Socially just triple-wins? An evaluation of projects that pursue climate compatible development goals in Malawi

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The candidate confirms that the work submitted is his own, except where work which has formed part of jointly authored publications has been included. The contribution of the candidate and the other authors to this work has been explicitly indicated below. The candidate confirms that appropriate credit has been given within the thesis where reference has been made to the work of others.

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Abstract

Climate compatible development (CCD) is gaining traction as a conceptual framework for mainstreaming climate change mitigation and adaptation within development efforts. So far, the social justice implications of pursuing CCD goals in different settings have not been comprehensively considered. Social justice research can facilitate understanding of whether and how development, mitigation and adaptation are prioritised, balanced and experienced through CCD. It can also uncover CCD 'winners' and 'losers' across governance levels and (spatial and temporal) scales. This thesis develops a conceptual model to guide social justice evaluations that considers both issues of procedure (participation and recognition) and distribution. It is used to guide analysis of two projects in Malawi that pursue CCD triple-wins across development, mitigation and adaptation. A mixed methods research design enabled exploration of the social justice implications of project design, implementation and project outcome distributions.

Overlap existed between stakeholders' 'revealed' priorities for CCD, but donor power over project design processes encouraged some stakeholders to suppress their preferences. Donor recognition patterns were assimilated within design processes, with other stakeholders' participation constrained. Poor alignment with contextual power meant implementation processes had only limited success in facilitating procedural justice for local people, especially the most vulnerable households. Findings show that CCD must understand, manage and challenge visible, hidden and invisible forms of power in order to facilitate widespread procedural justice opportunities during design and implementation. Projects achieve CCD triple-wins, but auxiliary benefits and negative side-effects have also been experienced by professional stakeholders and local people, respectively. Outcomes have been experienced unevenly within and between stakeholder groups and serve to worsen inequalities in target villages. Depending on its design and implementation, CCD can create multi-level, cross-scalar patterns of interrelated social justices and injustices. Recommendations are presented to encourage the former and avoid the latter.

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1 Introduction

This thesis has the concept of climate compatible development (CCD) at its core. CCD is defined as "development that minimises the harm caused by climate impacts, while maximising the many human development opportunities presented by a low emissions, more resilient future" (Maxwell and Mitchell, 2010, p.1). In mainstream theory and practice, 'development' has been largely concomitant with Western ideas of progress. Foreshadowed by the end of World War Two and the decline of colonialism, the 'era of development' is considered to have begun midway through the 21st Century (Allen and Thomas, 2000). Development thinking since has been heavily conditioned by first Keynesian (until the early 1980s) and later neoliberal (from the early 1980s onwards) economic orthodoxies (Pieterse, 2010). Keynesian and neoliberal thinking differ radically in many important respects, particularly in terms of their considerations of the appropriate role of the state. Yet both have encouraged top-down development approaches emphasising the central importance of income creation and economic growth (Escobar, 1995; Sachs, 2009).

There is growing consensus around the idea that underdevelopment is multi-dimensional and constitutes more than a lack of monetary resources (Desai and Potter, 2006). This consensus has its origins in 'human development' discourses that originated in the 1980s and have gained traction since the turn of the Millennium (Ibid.). They stress that development should be considered synonymous with enhancing the political, socio-cultural and economic freedoms that people have to pursue life choices that they value (Sen, 2001). Achieving 'development as freedom' requires that individuals and groups are able to live unimpeded by various forms of deprivation (or 'poverty'), including, but not limited to: ill-health, malnutrition, poor access to adequate sanitation and clean water, social exclusion, poor access to education, bad housing conditions, violence and political disenfranchisement (Ibid.). Multi-dimensional targets (e.g. the Sustainable Development Goals) and measurement tools (e.g. the Human Development Index) have been sponsored and utilised by international organisations to operationalise this freedom-based approach (UNDP, 2015; UN, 2016c).

The popularity of human development discourses has coincided with a shift towards development theory and practice that emphasises bottom-up processes (Pieterse, 2010). Some theorists (e.g. Nussbaum, 2003; Nussbaum, 2005; Sachs, 2006) continue to argue that the multiple dimensions of development can be pre-ordained and hold

universal relevance. However, this overlooks that beliefs, cultures and values are contextual and vary over time and space. What is considered to be required to overcome deprivation may also differ accordingly. Context-specific approaches that draw on local insights are, therefore, required to help enhance people's freedoms (Sen, 2009).

At the same time, development and freedoms can be affected by biophysical as well as human processes as the social and the ecological are inherently linked. For example, it has been scientifically proven that anthropogenic greenhouse gas emissions have caused an unprecedented warming of the global climate system (Stocker et al., 2014). In conjunction with other development stressors, resultant climate change impacts (e.g. rising sea levels, increased incidence of heat waves, altered rainfall frequency and intensity) are already exacerbating forms of deprivation (e.g. food insecurity, financial poverty, ill-health, poor access to clean water), especially in developing countries (Denton et al., 2014). In the future, these climate impacts are expected to worsen and become more frequent (Burkett et al., 2014). In conjunction with other stressors (e.g. inequality, disease), they will likely impinge on people's freedoms and make development objectives much more difficult to realise. They could even undermine already-achieved development gains (Ibid.).

In recognition of increasing climate risk, calls for development efforts to incorporate climate change mitigation and adaptation have intensified (e.g. UN, 2016; UNFCCC, 2015). Both mitigation and adaptation are perceived as essential to safeguard and advance development freedoms by reducing vulnerabilities (where vulnerability is seen as a function of: exposure to socio-cultural, economic, political and environmental (including climatic) shocks and stressors; sensitivity to these shocks and stressors; and capacities to adapt and respond to them (adapted from Agard et al., 2014; Gaillard, 2010)).

Mitigation and adaptation are sometimes understood diversely and co-opted for instrumental purposes within research and practice (e.g. Ireland, 2012). Nevertheless, mitigation commonly refers to human actions taken to reduce the sources or enhance the sinks of greenhouse gases (Agard et al., 2014). Under the Paris Agreement of 2015, all 197 countries that have ratified the United Nations Framework Convention on Climate Change (UNFCCC) agreed to take mitigation action to keep average global temperature increases "well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels" (UNFCCC, 2015, p.2). The commitment of developing countries to undertake greenhouse gas emissions reductions

has built over time, culminating in the Paris Agreement. Prior to this, developed nations, who are responsible for the bulk of both historical emissions and current per capita emissions consumption levels (World Bank, 2016), had sole responsibility for global mitigation efforts coming from the international political arena.

Adaptation commonly refers to anticipatory or reactive actions that enable people to deal with, or exploit, the consequences of actual or expected climate changes (Agard et al., 2014). Adaptation efforts are required because the speed and magnitude of global climate change means mitigation alone is insufficient to reduce associated risks (Field et al., 2014). Adaptation represents a particularly pressing priority in developing nations, where individuals and collectives often have limited resources with which to respond to climate impacts (Ibid.). Because adaptation activities: 1) attempt to alleviate climate change impacts that already threaten development progress; and 2) reduce vulnerabilities that are linked to patterns of underdevelopment, development and adaptation are often considered to be more natural bedfellows than development and mitigation (Lemos et al., 2007).

In the context of increasing acknowledgement of the links between development, mitigation and adaptation, CCD has been proposed as the basis of a new development landscape able to manage the threats and opportunities that climate change presents for social and economic progress (Mitchell and Maxwell, 2010). It represents a guiding framework for mainstreaming mitigation and adaptation within development efforts in order to achieve ‘triple-wins’ across each component (Ibid.) (Figure 1.1).

CCD represents a distinct area of policy and practice compared with development per se. The consequences that climate change has for development, and vice versa, makes it questionable whether the latter can be achieved without some consideration of the former. However, by incorporating mitigation and adaptation into development planning and service delivery, CCD goes further than just considering climate change as one amongst a range of ‘risk factors’ for development progress.

By integrating development, mitigation and adaptation, CCD considers a unique set of interactions between scales, governance levels, actors and sectors relative to each of its individual component parts (Mitchell and Maxwell, 2010). There are differences between the governance levels and (spatial and temporal) scales at which development,

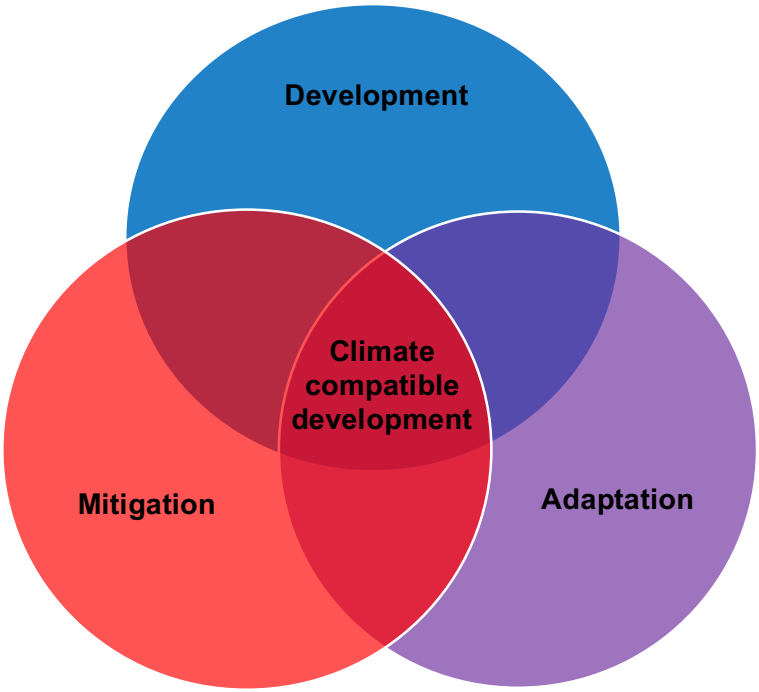

Figure 1.1: The popularised depiction of climate compatible development and its component parts. Adapted from: Mitchell and Maxwell (2010).

mitigation and adaptation actions are taken and their outcomes experienced (Klein et al., 2005; Swart and Raes, 2007). The concept of sustainable development has introduced consideration of future generations into development thinking (WCED, 1987). However, development practitioners remain concerned with reducing deprivation in the short-term. Development approaches that emphasise the freedoms of individuals and groups are also naturally concerned with local-scale outcomes, even if this might require intervention across governance levels (Sen, 2001). By contrast, mitigation focusses explicitly on creating benefits that will be experienced over time at the global scale (Klein et al., 2005). Moreover, the benefits of successful adaptation will multiply over time as climate impacts worsen and become more frequent, rather than just being sustained (Field et al., 2014). Capacities for undertaking development, mitigation and adaptation actions are also typically distributed unevenly amongst actors and sectors (Swart and Raes, 2007).

Different terminology (e.g. climate resilient pathways, low carbon climate resilient development) has been used to describe similar or analogous sets of ideas to those promoted by CCD. However, CCD is often used to promote these ideas within developing country contexts (Nunan, In Press), including in Malawi, which is the focus of this study. Hence, CCD is used here to refer to all policies, programmes and projects that individually, or in combination with one another, seek to advance triple-wins across development, mitigation and adaptation within the developing world.

Governments and donors are currently investing in CCD to reduce vulnerabilities (Stringer et al., 2014). The United Kingdom's Department for International Development (DfID) considers that CCD is integral to helping the Least Developed Countries respond to climate and development shocks (DfID, 2011c). The concept sits at the core of policies, programmes and projects that are being implemented in various different countries (e.g. Fisher and Mohun, 2015; CDKN, 2016). Public sector spending has been used to help mobilise private investment in CCD (Whitley et al., 2012). The concept has momentum and is gradually becoming mainstreamed within the lexicon of climate and development practitioners (Stringer et al., 2014).

So far, the operationalisation of CCD has outpaced academic inquiry into the concept. One pressing research gap relates to the social justice implications of pursuing CCD goals in different settings. Social justice is concerned with how opportunities, privileges, burdens and disadvantages are allocated within society (Schlosberg, 2007). It is considered to comprise two interdependent components: procedural and distributive justice. Procedural justice is achieved when individuals and groups have opportunities to meaningfully participate and have their values, cultures and identities recognised through CCD decision-making processes (Fraser, 1998; Young, 1990). Achieving distributive justice through CCD requires that procedurally fair decision-making processes are used to determine a way of allocating the material benefits and any negative side-effects (intended or unanticipated negative impacts) that result from interventions (Paavola and Adger, 2006).

Exploring social justice through CCD is important because there is incomplete knowledge and multiple forms of uncertainty in the climate change and development context. This often translates into a plurality of stakeholder values and interests that coexist and conflict with one another (Sen, 2001; Curry and Webster, 2011). Moreover, multi-stakeholder working between actors across global, national and local scales is required for CCD benefits to be delivered (Stringer et al., 2014). The term 'stakeholders' refers to actors or organisations with an interest in, or who are impacted by, CCD (adapted from Freeman, 2010). They include: donor agencies; non-governmental organisations (NGOs) and other civil society organisations; private sector organisations; researchers; national and subnational governments; consultants; technical experts; and local people (Bryan et al., 2013; Wood et al., 2016).

