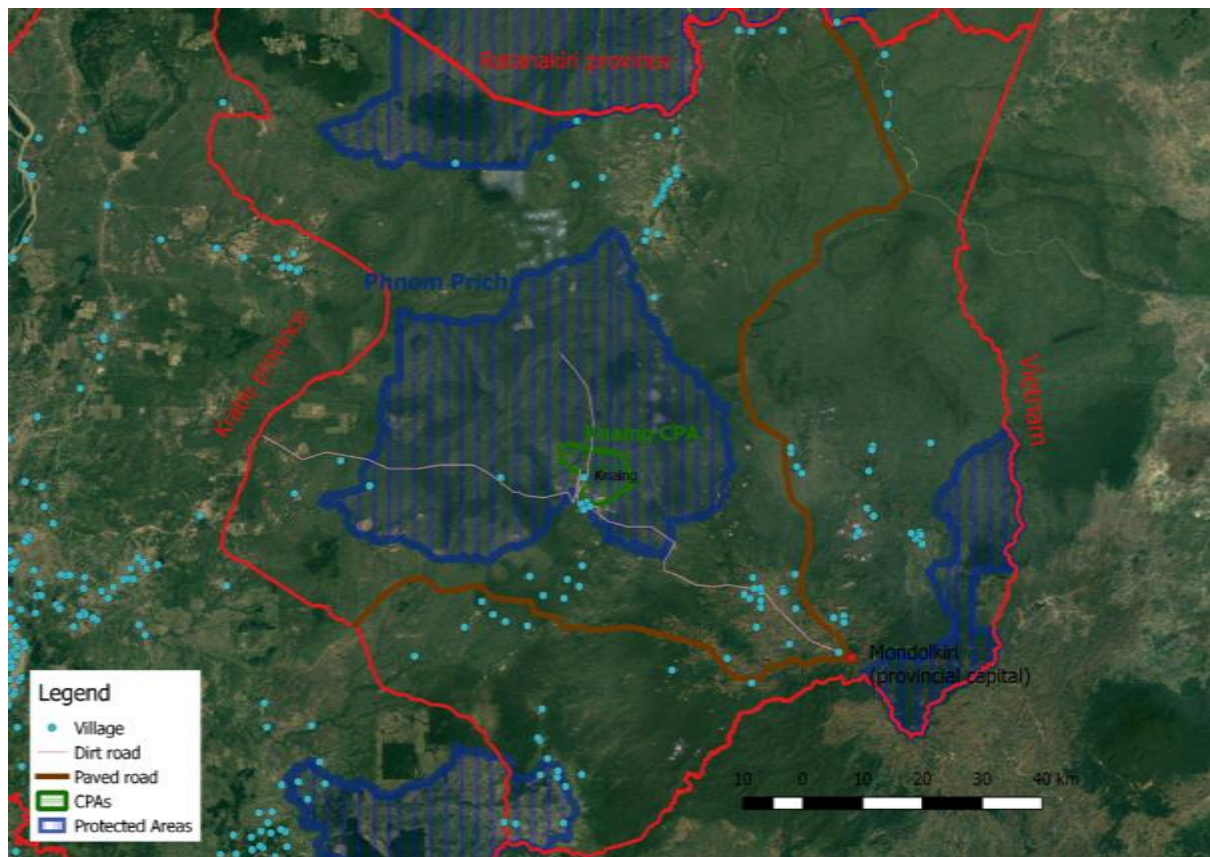
Knaing CPA itself is located within the Phnom Prich wildlife sanctuary, established through Royal Decree in 1993. The 225,000 ha sanctuary is located to the north-east of the province, not far from the Vietnamese border. As the name suggests [*Phnom* = mountain] it is a mountainous area of poor soil, mostly covered with deciduous forest [*Prich* is a type of grass that grows on sandy soils and typically grows in places unsuitable for farming], although with patches of evergreen forest along rivers and the more fertile valleys and plateaus. The area is rich in timber and wildlife (elephants,

⁵⁸ Many Bunong have also converted to Christianity in the last two decades.

gibbons and monkeys) and has been sparsely populated by Bunong villages for as long as people can remember. In 1962 King Sihanouk established the area as a forest reserve to protect the now extinct *Gouprey* [literally 'wild cow' indigenous to Cambodia] which Sihanouk had made as Cambodia's official icon. By 1966, King Sihanouk, who was desperately trying to steer the country along a neutral path, had come to believe that a North Vietnamese communist victory was inevitable, and so allowed the North Vietnamese Army/ People's Army of Vietnam to use the area as a base and supply route (to supply the National Front for the liberation of Vietnam/ Viet Cong). The area thus became an important part of the Ho Chi Minh/ Sihanouk trail and saw not only large movements of Viet Cong and the establishment of bases in the area, but also battles with Army of the Republic of Vietnam (ARVN), US forces and Royal Government Forces. The area was also heavily bombed as part of US Operation Menu (1969-1970) and the subsequent Operation Freedom Deal (1970-73) in a last-ditch effort to disrupt the Vietcong and Khmer Rouge and prevent their southern movements. From 1970, when the Khmer Rouge had nominal control of the province, all villagers were evacuated north to *Koh Nyek* district which had been an important base for the Khmer Rouge. By early 1979 the area was liberated by the Vietnamese army, although due to the remoteness and forested nature of the area, it remained a highly unstable area with bouts of fighting between Vietnamese/government forces and the Khmer Rouge right up until 1998 – the largest market in the area was razed to ground due to a Khmer Rouge attack in late 1998.⁵⁹ In the 1990s the area was periodically logged by small groups of people with political connections, as well as through large logging concessions such as the Malaysian Samling logging concession. Although it had been formerly established as a wildlife sanctuary since 1993 (when the Khmer Rouge still held much of the territory), it was not until the early 2000s when the international conservation NGO WWF began joint operations with the Ministry of Environment that active conservation work began.

⁵⁹ The area was also an important space for the anti -Vietnamese insurgency on the part of the highlanders in Vietnam/Cambodia under the banner of the United Front for the Liberation of Oppressed Peoples (FULRO). Remarkably, FULRO had been holed up in the forests of Phnom Prich under the tutelage of the Khmer Rouge, entirely cut off from the outside world and unaware that their leader had been killed 17 years earlier.

Figure 6.5 Phnom Prich Map



Source: Author

Knaing village, where Knaing CPA is located, is on the southern edge of Phnom Prich. It is a strongly Bunong village where 76 of its 80 households are ethnic Bunong (although several households have Khmer men who have married Bunong women and one household vice versa). It is located approximately two kilometres from a local river – it was originally located along the river but relocated due to flooding and on the advice of village elders (living in the previous spot was against the wishes of the forest spirits). All people in the village are swidden rice farmers who supplement incomes with cattle raising, hunting, timber felling, resin tapping and fruit, vegetable and minor cassava growing. The most defining characteristic of the commune is its isolation from the rest of the province. It is fifty kilometres from the provincial capital along a road that is impassable in the wet season and takes a full day to pass in the dry season. The second most important characteristic of the area is the presence of gold. In the nearby town of *O'Clor*, there has been a major influx of

Khmer immigrants, initially from neighbouring Kratie province, and then later waves from across Cambodia attracted to gold mining. From 91 households in 1998, the town is now home to 387 households including a pagoda, guesthouses, gambling den, numerous Karaoke parlours and numerous brothels. It is now commonly known now by its Khmer name *Prai Meas* (gold) where most new immigrants are not even aware that it used to be a Bunong Village. Land poor immigrants and those with artisanal mining experience flocked to the remote area attracted to the prospect gold. Those with capital set up small-scale mining ventures using rudimentary pumping and digging equipment, while poor immigrants worked in the dangerous job⁶⁰ of manual labourers digging and pumping sludge. Many Bunong villagers from Knaing also worked as labourers – although like most poor labourers – never managed to get enough capital to run successful mines for themselves (Interviews 9,10,11). A few people interviewed in O’Clor began as poor labourers and were lucky enough to start artisanal minning which successfully extracted gold, though most lost money on wells that never made any returns (Interviews 12, 13). By 2015, the mines were nearly exhausted and tonnes of rock with tiny slits of gold were abandoned on the road coming into the town, due to it being economically unfeasible to extract the small accounts of gold from the rubble. By this time O’Clor had all the characteristics of a frontier culture (c.f Tsing, 2005: 76)– populated by a highly itinerant and predominantly male population of lowlanders who had come to try their fortunes at mining, timber felling and wage labour. Guns, corrupt officials,⁶¹ drugs and prostitution were all blatant in the small town – which was at times an attraction for some in Knaing (and certainly provided a market for vegetables and cattle), but also something that the much more insular Bunong villagers sought to try and avoid and keep at bay (Interview 9).

⁶⁰ According to the commune chief there are at least ‘a few deaths’ every year from people suffocating in mines, falling into pits, or being crushed by equipment.

⁶¹ Commune and district authorities extracted informal rents from all miners as well as from timber fellers. Commune officials spent most of their days drinking coffee, beer and rice wine at a small shop adjacent to the commune hall. Loggers, miners, hunters and WWF and MoE officials could be seen talking business with them.

Figure 6.6 A restaurant/Karaoke Parlour/ Brothel in O'Clor/Preah Mea



Source: author

Figure 6.7 The Road to Memong in the Rainy Season of 2014



A logging truck stuck (for one night already) along the road to Memong/Knaing. Source: author.

Figure 6.8 Gold Mines at the Southern End of O'clor/ Preah Meas



Mercury, which is used by artisanal miners to separate small gold chunks from rock, runs freely from open pits into the local river which transects Knaing. People in Knaing still use this river to bathe and collect water.
Source: author

6.4 The Adaptation Project in Knaing

WWF had been working in Knaing since 2005 and was a catalysing agent in the original establishment of the CPA in the Phnom Prich Wildlife Sanctuary. Phnom Prich was the organisation's flagship project in Mondolkiri and Knaing was one of the first CPAs to get formal recognition from the MoE (in 2009). Another international NGO, WCS worked in the neighbouring Seima protection forest which held the country's second REDD+ project. Originally both MoE and Ecosolutions consultants judged that Phnom Prich (and Knaing) were appropriate intervention site due to the long-term support from WWF (Interview 7). The Knaing CPA had over the years been supported by WWF to conduct both patrols into the Phnom Prich wildlife sanctuary, as well as a number of livelihood supporting activities (supporting resin sellers and commercial NTFP collection as well as a

savings group).⁶² Although the WWF project in Knaing was presented as an important and successful project in a remote indigenous community living in a 'biodiverse ecosystem', the senior program manager based in Mondolkiri admitted that 'forest protection activities in Knaing could hardly be considered effective' which was stated to be mostly due to 'rampant logging' and 'the weakness of the community' (Interview 14). Senior MoE officials in Phnom Penh stated that they felt 'from the perspective of the government' having 'strong control over a big area like Phnom Prich is important' and so the project was seen as way of ensuring flows of money to the MoE to territorialise the area (Interviews 1, 15). Before the project the MoE had only a small outpost in Memong commune of two staff and struggled to conduct regular patrols over such a large area (Interview 16). From the perspective of the Ecosolutions consultant, Knaing was an area 'highly vulnerable' to climate change and so offered a good opportunity to 'try out' the 'ecoagriculture approach' in a remote, indigenous village (Interview 7).

The main activities to be conducted in Knaing were climate change and business training, setting up a tree nursery that provided different tree species to reforest and provide income to farmers, providing and expanding irrigation and providing new 'resilience and livelihood options' for villagers. As mentioned before, surveys of Knaing emphasised how vulnerable people were to climate change. This situation was imagined to be remedied through inducting people into the market by increasing their abilities to sell things, to produce the things they sell more efficiently (and sustainably), and to make the vulnerable more aware of their relation both to the market (through various farmers and

⁶² Interestingly one of the explicit goals of WWF activities in Phnom Prich was to 'conserve forest carbon' and WWF staff in Mondolkiri stated they had been considering conducting PES and REDD+ in the area for some time.

sellers groups) and to the biosphere (through climate change and conservation trainings which demonstrated their position within 'global ecosystems').

Climate change was predominantly imagined as an economic cost that needed to be reduced. This reduction was to be done by utilising a wide range of activities that would ensure people adapt to the financial burden of climate change. For instance in Phnom Prich it was estimated that climate change annually costs Knaing \$20,000 in lost rice production, \$4000 on lost livestock production and an additional \$17,000 on crop production. The project then went about attempting to employ interventions that would reduce these costs. It must be emphasised that imagining livelihoods and agricultural production systems in this manner was an extremely novel move. It may well be asked when the Bunong have ever *not* had to overcome drought, flooding and a difficult climate/environment. After all, Bunong agriculture is precisely the culmination of technologies and experience in managing such challenges. Although Community Based Adaptation approaches are rapidly involving and tend to employ a wide range of interventions, in this case they all centred around a single goal – to reduce climate risk. Attempting to extract 'climate risk' from production systems as if there is some optimal norm that operates outside the climate, is deeply problematic. As will be further explored the project clearly had in mind the commoditisation of these climate risks and no doubt posturing climate change in terms of an economic cost is an important step toward financialisation.

The first activity to occur in Knaing was a training on climate change conducted over two days by consultants and local MoE staff. The aim of the training was to teach people about the effects of climate change while also introducing the concept of adaptation and resilience. Two months after completion most participants struggled to recall the exact significance of the training – although around five people were able to recite the term 'climate change' and 'adaptation', all five viewed

climate change as being linked to the cutting of forests (Interviews 16,17,18,19,20). Other recipients recalled only that ‘officials and government people’ came to the village to teach them about ‘development’ and to conduct ‘a project’ (Interviews 21,22). When asked about climate change during interviews, around a third of interviewees were entirely unfamiliar with the term (particularly women and older people), while the other two-thirds had heard of the term but were unable to articulate its specific meaning but felt it encompassed hot weather and drought. Part of the problem was that the trainings were predominantly conducted in Khmer – as opposed to Bunong – although there was some facilitation by an MoE officer and the village chief who are both native Bunong speakers. Although nearly all people in the village are competent in spoken Khmer (and a number of languages), a number of older individuals – particularly middle-aged and older women were not comfortable in Khmer – especially technical Khmer. More than 75% of people in the village were functionally illiterate in Khmer – making it hard for them to understand posters and pamphlets that were given out. As one 68 year-old villager put it to me (in simple Khmer with a smattering of Bunong words – and with the help of some translation) – ‘who cares about those meetings and those high people. Khmer is just for selling things at the market. Bunong is the language for day to day matters and important things. When people come we just sit and listen – but what they say is not important’ (Interview 23). Like most trainings conducted in rural Cambodia, boxes were ticked and project documents verified successful completion, but a few months later, few marks of the training were left.

The other two major interventions to occur in the village were: an irrigation system to help people grow crops in the face of erratic rainfall, and a nursery that would allow farmers to reforest their individual plots with economically beneficial species. From the outset, both interventions faced a number of challenges. After initial consultation within the village there was little consensus on how these two interventions would be implemented. The Ecosolutions consultant initially envisaged a

large pond that could either be rain fed, or preferably fed by the nearby river. The Ecosolutions consultants placed much emphasis on 'home gardens' which was a key component of their 'ecoagriculture' approach. It was imagined that a simple irrigation system could be used to support fruit and vegetable production within the proximity of people's homes to generate income that could mitigate the costs associated with climate change. The problem was that several villagers – especially the elders – were in disagreement over where these works should take place as they had concerns over disrupting spirits. Several older villagers – who had considerable authority in the village – were unhappy building a large reservoir in the area of land adjacent to the village as for a long time they had understood this area to be an important place for local spirits (*neak taa*) (Interviews 23, 24). The village's local history was intimately bound up in this issue, as it had originally been moved from the area adjacent to the river – where the reservoir was proposed – to its current location due to the belief that flooding and sickness had been caused by settling in an area inappropriate to local spirits (Interview 24). In a way, the village resettlement could be considered as 'climate change adaptation' although mediated through animism where flooding events which threatened agricultural productivity spurred on a major reorganisation in the village.

It also turned out that the project did not have enough money to build a large rain-fed reservoir away from the river, and so for a few months, there was no movement on the issue. According to ecosolutions consultants and MoE officials, villagers had expressed a desire for the project to dig several wells throughout the village to supply water (Interviews 1,7). The problem was however that the cost of sinking wells increases exponentially with depth after 6m – and most land was between 7-9m above groundwater. The project thus initially rejected the proposal to dig wells and instead provided households in the village with large plastic 5000 L water tanks that could be used to collect rainwater from roofs during the rainy season that could be stored throughout the dry season.

Although happily accepting the water tanks – which did save people having to collect drinking water

from the river or wells, people gradually abandoned the idea of home gardens. The water tanks only provided sufficient drinking water for a few weeks following the end of the rainy season, but would be unable to provide sufficient water for major vegetable or fruit gardens which have high water needs (Interviews 19,20, 25-42). Out of the 80 water tanks provided to each household, by 2016 only 9 households were still making any serious attempt at growing home gardens using the water tanks. Of those who did not create home gardens, the most common reason cited was drought and the fact that the water tanks ran dry within the first month of the dry season (ibid). Many were already growing fruits and vegetables in their farms, or on small plots along the river, or stream, and saw little benefit in growing vegetables at their home where water accessibility was a major issue. Many people were also already growing garlic, chilli, ginger and lemongrass around their houses (although in small amounts and these did not require much water) as well as a small number of fruit trees (ibid).

The ecosolutions consultants however had a different idea, seeing home gardens as a central tenet of the 'agroforestry approach' - which for them was a 'sustainable' and 'integrated ecological' form of agriculture in line with 'adaptation to climate change' (Interview 7). For instance, one of the project documents noted that '[T]he community understand 'homegarden' to mean any patch of fruit or vegetables plants grown around the homestead. Their understanding of a homegarden does not necessarily correspond with the diverse, multi-layered intensified homegardens specified in the PD'(C4 EcoSolutions & Ministry of Environment - Royal Government of Cambodia, 2012). Project staff thus viewed the humble gardens of villagers as unsophisticated and a barrier to successful climate change adaptation and livelihood diversification. As the Khmer provincial MoE staff in charge of implementing the project somewhat patronisingly put it 'we try to get them to grow vegetables near their home like Khmer people, but it is very difficult to get them to change their ways. They are stuck doing things according to tradition' (Interview 43). Based on interviews in the other project

site in Bung Per, the project faced exactly the same problems in Khmer dominated intervention sites where people equally exhibited a resistance to the home garden concept (Interviews 2-6).

The case of a 63 year old Bunong woman - Chit – is illustrative of the problem homegardens faced (Interview 44). Chit was struggling in a small thatched house on the edge of the village. Her children had all migrated out of the village (two married and one who worked as a labourer in Phnom Penh) and her husband had died four years earlier of a mysterious disease (likely cancer). Not having money to cover hospital bills, she ended up selling most of her cattle (the family's major asset) as her husband progressed up the healthcare chain – from the clinic based in Memong which according to Chit 'is almost entirely useless apart from very minor afflictions' to the provincial hospital 'which is only slightly better' and finally to Siem Reap (where there are donor funded hospitals). When he passed away she had retained the family's three hectares of land, but with arthritis and a lack of labour in the village (which anyway she had no money to pay for) she was left with no way to support herself. She also abandoned her old house (which had a corrugated roof) as is common in the Bunong belief system⁶³ and rebuilt a small thatch hut nearby. Chit struggled on and was managing to farm about half a hectare of paddy land per year which could cover her rice needs. This was supplemented by meat, rice and vegetables neighbours gave to her and occasional remittances from her son or daughters. She was already growing a variety of herbs and leafy vegetables next to her house – which she watered using a nearby well (only 15m from her house which was installed as part of an NGO project). But during the dry season all the seeds provided by the project for homegardens died. She had neither the energy, capital, nor saw the benefit of installing a corrugated iron roof to capture rain water to store in the tank and so it lay empty next to her small house.

⁶³ It is common amongst rural Bunong households to move out of a house when the mother or father dies as it is believed the spirit stays with the house and it is both disrespectful and unlucky for the rest of the family to continue living there.

Analogously, for many the poorest households who had thatch roofs the water tank remained empty next to their houses. The protracted dry season also demonstrated that the water tanks were not a solution to daily water consumption issues. In a regular dry season the tanks could only store water that could get an average family 4-6 weeks through the dry season (if used for water consumption only). As many people complained about well water that was highly turbid with a strange taste,⁶⁴ many remained dependent upon river water which had to be collected from more than one kilometre away (Interviews 20, 26,28,29,30, 33-38).

Figure 6.8 Chit's House



Chit's house featuring a project provided, but empty, water tank. Taken during the wet season. Source: author

⁶⁴ This is typically due to a high concentration of suspended organic matter. Whether this was a problem with individual well systems or due to groundwater contamination (i.e. from overuse of fertilisers) is unknown. High turbidity is typically an indicator of bacteria growth. When MoE officials implementing the project in Mondolkiri and Phnom Penh were asked about this they replied turbidity is not a problem and people refused to drink the water 'because they are stubborn' and 'do not understand about water quality issues' (Interview 43).

The main impediment to seed and fruit tree distribution was the 2016 drought (April-July). As mentioned in chapter five, this drought event was a particularly severe episode of the El Niño cycle.⁶⁵ Every single water tank distributed by the project had already run dry by February leaving many without a convenient source of water. All vegetables grown in homegardens, with the exception of four households who had easy access to pumped well water (and for whom it was convenient to grow vegetables nearby their house), were wiped out in the drought. Similarly, the drought had a major effect on the other main intervention in Knaing – the tree nursery. By 2015, as mentioned previously, the project had come to focus not on reforestation (as there was almost nowhere to reforest) but on providing fruit trees and other cash crops that farmers could plant in their *Chumgar*. By mid-2015 the village chief had chosen 30 ‘demonstration farmers’ who would be given a number of different seedlings that had been grown in the nursery to trial as viable cash crops. The following year all Knaing households would be provided with seedlings of viable cash crop species. Coconut, mango and jackfruit were decided upon due to the fact that they were relatively cheap to produce (Interviews 1, 7, 39).

Nearly all coconut trees died (23 of the 30 farmers reported 80-100 per cent died and the rest reported 50-80 per cent mortality), most jackfruit trees died (around 75 per cent of planted trees) and a large number of mango trees died (around half depending on whether they were grown close to a permanent water source). Coconut and jackfruit are known to be particularly prone to drought and even in a regular dry season face major challenges (especially in areas without year-round irrigation, and on slopes, and sandy and rocky soils). Mango too – which is more hardy in the face of drought, still requires saturated soils in drought conditions to survive. Mortality of these three crops was particularly high for those who had grown them around their homes as part of ‘home

⁶⁵ Both the U.S NOAA and Australian BoM stated the 2014-2016 El Nina cycle was the most severe ever recorded (since 1950).

gardens' due to not having a nearby water source. Where mango had been grown along the main river, or streams, the mortality rate was significantly lower, but even then farmers reported making meagre incomes from selling mangoes in O'Clor (as the price was still low and in many cases they also used them for household consumption and shared them with other villagers).

MoE staff based in the provincial capital saw the drought as unfortunate and a hindrance upon the progression of the project, but also expressed that 'it is sometimes difficult to make people in Knaing follow instructions and grow things the proper way' (Interviews 43, 45). So too MoE officials such as Ouk Novann in Phnom Penh saw the drought as an unfortunate 'setback' which 'delayed project implementation' (Interview 46). The village chief was largely indifferent and stated he was 'simply waiting for the project people to come and distribute more seedlings and wait and see how it went' (Interview 48). Drought, which in project documents was presented as the exact phenomenon that the project legitimised itself upon, came to be an inconvenience to project progression by those actually doing interventions. In the instance of drought and homegardens, the climate disrupted the orderliness of the project rather than the project providing a practical measure to help people deal with drought. Yet rather than vulnerability emerging from an external natural force tipped out of balance, it has to be emphasised that people's vulnerability to drought was immanent to their day to day practices and relations to the state, market and outsiders, and the particular geographies of these relations. By positing that a few simple interventions could act as a wedge between Bunong villagers on the one side, and the external climate on the other, the project avowed the fact that it was largely incapable of transforming these myriad relations in any wholesale way. Furthermore, by subordinating adaptation and resilience to the individual scale where it was predominantly imagined as the set of choices, capacities and capabilities of individuals, relations that were not easily changed were largely ignored (for instance to the patrimonial state, class and race relations and market

forces). In this manner it was easy for proponents to assign failures of the project to individuals as it was argued that they had been given the physical materials and non-material capacities to become adaptive and resilient. The rest of this chapter will turn to looking at the broader relational vulnerabilities that people in Knaing found themselves.

6.5 People and Vulnerability in Knaing

Taking a cue from Marcus Taylor and others, this section focuses on how people in the project site are embedded in what Taylor refers to as 'the material climate' by considering 'the interlacing of meteorological forces, forms of social organisation, technological infrastructures and discursive frameworks at various spatial scales' (Taylor, 2014: 23). Rather than looking at the climate as a highly abstract and statistically aggregated numerical system that operates autonomously from social-ecological systems (or in exogenous relations), it is important to consider how localised weather patterns produce certain relations and ways of doing things. For people in Knaing this is a rudimentary, if not entirely obvious and incontrovertible starting point for understanding people's relation to the weather.