In the context of value plurality and uncertainty, CCD stakeholders are likely to hold diverse preferences related to how the concept should be pursued. Stakeholders will

also have dissimilar access to the human and material resources required to advance these preferences and take part in CCD design and implementation processes (Tanner et al., 2014; Mustalahti et al., 2012). Procedural justice evaluations can help appraise the extent that CCD accounts for these diverse capabilities and reconciles dissimilar preferences.

Development, mitigation and adaptation outcomes are also experienced differently across diverse governance levels and temporal and spatial scales (Klein et al., 2007). Social justice research can help facilitate understanding of whether and how different CCD components are prioritised, balanced against one another and experienced through interventions. It can help to signpost who is driving the design and implementation of CCD and which individuals and groups located at different governance levels and scales might 'win' and 'lose' as a result of its outcomes, allowing remedial actions to be taken to target injustices.

Procedural and distributive justice evaluations can indicate whether and/or how CCD contends with and shapes patterns of political, socio-cultural and economic (un)freedoms that determine whether local people can pursue ends that they value (Sen 2001). Understanding this is crucial because CCD is considered to be a 'development first' approach. Indeed, climate change is regarded as a pressing challenge principally because of its likely implications for development (Picot and Moss, 2014). However, the often dissimilar spatial, temporal and governance properties of development, mitigation and adaptation (see also Klein et al., 2005; Swart and Raes, 2007) mean that findings and recommendations from previous research exploring the social justice implications of development initiatives (e.g. Tschakert, 2009; Sommerville et al., 2010) will be insufficient for encouraging social justice through CCD.

1.1 Research aim and objectives

The aim of this study is to explore the social justice implications of two subnational projects that pursue CCD triple-wins in Malawi. Together, the projects form the *Enhancing Community Resilience Programme* (ECRP), which seeks to improve the lives of over 600,000 vulnerable Malawians (DfID, No Date).

This aim was fulfilled through the completion of three objectives, which were each further broken down into specific research goals:

1) Understand different stakeholders' priorities for case study project design;
   i. Identify project stakeholders,
   ii. Ascertain priorities held by different stakeholders,
   iii. Assess motivating factors that underpin these priorities.

2) Identify procedural justice opportunities afforded to stakeholders within case study project design and implementation processes;
   i. Develop a framework for exploring the procedural justice implications of CCD,
   ii. Evaluate which stakeholders were recognised by, and able to participate in, project design and implementation processes using this framework.

3) Investigate the outcomes created by the case study projects and their links with distributive justice;
   i. Develop a framework that enables evaluation of the full range of outcomes created by CCD across levels and scales,
   ii. Evaluate outcomes created by the case study projects using this framework,
   iii. Examine links between project outcomes and theories of distributive justice.

1.2 Key thesis contributions

By fulfilling the research aim and objectives, this thesis contributes to academic debates on CCD, social (and climate) justice and wider climate change, environment and development discourses. It also makes a substantial applied contribution by presenting a suite of recommendations that can help encourage social justice (and the avoidance of injustice) through the operationalisation of CCD.

1.2.1 Contribution to the CCD literature

CCD is popularly depicted as a conceptual framework that can encourage practical actions that achieve multiple positive development, mitigation and adaptation outcomes (Mitchell and Maxwell, 2010). However, so far, the concept's operationalisation has outpaced efforts to critique it. This thesis contributes to the academic CCD discourse by applying a social justice lens to examine the implications of two projects pursuing CCD goals. It does so by assessing how projects contribute towards opportunities and privileges as well as disadvantages and burdens. It looks beyond the focus on economic outcomes (distribution) that is commonplace within CCD debates (e.g. Tompkins et al.,

2013; Suckall et al., 2014, Tanner et al, 2014), assessing the political (participation) and socio-cultural (recognition) implications of the projects.

The value of multi-stakeholder working for progressing CCD is often discussed (Daniell et al., 2011; Dyer et al., 2013). There are multiple, well-articulated points of contention within the CCD operating context (e.g. in terms of how development, mitigation and adaptation should be defined and progressed and how development, mitigation and adaptation should be balanced – see section 2.3.4, chapter two). However, little attention has been paid to what extent stakeholder priorities for CCD align and are being reconciled in the context of specific interventions. Chapter five addresses this research gap, presenting lessons for achieving procedural justice through CCD design. Findings advance the literature on CCD multi-stakeholder working.

Community-based approaches are commonly used to pursue CCD goals (Stringer et al., 2014). There is a growing literature that appraises the implications that community-based development and adaptation have for local people (e.g. Dodman and Mitlin, 2013; Cook and Kothari, 2006), but research that evaluates efforts to achieve CCD triple-wins through individual community-based initiatives is scarce. Thus, it is not yet clear what implications pursuing CCD triple-wins through community-based approaches has relative to the pursuit of single- or double-wins. Chapter six addresses this literature gap, which represents a crucial endeavour because local involvement in, and acceptance of, projects are important enabling conditions for the successful rollout of CCD (Anton et al., 2014).

Ecosystem-based activities are being institutionalised alongside community-based approaches as a way to achieve CCD outcomes (Reid, 2016), but their potential for doing so has yet to be examined. Chapter seven contributes new insights to the literature concerning this potential. In doing so, it presents a comprehensive assessment of the multi-level, cross-scalar outcomes that projects pursuing CCD goals stand to create. Tompkins et al. (2013) have criticised the popularised depiction of CCD for failing to draw attention to the negative side-effects that it might encourage in different circumstances. The authors also note the absence of research that evaluates the size of CCD outcomes. Chapter seven advances the literature by considering both negative side-effects and outcome magnitudes. The empirical analysis conducted stands out from the existing research on CCD outcomes, which has tended to be desk-based (Tompkins et al., 2013) or has hypothesised benefits and negative side-effects (Quan et al., 2014; Tanner et al., 2014; Stabinsky and Ching 2012).

Linked to the scarcity of social justice analyses of CCD, the literature has not yet produced conceptual models and frameworks for holistically assessing recognition, participation and distribution across levels and scales in the CCD context. This thesis, therefore, develops a conceptual model that addresses this literature gap. Two analytical frameworks are also developed for assessing procedural and distributive justice through CCD, respectively. Both the conceptual model and analytical frameworks can be used to facilitate further research that unpacks and systematically critiques the design and implementation of multi-level CCD interventions.

Overall, the CCD literature base remains in its infancy, although it is rapidly growing. Research is beginning to critique the concept's origins and operationalisation (e.g. Tompkins et al., 2013; Käkönen et al., 2014; Tanner et al., 2014). Yet, this research represents a small proportion of the overall CCD literature base, which tends to focus on appraising the feasibility of achieving CCD goals in different settings (e.g. Ayers and Huq, 2009; Bryan et al., 2013) and proposing strategies for advancing CCD (e.g. Ellis et al., 2013; Stringer et al., 2014). This thesis contributes to the nascent body of critical CCD research and suggests avenues for further research that encourage a more critical CCD academic discourse. Findings have particular relevance in light of the 2015 Paris Agreement and the adoption of the Sustainable Development Goals (SDGs), which both present new opportunities for developing projects with characteristics that are similar to those evaluated in this thesis.

1.2.2 Contribution to social and climate justice discourses

The thesis presents new insights for the social and climate justice literature. In developing a conceptual model for holistically evaluating social justice through CCD, this literature is critiqued and limitations of existing approaches are delineated. The model is purposively designed to address these limitations and can be used to guide and evaluate policy and practice in an integrated, systematic and rigorous manner. Empirical research presented in this thesis reinforces the limitations of existing social and climate justice approaches. Research findings uncover additional gaps in the social and climate justice literature and avenues for further research are suggested to help fill these gaps.

The social and climate justice literature has been dominated by normative ideals rather than empirical appraisals (Barrett, 2013b) and has tended to focus on resolving "questions about the nature of perfect justice" (Sen, 2009, p.ix). This has limited its application for comparing 'imperfect' societal arrangements and providing guidance for

practical action in different contextual circumstances. The conceptual model presented in this thesis departs from dominant social justice approaches by facilitating understanding of whether and how CCD enhances social justice and remedies injustices, rather than attempting to resolve debates over what constitutes theoretical perfection. It provides a bridge between social and climate justice theory and practice and, in doing so, makes a novel contribution to the literature.

1.2.3 Applied contributions

By operationalising the conceptual model through research in Malawi, the thesis generates findings that give way to a suite of recommendations that can help CCD practitioners to encourage justice and avoid injustice through project-level initiatives. Recommendations, which are presented in chapters five, six and seven, account for CCD's multi-level, cross-scalar operating context and consider how diverse stakeholders with different agendas contribute to project development. Findings related to the design of CCD (chapter five) are particularly pertinent to donor agencies who often provide funding for CCD projects and therefore have considerable influence over design processes. Findings related to the implementation of CCD (chapter six) hold relevance for NGOs and other civil society organisation who are often responsible for overseeing the introduction, execution and monitoring and evaluation of project activities. Findings related to the outcomes that CCD stands to create (chapter seven) hold relevance for all stakeholders that are involved in designing and implementing CCD projects. By holistically considering social justice through design, implementation and outcomes, recommendations account for all stages of CCD project lifecycles and represent a comprehensive manifesto for practical action.

1.3 Outline of thesis structure

This thesis is divided into eight chapters. Following this introductory chapter, literature that discusses CCD theory and practice is reviewed and critically analysed in chapter two. Pressing research gaps that were used to help develop the research presented in this thesis are discussed. Chapter three develops a conceptual model for exploring the social justice implications of CCD. The research design and associated data collection and analysis methods are presented in chapter four. Detail related to the research context and locations is also provided and the research process is reflected upon.

Chapters five, six and seven present the results of empirical research. In each chapter, the specific data collection and analysis methods used are set out. Chapter five identifies the priorities held by ECRP stakeholders for project design and elucidates the motivating factors behind these priorities. The chapter then evaluates stakeholder recognition and participation in design processes using a framework that was developed for exploring the procedural justice implications of CCD in the context of power. In chapter six, the framework is used to identify the extent to which different individuals and groups have been recognised by, and are able to participate in, ECRP implementation processes. Together, chapters five and six contribute to the completion of research objectives one and two. Chapter seven addresses objective three by investigating the outcomes created by the ECRP and their links with theories of distributive justice. A framework for conducting holistic analyses of outcomes created by CCD across multiple governance levels and (spatial and temporal) scales is developed based on the results of a systematic literature review. Together, the two frameworks utilised in chapters five, six and seven enable consideration of both procedural and distributive justice, thereby operationalising the conceptual model developed in chapter three.

Chapter eight discusses the wider implications of the research. It reiterates how the research aim and objectives have been achieved. Empirical findings presented in this thesis are considered together and situated within the wider environment, development, climate change and social justice literature. Further avenues for research are then suggested before final conclusions on the thesis as a whole are drawn.

2 A review of the climate compatible development literature

2.1 Introduction

Understanding of the complex, multi-directional links between development and climate change is ever-increasing, although uncertainties remain (e.g. in terms of greenhouse gas radiative forcing values, rates of climate change, climate impacts at particular times and in particular places) (Stocker et al., 2014; Field et al., 2014). Greenhouse gas emissions related to the content of past, present and future development pathways will determine the magnitude of climatic change (Stocker et al., 2014). The Intergovernmental Panel on Climate Change (IPCC) states with high confidence that "climate change poses a moderate threat to current sustainable development and a severe threat to future sustainable development" (Denton et al., 2014, p.2).

Underlying development trajectories determine the existence of societal capacities for reducing the risk of climate impacts (Burch and Robinson, 2007). Climate change poses an acute risk to people living within developing countries because they often have limited resources with which to prepare for and respond to associated shocks and stresses (Field et al., 2014). Depending on how response capacities are utilised, actions aimed at reducing climate risk can either enhance or impede development (Denton et al., 2014). Likewise, development actions can either increase or decrease the climate vulnerabilities of populations that they seek to benefit (Bunce et al., 2010). Hence, climate change and development goals may complement or conflict with one another.

Until the turn of the Millennium, mitigation and adaptation were commonly addressed independently of one another within research and practice (Laukkonen et al., 2009). They were pursued via parallel processes involving dissimilar sets of actors (Dang et al., 2003; Klein et al., 2007). Differences between the governance levels and (spatial and temporal) scales at which mitigation and adaptation actions are taken and their outcomes experienced presented barriers to integration (Klein et al., 2005; Swart and Raes, 2007). Global climate change negotiations within the UNFCCC focussed on mitigation and adaptation separately (Watkiss et al., 2015).

However, at the global level it is now recognised that mitigation and adaptation can often represent synergistic strategies for reducing climate risk (Ibid.). This is because: 1) a lag

in the climate system means mitigation actions undertaken now will not reduce near-term climate change; 2) dangerous climate change might trigger tipping points to which socio-ecological systems cannot adapt; and 3) there are limits to adaptation (e.g. physical, financial, informational, social, technological, cultural) that reduce its potential to act as a substitute for mitigation (Ibid.). Moreover, there are links between mitigation and adaptation because the capacities needed to undertake each are largely indistinguishable (Burch and Robinson, 2007; Tompkins and Adger, 2005). Nevertheless, in particular circumstances, mitigation and adaptation efforts can complement or conflict with one another (Klein et al., 2005).

In recognition of these climate-development and mitigation-adaptation interactions, consensus has emerged around the idea that development, mitigation and adaptation can be usefully addressed using a joined-up approach that increases harmonisation, reduces conflicts and, where possible, harnesses synergies between each component (Bryan et al., 2013). In this context, interest in CCD is growing and its main tenets are already being operationalised (Fisher and Mohun, 2015). Nevertheless, research around the concept remains in its infancy.

This chapter reviews and critically analyses literature that discusses CCD theory and practice in order to present the state of knowledge around the concept. Firstly, it maps the conceptual evolution of CCD, considering links and overlaps with other related concepts. CCD's suitability as a conceptual framework for guiding joined-up adaptation, mitigation and development policy and practice is assessed relative to these concepts. Secondly, it examines the burgeoning body of research into the operationalisation of CCD, setting out key trends and lessons learnt. Pressing areas for further study are outlined and are subsequently used to develop the research design for this thesis. Despite that CCD is gaining traction amongst policymakers and practitioners, similar stock-taking exercises are scarce. This review addresses the literature gap by providing a timely synthesis. In doing so, it furthers understanding of whether and how CCD can be used to underpin a new development landscape in the context of increasing climate risk.

2.2 The conceptualisation of climate compatible development

Conceptual framings, or policy narratives, refer to "intellectual machinery" and "discursive storylines" that represent subjective standpoints but enable abstract ideas to be translated "into a domain of calculability and implementation" (Käkönen et al., 2014,

p.354). The tenets of CCD have begun to shape the decisions and actions of policymakers and practitioners. There are increasing attempts to translate the theoretical linkages between development, mitigation and adaptation into practical actions that, individually or in combination with one another, aim to further progress against each component (Fisher and Mohun, 2015; CDKN, 2016).

CCD represents the latest in a growing list of concepts that seek to address relationships between environment and development issues. This list includes (amongst others) sustainable development, green economy, low carbon development and climate resilient development — concepts that have attracted significant attention within academic and policymaking communities. CCD is closely linked to, and builds upon, these concepts. In this section, the conceptualisation of CCD is discussed and these links are explored. Reasons are presented as to why CCD is increasingly considered a more suitable framework for guiding joined-up development, mitigation and development policy and practice compared with other concepts.

2.2.1 Sustainable development, green economy and persistent vulnerabilities

Sustainable development is commonly credited as the first concept rooted in concerns about human-nature interactions to appeal to a mainstream audience. It continues to represent conventional wisdom in attempts to reconcile environment and development issues within research and practice (Adams, 2008). The concept was thrust into the limelight following the publication of the Brundtland Report in 1987, which defined it as "development that meets the needs of the present without comprising the ability of future generations to meet their own needs" (WCED, 1987, p.1).

An important precursor to the Brundtland Report was Meadows et al.'s (1972) *Limits to Growth*, which showcased the detrimental effects that exponential economic growth could have on finite natural resources. Sustainable development acknowledges that poverty constitutes more than just a lack of finance and that development is about more than just the economy (WCED, 1987). It is aligned with human development discourses that, as discussed in chapter one, have given way to a growing consensus centred upon the multi-dimensional character of development (Pieterse, 2010). By encouraging consideration of intra- and inter-generational fairness, sustainable development introduces temporal dimensions into human development thinking.

Sustainable development seeks to amalgamate three interdependent, mutually reinforcing pillars — the economy, society, and the environment — in order to reduce tension between each (WCED, 1987). It appeals to a wide variety of stakeholders (e.g. NGOs, governments, the private sector) who previously sought to advance economic, social and environmental concerns in isolation from one another. Accordingly, it has proved a politically expedient concept (Kates et al., 2005; Lele, 1991).

The concept recognises that: 1) climate change represents a significant risk to natural systems and the "survival, security and well-being of the world community" (WCED, 1987, p.22), and; 2) society ought to be configured and the environment protected such that current and future development needs, particularly those of the world's most vulnerable people, can be met (Rao, 2000). The necessity of both adapting to climate impacts and advancing development along low-emissions pathways is considered essential for reducing both short-to-medium and longer-term climate change risks (WCED, 1987). However, literature around sustainable development (e.g. WCED, 1987; Hopwood et al., 2005; UN, 2016) has done little to encourage analysis of specific circumstances in which development, mitigation and adaptation may complement or be in tension with one another.

By stressing the "interconnection of everything" (Mebratu, 1998, p.92), sustainable development has been criticised for being a meaningless, "ambivalent cliché" (Mitcham, 1995, p.322) that lacks clarity (Victor, 2006). Its multi-faceted nature makes concrete and commonly agreed objectives or implementation strategies difficult to realise (Pannell and Schilizzi, 1999; Lamboll and Nelson, 2012). Rhetoric surrounding sustainable development stresses that addressing environmental problems is contingent on radical change that enables the needs of the world's most vulnerable people to be better met (Halsnæs et al., 2008; Lafferty and Meadowcroft, 2000). However, some observers have been concerned that many countries have pursued carbon-intensive economic development under the guise of sustainable development (Grist, 2008; Beg et al., 2002). Reflecting neoliberal orthodoxies, these business-as-usual approaches have often paid little attention to environmental and societal responses that are required to reduce the risks of climate change (Ibid.). It is argued that they have failed to reduce, and have in some cases exacerbated, global inequalities (Adams, 2008; Giampietro, 1994; Daly, 1990).

Since the turn of the Millennium, green economy framings have become popular amongst policymakers as a way to realise the economic and environmental goals of

sustainable development (OECD, 2011). Green economy proponents suggest that market failure has resulted from the systematic undervaluing and mismanagement of natural capital (including the global climate) (OECD, 2011; Stern, 2007). They argue that the environment needs to be valued and integrated into economic decision-making in order to protect it (Schmalensee, 2012). Doing this, proponents suggest, will also stimulate enhanced efficiency, innovation and sustained economic growth (Borel-Saladin and Turok, 2013; Brand, 2012).

Various practical tools and interventions have been developed (covering institutional arrangements as well as economic and non-economic policy instruments) with a view to operationalising the green economy and overcoming the ambiguity that has constrained the practical pursuit of sustainable development (Borel-Saladin and Turok, 2013). Following the global economic recession that began in 2008, some green economy approaches championed 'green stimulus' packages (Atkisson, 2012). They proposed that an economic recovery could be kick-started in different countries by redirecting government funding from industries that overuse resources towards 'greener' enterprises. Identified investment priorities were less dependent on fossil fuels and responsible for fewer greenhouse gas emissions (Ibid.).

Yet, just as real-world sustainable development approaches are chastised for exacerbating global inequalities, the operationalisation of the green economy has been criticised. It has been suggested that green economy strategies have exacerbated vulnerabilities across the developing world by: restricting local people's access to the Earth's resources and sinks (Brand, 2012); erecting new constraints that prevent populations from participating in global trade (Khor, 2011); and forcing individuals and groups to forgo livelihood activities (e.g. biofuel production, farming using inorganic fertilisers, use of high-carbon fuels) that could reduce their resource poverty by creating food security and energy access benefits (Resnick et al., 2012). It is considered that green economy approaches have caused vulnerable populations to forgo immediate development gains in favour of environmental goals (e.g. biodiversity, lower emissions and reduced pollution) that can only yield benefits over longer timescales (Ibid.).

Overall, evidence suggests that sustainable development and green economy framings have been insufficient for encouraging joined-up approaches that create meaningful development, mitigation and adaptation progress. Almost 30 years on from the publication of the Brundtland Report: 1) global greenhouse gas emissions continue to rise and threaten dangerous levels of climate change (Stocker et al., 2014); 2) vulnerable

populations increasingly face worsening climate change shocks and stresses that they are ill-prepared to deal with (Field et al., 2014); and, 3) increasing global inequalities mean that the world's most vulnerable people are more marginalised than ever before (UNDP, 2015). This situation has inspired the formation of new concepts that aim to facilitate action to help overcome persistent climate and development vulnerabilities.

2.2.2 Climate to the forefront: low-carbon development and climate resilient development

In the wake of the perceived shortcomings of sustainable development and green economy framings, fresh concepts for encouraging joined-up climate change and development action are receiving significant attention within research and practice. The concepts of low-carbon development and climate resilient development have been mainstreamed within the lexicon of development practitioners (Mulugetta and Urban, 2010; Käkönen et al., 2014). The former seeks synergies between development and mitigation, practically translating into development that emits less carbon (Mulugetta and Urban, 2010). The latter seeks synergies between development and adaptation: "development that has the capacity to absorb and quickly bounce back from climate shocks and stresses" (Mitchell and Maxwell, 2010, p.4).

Low-carbon development and climate resilient development restrict their focus to development plus mitigation or adaptation, respectively. Hence, they depart from sustainable development and green economy framings by more explicitly encouraging the reduction of climate risk at the forefront of practical action. The origins of both concepts appear to be grounded in pragmatic concerns, at least in part. Their emergence has been driven by donors who consider that new sources of climate finance can help overcome development funding shortfalls (Ellis et al., 2013; Käkönen et al., 2014).

Uncertainties around climate impacts and the benefits of investing in mitigation and adaptation make it sensible to safeguard investments by ensuring that climate actions also create development benefits (Wilbanks and Sathaye, 2007). Development benefits help vulnerable populations to address livelihood stressors that they often perceive to be more immediately threatening than climate change and are, therefore, highly prized (Reid et al., 2009). Concurrently, mitigation and adaptation actions can help reduce the likelihood that these stressors are exacerbated over time (Ibid.).

Encouraged by supranational organisations (e.g. the World Bank, the United Nations Environment Programme), many developing countries have produced 'Low Emissions Development Strategies' that outline nationally-appropriate policies for operationalising low-carbon development (Allen and Clouth, 2012). These often stress a commitment to harness international policy mechanisms such as the Clean Development Mechanism, REDD+ and the voluntary carbon market (Ibid.). Per capita consumption emissions levels across the developing world remain a fraction of those in developed nations (World Bank, 2016). Despite this, many developing countries are taking mitigation action because the extent of their climate vulnerability has led them to recognise the importance of curbing their own rising emissions (Chaudhary et al., 2015).

Bowen et al. (2011) suggest that the Least Developed Countries can benefit from low-carbon development because: 1) addressing obstacles to low-carbon development will also enhance productivity and well-being; 2) the achievement of a global climate deal means investment will be directed towards low emissions approaches; and 3) globally cheap mitigation options in the developing world can be exchanged for financial resources that can help drive development. By presenting mitigation as mutually beneficial for local and global populations, low-carbon development helps stabilise the North-South tension around climate action, which is an important dynamic in international climate politics (Käkönen et al., 2014). The proposition that mitigation can create immediate development benefits could also alleviate concerns that low-carbon development might trade-off short-term development for longer-term, global level climate risk reduction. However, the extent to which low-carbon development strategies and policy mechanisms have contributed to short-term livelihood improvements and poverty and inequality reduction is a matter of contention (Wood et al., 2016; Stabinsky and Ching, 2012; Boyd et al., 2009).

Climate resilient development is premised on the notion that the long-term stability of societies depends on their capacities to withstand and recover from climate change impacts (Ayers and Huq, 2009). It departs from traditional development approaches by placing greater emphasis on complexity and uncertainty (Field, 2012). However, by emphasising the ability of existing systems to bounce back from shocks and stresses (see e.g. USAID, 2014; Mitchell and Maxwell, 2010), the concept risks closing down space for transitioning beyond these systems (Pelling, 2011). Multiple indicators and tools exist for measuring climate resilience, thereby helping the concept to be operationalised in practice (Walker and Salt, 2006; Speranza, 2010). However, the specifics of what constitutes climate resilience in different contexts and sectors is often

unclear (Oates et al., 2014). Akin to Low Emissions Development Strategies, 'Climate Resilient Development Strategies' are being advanced by developing nations to encourage and co-ordinate policy and practice across scales (Allen and Clouth, 2012).

As discussed in chapter one, development and adaptation are considered to be more naturally aligned than development and mitigation. Accordingly, the operationalisation of climate resilient development has been the subject of less controversy than low-carbon development approaches within the literature. The political expediency of climate resilient development is likely augmented because it has been taken to refer to the maintenance of existing systems. It, therefore, avoids the need to overcome powerful vested interests in order to move beyond the status quo (Pelling, 2011).

2.2.3 Hitting the sweet-spot? Climate compatible development

Despite encouraging integrated climate-development actions, low-carbon development and climate resilient development have sustained the separate pursuit of mitigation and adaptation. The former promotes development plus mitigation; the latter development plus adaptation. Neither encourages joined-up development-mitigation-adaptation approaches that are able to comprehensively advance development and reduce climate risk over time. In a bid to rectify this, CCD seeks ways to amalgamate the two concepts: "assessing how to…combine the two strategies is at its very core" (Mitchell and Maxwell, 2010, p.2). In some cases, decision-makers might seek to operationalise CCD by pursuing triple-wins across development, mitigation, and adaptation through individual 'sweet-spot' policies, programmes and projects. Alternatively single- or double-wins achieved through discrete initiatives may have to be amalgamated and balanced at aggregated governance levels to meet CCD goals (Ibid.).