The distance and condition of the road to Sen Monorom and the fact that it is near impassable during monsoon rains is for instance a generally accepted part of living in rural Mondolkiri. There is always a wide degree of variation in the timing, intensity and frequency of monsoon rains which is formative of road conditions at any particular time. Added to this are two more important factors: provisional works on the road (where it has been graded every two or so years, as well as a number of small concrete bridges and dikes being put in) and traffic on the road (where from 2010-2015 heavy logging trucks which made daily trips along the road led to rapid and sustained degradation). People are extremely flexible in relation to, and tolerant of road conditions and well aware that road condition, time it takes to travel, and even whether it is possible to travel at all, does not rigidly

follow any particular temporal pattern and is highly varied. At any one particular time some stretches of road, or local roads to nearby villages, may be in a passable condition, it is more than likely that the main provincial road may be impassable. Particular road conditions at particular times have a wide-ranging effect on day to day village life. The fact that cash cropping has yet to be widespread in Knaing is largely due to the fact of the road. Similarly, that the vast land surrounding Knaing has not come under the same type of pressures from immigrants, land speculators and companies as in other parts of rural Cambodia is largely attributed to the condition of the road. So too people's decisions about healthcare and education are largely attributed to the road condition. When the road is bad the elderly and severely sick frequently decide to stay in villages and die as seeking medical treatment in distant areas becomes too complicated (Interviews 41,40).⁶⁶ For less urgent issues people turn to local doctors utilising both biomedicine that is peddled by travelling sellers and traditional healers and doctors who engage the spirit world.

Agricultural practices and relations are also clearly co-produced through the particular climatic conditions people in Knaing find themselves in. The yearly cycle of monsoon and drought co-produces a particular set of agricultural practices which focus around upland swidden 'dry rice' production in the dry season and swidden *chamkar* production in the wet season. People did not necessarily see themselves as 'vulnerable' to drought or erratic rainfall as there has always been variation in the timing, intensity and frequency of monsoon rains and it is this variability that agricultural practice is based around (Interviews 25-38). In distinction to lowland rice varieties, typical upland rice varieties used by people in Knaing are glutinous, slow growing, of modest yields and are employed precisely because they are a safe bet against late and inconsistent rains. The fact that they can remain dormant in drought (due to growth being triggered by water exposure) and

⁶⁶ During the research period I observed two different elderly people in this position. Both were suffering major health complications but unable to move to the provincial capital and so stayed in the village subsisting on basic medicines such as Panadol, drips and vitamins.

that they are hardy in minimal water conditions (due to a deep and thick root system, minimal leaf growth, and rapid wilting at the onset of drought) make them ideal for climates of erratic rainfall – although at the cost of low yields, long growing times and labour intensive planting) (ibid). As part of rotational cropping systems fertility of fields is maximised by leaving cleared areas dormant for 3-10 years and rice is frequently intercropped with vegetable and legumes (ibid). Although this system is labour intensive (particularly concentrated in the wet season) it is well suited to areas of low labour to land ratios where large surpluses are not prioritised. Although these production systems require large investments of household labour to clear forest, plant, harvest and mill rice, household food security can usually be achieved using only household labour (sometimes supplemented with reciprocal labour or very small amounts of local paid labour for larger farms). Although the drought had wide-ranging effects on people in Knaing including difficulty in acquiring drinking water, a major reduction of river flow volume which made irrigation and washing difficult, and major losses of fruit and vegetables, the impact on rice production was relatively lower in comparison. Out of 20 people interviewed in depth, swidden rice yields had decreased only by an average of 10-25% during the drought (for comparison, in some of the worst-hit districts of north Western Cambodia, farmers were experiencing over 75% paddy rice mortality).

That this predominantly subsistence economy has not succumb to the pressures of the market economy is in large part due to the geographic isolation of the village – which is co-produced through climatic factors. That most people do not spend capital on farm labour, fertilisers, herbicides, pay rent for land, hire equipment for forest clearing, pay taxes, own businesses,⁶⁷ and that they tolerate low quality and cheap healthcare, have extremely low educational ambitions and

⁶⁷ Only 6 per cent of households were involved in small goods selling, (petrol, confectionary, basic household items).

supplement a significant portion of daily nutrition through hunting and foraging,⁶⁸ means that their needs for capital are much lower than those elsewhere in rural Cambodia such as Oddar Meanchey. The fact that there were no microcredit organisations, very few consumer items (expensive clothes, electronics, even food and beverage products) meant that people were not entangled in capitalist relations to the degree that other rural Cambodians are. Unlike most of rural Cambodian villages, Knaing is extremely inward looking, focusing surplus production on those within the village and carefully managing economic and political relations with outsiders. The village itself was a tightly knit community that made a strong differentiation between insiders and outsiders and where insiders were obliged to play an active part in communal life including participating in the numerous animist ceremonies, sharing surpluses, following and respecting animist beliefs and traditions and keeping up and engaging in village issues.⁶⁹ On numerous times in the history of the village, people had abandoned fields and houses in order to avoid outsiders and simply moved the entire village. Once again it was the isolation and the state's tenuous territorialisation of this hinterland that allowed Knaing to remain insular and on the peripheries of the market economy.

⁶⁸ All 20 interviewed households engaged in hunting and vegetable/fruit foraging on a regular basis (with at least one member engaging one of these things on a fortnightly basis).

⁶⁹ A good example is one 74-year-old Khmer man who had moved to the village in the early 1980s after marrying a Bunong woman who was born in the area (interview 39). Like other long term Khmer residents he adapted to Bunong beliefs and practices (able to speak and understand Bunong) and often participated in animist events. Sometime in the mid2000s (he nor his family could remember the actual year), he was accused of farming a sacred site where a long deceased Bunong villager was buried. Unaware of the site's significance, he immediately stopped farming but village elders expressed that the damage had already been done. He was expelled from the village and to this day he, his wife and children live on the outskirts of the village (in the forest) with minimal interaction with the rest of the village. He and other villagers also stated that sometime in the early 1990s a villager was accused of being a witch and was subsequently hacked to death by a group of other villagers (Interviews 39,40).

Figure 6.10 Monitor lizard collected by a Bunong Man for an Informal Drinking Session



Source: author

It is important to note that people did not see themselves as particularly vulnerable to climate change. Many complained about droughts (particularly the severe 2016 drought) and deforestation and its effect on localised temperature, but they saw drought as a longheld part of agricultural production which according to one 61 old man born in the village ‘is worse in some years more than others but in the long term that is how it is here. We struggle, we have for a long time; we go to the forest, we clear scrub and we plant by hand. Some years we get lots [yield] in other years little. So sometimes we have to share and do what we can to make sure we get by’ (Interview 37). Drought was not an exogenous factor that suddenly wreaked havoc on their lives – rather agricultural production and communal surplus distribution was built around erratic rainfall. Project proponents

therefore struggled greatly to introduce the concept of climate vulnerability as an external shock within workshops and trainings. Project proponents in the provincial capital and in Phnom Penh could then suggest that it was due to villagers being ‘uneducated, illiterate and simple’ that these concepts had little traction in the village (Interviews 1, 46)

It is also important to note that people were not entirely outside of the market economy and nor were socio-ecological systems in the village static and seamlessly reproducing themselves. Rapid changes in the area – particularly with the influx of migrants to O’Clor, and the booming timber business, created new relations and contradictions within the village. The large influx of Khmer settlers in O’Clor forced the village to become far less insular. Although small numbers of Khmer had been settling the area since the early 1990s to mine gold, it was not until the mid to late 2000s when O’Clor itself began to rapidly expand. Throughout the 1990s most gold miners stayed in Memong and made the daily trip to O’Clor citing insecurity, malaria and the fact that authorities had attempted to prevent large number of people settling forested areas. By the 2000s, after the fall of the Khmer Rouge this began to change. As people began to erect more permanent settlements in O’Clor during the 2000s, Khmer immigrants began to turn to farming – claiming land and clearing adjacent patches of land. The response of indigenous villages was largely flight. Although some villages attempted to negotiate payments for land, most Khmer immigrants did not recognise fallow land as being owned and simply took it. Most of the original Bunong inhabitants moved to other surrounding villages – although to this day the village chief of O’Clor is still one of the few original Bunong residents.⁷⁰ Due to the proximity of Knaing to O’Clor several Knaing families also lost fallow land to Khmer immigrants – which to this day they are deeply resentful over. As a middle aged Bunong man put – ‘you have to understand about the difference between us indigenous people and

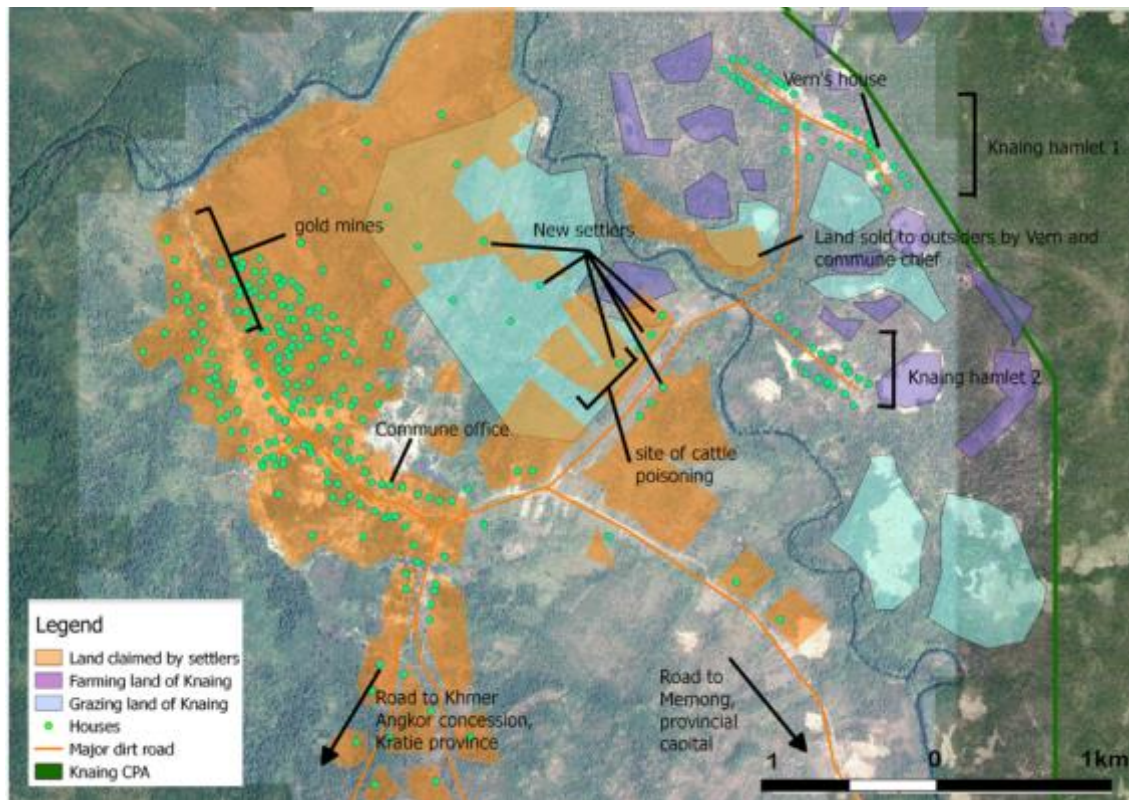
⁷⁰ He however is fluent in Khmer and was chosen as village chief exactly due to his long connections with Khmer administrators through work in the mining and timber businesses.

Khmer. We are less educated, we don't have a high level of experience with markets. Many of can't read. We are farmers. So it was easy for Khmer outsiders to come and exploit us – to take our land. You can see this was an injustice as we could not even oppose them in any way. To this day many of us suffer because we lost that land. We have to be smarter and fight for our rights. We will not forget what happened' (Interview 42).

Yet tensions over land were ongoing – although they were often expressed in subtle ways. By 2012, Khmer immigrants had begun to settle on the opposite side of the river – which people in Knaing used as a cattle grazing area. As this cattle grazing area was not demarcated into private property, immigrants under the patronage of the O'Clor village chief and commune chief considered it free land able to be claimed. A few Knaing residents immediately established small huts and cleared fields in the area in order to protect land (Interview 42,43,41). Yet others continued grazing in the area. The immigrants started complaining that cattle were eating their crops and that Knaing cattle raisers should keep their cattle within an enclosed space to prevent it from entering their land (Interview 47). Knaing people entirely ignored these requests as they felt the land was theirs. Rather than erect fences the immigrants took to hitting the cattle and even cutting them with axes and knives. Around five cows were killed in this manner – which represents a huge loss for the asset poor Knaing villages (Interviews 42,43,41). Yet when confronted, the immigrants denied any knowledge of the events. Finally in 2013, Knaing villages claimed there was a mass poisoning of cattle when more than 40 cattle suddenly became sick and all died within weeks of each other. Knaing villages claimed immigrants had purposefully poisoned their cattle (ibid)– immigrants claimed that the cattle had been accidentally killed by consuming vegetables sprayed with pesticide and herbicides – which was ultimately the fault of Knaing villages for letting their cattle freely roam the area (Interview 47). The single event directly pushed several Knaing villages into poverty as around 7 households had lost between 75 per cent-100 per cent of their cattle herd – which at the time was their most important

asset (Interviews, 42,43, 41). After several attempts to get the two village chiefs and the commune chief to help mediate the issue, Knaing villages had largely given up as these authorities had failed to act on the issue.