The origins of CCD overlap with those of low-carbon development and climate resilient development. Donor agencies have driven and funded its development (Käkönen et al., 2014; Mitchell and Maxwell, 2010). Interest in the concept grew in the wake of the global economic crisis because CCD has the potential to stimulate cost-effective policy and practice by achieving multiple benefits simultaneously (GDPRD, 2011; Tompkins et al., 2013). CCD's evolution was also influenced by the growing popularity of climate-smart agriculture (Tompkins et al., 2013), a concept that aims to simultaneously enhance food security, improve resilience to climate change and reduce or remove greenhouse gas emissions (FAO, 2013). Because CCD's development focus is broader than agriculture,

it is able to acknowledge that ‘getting out of farming’ could be the most beneficial option at certain scales for vulnerable populations (Meridian Institute, 2011).

CCD builds on low-carbon development and climate resilient development by placing the reduction of climate risk at the forefront of practical action. By fusing together low-carbon development and climate resilient development, CCD is well-placed to address links between development, mitigation and adaptation. In so doing, it could better encourage the reduction of climate risk over time relative to either standalone concept: adaptation can help address current and near-term climate stresses and shocks while mitigation lessens the likelihood that these stresses and shocks will worsen in the medium-to-long term (Watkiss et al., 2015). Amalgamating both concepts is also politically expedient. Integrating mitigation with adaptation actions further incentivises the pursuit of low-carbon development in the developing world (Käkönen et al., 2014). Moreover, incorporating both low-carbon development and climate resilient development into CCD may reconcile advocates of each standalone concept, thereby underpinning CCD policy and action with a potentially large support coalition (Naess et al., 2014).

Restricting its environmental focus to mitigation and adaptation, CCD avoids the pervasive ambiguity that has constrained the practical implementation of sustainable development. Still, by zoning in solely on the climate, it is unclear what implications — positive or negative — the concept’s operationalisation might have for wider environmental issues (e.g. ecosystem conservation and clean water provision). For example, afforestation and other forest management activities, which could theoretically realise triple-wins (Klein et al., 2007), might reduce biodiversity in cases where plantations comprised of single tree species replace biodiverse grasslands or shrublands (Metz et al., 2007).

It is also unclear as to whether the CCD policy narrative permits and encourages action that challenges existing development paradigms (Stringer et al., In Press). The concept has been discussed as a way to protect predominant development approaches from new threats and uncertainties created by climate change (Mitchell and Maxwell, 2010). It is, therefore, uncertain whether CCD encourages current orthodoxies to be perpetuated or allows them to be challenged when they sustain and exacerbate vulnerabilities.

CCD is popularly depicted in terms of ‘wins’ and ‘winners’ but pays little attention to possible negative side-effects across (temporal and spatial) scales and governance levels that might be required to integrate development, mitigation and adaptation

(Bruggink, 2012). There are obvious reasons why CCD is proving an attractive concept. Development, mitigation and adaptation each provide challenges for policymakers. Yet CCD offers opportunities to provide answers to all three at once. By accepting that there is a dual moral imperative to protect the Earth and advance the plight of humankind, it appears, at face value, to be ethical. It pledges to ensure that development, mitigation and adaptation point in the same direction, thereby making it also appear highly efficient and cost-effective.

However, although development, mitigation and adaptation are theoretically complementary, studies have shown that they are not always compatible and that their pursuit can produce a range of negative impacts for different individuals and groups (Harvey et al., 2014; Locatelli et al., 2011). Compatibility may also change over time. For instance, Baudoin et al. (2014) illustrate that use of chemical fertilisers by Beninese farmers can facilitate food security gains in the present but reduce capacities to adapt to future climate impacts. This is because prolonged chemical fertiliser use has negative impacts for soil fertility and water availability. Reduced soil quality could also have implications for below-ground carbon storage (Stringer et al., 2012a). The consensual framing of CCD is likely to encourage support for the concept. However, it may encourage policy and practice that is overly optimistic about what is achievable and lacks safeguards to prevent or cushion the impact of negative side-effects.

Overall, CCD shows promise as a conceptual framing for advancing joined-up development, mitigation and adaptation. However, like other concepts that attempt to reconcile environment-development issues, it represents only one subjective way of viewing the world. The particulars of its conceptualisation (e.g. how it defines problems, clusters knowledge and justifies solutions) might overlook and/or side-line concerns that are prioritised by alternative perspectives and ways of thinking (e.g. the creation of negative side-effects; opportunities for radical change). When translated into practical actions, these particulars could have diverse cross-scalar, multi-level implications (Käkönen et al., 2014). Evidence from research concerned with the operationalisation of CCD is required to uncover these implications in order to stress-test whether the concept is appropriate for advancing joined-up development, mitigation and adaptation approaches. In the following section, this research base is examined.

2.3 From theory to practice: operationalising climate compatible development

This section presents and analyses the findings of studies that address the operationalisation of CCD. The literature base is underdeveloped and remains in its infancy. However, linked to the concept's popularity amongst policymakers and practitioners, new research is being produced and published at pace. So far, most existing literature has furthered knowledge on CCD by doing one or more of the following:

1) Appraising the use of CCD as a guiding framework for policy and practice;
2) Assessing the feasibility of achieving CCD goals across governance levels;
3) Proposing strategies for advancing CCD and overcoming barriers to action;
4) Critically analysing CCD.

These categories are now used to guide discussion of the literature. Knowledge gaps and key areas for further research are highlighted throughout.

2.3.1 Climate compatible development as a guiding framework for policy and practice

Huxham et al. (2015) suggest that a CCD framing can help guide practical action towards positive, joined-up development, mitigation and adaptation outcomes. The authors adopt participatory scenario planning tools that highlight that a CCD policymaking approach could help reverse patterns of mangrove destruction and degradation on the south Kenyan coast. This would safeguard the longevity of ecosystem services that contribute significant livelihood benefits, sequester carbon and help people deal with rising sea levels. Using economic valuation techniques, they estimate that these benefits could yield a net present value of $20 million relative to business-as-usual scenarios over a twenty-year period. Their work shows that adopting scenario planning and economic valuation techniques together could help build an economic evidence base for CCD. Likewise, Harkes et al. (2015) develop scenarios that show that CCD can help protect mangroves, which are threatened by current shrimp aquaculture production methods in Sri Lanka. Mangrove protection, they argue, can simultaneously encourage development, mitigation and adaptation progress.

Both Huxham et al. (2015) and Harkes et al. (2015) consider that a CCD framing helps equip decision-makers with forward-thinking perspectives that reduce short-termism and incentives to forgo long-term climate and development benefits in favour of immediate gains. Other studies (Stringer et al., 2014; Broto et al., 2015; Chaudhary et al., 2015) also suggest that CCD can help encourage policymakers and practitioners to consider how different (spatial and temporal) scales, levels and sectors can be linked and harmonised during the development of practical action.

By exploiting cross-sectoral and -scalar linkages, these authors consider that a CCD framing can help engage multiple stakeholders in the development of policy and action. Use of a CCD framing can also help stakeholders to understand development-mitigation-adaptation linkages, thus improving the quality of this engagement (Broto et al., 2015; Huxham et al., 2015). Mobilising multiple stakeholders can help alleviate policy inaction. For example, Chaudhary et al. (2015) consider that multi-stakeholder working is a necessary precondition for designing mitigation policies in India. In this case, collaborations could help reconcile stakeholders' value positions and enable policies that serve both development and climate objectives and are acceptable to various powerful interest groups that may impede change. Stringer et al. (2014) also find that a CCD framing facilitates collaboration between different government departments in southern Africa, encouraging harmonised policymaking across sectors.

The popularised depiction of CCD focuses on the achievement of development, mitigation and adaptation 'wins' (see Figure 1.1, p.4). However, Clarke and de Cruz (2015) suggest that the adoption of a CCD guiding framework might necessitate that negative side-effects and, therefore, 'losers' are also created. The authors evaluate how the development and humanitarian aid landscape could be reconfigured so as to promote positive CCD outcomes. They suggest that current paradigms and ways of working may increase vulnerabilities in the face of climate change. Yet a CCD reconfiguration will require "challenging and unpalatable choices" (p.S21). In extreme circumstances, they argue, providing development support to vulnerable communities in extremely climate sensitive areas could delay necessary adaptation and may, therefore, have to be abandoned. Tompkins et al. (2013) have criticised the popularised depiction of CCD for failing to draw attention to the negative side-effects that may also be created when it is used as a guiding framework for action.

Overall, evidence suggests that a CCD framing can help facilitate collaborative, harmonised policy and practice that encourages positive cross-scalar development,

mitigation and adaptation outcomes. However, pursuing CCD might also introduce new complexities and lead to particular individuals and groups being simultaneously disadvantaged. The popularised depiction of CCD (Mitchell and Maxwell, 2010) conceals these negative side-effects and equity dilemmas.

2.3.2 The feasibility of achieving climate compatible development goals

A second tranche of studies has evaluated the feasibility of achieving CCD goals through policy and practice that is initiated at different governance levels. A growing body of research has been concerned with uncovering whether CCD triple-wins can be achieved simultaneously through individual activities or by combining activities in project level interventions.

There are possibilities for individual actions to create development, mitigation and adaptation benefits simultaneously. Ecosystem-based approaches, which are proposed as a way to achieve CCD goals through protecting, generating and utilising natural capital, show particular promise (Munang et al., 2013). In particular, a range of sustainable land management practices that span the water-energy-food nexus can achieve CCD triple-wins (Woodfine, 2009; UNCCD, 2009). It is suggested that agroforestry (Mutonyi and Fungo, 2011; Verchot et al., 2007; Clough et al., 2011), participatory forest management (Chhatre and Agrawal, 2009; Guariguata, 2009), forest regeneration (Vignola et al., 2009; Pramova et al., 2012) and conservation agriculture (Milder et al., 2011; Bryan et al., 2013) can simultaneously: facilitate carbon storage; decrease soil erosion; protect people and increase their access to resources (e.g. firewood, water, fertile soil, finance, material possessions) in the face of climate impacts (e.g. flooding, dry spells, drought); and enhance biodiversity.

Ecosystem-based approaches are creating CCD benefits across the developing world (Magrin et al., 2014; Hijioka et al., 2014) but they are considered to have particular potential in sub-Saharan Africa (Niang et al., 2014). Niang et al. (2014) highlight that projects are increasingly being designed with a pro-poor orientation across the region in order to encourage local participation and widespread adoption of technologies that have the potential to create CCD triple-wins. Many project developers are attempting to harness the carbon market in order to generate additional finance to further development and adaptation goals that can benefit local populations (Ibid.).

Other actions that generate CCD triple-wins have been reported in the literature. Decentralised renewable energy technologies (e.g. bioenergy, wind, solar) can be configured to create new, low carbon livelihood activities for local populations and enhance adaptive capacities (Venema and Rehman, 2007; La Rovere et al., 2009; Dyer et al., 2012). Evidence from Bangladesh shows that waste-to-compost projects are able to simultaneously contribute to: mitigation — through reduced methane emissions; adaptation — through soil improvements in drought-prone areas; and development — through poverty reduction related to improved ecosystem service flows (Ayers and Huq, 2009). Research from Kenya shows that improved livestock feeding can improve the productivity and profitability of dairy cattle whilst reducing methane emissions. Providing a better quality diet to fewer, more productive animals is also emerging as a way to deal with climate risks (Bryan et al., 2013).

Nevertheless, these activities may not be able to achieve CCD triple-wins in all circumstances. Locatelli et al. (2011) show that sustainable land management cannot always realise simultaneous mitigation and adaptation benefits. For example, maximising carbon sequestration through forestry activities (e.g. fast-growing tree monocultures) may reduce opportunities for ecological adaptation (Díaz et al., 2009). Activities that are considered to have significant potential to generate triple-wins at particular spatial scales may also be unable to achieve these benefits when implemented in other places. For example, Bryan et al. (2013) show that CCD benefits from agricultural investments in Kenya are dependent on the agro-ecological zone in which they are made.

The balance of mitigation, development and adaptation wins created by activities and projects might also change over time. For instance, research conducted across the developing world (Schwilch et al., 2014; Leventon et al., 2015) suggests that there may be climatic limits to the CCD benefits that are created by ecosystem-based activities. In the context of future climate change, development, mitigation and adaptation benefits may be time-bound and activities may even increase local people's vulnerabilities (Ibid.). Overall, there is growing consensus that achieving triple-wins through individual projects and activities is possible, but rare (Swart and Raes, 2007; Klein et al., 2005). The simultaneous achievement of CCD goals across space and time is contingent on a number of contextual factors.

Recognition that development, mitigation and adaptation do not always point in the same direction has led to the proposition that CCD goals should also be pursued through

balancing the outcomes of, and reducing conflicts between, policies, programmes and projects at aggregated governance levels (Mitchell and Maxwell, 2010). It is argued that obsessively pursuing CCD triple-wins through individual initiatives could even undermine the achievement of development, mitigation and adaptation (Broto et al., 2015). To facilitate a more aggregated approach to CCD, it has been suggested that policymakers should focus their resources on: a) building synergies between development objectives and mitigative and adaptive capacity; b) developing cross-sectoral and -scalar institutional development-mitigation-adaptation linkages; and c) co-ordinating actions that achieve single- and double-wins in ways that avoid antagonism (Klein et al., 2005; Swart and Raes, 2007).