Figure 6.11 Land Use Types in Knaing/O'Clor



Source: Author

The Knaing village chief Sroh Vern was a good example of the village's contradictions. Born in the village, an accomplished hunter and elephant trainer, Vern had good relations with people in the village – highly involved in village life and the plethora of traditions and ceremonies that were held in the village. Yet Vern, who was highly literate in Khmer and who had for a long time been close to key Khmer administrators throughout the district, formed an important node in the Khmer dominated administration in the area. In particular, his closeness to the Khmer commune chief (who appointed him) and flexibility in terms of 'going along' with their interests and agendas as he put it, made him an important broker between villages and mid-level administrators (Interview 48). As he

was one of the few literate people in the village, he also was the head of the Community Forest group in the village established by WWF (a position he occupied since its inception) and was also the key representative of the adaptation project. Yet not everyone in the village liked and respected him. Several people felt he was despotic and had too much power (Interviews 30, 33, 39). A number of villages were also ambivalent about the WWF program - although they supported the aims of conserving the vast Phnom Prich forested area that their village backed onto, people resented restrictions put on extending fields and fallow land. Under the rules of the establishment of indigenous community forests, people who had former fields within protected areas were allowed to continue farming them but were not allowed to extend their fields – nor were people who did not originally have fields in the protected area allowed to clear new fields. Seeing the changes happening in the area people realised that land surrounding them was rapidly becoming either territorialised by the state or commoditised through immigrants and local level administrators. Realising that they had little labour to mobilise to claim land, people worried in the future that they would be stuck with small patches of low productive land while immigrants and the state amassed large stretches of land around them (Interviews 25, 31, 32,33).

Commoditisation of timber in the area also pushed people in Knaing in new directions. Although the area had been selectively logged since 1990 (from the Malaysian company Samling and smaller scale loggers) it was not until the late 2000s that logging took off on a big scale. A number of small-scale loggers had for years been scouring Phnom Prich for valuable timber – and by the early 2000s there were many people coming to O'Clor for logging rather than gold mining. Many of the original Khmer inhabitants of Knaing were in fact originally timber harvesters who had eventually settled in the village after more valuable species such as rosewood were no longer available (Interviews 25, 30). As almost everyone in the commune knew, Vern and his family had also been running successful timber operations for years. With their deep knowledge of Phnom Prich they were able to find valuable

trees that outsiders simply were unable to find. Vern's brother even used timber from Phnom Prich to build a drawbridge across the main river in the village which he charged people \$2 for a two-way trip. However, due to transport problems, and the increasing grip of the commune chief over small-scale logging, as well as bribes that had to be paid to military police and forestry officials, his logging ventures only resulted in modest incomes and increasingly became linked up to much more powerful outsiders (Interview 42). Even in 2015 he was still sending out relatives on logging expeditions – although the wood by that time was being collected by middlemen. In his dual role as both conserver and exploiter of forests, Vern had a high degree of power within the village and over the local flows of timber. In most cases he turned a blind eye to his fellow villagers logging – and even helped them connect to middlemen (Interviews 25, 29). Those who could afford chainsaws could gain an important source of income, and hence tolerated Vern's contradictory activities (ibid). For those too poor to engage in logging there was a tendency to be more openly critical of Vern (Interviews 30,33).

Yet it was the establishment of a number of economic land concessions in the late 2000s that led to a boom in timber. The establishment of a 9,600 hectare concession to the company Kasikham Khmer Angkor on the south-west border of Phnom Prich, and the establishment of the 8,900 ha Vietnamese Binh Phuk concession on the southern border saw mass logging in the area (see figure 6.6) . The Kasikham Khmer Angkor company likely never actually had a plan to grow anything on their land – and nor did the provincial ministry of environment who granted the concession enforce any of the conditions and requirements of the concession. The company went about building an access road to Kratie province to the west and begun blatantly smuggling wood out of Phnom Prich. Many villagers claimed that the commune chief – and other officials in the area – worked directly with the company and received payments in the form of unofficial taxes. In one of the Prime Minister's many crackdowns on non-performing land concessions and illegal timber harvesting activities, the Khmer

Angkor concession was revoked. Yet rather than logging activities ceasing, on the ground they appeared to be intensifying. In a trip to the concession in January of 2015, no less than seven logging trucks were observed along the 23 km road from Knaing to the concession which cuts through Phnom Prich. Bands of logging teams could be observed along the road not in any way attempting to conceal their activities. All spoken to stated they worked for Khmer Angkor. Many on the ground stated that infamous logging baron Try Pheap had received rights from the Ministry of Environment to 'collect' unused wood from the cancelled concession (Interviews 49,50,51). It was widely understood by those living in the area that this went well beyond merely collecting already felled timber, but just like he had done in Ratanakiri over the prior 7 years where he had been granted a similar right, he would bring in networks of loggers to collect valuable timber from far and wide (Milne, 2015; Pye & Titthara, 2014). Although the head of MoE Say Sam Ol admitted that the MoE had indeed given permission 'for a company' to collect unused wood, they were less forthcoming about which particular company (Titthara, 2016). Provincial level MoE staff when interviewed in 2015 in Memong were more outright about this – as by this time it had become a well-known fact that Try Pheap was active in the area. After being called out to the scene of a large stockpile of wood illegally felled, MoE staff documented and counted the timber. After questioning locals they were informed that loggers hired by Try Pheap were most likely the culprit. The staff dryly noted the irony of the situation – after collecting the timber, Try Pheap - who was given official permission to collect all illegally felled wood in the province – was then called to collect it (Interviews 52, 53).

In Knaing, people quickly became involved in Try Pheap's extensive logging network. Try Pheap is renowned for utilising local loggers paid on a piece rate – rather than employing full-time workers (see Milne, 2015). Utilising road blocks within both concession areas and MoE and military police outposts, it was possible to forcibly acquire wood for small payments from villages. Agents were also sent out to informally recruit loggers – who were provided with necessary equipment and would

take timber to the concession area – on a piece by piece basis. One afternoon sharing some food and rice wine with a few men I knew from Knaing – and two outsider Khmers, the men admitted that they were recruited to log Phnom Prich by Try Pheaps agents (Interviews 54,55,56, 57). Mostly they were logging second and third-grade quality timber and being paid only around \$5-7 per cubic metre. A small access road had also been cleared in the middle of Phnom Prich, which only attracted more people coming to log on such a basis. Villagers also claimed that Vern and his family had switched to supplying Try Pheap (Interviews 54, 55).

6.12 Loggers in Knaing Enjoying Some Rice Wine



Source: author

Figure 6.13 Logging truck in Knaing Preparing to Leave to Collect Timber



Source: author

6.12 Bunong Children in Memong District Collecting Luxury Timber for an Outside Buyer



Source: author

People in Knaing were not only aware that new logging networks from Khmer Angkor were extending across their traditional lands, but that various commercial state-backed concessions were rapidly transforming their relations to land and natural resources. People were aware that the Binh Phuc concession was also engaging in logging activities in the area. Similarly, the Data concession not far from Sen Monorom on the western edge of Phnom Prich and which was connected to the provincial governor, was involved in logging. But even in O'Clor, by 2012 a large Chinese mining venture had been officially granted a mining concession⁷¹ and Australian and Canadian mining firms

⁷¹ According to interview with local authorities the Chinese company had been informally mining within the area for a number of years before officially being granted a concession. Yet in 2015 it was unclear whether the company would continue due to long term economic feasibility of the project. At the same time Cambodia's first 'artisanal mining community' assembled from the long term small scale miners in O'Clor received formal

were also granted concessions within and surrounding Phnom Prich. This resulted not only in the territorialisation of forest lands by the state and associated companies, but brought inflows of workers and migrants who in turn required land and natural resources.

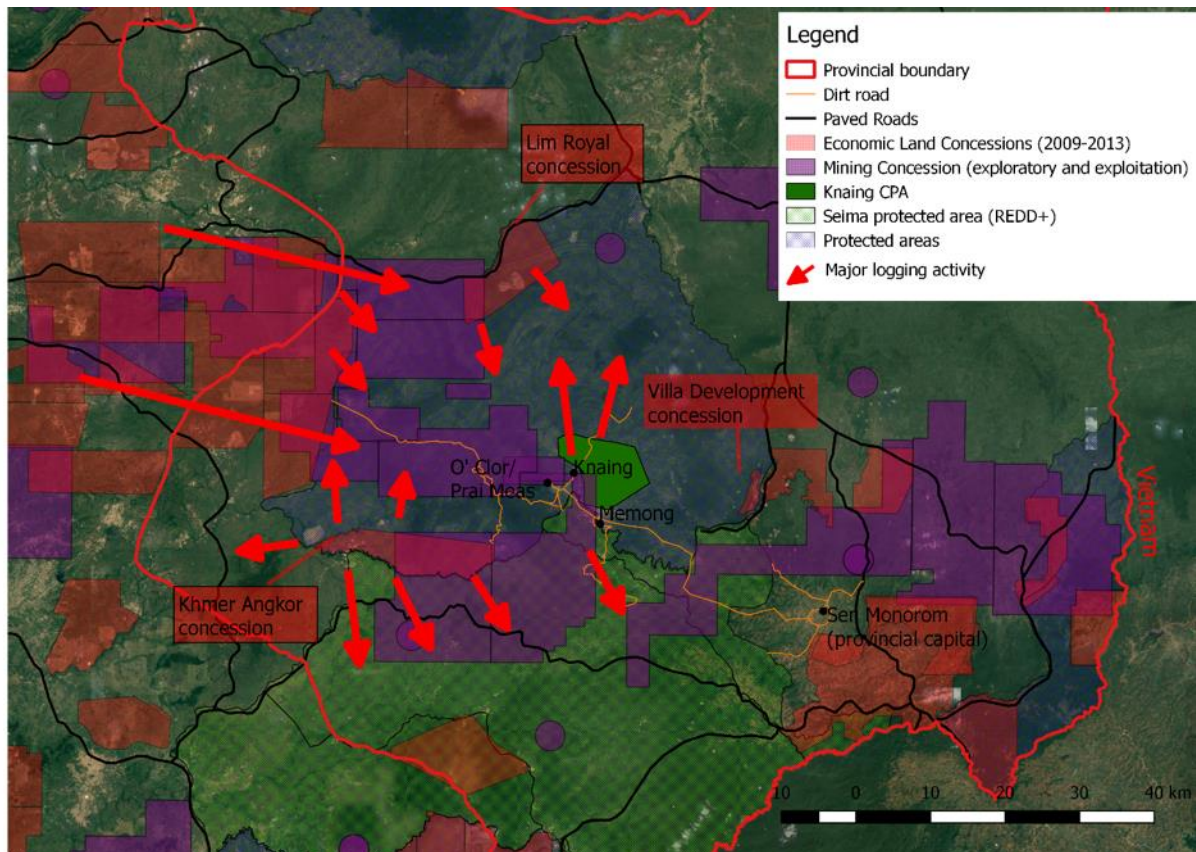
Land was also being territorialised through large-scale conservation projects. WWF and the MoE attempted to ramp up conservation efforts in Phnom Prich as Hun Sen had by January 2016 urged all provincial Ministry of Environment officials to 'actively put in place mechanisms to curb illegal logging' where he threatened to fire those who failed in this mandate (Seangly, 2016). Yet Vern and MoE officials based in Memong complained that illegal logging went on unhindered (Interviews 48, 52, 53). Although Vern was a part of this illegal logging, in his role as leader of the community forest group he still conducted regular patrols and arrested small scale loggers he did not know. On a number of occasions he even confiscated wood from loggers in Phnom Prich to take it to the MoE outpost only to have 'the loggers make a phone call and come pick it up from them immediately after' (Interview 48). So too the male loggers interviewed in Knaing admitted that if they were apprehended by MoE officials 'all they had to do was make a phone call' (Interview 49). The MoE officials were equally frustrated at this state of affairs noting that 'our hands are tied. That is how it works we have to follow those above us. If we are told to let someone go then we have to follow' (interviews 52, 53).

Cambodia's second REDD+ project was also located in the same district as Knaing covering 180,000 ha that was fairly strictly protected by the Forestry Administration. It suffered from many of the same issues that the Oddar Meanchey project faced, but it became clear that with a new emphasis on distributing land titles in the district, and the FA's renewed attempts at enforcing conservation

permission from the Ministry of Mines and Energy to operate a number of mines in the area. Yet in 2016 it was still unclear whether the Chinese company would continue mining and in which areas it was allowed to mine.

boundaries, it would not be possible to simply claim land within that area. Once again this brought home a realisation to people in Knaing that their vast forested landscape was quickly being carved up into conservation areas, land concessions and private property, leaving them with no land to expand – or escape- into.

Figure 6. 15 Natural Resource Exploitation Around Phnom Prich



Source: author

In summary, people in Knaing themselves were increasingly aware of their own vulnerability in relation to new logging networks, new mining and land concessions, state territorialisation and the gradual spread of the land market into their village. In many ways the village's insular and largely subsistence based orientation was under increasing pressure which people saw as having positive and negative effects. Many people expressed deep contradictions where they wanted to participate in the market on a stronger basis, but also wanted access to forest products and ways of life that

were largely not possible where the market and state had territorialised surrounding land. People wanted the road to Sen Monorom to be upgraded so that they would not be forced to suffer without proper medical treatment and so that they could easily transport produce to the province (and vice versa). But they also realised that better access brought increasing pressures on land and natural resources. As capitalist relations slowly took hold in the area and the state simultaneously tightened its administrative grip on the region, people became intimately aware of the fact that they were not well positioned to exploit market relations. People readily accepted that they had little experience as small scale traders and saw themselves as outcompeted in terms of basic commodity trading in comparison to the much more mobile Khmer immigrants. They also had few assets, and the one asset they did have at their disposal – land, they struggled to gain profits from due to having limited labour and capital. Logging, which people did on an ad hoc basis, brought in only limited revenue where even Vern was acutely aware that outsiders were gaining most of the profit from his logging ventures. The community could no longer simply ignore or avoid the state or outsiders. There was no longer any place the village could turn to avoid – or at least remain peripheral from - these relations as it had so many times in the past. Yet at the same time people were largely abandoned by the state where woeful education standards, inadequate healthcare services and a basic lack of any infrastructure continued to plague the village. Everywhere people turned they encountered the state and were increasingly urged to participate in state building; yet authorities at all levels felt content to leave people in villages such as Knaing to be exploited by state-backed elites without any practical support. As has been emphasised in this section, local weather patterns came together with these broader relations in a way that created new challenges and struggles for people in Knaing. Yet it was not 'erratic rainfall' that was novel, but rather people's increasing integration into capitalist relations and processes of state-making.

6.6 So what of Adaptation?

The project dragged on with increasingly infrequent visits from project staff. Largely this was due to the climate itself – as during the rainy season the road from the provincial capital was often impassable. Project staff in Phnom Penh remained confident the project was making adequate progress – as did mid-term progress reports – even though the water and vegetable growing components had ‘faced setbacks’. The project had still achieved a number of its aims and goals and even with the drought, was still ready to distribute seeds and inputs to all villagers in late 2016. In addition, the project had contracted a consultant from Phnom Penh (one of the young male Khmer experts embedded in the FA working on REDD+ mentioned in chapter 5) to conduct a feasibility study in the village as to whether a REDD+ could be established within the site. The \$5000 spent on the consultant resulted in a one night trip to Knaing where it was concluded that it was unfeasible to conduct a REDD+ project due to the large transaction costs associated with such a small area of forest. Yet this did not stop project proponents from sponsoring Vern on three different occasions to attend REDD+ workshops in Phnom Penh, Siem Reap and Pursat provinces. Similarly, initial optimism over providing weather insurance to farmers which was described by an ecosolutions consultant as an ‘innovative market-based mechanism for dealing with vulnerability’ came to very little as there were no weather insurance products available to the farmers within Cambodia. Although farmers had indeed been provided with inputs for marketable crops, even if crops had not died during the drought, there was little practical support available for them, and a myriad of problems associated with transporting and selling such crops existed. The project appeared to have largely failed in its attempts to engage people in markets to make them secure in the face of vulnerability.

Although people themselves were being increasingly seduced, compelled and at times even forced into various market relations, these were not always the type of markets the project had envisaged

– especially when it came to timber harvesting. Much like in Oddar Meanchey, in many cases, people felt that the problem was not so much that the project was pushing them into market relations, but that it failed to provide a sellable commodity that could afford them a decent income. Many farmers questioned why the project had not been more ambitious in scope and assisted them to grow high value crops such as cashew nut (which was rising in price and sturdy in the face of drought), pepper (which was also rising in price, but heavily dependent on irrigation – although some pepper groves grown by a Khmer settler in nearby Memong had survived the drought) or even rubber (which although had seen a major price crash was back on the rise by 2016)⁷² (interviews 25-35). After employing risk analyses to carefully carve out people in Knaing as particularly vulnerable to climate change, the program largely failed both in attempts to financialise these risks, and to more generally deploy the market in order to buffer people from the effects of climate change.⁷³

In many ways, it appeared that the project had settled on a core biopolitical rationality of adaptation as discussed in chapter three. That is, that where attempts to actually improve the material conditions of life are largely unfeasible, adaptation settles on making subjects resilient to low living standards in the face of abandonment. In late 2015, Vern with other villagers requested the project provide left-over money to help improve the short 1.5 kilometre stretch of road connecting the main road from the provincial capital to the village. In the rainy season, this small stretch of road was so

⁷² One of the long-term Khmer residents of the village (who had been in the village for more than a decade, spoke Bunong and had a Bunong wife questioned why the project ‘had not thought more carefully about suitable and modern crops that were popular in the area’ (interview 32). Himself and his neighbour – a Bunong man in his 40s who had worked for WWF – had excess capital gained from logging that they were eager to invest in farming – and as they both put it in different ways they were quite willing ‘to take risks’ and ‘experiment’ (interview 33). They were frustrated however with the limited opportunities in this regard.

⁷³ As a comparison see Micael Dove who in his well cited 1993 article *Forest Crunch* speaks of an FAO study in Kalimantan; ‘[T]he Authors of the study conclude that, in addition to handicrafts, the income of rural and isolated people can be supplemented by ‘agriculture or other activities... [T]his study’s list of potential sources of income is a list not of what the broader society values most, but of what it values least. It is a list of what the broader society is likely to allow the forest peoples to keep... [F]or an environment as rich in resources as Southeast Asia’s tropical forests, a list of potential income sources that cannot transcend butterfly and crocodile farms is a recommendation, however unintentional, not for the empowerment of the forest peoples but for their impoverishment. In the context of heightened competition for access to tropical forest resources, this ‘sin of omission’ — which strengthens the position of outside interests and weakens the position of the forest dwellers — is no accident: it is a product of the ideology and rhetoric of the dominant political-economic interests (Dove, 1993: 20-21). See also (Tania Murray Li, 2002: 10).

bad that in an emergency the sick had to be carried on foot out of the village taking an hour just to get to O'Clor. They also requested a humble amount of money to fix the village school – which had been built entirely from funds sourced from within the village and was made of thatch and bamboo, but which by 2015 had a major roof leakage. The commune chief refused to support the allocation of project funds into these areas citing 'other priorities' and project proponents quietly sidelined the proposal (Interview 48). Yet somehow, the project had contributed to making people resilient in these circumstances. By supporting the WWF conservation project, people were becoming more proactive in managing the CPA area (conducting regular patrols and closely abiding by CPA rules and regulations). And although people did not clearly understand climate change, they began to understand that cutting the forest, polluting and overhunting were negative activities which somehow had implications beyond their local area. Even without a deep understanding of their relationship to the global climate, people in Knaing began to comprehend that somehow there was something about them that was lacking and that made them 'vulnerable' and therefore the target of outside aid agencies.⁷⁴ Even though there were very few formal commodity markets people could engage in, they were increasingly understanding that it was the market, not the state, that they should look to in order to sustain a basic level of living.

6.7 Conclusion

As people were very literally struggling to secure the most basic standards of living, the project was presenting itself as a cutting edge intervention that had successfully made the poor and vulnerable resilient in the face of a changed climate. Much like the Oddar Meanchey project, documents, photos and testimonials of project success began to flow through the much broader climate

⁷⁴ Vern for instance one night when asked about NGOs and government coming to do development in the village said 'in the past they [NGOs and government agencies] had no interest in the village - we never saw anything. We were just in the forest. Now we see more and more people coming as the road improves. NGOs now come and talk about climate change because unlike people in the cities we have never heard about that and we don't know about it. They tell us we need to know so that what they call development can happen here' (Interview 7).

assemblage becoming largely autonomous from the material realities within the village.⁷⁵ Yet unlike REDD+, project aims never became bound up in the convoluted (or involuted) process of carbon commoditisation. Rather, the project became an important experiment that sought to make the vulnerable resilient and adaptable to climate change. The adaptation project in Cambodia helped to carve out and make visible to governments, NGOs, experts and researchers a certain type of subject who was subtracted from the complex geographical relations that actually produced life struggles, into the one-dimensional subject vulnerable to external climatic changes. The project was also important in that it normalised particularistic neoliberal approaches to climate change; it was highly expert dependent, at a discursive level relied heavily on market approaches to reducing vulnerability, and was particularly focused on the capacities, capabilities and choices of individuals with little concern for their broader material contexts. The story of Knaing became abstracted into quantitative risk analyses, but also an emotive narrative of vulnerable indigenous people finding innovative, market mechanisms to deal with climate change. It became a small, but important piece of the carbon assemblage's broader attempts to govern over the climate vulnerable.

⁷⁵ As of writing the project has not yet been completed. But so far it has featured on the Asia Pacific Adaptation Network (briefly mentioned in chapter 3), within Cambodia media (i.e. the Khmer Times) (Pheakeday, 2015), promoted within Journal articles and conferences (e.g. Associate Professor Akihisa Mori who has written about the project favorable in comparison to GEF climate change projects in Cambodia)(Mori, 2015), it has been promoted by Ecosolutions at different forums and conferences (e.g. the 2015 African Climate and Development Initiative seminar) (Ecosolutions, 2015), it has been promoted by the Adaptation Fund Network (Candice Arendse, Kodjo, & Williams-Raynor, 2015), and by the MoE (Climate Change Department, 2014).

Chapter 7. Conclusion

7.1 Summary

This thesis has attempted to demonstrate: 1) the way in which the climate change assemblage has been formed including the discourses, rationalities and financial flows which sustain it, and 2) how it territorialises particular places – in this case Cambodia (and specific locales in Cambodia).

The climate assemblage consists of a plethora of different actors who all have an interest in maintaining and expanding the relations which define the assemblage. This includes: scientists who wish to promote climate science, policy makers who wish to employ risk analysis to mitigate against future climate change risks, corporate social responsibility departments of major corporations who wish to promote their green credentials, carbon-intensive industry which seeks to be at the forefront of carbon markets, financial advisers who wish to channel over-accumulated capital into carbon markets, multilateral development institutions who wish to be at the forefront of climate change knowledge, bilateral donors who wish to promote their efforts to fight climate change and poverty amongst their constituencies, environmental bureaucracies in the global south who seek donor finance and wish to legitimise their position, NGOs who seek donor finance, and farmers who wish to be a part of state-making projects.

These seemingly disconnected actors are in fact joined together through the discourses of adaptation and resilience, and all have an interest in expanding carbon markets and neoliberal climate change experiments. Diverse actors are brought together in unexpected ways through the climate assemblage – poor 'climate-vulnerable-farmers' brushing shoulders with adaptation and resilience experts.⁷⁶ In cities such as Phnom Penh, government figures, NGO workers, businessmen

⁷⁶ For instance Vern (chapter 6) had not only been to numerous donor funded trips to Phnom Penh, but also on a donor funded trip to the Philippines that looked at conservation issues (including REDD+ and PES). Similarly a number of individuals mentioned in chapter 5, had been on donor funded trips overseas (including some who had been on the same trip as Vern to the Philippines) and the head of the Oddar Meanchey CF Network had even been sponsored to attend one of the international CoPs.

and experts who are all interested in climate change share a small and intimate world (chapter 4); all these very different people find themselves coincidentally encountering one another.

What gives coherency to the climate assemblage – what brings people together in unexpected ways are ideas – global designs –which pop up throughout the global south. People find themselves working together on adaptation programs, attending workshops on resilience, or forging coalitions to promote carbon markets. Even where these global designs collapse as they are actualised in settings where local geographies and histories break apart universal concepts and virtual plans, relations between some actors may be strengthened. Even with the iconic failures of the Oddar Meanchey REDD+ project, institutions working on REDD+ in Phnom Penh expanded during the project period. Similarly, the very limited ability to meaningfully bring any benefits to people in Knaing, did not hinder the expansion of the MoE, or the expansion of large climate funds operating in Cambodia. What this shows is that the expansion of the climate change does not depend on the material betterment of the poor and marginalised, but on the ability of experts, bureaucrats, NGOs and financiers to strengthen and expand relations. A key conclusion of this thesis, is that by taking an assemblage approach, and taking a step back from the discourses, rationalities and desires that focus so much attention on the rural climate-vulnerable subject, it is possible to come to terms with the actual material geographies of the assemblage itself. That is, that by avoiding the fetish of the rural climate –vulnerable subject, it is possible to see that the climate assemblage first and foremost seeks its own expansion and reproduction even where this involves practices, lifestyles and logics that are seemingly in contradiction with the aim of empowering the poor and assisting them to deal with climate change. Thus, workshops at luxurious hotels, people spending inordinate amounts of time on analytical tasks in air-conditioned buildings and the very substantial outlays of donor money spent on consultants and experts, cannot be seen as a divergence from stated aims and goals, an inconsistency or an excess of a development industry. Rather these things must be understood in the context of delirium introduced in chapter 1 – ‘compelling but even when not making sense rationally’ (High: 2014: 14). In the context of the day to day work of the climate assemblage these

practices make sense; expertise, workshops and analytical labour have become immanent parts of the climate assemblage and it is for this reason that any politics of climate change needs to be centred around the actual materialities of the climate assemblage.