An aggregated approach might sensibly consider CCD a dynamic process in which the space available to achieve development, mitigation and adaptation goals changes over time (Tanner et al., 2014). For instance, mitigation activities in developing countries may only become politically acceptable once vulnerable populations have received assistance to help them deal with pressing development priorities and near-term climate vulnerabilities. Crucial to decision-makers, therefore, is an understanding of societal conditions that can be manipulated to create synergies and reduce trade-offs (Ibid.).

National governments are beginning to see value in pursuing more aggregated approaches to CCD (e.g. Stringer et al., 2014; Fisher and Mohun, 2015). However, less academic attention has been paid to advancing CCD at aggregate levels compared with individual activities, programmes and projects. Developing associated strategies is likely to be challenging, if not “daunting” (Wilbanks and Sathaye, 2007, p.959), because development, mitigation and adaptation actions are often implemented by different actors operating across dissimilar sectors, spatial and temporal scales and governance levels. Moreover, the costs and benefits of individual actions are borne and experienced by different individuals and groups, and may be viewed in diverse ways across time and space (Ibid.). It is not clear what would constitute a socially, economically and environmentally justifiable mix of development, mitigation and adaptation actions in different contexts, nor how this would be determined or achieved (Klein et al., 2005).

Janetos et al. (2012) have developed a planning framework to assist decision-makers to evaluate possible CCD synergies and trade-offs that might be created by individual policies and actions. However, overall, the academic community has done little to advance informational tools for assisting the pursuit of CCD at aggregated levels. Moreover, tools for assessing and evaluating whether, when and for whom CCD is

happening are scarce. The framework developed to examine outcomes created by CCD in order to complete the third research objective of this thesis helps address this fundamental gap.

2.3.3 Advancing climate compatible development and overcoming barriers to action

A growing body of research is beginning to shed light on the contextual circumstances upon which progression towards cross-scalar, multi-level CCD hinges (e.g. Ellis et al., 2013; Stringer et al., 2012b; Quan et al., 2014). Findings point to a host of barriers to action (Table 2.1). The existence of barriers helps explain why progress towards triple-wins through individual initiatives is rare and further confirms the challenges inherent in advancing towards CCD goals via aggregated strategies. Governance, regulatory, resource, informational, socio-cultural and political-economic barriers occur, highlighting that achieving CCD requires more than just a focus on what is theoretically feasible. Their presence in different contexts indicates that CCD does not take place in a vacuum and is being superimposed onto existing human and natural systems (Stringer et al., 2014). These systems condition vulnerabilities and may not give way to optimal conditions for achieving joined-up development, mitigation and adaptation goals. Research presented in this thesis advances this literature by considering: 1) whether and how barriers preventing the achievement of CCD triple-wins impact differently upon individuals and groups living in diverse states of vulnerability; and 2) how barriers differ across spatial and temporal scales.

Research has begun to outline strategies with which to address these barriers and present lessons for advancing CCD. The majority of studies have focussed on governance recommendations. Co-ordinated and co-operative planning and implementation across sectors, governance levels and scales is encouraged by a CCD framing. These conditions are also considered necessary for achieving CCD goals (Kok et al., 2008; Austin et al., 2012; Conway et al., 2015; Kaur and Ayers, 2010). Stringer et al. (2012b) show that the establishment of umbrella organisations can help facilitate CCD by co-ordinating, and harnessing synergies, between projects pursuing development, mitigation and adaptation goals.

Table 2.1: Barriers to advancing climate compatible development

Barrier	Reference
Governance and regulatory	
Poor co-ordination and co-operation between government departments and across sectors	Conway et al. (2015); Kok et al. (2008); Anton et al. (2014); Stringer et al. (2012b)
Limited human and material resources	Kok et al. (2008); Ellis et al. (2013); Stringer et al. (2012b); Huhtala and Bird (2013)
Ill-conceived policy mechanisms and land tenure systems	Wood et al. (2016); Milder et al. (2011)
Short-termism and unsupportive policy priorities	Ellis et al. (2013); Milder et al. (2011); Newell et al. (2014)
Mainstreaming fatigue related to international pressure to integrate issues into development planning	Kok et al. (2008)
Limited institutional memory	Denton et al. (2014)
Financial and material	
Poor access to input and output markets	Bryan et al. (2013); Mutonyi and Fungo (2011); Suckall et al. (2014)
Unachievable financier requirements	Huhtala and Bird (2013); Wood et al. (2016)
Limited financial incentives/ poor access to credit	Suckall et al. (2014); Tanner et al. (2014); Bryan et al. (2013)
Poor land access	Milder et al. (2011)
Limited access to inputs (e.g. seeds, fertiliser for climate-smart agriculture)	Bryan et al. (2013); Milder et al. (2011); Suckall et al. (2014); Mutonyi and Fungo (2011)
Socio-cultural	
Poor local acceptance of technologies and techniques	Wood et al. (2016); Milder et al. (2011)
Informational	
Limited knowledge of climate change and policy mechanisms and/or sources of finance for CCD amongst stakeholders	Kok et al. (2008); Huhtala and Bird (2013); Stringer et al. (2012a)
Difficulties making decisions in the context of uncertainty and insufficient tools for doing so	Kok et al. (2008); Anton et al. (2014); Ellis et al. (2013)
Risk aversion	Bryan et al. (2013)
Limited access to suitable planning materials	Mutonyi and Fungo (2011)
Technical	
Poor access to technologies	Burch and Robinson (2007); Ellis et al. (2013)
Restricted extension support to guide local actions	Milder et al. (2011)
Political-economic	
Relative powerlessness of CCD advocates	Newell et al. (2014); Quan et al. (2014); Stringer et al. (2014)

The value of progressing towards CCD via multi-stakeholder working has received significant attention in the literature (e.g. Dyer et al., 2013; Daniell et al., 2011). Multi-stakeholder collaborations enable resources and different types of expertise to be pooled in pursuit of shared goals. In isolation, few individual stakeholders have access to the range of resources that can be attained through collaborative working (Anton et al., 2014; Stringer et al., 2012b; Dyer et al., 2013; Forsyth, 2010). Suggestions have been made within the literature as to how to progress multi-stakeholder working. Daniell et al. (2011)

consider that research-supported processes can help bring stakeholders together and develop mutual understanding because they offer a relatively non-threatening environment for dialogue.

The benefits of including local people in these partnerships have been highlighted. For example, Nyong et al. (2007) show that harnessing indigenous knowledge can facilitate progress towards mitigation and adaptation when local people are able to suggest solutions for overcoming their vulnerabilities. Drawing on experiences from Maputo, Mozambique, Broto et al. (2015) developed a participatory planning methodology to encourage the involvement of local stakeholders in CCD design and implementation. Through completion of research objectives one and two, this thesis builds on this literature by advancing recommendations that could help encourage multi-stakeholder working and local people's involvement within the design and implementation of CCD projects.

Sufficient multi-level governmental capacity is also considered a prerequisite for progress along CCD trajectories (Kok et al., 2008; Del Villar et al., 2011; Stringer et al., 2012b). At the local level, extension services with sufficient human and resource capacities can encourage individuals and groups to take autonomous CCD actions (Dyer et al., 2014; Suckall et al., 2014). The championing of climate issues by powerful national and subnational government actors can also help to build coalitions for change (Ellis et al., 2013; Anton et al., 2014).

Huhtala and Bird (2013) focus on overcoming financial obstacles to CCD. They argue that the global climate finance architecture needs to be better harmonised, streamlined and based on greater input from developing countries. Drawing on the experiences of the Least Developed Countries to improve climate finance approaches will be vital because funding mechanisms are often poorly matched with their needs (Wood et al., 2016). Better translation of policy mechanism (e.g. the Clean Development Mechanism, voluntary carbon market) monitoring and verification standards into local methods and tools could also reduce technical barriers to CCD, lessen reliance on external actors and improve access to financial resources (Stringer et al., 2012b). At local levels, provision of improved credit facilities for the resource-poor can support the purchase of inputs required to achieve CCD (Suckall et al., 2014). Ensuring local people have better access to input and output markets will also be crucial in creating incentives for autonomous CCD actions (Ibid.) and may be a precondition for project success.

Research has only recently begun to address informational barriers to action. Work has assessed how climate knowledge platforms and guidance tools can be mapped onto the needs and priorities of users (Hammill et al., 2013). Yet, as discussed above, there is a need for new tools to be developed. There is also room for existing tools to be further improved (Ibid.; Naess et al., 2014). Platforms for communicating with decision-makers about, and assisting decision-making in spite of, uncertainties inherent in the climate system are necessary. Wariness about taking decisions in the absence of full knowledge often paralyses action (Kok et al., 2008; Wilbanks and Sayathe, 2007). In the context of uncertainty and subsequent value plurality, Wilson and McDaniels (2007) suggest that structured decision-making methods could provide useful heuristic support tools. Multi-criteria frameworks could also assist decision-makers to determine optimal balances between development, mitigation and adaptation in particular contexts (Klein et al., 2005). Given that CCD research lags behind the rate at which the concept is being operationalised, it is important that monitoring and evaluation structures are developed that enable policymakers and practitioners to advance CCD based upon lessons from experience (Denton et al., 2014).

Recommendations for advancing CCD focus on incremental rather than transformative change. However, studies have begun to stress that incremental change may be insufficient for enabling all vulnerable populations to achieve CCD goals (Tanner et al., 2014; Quan et al., 2014; Bizikova et al., 2007). Development pathways condition the vulnerabilities of populations, sometimes to the detriment of marginalised groups. In situations where vulnerabilities are entrenched, augmenting existing development pathways with additional climate objectives will be unlikely to help affected people to experience CCD benefits (Tanner et al., 2014; Quan et al., 2014). Global emissions trajectories are currently on course to generate dangerous levels of climate change. Should this continue, then it is unlikely that incremental adjustment will be able to reduce climate risks to safe levels (Stocker et al., 2014; Pelling et al., 2015).

Growing attention is being paid to situations that require transformative change and strategies for its achievement within the wider climate change literature (Denton et al., 2014). Studies that further understanding of whether incremental or radical change is required to advance CCD in particular circumstances would represent an important addition to the literature. Research presented in this thesis evaluates projects aiming to achieve CCD benefits through incremental change focussed at the local level. In doing so, power — networks of societal institutions (formal and informal) and resources (Gaventa, 2006) — is analysed. Analysis of power and political economy within the CCD

literature will be crucial because they condition possibilities for incremental and transformative change (Gaventa, 2006; Tanner and Allouche, 2011).

2.3.4 Critical climate compatible development research

To date, there has been a scarcity of research that critiques the operationalisation of CCD. This is problematic because CCD represents a subjective way of viewing the world. Its use of discursive storylines can alter the perceptions and actions of policymakers and practitioners and, in so doing, shape what is included (and what is not) in policymaking and practice. Consequently, CCD justifies certain types of action but has the potential to side-line alternative responses and conceptual framings (Gottweis, 2003; Hajer, 1995). Moreover, CCD is being operationalised in a multi-level context where several forms of uncertainty mean myriad values and interests coexist and conflict with one another (Paavola, 2008b). Therefore, it is likely that CCD stakeholders will hold diverse preferences related to how the concept should be pursued. Different perspectives about how it is being implemented and the outcomes it is producing are also probable. Critical research is required to uncover how CCD is navigating this value plurality and the consequences that follow this. In the following, pressing critical literature gaps that are used to frame the research presented in this thesis are highlighted.

Knowledge of climate change is incomplete due to constrained understanding of the complex Earth system and limitations inherent in climate models (Curry and Webster, 2011). This makes precise predictions about changes (especially in regions and localities) impossible and the consequences of mitigation and adaptation activities uncertain (Ibid.). There may also be unknown, undiscovered forms of uncertainty (Dessai and Sluijs, 2007). Meanwhile, development suffers from chronic data shortages and commonly relies upon outdated data collection methods. Low capacity means data collection is often infrequent, irregular and incomplete (Devarajan, 2013).

The problem of uncertainty surrounding CCD interventions is complicated in a world marked by vast, socially-constructed inequality in terms of climate change and development issues. As Barrett (2013a, p.1) argues, climate change constitutes the source of a “double inequality” with an “inverse distribution of risk and responsibility”. Uneven development patterns are also human creations that condition populations’ capacities to respond to change (O'Brien and Leichenko, 2003).

Combatting this inequality through CCD approaches requires multi-stakeholder working across global, national and local scales (Stringer et al., 2014). Stakeholders' cultures and value positions will condition how they approach uncertain climate and development problems (Hulme, 2011) and how they work together. However, belief systems motivating some stakeholders' priorities and actions may not be fully comprehensible to others (Sen, 2009).

In the context of uncertainty and disparate value positions, stakeholder priorities for CCD will likely conflict with one another. Debate about what is to be developed, and how development should take place, is commonplace, irrespective of climate change concerns (Pieterse, 2010). How to progress mitigation and adaptation and balance them against one another within policy remains contentious. Divergence between nation-states around these issues has created difficulties for global climate negotiations (Morgan and Waskow, 2014). Developing countries' populations and governments often prioritise development and adaptation over mitigation in order to reduce current global inequalities (Ibid.; Ayers and Huq, 2009). Meanwhile, others suggest that these countries should prioritise low-carbon approaches because mitigation finance can help drive development (Bowen et al., 2011).