It is also important – for a politics of climate change – to be attentive to the discourses and rationalities which sustain the climate assemblage and allow it to reproduce itself and extend itself across space. As was shown repeatedly, the climate assemblage is not just formed of any approach to climate change. It is not based on what farmers in Oddar Meanchey think about climate change, nor are their concepts for dealing with the problems they face in rural Cambodia replicated in other places. What chapter 3 clearly shows is that the climate assemblage formed around very specific rationalities and discourses that have slowly – across three decades – come to be reduced down into a set of simple and reproducible concepts, techniques and designs. What chapter 4 demonstrates in the case of Cambodia, is that across a decade, very particularistic approaches to climate change were haphazardly institutionalised within government departments, NGOs and expert networks through a series of large donor-funded projects. As chapters 5 and 6 showed, these concepts and approaches were stretched across space into rural Cambodia. Yet despite the diversity and proliferation of projects and programs being done in the name of working on climate change, there is a surprising homogeneity in terms of lexicon, approach and concepts employed. Small Christian organisations to NGOs set up by indigenous people to deal with their unique problems, to the World Bank, all talk about climate change as a future risk, that affects the vulnerable who need to be made resilient. This thesis has tracked how particular logics flow geographically across the climate assemblage as virtual plans are actualised in diverse settings. In particular, this thesis has considered three broad cross-cutting rationales and approaches of the climate assemblage that give sense and coherency to the array of activities undertaken by the climate assemblage. These are:

- 1) *Risk analysis and risk reduction.* When meteorological networks, actuarial tables, satellite technologies, sonar, radar and computing came together to allow virtual scenarios of climate change – abstracted from weather patterns – to be visualised, the climate assemblage crossed an important threshold. Understanding climate change as a series of future, virtual quantifiable and discreet risks which will impact on desired patterns of accumulation, on population health and productivity (biopolitics), on physical infrastructure and ecological processes, spawned a ‘risk industry’ that is now global in scope. Attempts to firstly visualise these risks and quantify them becomes a key aim of the climate assemblage. One of the first things the climate assemblage focused on within Cambodia was quantifiable assessments which could rank Cambodia in terms of its overall risk to climate change. More specific risk analyses such as deforestation rates, emissions rates and sector specific risk analyses began to emerge. The assemblage then aims to govern these risks by reducing them or minimising them in a cost efficient way (a classic security logic). Even in Knaing, the risks to agriculture associated with erratic rainfall (representing US\$20,000 per year) were not to be eradicated but brought to a tolerable level utilising ecoagriculture, provision of water tanks and conservation measures.

- 2) *Neoliberalism.* If the climate assemblage aims to visualise and reduce virtual risks, then it does so in a very distinct way. Above all the climate assemblage seeks to instigate novel relations between subjects, ‘communities’, green bureaucracies and the market. This is typically by experiments conducted through ‘projects’ and ‘programmes’ that aim to induce target populations into distinctly neoliberal modes of dealing with climate change (neoliberalism as exception). For instance in Oddar Meanchey and Mondolkiri the market is being introduced into spheres it was not formerly present (i.e. in forest protection within the REDD+ project, insurance and cash cropping in Mondolkiri).

Neoliberalism with its ruthless push for new fields of investment has in recent years opened up climate risks to financialisation in new and novel ways. Not only has carbon itself been commoditised (through the innovation of the 1tCO₂ which has spawned new units such as the Certified Emissions Reduction [CDM] and the Certified Avoided Emission [REDD+]) but the future risk of climate change have been drawn into circuits of capital accumulation in a myriad of ways. In chapter 4 it was examined how the climate assemblage in Cambodia attempted to open up climate risks (to people and forests) to commoditisation. As chapter 6 showed, enormous amounts of energy and analytical labour are employed, in a first

movement, to prepare the ground for the conditions required for a carbon market to exist, and in a second movement, to reduce the risks of overseas finance entering into these novel markets. Chapter 6 gives a good example of this where special insurance policies and legal and contractual mechanisms were employed to secure a sale of REDD+ credits. Chapter 7 also showed how attempts were made to financialise the climate risks posed to Mondolkiri's indigenous people and forests.

- 3) *Adaptation and Resilience*. The carbon assemblage is not governed by entirely coherent, fully compatible self-contained rationalities and discourses. Rather its own historic and geographic expansion has seen the endurance of some rationalities (security and biopolitics), the dissolution and abandonment of some (e.g. tropicality and climate determinism) and the addition of new rationalities (empowerment, resilience, capabilities, entrepreneurialism). The rationalities that give coherence to the climate assemblage should be seen as a tangled knot where certain contact points have given a flexibility to the assemblage (i.e. the realist ontology of risk analysis and neoliberal and resilience world views, or the co-evolution of risk, speculation and neoliberalism). Like any powerful assemblage, there are also deep contradictions between different agendas and rationalities. One of these concerns the enduring biopolitical rationale of protecting life and enhancing it in the context of a dangerous climate, and the more neoliberal inspired rationale of merely opening up climate risks to speculation for the sake of profit. If as Michele Serres puts it 'contradiction is the motor of development' (Serres, 2007: 56) it is exactly this ability for neoliberalism to slide between two contradictory poles that makes it so enduring. On one hand it has firmly embedded itself in a biopolitical logic – that is that it represents itself as *the only game in town* for protecting the biosphere and ensuring the prosperity of life – while simultaneously quietly moving away from any real hopes of bringing about the improvement of life on a mass scale and instead fixates upon the search for new spheres of investment. That REDD+ project proponents and others promoting market mechanisms to climate change can solemnly stand by neoliberalism and its claims to protect the biosphere and enhance life, while simultaneously the people who are the targets of these projects are entirely abandoned, is evidence of the bipolar nature of neoliberalism and the fact that the climate assemblage often trends towards abandonment rather than improvement.

Yet resilience and adaptation are not going to cease being central organising concepts for the climate assemblage. As was shown in chapter 5, within Cambodia, being able to perform

the conceptual language of adaptation and resilience has become linked to funding. As was repeatedly shown, adaptation and resilience are not just about helping the poor – but fundamentally about governing life. The climate assemblage deploys a large array of different interventions and technologies from solar panels, to phone apps to ecoagriculture which more than attempting to make profit, attempt to cultivate neoliberal subjectivities that can withstand climate change and abandonment.

Biopolitics enters into another contradiction where it is less concerned with the older forms of improvement of life (i.e 19th-century notions of development) than resilience which prepares life for failure and abandonment. The climate assemblage clings onto fuzzy notions of improvement and development, yet its interventions rarely involve material benefits that will accrue to individuals – instead they focus on training, empowerment, and capabilities which first and foremost aim not to improve the condition of life but make it resilient.

Climate change interventions – especially in relation to forestry - also increasingly fall back on attempts to make the vulnerable responsible for managing vital ecosystems (which was demonstrated in chapter 5). Free healthcare, low-interest state provisioned credit, free quality education, are all increasingly rare in the world of neoliberal development interventions.

7.2 The politics of climate assemblages

Against the moralistic urgency to empower the vulnerable, or create new novel market-based mechanisms for dealing with climate change, a close analysis of the climate assemblage offers a much more potent and radical politics. An assemblage approach never starts with a set of political concepts, framings or problems to be solved. The politics is always derived from the assemblage itself. Climate justice, climate politics from an international relations framing, a politics of pushing

for more climate finance for x country/group of people/ cause, or a politics based around the vulnerable and their need to be made resilient, offers very little potential for transforming the climate assemblage and its relations to people and place. In fact, the opposite is true – such a politics tends to reproduce the climate assemblage, giving its activities more urgency.

This thesis offers three potential political trajectories – all derived from corresponding aspects of the global climate assemblage – that offer more radical potentials for a global climate assemblage. In other words, it may be the case that a series of relations – backed by money, labour, skill and care – are required at a global level to meaningfully deal with climate change. Such a climate assemblage may emerge from the contemporary climate assemblage or represent an entirely new assemblage. Drawing on the specific lessons from Cambodia, some modest hints at what such an assemblage may look like are briefly given:

- 1) *Decolonising climate change.* The climate assemblage has never formally departed from colonial ways of thinking (let alone acknowledging its colonial legacy) and as such retains many of the foundational assumptions and ways of viewing the world that were crafted with the experiences of colonisation. The tropical world seamlessly slipped into the ‘third world’ and then ‘developing world’, and the vulnerable-colonial-subject in need of improvement and development share many similarities with the contemporary vulnerable subject who is to be made resilient. That many of the contemporary concerns around adaptation not only have their origins in the colonial period, but utilise terms and concepts that emerged from the colonial period is evidence for an urgent need to reevaluate approaches to climate change in the context of their colonial legacy. While a body of scholarly work has begun to subject a range of projects and disciplines, ranging from conservation to international relations, to the critical lens examining their colonial

origins, the moral urgency and seeming novelty of climate change has allowed contemporary dominant approaches to climate change to escape such scrutiny.

It is important to highlight here not just that the climate change assemblage is colonial in its content (i.e. that it employs terms and concepts which come out of the colonial period) but that it is also colonial in form. The climate assemblage is predominantly enmeshed in the interests, agendas and types of reason of the west,⁷⁷ not of the global south. The climate assemblage does not just come from *anyplace*, it is not based on the experiences *of all people*, it does not employ the knowledges of *everyone* and nor is it built around the strategic interests *of all the poor*. It has rather been assembled in the context of the colonial project and the US experiences of the cold war. The climate assemblage is firmly lodged in what Walter Mignolo refers to as ‘global designs’ (Mignolo, 2012). These are precisely modes of thinking and acting that legitimise themselves in relation to the universal – that is that they can supposedly transcend localised and particularistic conditions, issues and modes of knowledge. Virtual concepts of adaptation, resilience and carbon markets can supposedly be actualised anywhere with a healthy dose of expertise. When actualised in particular settings these concepts subordinate other concepts and forms of knowledge. Poor Cambodians understanding of climate change is ranked from poor to excellent based on the degree to which their articulations correspond to dominant ideas within the climate assemblage. The perceptions of climate change survey (chapter 4) even attempted to quantify this across the whole of Cambodia. Similarly, virtual global designs such as REDD+ and PES can

⁷⁷ See Walter Mignolo for a longer discussion on this. Mignolo has a very specific understanding of the ‘west’ or ‘occidental’ which he describes in detail. According to Mignolo just as the ‘orient’ came to be a real and imagined place created through European encounters with others and the creation of oriental literature, so too the occidental was assembled through both literature and the actual experiences of colonisation. The ‘west’ came to be understood as both a geographic place but more saliently as a culture and collection of people who have a Christian heritage, who place rationality and science at the center of their world views and whose culture evolved from Europe.

afford to be ignorant of the myriad of local problems that such programs will encounter by appealing to the technical (but universal not local, and particularistic).

In Mignolo's language 'border thinking' is a useful starting point for departing from colonial forms of thinking (what he terms 'coloniality') (Mignolo, 2012: 12). Border thinking is a type of reason not outside coloniality, but that comes from the borders of global designs and local histories - a type of thinking that emerges from being in between both conceptual, disciplinary borders and geographic as well as epistemic borders. Such a thinking neither fetishizes local cultures or nationalisms, or subordinates non-western modes of knowledge to scientific and universal reason. Border thinking starts from a realisation of how the colonial project has profoundly influenced ways of thinking and acting and elevated specifically western ways of thinking and acting to the supposed universal. Yet border thinking also holds that western thinking is unable to meaningfully address growing social and environmental problems because such a mode of thinking prioritises the reproduction of (flailing) western power and subordinates rather than empowers non-western modes of knowledge. Border thinking would radically alter conceptions of climate change. Thinking at the border would rip climate change away from its virtual configuration as a series of future imagined risks to be reduced, and view it as inseparable from the lived realities of people in particular places. Considering chapter 6, project interventions would be radically different if the vulnerability of people in Knaing was considered in terms of the broader material climate (detailed in the second half of that chapter) rather than the simplistic conception of climate change as an external imposition upon one-dimensional vulnerable subjects. Similarly, considering chapter 4, border thinking would engage more thoroughly with the Cambodia-specific types of political organisation such as neo-patrimonial power, and the vast discrepancies between urban elites and the rural poor,

rather than blindly reproducing these patterns as the contemporary climate assemblage in Cambodia does. Border thinking would also lead to an intimate awareness of the colonial nature of development in Cambodia. That is, that regardless of wave after wave of neoliberal critique of development that asks it to be based on communities, bottom-up and attuned to local conditions, development in Cambodia remains an obviously elite endeavour that is structurally dependent on the analytical labour of people from outside Cambodia whose labour, ideas and desires are given far more value than those of Cambodians. There are almost infinite possibilities for reducing these inequalities and redistributing power in the hands of Cambodians (and Cambodian modes of thinking) that could be actualised within the assemblage.