Stakeholders involved in CCD interventions may concurrently seek to pursue other agendas whilst furthering development, mitigation and/or adaptation and the pursuit of these agendas could exacerbate disagreement. For example, development organisations may pursue CCD in areas where they have prior expertise and capacity and pursue cost-effective activities to avoid overstretching organisational resources. Consequently, they might be incentivised to concentrate activities in locations where vulnerabilities and/or development-mitigation-adaptation synergies are not necessarily greatest (Atela et al., 2014). Such strategies may not be universally approved of by other stakeholders.

What constitutes mitigation and adaptation is also contentious. Mitigation and adaptation policy (e.g. under the UNFCCC) is commonly directed by knowledge produced by IPCC (UNFCCC, 2016a; UNFCCC, 2016b). However, centuries-old strategies adopted by developing world populations for dealing with climate stresses have gone largely unrecognised within adaptation projects that are funded and executed by external actors (Reed and Stringer, 2016). Likewise, the mitigation potential of indigenous livelihood strategies has not been well acknowledged (Nyong et al., 2007). Efforts to promote the IPCC as the "epistemic authority on matters of climate policy" (Beck et al., 2014, p.80)

have been criticised for legitimising certain mitigation and adaptation actions (and actors) while delegitimising others, particularly those implemented by indigenous populations (Ford et al., 2012).

The multiple points of contention within the CCD operating context are, therefore, well-delineated. Yet, despite this, little attention has so far been paid to: a) whether and how stakeholder preferences for CCD align or differ in the context of specific interventions; or b) whether and how CCD policies, programmes and projects have reconciled stakeholder preferences through CCD design. Research in this area will be important for uncovering which stakeholders are driving the design of CCD interventions and how design processes contend with socio-cultural and political oppression that have caused patterns of underdevelopment (Sen, 2001). This is a pressing area for further study and it is addressed in this thesis through completion of research objectives one and two.

By recognising the importance of development, mitigation and adaptation simultaneously, policies, programmes and projects that seek to integrate all three components could encourage common ground between different constituencies (Ayers and Huq, 2009). However, the few studies that have conducted research in this area suggest that this will not be a given. For instance, Mustalahti et al. (2012) show that local development priorities (e.g. water access, food security) are poorly reconciled with global mitigation goals through REDD+ design in Tanzania.

These findings are reinforced by the work of Sova et al. (2015) who conducted research in seven Least Developed Countries and found that local concerns were considered of secondary importance to 'expert' knowledge within national adaptation planning. Käkönen et al. (2014) suggest that international financial incentive structures related to CCD (e.g. donor, multi-lateral development bank and policy mechanism funding requirements) mean that developing countries are reliant on developed country expertise and technologies to operationalise the concept. Consequently, the authors argue that climate governance is internationally-driven and configured to fit with international incentive structures that perpetuate dominant paradigms and western knowledge and scientific rationalities, rather than local realities.

CCD decision-makers may, therefore, have incentives to pursue actions that are prioritised by stakeholders at supralocal levels (e.g. mitigation and economic growth) over the concerns of local people (e.g. adaptation and poverty alleviation) and thereby exacerbate global inequalities (Bruggink, 2012; Stabinsky and Ching, 2012). As has

been discussed in this chapter, there are certain circumstances when interventions that pursue CCD goals may need to create transformative change that challenges business-as-usual approaches in order to reduce vulnerabilities (Denton et al., 2014). Yet, by marginalising the voices of local people in vulnerable areas, these interventions may serve to reinforce the status quo.

Limited local involvement within the design of CCD could also restrict the extent to which implementation processes align with local people's specific needs and capabilities. Both Chhatre and Agrawal (2009) and Quan et al. (2014) show that meaningful local involvement in implementation processes can help ensure interventions create development, mitigation and adaptation outcomes that are pro-poor and reduce vulnerabilities. However, study of so-called 'community-based' projects pursuing CCD goals illustrates that, in some cases, outsiders and already-powerful local people are able to dominate implementation processes (Dodman and Mitlin, 2013). Meanwhile, the involvement of the most vulnerable people (e.g. women, the elderly, the extreme resource poor) is limited (Mathur et al., 2014; Barrett, 2013a).

Community-based approaches are being institutionalised as a way to achieve CCD goals (Reid, 2016). They look to target development and climate vulnerability reduction efforts towards 'communities' made up of groups of local people bound together by considerations such as culture, identity and place (Fritzen 2007; Mansuri and Rao 2004). Community-based project theory stresses the need to involve local people in different stages of project implementation and allow them a role in decision-making (Ayers and Forsyth, 2009; Reid et al., 2009).

However, critical evaluations of community-based climate and development projects lag behind the rate at which they are being implemented (Dodman and Mitlin, 2013). Little attention has been paid to how conditions unique to the multi-level, cross-scalar CCD implementing context shape the involvement of local people in community-based projects, particularly those that simultaneously pursue triple-wins across development, mitigation and adaptation. This thesis addresses this research gap by evaluating local involvement in ECRP implementation processes (research objective two). Addressing this research gap is necessary because local involvement in, and acceptance of, project implementation processes is required to successfully roll out CCD and reduce vulnerabilities (Anton et al., 2014).

CCD outcomes could create additional points of disagreement and contention between stakeholders. Initiatives that generate development, mitigation and adaptation benefits (both individually and simultaneously) are also perceived to deliver negative side-effects. Suckall et al. (2014) draw on local testimonies to contend that autonomous local adaptations in Zanzibar have generated negative side-effects for mitigation and development. Negative side-effects ensue because farmers spend longer on farms when climate impacts constrain agricultural productivity. This reduces the time that farmers have to spend investing in alternative livelihood activities, some of which can also create mitigation benefits (e.g. forestry activities). Tompkins et al. (2013) analyse policies related to agriculture, aquaculture, fisheries, forestry and tourism with the potential to create CCD triple-wins in Belize, Kenya, Vietnam and Ghana. They argue that although some of these policies can create triple-wins, others fail and often create unanticipated negative impacts for development, mitigation and adaptation.

'Do no harm' principles are often mainstreamed within policy mechanisms (Gold Standard, No Date; UN-REDD, 2013), meaning negative side-effects ought to be unintended and unanticipated *ex ante*. Yet, theoretically, negative side-effects could also be anticipated and/or intentional. For instance, relocating populations away from extremely climate exposed areas may sometimes be a necessary adaptation strategy, but can undermine social cohesion and local environmental knowledge (Adger et al., 2011; 2013). CCD policymakers and practitioners might accept that some individuals and groups may have to lose out in order for others to benefit. The popularised depiction of CCD focusses on 'wins' and 'winners' but pays little attention to negative side-effects that might be created through its pursuit (Tompkins et al. 2013). This is unsurprising because discussing 'winners' and 'losers' in the context of climate change is highly contentious and is, therefore, often avoided (O'Brien and Leichenko, 2003).

Points of contention will differ within and between spatial and temporal scales. This is because development, mitigation and adaptation outcomes are experienced differently by actors operating across dissimilar dimensions. Mathur et al. (2014) illustrate that the most marginalised populations (e.g. elderly, disabled, extremely resource poor, women) have often received fewest benefits from carbon market projects implemented in developing countries. In these projects, powerful local actors have used their superior resource access to monopolise project benefits for themselves, their friends and families.

Tanner et al. (2014) consider that reducing fuel subsidies for small fishing boats in Ghana could help progress CCD by discouraging maladaptive fishing practices and reducing

greenhouse gas emissions from the fishing sector. Associated adaptation and mitigation benefits would likely increase over time but pursuing them would negatively impact upon the immediate livelihoods of fisherman, who are considered amongst the poorest and most vulnerable members of society. Similarly, Quan et al. (2014) show that pursuing CCD benefits in Mozambique through REDD+ could restrict local people's consumption of forest products in the present. However, over time, biodiversity improvements related to better forest governance might help improve local adaptive capacities. Over the longer-term, projects may also create global scale mitigation benefits. These studies point to the need for research that calculates return on investment periods for particular activities and interventions that pursue CCD goals from the perspective of vulnerable populations in different circumstances (see e.g. Dallimer et al., 2016). Findings would enable policy actions that target gaps between initial investments and the delivery of benefits, during which time some people's multi-dimensional poverty may worsen, in order to encourage transitions along CCD pathways.

Conflict could also emerge over issues only indirectly related to climate and development outcomes. This is because outcomes resulting from CCD interventions can have consequences for stakeholders who are not target beneficiaries (auxiliary outcomes). For example, framing interventions in line with multiple-win approaches is politically expedient for donors (McShane et al., 2011) and might help development organisations access finance that is increasingly channelled into CCD-related initiatives (Ellis et al., 2013). Stakeholders could also face auxiliary negative side-effects. CCD may, for instance, drive project developers to spread scarce resources thinly in pursuit of simultaneous triple-wins. Auxiliary outcomes may also differ across spatial and temporal dimensions.

There is an urgent need for further, empirical research that holistically explores the outcomes — both benefits and negative side-effects — that integrated climate and development interventions stand to create across levels and scales. Research that does exist has tended to be desk-based (Tompkins et al., 2013) or has hypothesised outcomes (Quan et al., 2014; Tanner et al., 2014; Stabinsky and Ching 2012). Empirical studies have yet to analyse the relative size of adaptation, mitigation and development benefits and negative side-effects generated by the pursuit of CCD (Tompkins et al., 2013). As a consequence, patterns of winners and losers that are created by CCD remain underexplored. Research that explores CCD outcomes is urgently required to ensure investments are: effective — successfully achieving development, mitigation and adaptation benefits; and efficient — achieving benefits without incurring costly

associated negative side-effects. It would also reveal whether and/or how economic development freedoms that shape whether people can pursue life choices that they value are enhanced (Sen 2001). This thesis seeks to address this research gap by evaluating the multi-level, cross-scalar outcomes that result from CCD projects (research objective three).

2.4 Conclusion

This chapter has reviewed and evaluated literature discussing CCD theory and practice in order to present the state of knowledge around the concept. It mapped the conceptual evolution of CCD, considering overlaps with other concepts that seek to exploit human-nature interactions. CCD is well configured to advance joined-up development, mitigation and adaptation progress relative to other conceptual framings. This is because it explicitly considers climate-development linkages and pursues mitigation and adaptation simultaneously, which is an appropriate approach because the two are complementary.

CCD represents one subjective way of seeing the world. How it shapes policy and practice will have diverse implications for socio-ecological systems and individuals and groups contending with differential levels of vulnerability. These implications differ according to the time, spaces and governance levels at which they are viewed. The burgeoning body of research concerning the operationalisation of CCD was reviewed in order to shed light on these implications. Key trends, lessons learnt and areas for further study were set out. So far, most literature has focussed on: appraising the use of the concept as a guiding framework for policy and practice; showcasing how development, mitigation and adaptation wins can be achieved; and overcoming barriers and advancing CCD. By contrast, critical research remains scarce.

Three pressing research gaps concern the need to explore: 1) the priorities of different stakeholders for progressing CCD; 2) the extent of local involvement in multi-stakeholder partnerships for designing and implementing CCD; and 3) multi-level, cross-scalar outcomes that are created by CCD policy and action. In the following chapter, a conceptual model that draws on social justice theory is developed in order to address these gaps.

3 A conceptual model for evaluating the social justice implications of climate compatible development

3.1 Introduction

As discussed in the previous chapter, several forms of uncertainty in the CCD context mean stakeholder priorities for, and perspectives about, integrated climate-development interventions may not align (Mustalahti et al., 2012). Physical science and economic approaches that draw upon quantitative data and consider problems from particular epistemological positions (e.g. climate science models, rational-choice theory, assumption-based planning approaches) are crucial support-tools for climate and development planning and response design and evaluation (Paavola, 2008b). However, these approaches are incapable of adjudicating between competing stakeholder priorities and perspectives, especially in the context of uncertainty related to complex systems (Ibid.). They are, therefore, unable to fulfil all of the needs of CCD decision-makers and researchers alone. Alternative approaches that facilitate adjudication between stakeholder perspectives and priorities are required to underpin the formulation of CCD policy and practice.

Social justice approaches that consider issues of procedure and distribution can help arbitrate between competing viewpoints related to how opportunities, privileges, burdens and disadvantages are allocated within society (Schlosberg, 2007). However, a shortage of conceptual models for guiding cross-level, multi-scalar social justice analyses of CCD betrays the importance of social justice research. A growing climate justice literature seeks to draw on social justice theory in order to develop approaches for guiding climate change policy and practice. However, the climate justice literature is subject to limitations and has not yet produced models for guiding and evaluating policy and practice in an integrated, systematic and rigorous manner.

This chapter develops a conceptual model to guide social justice evaluations of CCD. Firstly, the aforementioned limitations of the climate justice literature are detailed. A conceptual model is then developed that addresses these limitations. It can help CCD decision-makers and researchers to reconcile the different viewpoints of stakeholders and complements the use of physical science approaches and economic methodologies for designing, implementing and evaluating interventions.

In this thesis, the model is used to guide research that explores: the priorities of different stakeholders for progressing CCD (objective one); the extent of local involvement in multi-stakeholder partnerships for designing and implementing CCD (objective two); and multi-level, cross-scalar outcomes that are created by CCD policy and action (objective three). As discussed in chapter two, research in these areas is required to address pressing gaps in the CCD literature. The development of the conceptual model, therefore, helps contribute to the emergence of a more critical CCD research agenda, which is urgently required to uncover the implications that CCD has for different stakeholders operating across levels and scales.