- 2) *Rejecting attempts to financialise the negative effects of climate change.* Rejecting projects that attempt in any way to transform the suffering of people, or the degradation of natural services, into either commodities, or incorporate them into circuits of capital accumulation, is a potent way of preventing one of the central tendencies of neoliberal thought. As was clearly shown in chapter 5 there is a tendency for neoliberal inspired climate change interventions to fall back on attempts to facilitate the expansion of carbon markets while abandoning all attempts to meaningfully improve the living conditions of the people at the supposed centre of such projects. Enormous amounts of energy, labour and capital are spent on creating the conditions that would allow for the expansion of carbon markets. All indicators point toward the climate assemblage's increasing dependency upon financial capital to actualise its activities, with the corollary that the climate assemblage is intensifying its efforts to create conditions that would facilitate finance capital entering the field of climate change. This orientation distracts and is at odds with efforts to meaningfully address

climate change because needed activities often have no potential to generate profit or be monetised.

- 3) *An affirmative biopolitics*. Roberto Esposito has suggested that rather than trying to reject biopower wholesale, it is much more politically astute to push biopolitics towards its affirmative horizons (Esposito, 2008). Esposito holds that a politics formed around the basic functions of life is not necessarily a bad thing; a politics based around the affirmation of life in all its diversity gives rise to an inherently transformative politics. Yet he warns of three biopolitical tendencies that have to be avoided; 'the normativisation of life' where attempts are made to mould life in accordance to some ideal form or type, 'the double enclosure of the body' where bodies are seen as manifestations of the larger national political body, and the 'suppression of life' where attempts are made to suppress births or the development of life. Adaptation and resilience would have very different meanings within the context of an affirmative biopolitics. Rather than attempting to mould life to an idealised norm – i.e. the resilient subject who is to utilise the market to meet basic needs, an affirmative biopolitics would prioritise the basic conditions that are needed for life to flourish in all its diversity and different circumstances. An affirmative biopolitics would prioritise life that is most limited and threatened by the material conditions it finds itself in. For instance the needs of poor farmers of Oddar Meanchey would be prioritised over the desires of western consumers who wish to ameliorate their feelings of guilt through purchasing carbon offsets.

Yet for an affirmative biopolitics to meaningfully address the needs of the desperate and marginalised, it is necessary to instigate other concepts and measures to avoid climate change interventions legitimising themselves through an appeal to biopolitics, while simultaneously disavowing all responsibility to the people who are the targets of such

interventions. Real climate change interventions do not flaunt their ‘participatory’ or ‘community-based nature’. They do not begin with a critique of state-backed top down forms of governing in order to legitimise neoliberal and resilience thinking’s fetish of the local. An affirmative biopolitics would be measured not on the discourse it espouses, but the degree to which it affirms different lives in a particular area. This could be in the form of tangible education, health and economic benefits, rather than lofty ideals of empowerment, capacity development, resilience or adaptation. Accountability here would be to the people at the centre of the project rather than to donors and multilateral institutions.

Appendix 1. Interviews Conducted for Chapter 4 (Building a Climate Assemblage in Cambodia)

Interview Number	Interviewee description	Place of Interview	Date
1	Senior MoE staffer (male) with experience working on national level climate change projects.	Ministry of environment Office (old), Phnom Penh	Jan, 2015
2	Senior MoE official (male). Manager of several large climate change projects.	Ministry of environment Office (old), Phnom Penh.	Jan, 2015
3	Male, 50s, evictee from Stung Atai dam site. Living with family in O’Saom since mid-1990s.	O’Soam village, O’Soam district, Pursat province. Interview conducted at small market stall his wife was running.	Feb, 2016
4	Female, 40s, market seller, former evictee of dam site. Had settled in	See above.	Feb, 2016

	the area since mid-2000s.		
5	Female, 60s, small trader and evictee from dam site. Her family had claimed a few ha of farmalands in the site and did not receive any compensation.	See above.	Feb, 2015
6	Tin Ponlock (male, 50s), senior MoE official, leader on CCA, and various other large scale climate change programs.	Ministry of Environment Office (old), Phnom Penh.	Jan, 2015
7	Provincial department of Agriculture (Prey Veng) officer, involved in CCA project. Female, 50s.	Prey Veng provincial department of Agriculture.	March, 2015
8	Provincial department of Agriculture (Prey Veng) officer, involved in CCA project. Male, 60s.	See above	March, 2015
9	NGO officer, based in Prey Veng (the NGO has a small office, but main office located in Phnom Penh).	NGO office, Prey Veng (provincial capital)	March, 2015
10	Farmer, male, 40s, contact person for farmer village group as part of NGO project.	House of farmer, Bung Kraom village, Prai Sdech district	March, 2015
11	Farmer, female, 30s, randomly selected from one of the project site villages.	House of farmer, Bung Kraom village, Prai Sdech district	March, 2015
12	UNDP officer working on the CCA. Female, Cambodian, 30s.	UNDP office Phnom Penh	February, 2015
13	UNDP chief technical officer for CCA, male 40s, expat.	Ministry of Environment (Old, New)	January, 2015, March, 2016)

14	ADB official, technical adviser for SPCR, male, 40s, expat.	Ministry of Environment (old)	January, 2015
15	CORD official – main person involved in JCCI. Male, Cambodian, 50s.	CORD Office, Phnom Penh	June, 2015
16	Dan Church Aid, senior staffer – main person involved in JCCI. Male, Cambodian, 40s.	Dan-Church Aid office, Phnom Penh	June, 2015
17	Save the Children officer who had been involved in climate change projects, male, 40s, Cambodia.	Save the Children office, Phnom Penh	October, 2015
18	Action Aid staffer who had been involved in climate change projects. Female, 30s, Cambodia.	Climate change workshop, Phnom Penh	January, 2015
19	Oxfam officer, male, 40s, Cambodian.	Oxfam office, Phnom Penh	February, 2015
20	Climate change expert involved in various climate change projects run by NGOs and the FA and MoE including REDD+. Male, 30s, Cambodian.	Two different coffee shops in central Phnom Penh.	January, 2015, October 2016.
21	FFI senior programmer involved in REDD+ and climate adaptation program. Male, 30s, expat.	FFI office, Phnom Penh	July, 2015
22	MoE staffer involved in climate adaptation project. Male, Cambodian.	MoE Office, Phnom Penh	June, 2014
23	MoE staffer involved in climate change adaptation project. Cambodian.	MoE, Phnom Penh (same as above)	June, 2014

24	FA staffer, male, Cambodian.	FA, Phnom Penh office.	June, 2014, October, 2015
25	Interview with two STC staff: one senior female Cambodian staffer working on SPCR and American staffer who was chief technical adviser for the SPCR capacity development section.	Save the Children Office, Phnom Penh	May, 2016.
26	Director of the NGO WOMEN. Male, Cambodian	WOMEN office Phnom Penh	January, 2016.
27	Director, Cambodia Climate Change Network	Coffee shop, central Phnom Penh	January, 2016
28	Independent researcher who had conducted a major review of climate change projects for the CCCN. Female, 40s, expat.	Restaurant, Phnom Penh	June, 2014
29	Senior SIDA adviser. Cambodian, 50s, female.	SIDA office, Phnom Penh	June, 2014.
30	Head of carbon Nexus and senior program manager	Nexus Office, Phnom Penh	January, 2016
31	Former ADB project manager (who had been directly involved in the SPCR). Male, 30s, Cambodian.	Three different coffee shops in central Phnom Penh	January, June 2015. February, June, October, 2016
32	Former officer in conservation NGO, male, expat, 40s.	Restaurant, central Phnom Penh	October, 2016
33	UNDP officer, based in Phnom Penh, expat, female, 40s.	UNDP office, Phnom Penh	January, 2016
34	Kraing commune, Svay Leu district NCDM	His house, Kraing village.	May, 2016

	representative, male, Cambodian 50s.		
35	Village chief, village 1, Svay Leu district, male, Cambodian, 60s	His house.	May, 2016
36	Village chief, village 2, Svay Leu district, Siem Reap, male, 50s, Cambodian.	His house.	May, 2016
37	FAO officer involved in drought relief, based in Siem reap	Accompanied on field trip to drought affected areas.	May, 2016
38	IFAD technical staff based in MAFF	MAFF office, Phnom Penh	January, 2015.
39	UNDP technical officer working on REDD+ embedded in FA, male, 60s.	FA office, Phnom Penh	January, 2015, June, 2015
40	JICA technical REDD+ adviser, female, expat, 40s	FA office, Phnom Penh	January, 2015.
41	NGO adviser who had been working on REDD+ programing on and off over two years. Foreigner, 30s, male.	Restaurant in central Phnom Penh.	June, 2015.
42	NGO adviser who had been working on REDD+ programing on and off over two years. Cambodian, 30s, male.	Discussion group event, central Phnom Penh	July, 2016
43	EU ambassador to Cambodia	EU office, central Phnom Penh	January, 2015
44	NGO staffer working on REDD+	NGO forum office, central Phnom Penh	January, 2014, January, 2015
45	NGO director, Ratanakiri based NGO	NGO office, Ban Lung, Ratanakiri	January, 2015

Appendix 2. Interviews Conducted for Chapter 5 (The Oddar Meanchey REDD+ Project)

Interview Number	Interviewee Description	Place of Interview	Date
1	Chee Boreth, head of CDA	His house (in Samroang), his office, restaurant in Samroang	January, 2013, June 2014, January 2015, June, 2016,
2	Deputy of CDA	CDA office	January, 2014, January 2015, June 2015
3	CF deputy, Ratanaruka	His house in Bat Nem village	January, 2014
4	Venerable Bun Saluth	Samroang pagoda	January, 2014, January 2015, June 2015, February, 2016
5	Amanda Bradley	Email correspondence	February 2015
6	Rolis Hert, CF head of Romdoul Visna, male, 40s, Khmer	His house, in Samroang district, CDA office.	February, 2013, January 2014, October 2015
7	Deputy CF head, Romdoul Visna, male, 50s, Khmer	His house in Romdoul Visna village	January, 2014
8	Village chief Romdoul Visna	His house in Romdoul Visna	January, 2014
9	Rous Sok Phally, head of Rolous Thom CF, male, 40s	His house in Botivong village, CDA office	January, 2014, October, 2015
10	Old, male, Khmer farmer who had lost land to soldiers in the Romdoul Visna area	His house in Romdoul Visna area	January, 2014
11	Male soldier, Khmer, 50s, Prey Veng native, relocated 4 years prior.	Gazebo out the front of a small shop where a group of soldiers were eating and drinking	January, 2014
12	Male soldier, 50s, Kompong Thom native, Khmer. Relocated 4 years prior	See above	January 2014
13	Male, soldier, 50s, Kampot native. Relocated 4 years prior (with family).	At his family home in O'Bateuv village	January, 2014

14	Female, 50s, Khmer, Prey Veng native, relocated 3 years prior.	At her family home, O'Bateuv village	January, 2014
15	RCAF General with experience in the northern comman zone.	Restaurant Siem Reap, restaurant, Phnom Penh	February, 2015, October 2015, January, 2016
16	Ex-CF head, Andong Bor, male, Khmer, 40s	His House in Andong Bor area	March, 2015
17	CF committee member, Andong Bor	His house in Andong Bor region	March, 2015
18	Banteay Ampil district police, male, 50s, Khmer	Banteay Ampil Police office	March, 2015
19	Administrater, Banteay Ampil district, male, 50s, Khmer.	Banteay Ampil district office	March, 2015
20	Administrater, Banteay Ampil district, male, 60s, Khmer.	Banteay Ampil district office	March, 2015
21	Andong Bor CF head	His house, Banteay Ampil district.	March, 2015
22	Andong Bor CF deputy	His house, Banteay Ampil district	March, 2015
23	Villager in Andong Bor who frequently collected NTFPs from Andong Bor CF, Khmer, female, 30s.	Her house in Andong Bor area.	March, 2015
24	Villager, 40s, female who frequently went to Andong Bor to collect mushrooms	Andong Bor area	March, 2015
25	Villager, male, 50s who lived directly opposite Andong Bor CF	Andong Bor area	March, 2015
26	Low rank soldier, male 40s.	At soldier station inside Andong Bor CF	March, 2015
27	Low rank soldier, male 40s.	At soldier station inside Andong Bor CF	March, 2015
28	Low rank soldier, male, 50s	Outside a small farmhouse inside Andong Bor CF	March, 2015
29	Villager, CF committee member, Trapeang village,	Her house, Anlong Veng district	August, 2015

	Anlong Veng district, female, 40s		
30	CF committee member, Bat Nem village, Anlong Veng district, male, 50s.	His house, Bat Nem village	August, 2015
31	Village Chief, Goak Sompour	His house, Goak Sompour	February, 2014, August 2015
32	CF committee member, Goak Sompour village, male 50s, originally from siem reap	His house, Goak Sompour village	February, 2014, August, 2015, July, 2016
33	CF committee member deatined in forest by soldiers, female, 40s.	CF committee village head's house, Kown Domrey village	August, 2015
34	CF committee member, 30s, female	At shop in Bat Nem villaage	August 2015
35	CF committee member, 30s, female	At her house in	August, 2015
36	FA provincial head, Samroang	FA office, Samroang	January, 2013, July, 2014
37	Deputy of Anlong Veng FA triage	FA Anglong Veng office	August 2015
38	Head of FA Trapeang Prasat Triage	FA Trapeang Prasat Office	January, 2016
39	Former KR soldier intergated in battalion 42 of the RCAF. Male, 50s.	At a fishing site where his unit came to relax in Anlong Veng	January, 2016
40	Head of Samakay CF, Yey Nel, 50s, female	At the CF station in Samaky (including a tour of the CF), at the CDO office	January, 2015, October, 2015
41	Former CF committee member, Samaky.	At his his house in O Anrae village	October 2015
42	Former CF committee member, Samaky	At his house in Trapeang Tav Jas	October 2015
43	Former deputy of Samaky CF, male, 40s	At his house in Trapeang Tav Jas village	October, 2015