3.2 Debating climate justice: a review of the literature

Social justice has been at the forefront of climate change debates ever since it became a major political issue (Bulkeley et al., 2013). While not addressed explicitly initially, social justice considerations formed a major part of early international level policy decisions. Notably, they informed the UNFCCC's guiding principle: common but differentiated responsibilities and respective capabilities (Ngwadla, 2014). Recently, social justice has been dealt with more directly within policymaking and practice. Social justice considerations have been identified as important for fostering progress within international climate change negotiations (Ibid.). Subnational climate action also has social justice at its core. For example, the Scottish government has established a Climate Justice Fund to finance project level mitigation and adaptation activities in developing nations (SG, 2016).

However, conceptions of social justice that permeate climate research and practice are currently inadequate. Multiple different theoretical perspectives exist that consider social justice in divergent ways and propose unique approaches that could be used to navigate the value plurality surrounding CCD. This section explores the debates and disagreements on climate justice. It is argued that dominant conceptions of climate justice are limited in three ways: universalist propositions dominate; distributive justice approaches overlook pluralism; and procedural justice is given inadequate attention. This makes them unsuitable for the evaluation of CCD.

3.2.1 Limitation 1: universalism dominates

The merits of different social justice approaches have been debated by social scientists for centuries. While by no means homogenous groupings, four main 'types' of social

justice theory are pre-eminent: utilitarianism; egalitarianism; libertarianism; and contractarianism (Liu, 2010).

Utilitarianism seeks to balance societal costs and benefits in order to maximise aggregate social welfare (however defined) (Liu, 2010). It is unconcerned with inequalities that this might create: “justice is what is beneficial to the most” (Davy, 1996, p.105). Egalitarians see all people as inherently equal and demand the full removal of inequality (Liu, 2010). For libertarians (e.g. Hayek, 1960; Nozick, 1974), social intervention that prevents individuals from making free choices is unjust. All societal consequences stemming from free decision-making are considered fair, even when extreme inequalities are created (Ibid.). By contrast, Rawls and other contractarians argue that the least privileged should be made as well off as possible. They argue that if individuals were unaware of their abilities’ and socio-economic positions, it would be possible to agree upon a set of rules with which to organise society (Rawls, 1971).

Each theory type has gained traction within climate research and has been epistemologically embedded within policy proposals and/or scientific models. Much of the climate science and economics literature recourses to utilitarian assumptions, considering that climate impacts ‘matter’ only when they affect well-being and can be quantified monetarily (Adger et al., 2011). Egalitarian thinking permeates proposals calling for equal entitlements to the atmosphere, equal burdens in dealing with climate change and equal rights to be protected from its impacts (Klinsky and Dowlatabadi, 2009). Proposals that demand the right to be protected from climate impacts caused by others (e.g. Mace, 2006) also display libertarian thinking. Hence, individual value positions may be motivated by dissimilar and incommensurable rationales (Bromley and Paavola, 2002). Rawlsian thinking manifests itself in calls to protect those who are most vulnerable to climate impacts (Paavola and Adger, 2006). Notwithstanding criticisms for being deterministic, and disempowering those deemed ‘vulnerable’ (Adger, 2001), the concept of vulnerability has been institutionalised within climate research and practice (Gaillard, 2010).

Dominant theories differ radically in most respects but are analogous in one important sense: they present universal laws with which to facilitate social justice. Objectively deciding between them is fundamentally impossible (Sen, 2009). Theories concentrate on identifying ‘optimally just’ societal arrangements, meaning they are also unsuitable for comparing and improving existing societal arrangements. This limits their real-world relevance (Ibid.). A failure to agree on ways to operationalise key climate justice

principles (e.g. what constitutes equal burden sharing in practice) has long hindered international climate talks (Parks and Roberts, 2010).

Universalist theories regard social justice principles as consistent across time and space. Consequently, they overlook how different contexts and cultures shape social justice claims (Walzer, 1983). Drawing on empirical research in India, Fisher (2015) demonstrates that multiple identities, development inequalities and diverse experiences with climate impacts and policy outcomes translates into myriad climate justice claims. When analysed across different levels and scales, varied interpretations of justice and injustice emerge (Kurtz, 2003). Social justice is "negotiated and generated in the context of conflicting views and interests" (Paavola and Adger, 2006, p.600-601). Hence universalism should give way to particularism at and across a range of scales.

Intergenerational justice aside, climate justice is predominantly conceived as a static ideal to be operationalised within the UNFCCC. Agency is granted only to sovereign governments, meaning subnational considerations are underexplored (Bulkeley et al., 2013). Yet national government priorities are not necessarily valued by other stakeholders. Diverse priorities for REDD+ and the Clean Development Mechanism, for example, exist at national and local levels (Mathur et al., 2014; Mustalahti et al., 2012). Values and experiences also differ within scales (e.g. on the basis of gender (Terry, 2009)). There are increasing attempts to engage with subnational climate justice (e.g. Büchs et al., 2011; Paavola, 2008a). However, multi-level, cross-scalar analyses are scarce (Barrett, 2013b). The justice implications of decisions determining the scales at which climate responses are designed and implemented have also been overlooked (Fisher, 2015).

Theorists' own experiences and consciousness mean any attempts to derive universal social justice laws are fundamentally particular in nature. Thus, universalism suffers from philosophical incoherence (Bell, 2013). Moreover, any attempts to determine some universal common ground in a multiverse of disparate realities are likely to be so abstract as to be irrelevant for practical usage (Walzer, 1983). While some (e.g. Baxter, 2004) argue that multiplicity makes social justice 'meaningless', it is acknowledgement of this diversity that showcases the importance of social justice research and practice. The task for theorists and practitioners is not to determine universal theory but to understand and reconcile competing priorities about how social life ought to be arranged.

3.2.2 Limitation 2: pluralism is overlooked within distributive justice thinking

The pre-eminence of universalism is mirrored by a near-exclusive focus on questions of distribution within the literature (Paavola and Adger, 2006). Studies examining the distributional outcomes of policies, programmes and projects that pursue CCD goals have drawn on a range of inter-disciplinary techniques (e.g. economic approaches (Weston et al., 2015; Chhatre and Agrawal, 2009) and participatory methods (Suckall et al., 2014)). Distributive justice theories diverge in terms of what should be distributed (e.g. income, wealth, employment, opportunities, utility, costs) and how (Lamont and Favor, 2014). However, linked to the dominance of universalism, climate justice theories have pre-determined which societal goods are in need of distribution from on-high.

Owing to the perceived urgency of promoting action to reduce the causes of climate change, climate justice debates centred upon the costs and benefits of mitigation until the mid-2000s (Paavola and Adger, 2006). Subsequently, there has been growing realisation that: 1) climate change impacts are already threatening development progress; 2) climate vulnerabilities are linked to pre-existing global inequalities; and, therefore, 3) adaptation requires more than just large scale infrastructure development designed to protect against future climate change (Field et al., 2014). In light of this, social justice dilemmas related to adaptation needs and the provision of resources for meeting these needs have been articulated. However, studies often focus on climate impacts and adaption needs rather than the consequences of adaptation interventions (e.g. Barrett, 2013b; Kelman, 2010).

That mitigation and adaptation are mediated through development issues (e.g. health, water access) is similarly ill-considered. Climate change and development are deeply intertwined and one cannot be discussed without reference to the other (Niang et al., 2014). It follows that climate justice should be concerned about the climate but also uneven development processes. Yet climate injustices are often conceived as separate from developmental injustices. Accordingly, attempts to address climate injustices have commonly looked to safeguard existing social systems rather than encourage societal transformations (Fisher, 2015).

Belying their multi-dimensional nature, the distributional outcomes of mitigation, adaptation and climate impacts on development are also conceived narrowly. Largely, distributive justice is discussed in terms of emissions reductions (mitigation only), finance

and technology (Morgan and Waskow, 2014). Meanwhile, dimensions that are more difficult to quantify (e.g. loss-of-life, environmental degradation) are overlooked (Ngwadla, 2014). Climate justice approaches also dictate mechanisms by which distribution should proceed, independently of context and the particular societal good in question (e.g. dominant Rawlsian justice approaches consider that climate strategies should be configured to benefit the most vulnerable (Caney, 2005)).

Yet, if the nature of social justice is context-specific, then logically, the types of goods to be distributed and the mechanisms by which that distribution occurs must follow suit (Walzer, 1983). Multiple identities, global inequalities and diverse cross-scalar experiences with climate impacts and policy outcomes make it impossible to define a universal standard of distributive justice with regards to CCD. Rather, pluralism — diversity in terms of the priorities and perspectives held by individuals and groups — is ubiquitous, manifesting itself in heterogeneous beliefs about what is to be distributed and how, which differ across governance levels and (spatial and temporal) scales (Fisher, 2015).

Humans form social ties and create communities based upon geography, values, identity and other factors (Pretty and Ward, 2001). These communities create their own societal goods, the relevance and importance of which is derived from meanings attached to them (Walzer, 1983). While certain societal goods may have analogues in alternative communities, they will unlikely carry precisely the same meaning (Ibid.). Since they can have radically different properties, each specific good in a particular society will have its own distribution criterion. Thus different ‘spheres’ of distribution are created (Miller and Walzer, 1995).

It has been argued that these different spheres of distribution are incommensurable and, therefore, must be kept separate (Walzer, 1983). The opposite scenario is where ‘dominance’ reigns. In situations of dominance, holders of certain societal goods use these to obtain other goods (and avoid bads) despite not fulfilling the requirements of the relevant distributive mechanisms (Ibid.). Dominance is ubiquitous within the climate discourse. ‘Substitutability’ — the idea that losses of particular goods can be compensated by increasing access to different types of goods — has been mainstreamed (Klinsky and Dowlatabadi, 2009). However, it is not clear that, for example, financial transfers can always satisfactorily compensate for environmental degradation. The natural environment is often valued for non-material reasons (Adger et al., 2011), making financial compensation alone insufficient. Facilitating distributive

justice through CCD requires acknowledgement that multiple spheres of distribution exist and that societal goods may not always be substitutable.

3.2.3 Limitation 3: procedural justice is ill-considered

The supremacy of distributive justice is increasingly questioned. Distribution is a necessary social justice consideration, but cannot be separated from issues of procedure. For individuals and groups to self-determine what is to be distributed and how, they must be granted recognition, or equality of status (Miller and Walzer, 1995), and participatory opportunities (Schlosberg, 2007).

Unlike distribution, which can be seen as the 'economic dimension' of social justice, recognition resides in the socio-cultural realm (Fraser, 2005). Misrecognition — the absence of recognition — occurs when individuals and groups are subject to "devaluation, insults, disenfranchisement and oppression" (Tschakert, 2009, p.708) through formal governance processes or informal customs, norms and behaviours. This is intrinsically unjust since it can cause psychological harm and/or obstructs people's potential to flourish within society (Ibid.). Real-world patterns of misrecognition are often the foundation for distributive injustices (Schlosberg, 2007).

Distributional outcomes condition patterns of (mis)recognition because resource access and ownership can shape which individuals and groups can command respect and status (Sen, 2009). However, this does not make recognition merely another type of 'good' in need of adequate distribution. Recognition does not suffer from rival consumption (Schlosberg, 2007) and its socio-cultural constitution means it cannot simply be dispersed by actors and institutions (Young, 1990). Patterns of recognition are embedded within social practices. While powerful actors and institutions can shape these practices (e.g. a government might alter the law to give rights to certain groups), they seldom control them (Schlosberg, 2007). Thus distribution and recognition, although interconnected, are not reducible to one another.

Participation comprises the third pillar of social justice. The extent to which individuals and groups can participate equitably within public life shapes "the course of…common activity" (Gould, 1996, p.181) and influences whether they are considered in subsequent distributional patterns (Young, 1990). Mechanisms that combine and analyse different opinions, preferences and interests are crucial. These may not always satisfy every divergent perspective but reasoned, democratic debate between perspectives presents

the best chance of achieving widespread consensus, or at least mutual tolerance (Sen, 2009). Climate justice, therefore, will only be achieved through “shades of grey” and “negotiated compromises” (Sovacool, 2013, p.960).

Participation and distribution share a two-way relationship. Allocations of societal goods and bads determine which stakeholders have the necessary capacity (e.g. finances, expertise) to make best use of participatory opportunities (Sen, 2009). Likewise, participation and recognition reciprocate one another. Those who go unrecognised are not usually afforded participatory opportunities (Fraser, 1998). Conversely, people’s abilities to command recognition depend on the depth and breadth of their participatory opportunities (Schlosberg, 2007). Participatory processes tie together considerations of distribution and recognition, but are distinct from both.

Empirical research finds that procedural justice is integral to real-life climate justice framings, with civil society groups (Derman, 2014) and some climate change responses (Bulkeley et al., 2013) emphasising the importance of participation and recognition. Research has begun to reflect these empirical realities (e.g. Paavola and Adger, 2006; Comim, 2008). However, barriers to procedural justice currently ostracise legitimate climate justice claims at international, national (Mace, 2006) and local levels (Barrett, 2013a).