44	Samaky villager, 40s, female	At her house, Samaky village	October, 2015
45	Samaky villager, 50s, male	At his house, Samaky village	October, 2015
46	Samaky villager, 30s, female	At her house, Samaky village	October, 2015
47	Samaky villager, 40s, male	At his house, Samaky village	October, 2015
48	Samaky villager, 30s, female	At her house, Samaky village	October, 2015
49	Samaky villager, 40s, female	At her house, Samaky village	October, 2015
50	Samaky villager, 40s, male	At his house, Samaky village	October, 2015
51, 52	Ex Khmer Rouge Pey Srong CF committee members, both male, both 40s	At the house of one them in Sralau Srong village	October, 2015
53	Ex-FUNINPEC farmer, 70s, male.	His house, Samroang district	January, 2015
54	Farmer, 40s, male, living opposite Monks CF	His house, Samroang district	January, 2015
55	Sar Thly, head of Oddar Meanchey Community Forestry Network, male, 60s.	CDO office	July, 2014, January, 2015
56	Male, community representative for villages impacted by sugar concessions, male, 60s	His house in Samroang district	January, 2016
57	CF head of Ratanaruks, male, 60s	His house in Bat nem village	January, 2013, June, 2014, January, 2016
58	Bat Nem village chief, male, 60s	His house Bat Nem	June, 2014, January, 2015
59	Bat Nem villager, female, 60s.	House of village chief	June, 2014
60	CF deput chief, Srah Geav village	His house in Srah Geav	January, 2013, June, 2014

61	Kown Domrey villager, male 60s	His house	June 2014
62	Kown Domrey villager, feale 60s	Her house	June 2014
63	Kown Domrey villager, female 20s	Her house	June 2014
64	Kown Domrey villager, female 40s	Her house	June 2014
65	Kown Domrey villager, male 40s	His house	June 2014
66	Rom Jeik village ex-village chief, male, 60s	His house in Romjeik village	October 2015
67	Farmer and CF member Romjeik village, male 50s	His house in Romjeik village	October 2015
68	Villager, O'Ta Meng village, female, 50s	Her house, O'Tameng village	October, 2015
69	Farmer, male, 50s O'Tameng village	His house in O'Tameng	October, 2015
70	Villager, Day Thmey village, female, 30s	Roadside stall where she was sitting in Dey Thmey village	October, 2015
71	Villager, Dey Thmey village, male, 30s	Outside his house in Dey Thmey village	October, 2015
72	Villager, Dey Thmey village, female 40s	At roadside shop in Dey Thmey village	October, 2015
73	CF head, Songreu Prey Cher	At his house in Romjeik village	October, 2015
74	Deputy of O'Yeah Geav CF	At his house in O'Pok	January, 2015
75	Village chief, Tumnoup Thmey	At his house in Tomnoup Thmey	January, 2014, January, 2015
76	Farmer, male, 50s Srah Geav	His house in Srah Geav	October, 2015
77	Farmer, female, 40s from Srah Geav	Her house in Srah Geav	October, 2015
78	Srah Geov village chief	His house in Srah Geav	October, 2015

79	Male farmer, 40s from Jaa Thmey	His house in Srah Geav	October, 2015
80	Male farmer, 30s, from Jaa Thmey	At a shop in Jaa Thmey	October, 2015
81	Female farmer, 40s from Jaa Thmey	At a shop in Jaa Thmey	October, 2015
82	Female, 18, commonly collected NTFPs from forest, had equipment confiscated by CF patrol	At her family house in Jaa Thmey	October, 2015
83	Male farmer, 40s had equipment confiscated by CF patrol	At his house in Jaa Thmey	October, 2015
84	Male, farmer, wood cutter from Jaa Thmey	At his home in Jaa Thmey	October, 2015
85	Male farmer, 50s, who had participated in the 'land protest'.	His shop in Trapeang Thom	February, 2015
86	Female shop owner who had witnessed the protests	At her shop in Trapenag Thom	February 2015
87	Male villager who had witnessed the protests and passively participated on the side of the land gangsters	A coffe shop in Trapenag Thom	February, 2015
88	Femal farmer who left O'Umbel to settle in Romjeik	Her house in Romjeik village	February, 2015
89	PACT staff, foreigner, male	Phom Penh restaurants, Oddar Meanchey guest house	January, 2013, October, 2013, February, 2014, June 2015, January 2016
90	Terra staff, female, 30s	Oddar Meanchey, Samroang guest house	January, 2013
91	National FA staff heavily involved in REDD+process, male, 40s	FA office, Phnom Penh	January, 2013, July, 2014
92	Rith Bo, ex-CDA staff, 40s, male	CDA office, Samroang	January, 2013, June 2014,

			February, 2015, March, 2016
93	Ta Sern, CF leader (Srah Geav village)	His house in Srah Geav	January, 2013, October 2015, January, 2016
94	Neighbour of Ta Sern, male, 60s	O' Gonsaing village, Samroang	January, 2015
95	Ta Sern	CDA office	February, 2014, October 2015
96	UNDP REDD+ technical adviser, based in FA, expat	FA Office, Phnom Penh	January, 2014, June, 2015

Appendix 3. Interviews Conducted for Chapter 6 (Community Adaptation in Mondolkiri)

Interview Number	Interviewee Description	Place	Time
1	Serey Morona – MoE official involved in the adaptation project	MoE Office Phnom Penh	January, 2014, February, 2015
2	Female, ethnic Guoy farmer, Chom Thlork CPA member, 60s	Her house in Kompong Thom	January, 2015
3	Female, ethnic Guoy farmer, 30s, CPA member Chom Thlork CPA member.	At her stall in Kompong Thom Province	January, 2015
4	Male, Khmer farmer and Chlork Bung Prey CP member, 40s.	At his house in KG Thom province	January, 2015
5	Female, Khmer farmer and CPA member, Chlork Bung Prey, 40s	At her house in KG Thom province.	January, 2014
6	Male, Guoy farmer and Chlork Bung Prey CP member, 30s.	At his house in KG Thom province	January, 2014

7	Ecosolutions consultant	MoE office, Phnom Penh (old)	February, 2014, January, 2015
8	NGOF official who had visited site and CP members as part of an evaluation of the project	NGOF office, Phnom Penh	January, 2016
9	Bunong, Knaing villager, male 30s who had worked as a labourer in the mines	His house in Knaing	June 2014
10	Bunong, Knaing villager, male 30s who had worked as a labourer in the mines	His house in Knaing	June 2014
11	Bunong, Knaing villager, male 30s who was working as a labourer in the mines	Restaurant in O'Clor	June, 2014
12	Male, 50s, Khmer from Kg Cham settled O'Clor in 2001. Now owned two successful mines	Restaurant in O'Clor	January, 2015
13	Female, 50s, Khmer from Kratie first came to Memong in the 90s with her family. After a decade of her and her family working as labourers in the mines the turned to small scale trade.	Restaurant in O'Clor	September, 2016
14	WWF program manager	WWF office in Sen Monorom, Mondolkiri	June, 2014
15	Senior MoE official managing the project	MoE office (Old), Phnom Penh	January, 2014, February, 2015
16	Knaing villager, 40s, male, Bunong	His house in Knaing	January, 2015
17	Knaing villager, 40s, female, Bunong	Her house in Knaing	January, 2015
18	Knaing villager, 30s, female, Bunong	Her house in Knaing	January, 2015
19	Knaing villager, 50s, male, Bunong	His house in Knaing	January, 2015

20	Knaing villager, male, 20s, Bunong	His house in Knaing	January, 2015
21	Knaing villager, female, 50s, Bunong	Her house in Knaing	January 2015
22	Knaing villager, female, 60s, Bunong	Her friend's house in Knaing	January, 2015
23	Knaing villager– respected elder, female, 70s, Bunong.	At her nephews house in Knaing	January, 2015
24	Respected elder, female, 70s, Bunong.	At her friends nephew's house	January, 2015
25	Knaing villager, male, Bunong, 230s	At his house in Knaing	January, 2015
26	Knaing villager, female, Bunong, 30s	At her house in Knaing	January, 2015
27	Knaing villager, female, Bunong, 20s	At her house in Knaing	January, 2015
28	Knaing villager, male, Bunong, 20s	At his house in Knaing	January, 2015
29	Knaing villager, male, Bunong, 50s	At his house in Knaing	January, 2015
30	Kaning villager, male, Bunong, 40s	At his house in Knaing	January, 2015
31	Knaing villager, female, Bunong, 20s	At her house in Knaing	January, 2015
32	Knaing villager, male, Bunong, 20s	At his house in Knaing	January, 2015
33	Knaing villager, male, Bunong, 40s	At his house in Knaing	January, 2015
34	Knaing villager, female, Bunong, 20s	At her house in Knaing	January, 2015
35	Knaing villager, female, Bunong, 40s	At her house in Knaing	January, 2015
36	Knaing villager, female, Bunong, 40s	At her house in Knaing	January, 2015
37	Knaing villager, male, Bunong, 60s	At his house in Knaing	January, 2015

38	Knaing villager, male, Bunong, 60s	At his house in Knaing	January, 2015
39	Knaing villager, female, Bunong, 50s	At her house in Knaing	January, 2015
40	Knaing villager, female, Bunong, 20s	At her house in Knaing	January, 2015
41	Knaing villager, female, Bunong, 60s	At her house in Knaing	January, 2015
42	Knaing villager, female, Bunong, 30s	At her house in Knaing	January, 2015
43	Male, 40s, Khmer, Moe staff based in Sen Monorom	At the MoE office in Sen Monorom	January, 2015
44	Chit, female, 60s, Bunong	Her house in Knaing	January, 2015
45	Male, 50s, Khmer, MoE staff	MoE office in Sen Monorom	January, 2015
46	Ouk Novann, MoE manager for the project	MoE office in Phnom Penh (old and new)	January, 2014, February, 2015, July, 2016
47	Khmer settler, female, 50s, land on opposite side of riverbank to Knaing	Her house near Knaing	July, 2016
48	Sroh Vern, village chief, Knaing. Male, 40s, Bunong.	His house in Knaing	June, 2014, January, 2015, July, 2016
49	Logger observed in logging group from Knaing to Kratie road. Male, Khmer, 30s	Alongside road (with chainsaws and truck full of timber)	January, 2015
50	Logger (different group to above) at a truck stuck in sand on the road to Kratie, male, 40s.	Next to logging truck on road to Kratie.	January, 2015
51	Day labourer working to haul timber, male, Khmer from Komong Cham, 30s.	At a restaurant in O'Clor	January, 2015
52	Memong district MoE staff, male 40s, Khmer.	MoE office, Memong	June, 2014, January, 2015
53	Memong district MoE staff, male 50s, Bunong.	MoE office, Memong	June, 2014, January, 2015

54	Male, 30s, Khmer (lives in Knaing)	At his house in Knaing	June, 2014
55	Male, 30s, Bunong	At his friend's house in Knaing	June, 2014
56	Male, 40s, Khmer (outside logger)	At his friend's house in Knaing	June, 2014
57	Male, 50s (outside logger)	At his friend's house in Knaing	June, 2014

Appendix 4. Oddar Meanchey Survey

1. Male/ Female
2. Age:
3. Name of Village:
4. Name of CF:
5. To your knowledge are you a CF member/ have you been actively involved in CFs?
6. How long have you lived in this village? If from outside from which province?
7. A) Do you have secure land tenure over your agricultural and residential land?
B) If not, why? Because you have an unresolved land conflict? Because the land has never been formally measured?
8. A) Have you ever had a land conflict?
B) If so who did it involve? Soldiers? Authorities? Individual? Company? CF committee?
9. Have you ever migrated overseas for work purposes?
10. A) Has anyone in your household ever migrated overseas for work purposes?

B) If yes for what reason: In debt? Lack of farmland? Infertile land? Low price of agricultural produce? To do something different? Other?

11. A) Have you ever heard of the REDD+ Program?

B) If yes how much do you know about it: a tiny bit? Some? A lot?

12. Since establishing a community forest in the area what benefits have you observed:

No obvious benefits? Have had work? Have land tenure? Forest has been well protected? Been able to collect NTFPs?

13. A) Have you ever experienced soldiers, authorities or CF committee members apprehending or fining you in relation to forestry offences?

B) How would you characterise the experience: Fair? Unjust?

14. To what degree do you trust the local village level authorities:

100%? Around 50%? Not very much? Not at all?

15. Are you currently in debt to a microfinance institution?

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