To summarise, dominant conceptions of climate justice are unsuitable for the evaluation of CCD. To varying degrees, considerations of context, pluralism and procedural justice are overlooked. This means a multiplicity of diverse cross-scalar justice claims are ignored, especially those advocated from subnational levels. While limitations have been discussed elsewhere (e.g. Fisher, 2015; Paavola and Adger, 2006), they have rarely been engaged with holistically. Conceptual models that build on these lessons are absent, which creates a barrier to the consideration of social justice within the CCD discourse. The following section seeks to rectify this.

3.3 A conceptual model to guide social justice evaluations of climate compatible development

A conceptual model for evaluating CCD theory and practice is now presented that overcomes the three limitations highlighted in the previous section (Figure 3.1). At the

core of the model are the three pillars of social justice: recognition, participation and distribution.

Considering issues of recognition and participation will be crucial for understanding how CCD reconciles the competing agendas of multiple stakeholders operating across scales. The appropriate quality of, and balance between, development, mitigation and adaptation in separate initiatives should depend on the specific stakeholders involved. Local people targeted by interventions must be afforded status and opportunities to share their perspectives alongside other stakeholders (e.g. donors, NGOs, governments, private organisations). The relative (in)equality of stakeholders in terms of recognition and participation will determine whether CCD is being configured by bottom-up, organic or top-down and possibility universalist belief-systems. Evaluating recognition and participation will also uncover whose belief-systems have won out at particular times.

The extent to which CCD outcomes exacerbate or alleviate social conflict can be determined through distributive justice evaluations. Exploring which development, mitigation and adaptation outcomes are being distributed, and how, is vital. CCD activities and distribution mechanisms ought to emerge from specific implementation contexts, shaped by stakeholder value systems and perceived needs. To ensure the integrity of dissimilar distribution spheres, different goods should also be allocated by unique mechanisms. It might not, for example, be contextually-appropriate to allocate dissimilar development benefits (e.g. enhanced income-generating opportunities and improved energy access) using similar principles. Contextually-appropriate distribution mechanisms for adaptation will presumably consider how and by whom climate impacts are felt. Similarly, decisions regarding who undertakes mitigation action will likely have their own logic, doubtless informed by ethical considerations.

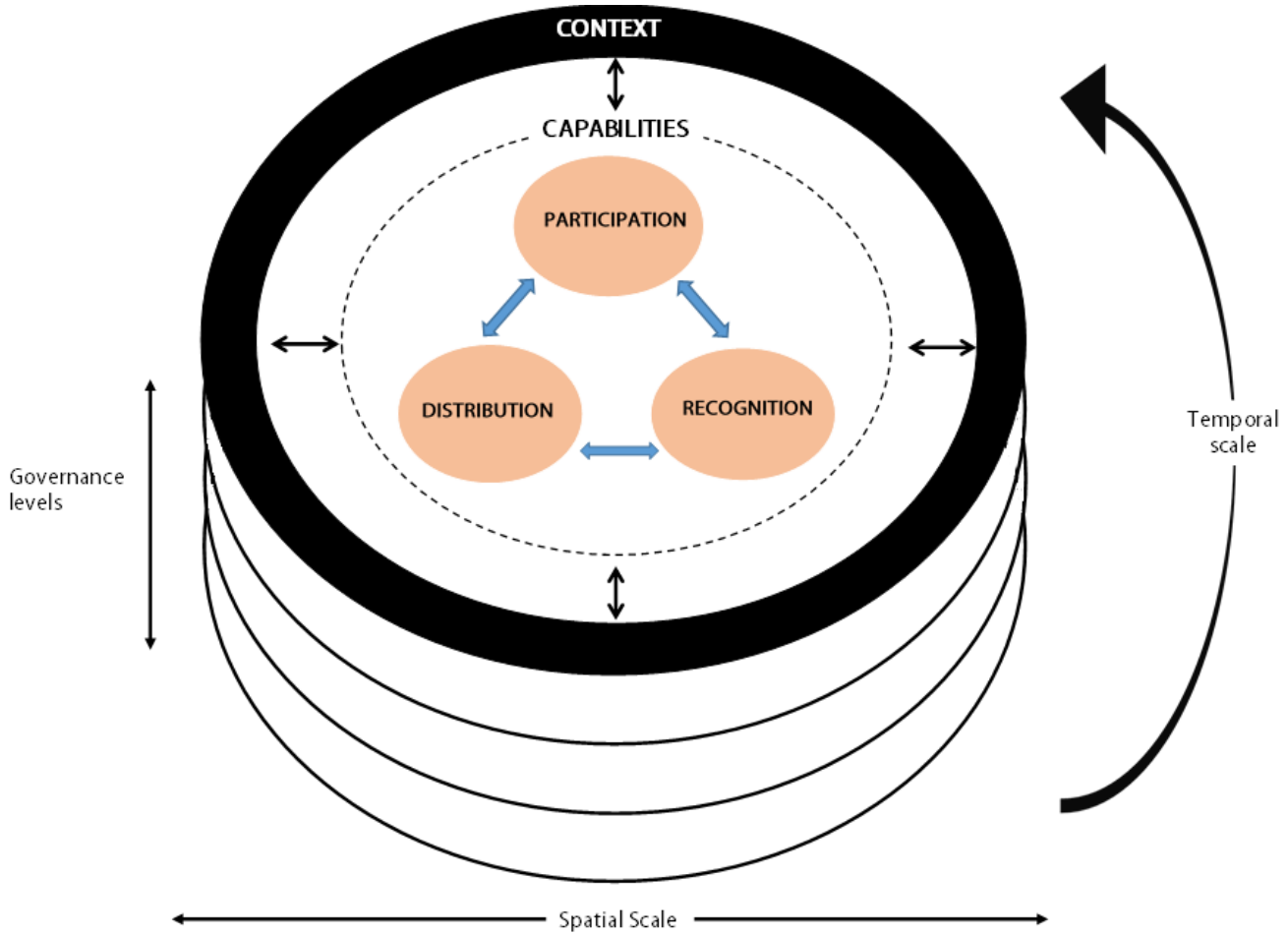

Figure 3.1: A conceptual model for evaluating the multi-level, cross-scalar social justice implications of CCD. Blue double-headed arrows reflect the reciprocal relationship between dimensions of distribution, recognition and participation. Small, black double-headed arrows represent the two-way relationship between social justice and contextual issues.

A priori distribution patterns also matter. Often, populations who benefit from climate and development initiatives are those able to command societal resources, whereas disadvantaged groups are marginalised (Barrett, 2013a). CCD initiatives are taking place in underprivileged rural areas of developing countries (CDKN, 2016). Target populations live in financial poverty, lack education and healthcare and suffer from other ailments (UNDP, 2015). Whether and to what extent populations are afforded recognition and participatory opportunities under these initiatives is unclear.

Considering CCD's procedural and distributive justice implications across spatial scales and governance levels is crucial. Actions pursuing double- and triple-wins across development, mitigation and adaptation are being designed and implemented in different places and at dissimilar governance levels (Denton et al., 2014). They impact unevenly on stakeholders operating across diverse spatial and governance dimensions (Mathur et al., 2014). Likewise, timescales matter. For instance, it has been suggested that community-driven ecosystem restoration could facilitate adaptation, store carbon and help reduce poverty in rural sub-Saharan Africa (Niang et al., 2014). However, ecosystem restoration benefits can take years to develop. This could create barriers to participation for disadvantaged groups who must focus their labour on activities that yield immediate benefits in order to survive. Over longer timeframes, it is suggested that ensuring procedural justice for future generations necessarily involves passing on an undiminished living environment to them (Paavola, 2008b).

Sen's (2009) 'capabilities approach' serves as a final arbiter of social justice within the conceptual model. It provides an overarching rationale for considering recognition, participation and distribution as equally important components. It states that societal arrangements are best judged on how they contribute towards humans' multi-faceted, subjective quality of life. Material goods are essential for this but are not the only, or necessarily most important, dynamics at play (Ibid.). Individuals' and groups' capabilities to achieve their desired 'functionings' (including chosen activities or states of existence) also depend on them having the necessary political and socio-cultural freedoms to optimise resource use (Ibid.). Some populations may even prioritise political and socio-cultural freedoms over possession of societal goods (Ibid.).

The capabilities approach equates societal arrangements' 'justness' with individuals' and groups' abilities to pursue ends that they value (Sen, 2001). To what extent different stakeholders are able to further their subjective and multi-faceted objectives through

CCD interventions is the overarching consideration of the model. Pursuing a capabilities approach places development at the heart of climate justice. The safeguarding and enhancement of capabilities is widely considered the appropriate end for development justice (UNDP, 2015; UN, 2016). Integrating climate and development justice is essential for examining the 'development first' CCD discourse (Picot and Moss, 2014).

CCD implementation contexts condition the extent to which capabilities are enhanced. CCD is part of wider political-economic processes underpinned by co-operation, competition and conflict between multiple actors, institutions and societal norms (Newell, 2008; Tanner and Allouche, 2011). In turn, processes are affected by issues of power, discourse and resource access (Tanner and Allouche, 2011). Stakeholders' respective agendas will naturally be influenced by these processes. It has already been shown that political-economic factors have profound impacts for the achievement of development, mitigation and adaptation (Tanner et al., 2014). Likewise, their achievement is routinely influenced and shaped by socio-ecological environments (Moser and Ekstrom, 2010). The diversity of actors and sources of finance involved in climate governance makes integrated climate and development interventions' contextual surround particularly complex (Tanner and Allouche, 2011).

3.4 Conclusion

This chapter contributes to the nascent critical CCD research agenda by developing and presenting a conceptual model to guide holistic social justice evaluations of CCD. The model can help decision-makers adjudicate between the diverse perspectives of CCD stakeholders and, therefore, complements the use of physical science approaches and economic methodologies for designing, implementing and evaluating interventions. The social justice approach upon which the model is predicated embraces particularism, pluralism and procedural justice. It provides a way to understand whether and how CCD enhances social justice and remedies injustices, rather than seeking "to offer resolutions of questions about the nature of perfect justice" (Sen 2009, p.ix).

Future application of the conceptual model can help reveal the cross-scalar cultural, political and economic implications of CCD. There is a need to rectify the absence of attempts to comprehensively map the outcome distributions that result from practical CCD interventions with great urgency. This will involve understanding how benefits and any negative side-effects (of different sizes) are distributed within and between

individuals and groups. There is a particular need to evaluate whether and how CCD distributions match local value systems and preferences. Despite that issues of recognition and participation shape how outcomes are configured, they are rarely raised as a priority for future CCD research. For reasons set out in this chapter, it is imperative that this changes.

Considering social justice could also make CCD strategies more effective. As discussed in chapter two, diverse stakeholders will likely have dissimilar development, mitigation and adaptation and auxiliary agendas. Concerted attempts to reconcile these agendas could facilitate holistic understanding of the inter-relationships between them. This could encourage compromise, lessen trade-offs and allow for their synergistic integration. Granting often-marginalised stakeholders recognition and participation at local levels could encourage innovation (Nyong et al., 2007). Conversely, failure to achieve reconciliation could isolate stakeholders with different priorities from one another and fuel conflict. For instance, those proposing 'hard' technical adaptation actions could be detached from those favouring 'softer' capacity building. In turn, this could destabilise relationships that are integral for achieving CCD goals.

CCD strategies and interventions are increasingly being proposed and operationalised. However, the social justice implications of these policies, programmes and projects are unclear. Understanding the processes through which CCD gives rise to social justices and injustices is integral to considerations of whether and how it should be used to underpin a new development landscape. This thesis contributes to understanding of CCD's social justice implications by applying the conceptual model developed in this chapter to critically analyse ECRP projects in Malawi. In the next chapter, the research design and data collection and analysis methods used to operationalise the model are set out.

4 Research design and methodology

4.1 Introduction

Research presented in this thesis aims to explore the social justice implications of two subnational projects that pursue CCD triple-wins in Malawi. Three objectives were identified to aid fulfilment of this aim and each has been broken down further into specific research goals:

1) Understand different stakeholders' priorities for case study project design;
   i. Identify project stakeholders,
   ii. Ascertain priorities held by different stakeholders,
   iii. Assess motivating factors that underpin these priorities.

2) Identify procedural justice opportunities afforded to stakeholders within case study project design and implementation processes;
   i. Develop a framework for exploring the procedural justice implications of CCD,
   ii. Evaluate which stakeholders were recognised by, and able to participate in, project design and implementation processes using this framework.

3) Investigate the outcomes created by the case study projects and their links with distributive justice;
   i. Develop a framework that enables evaluation of the full range of outcomes created by CCD across levels and scales,
   ii. Evaluate outcomes created by the case study projects using this framework,
   iii. Examine links between project outcomes and theories of distributive justice.

This chapter set outs how research was designed in order to achieve the aim and objectives of this thesis. It begins by setting out reasons for choosing Malawi as a research location and details the research context. Thereafter, it explains the research philosophy and presents the mixed methods case study approach adopted. Detail is provided on project case studies and district and village study sites and reasons for selecting them are outlined. Data collection and analysis methods used to complete the research are then set out. Finally, the research process is reflected upon and the implications for data validity are discussed.

4.2 Research context

This section provides detail on the Malawian research context, presenting information on development challenges, governance systems, land forms and vegetation and the climate. Reasons for choosing Malawi as a research location are then discussed in light of these contextual circumstances. Figure 4.1 presents a map of the country.

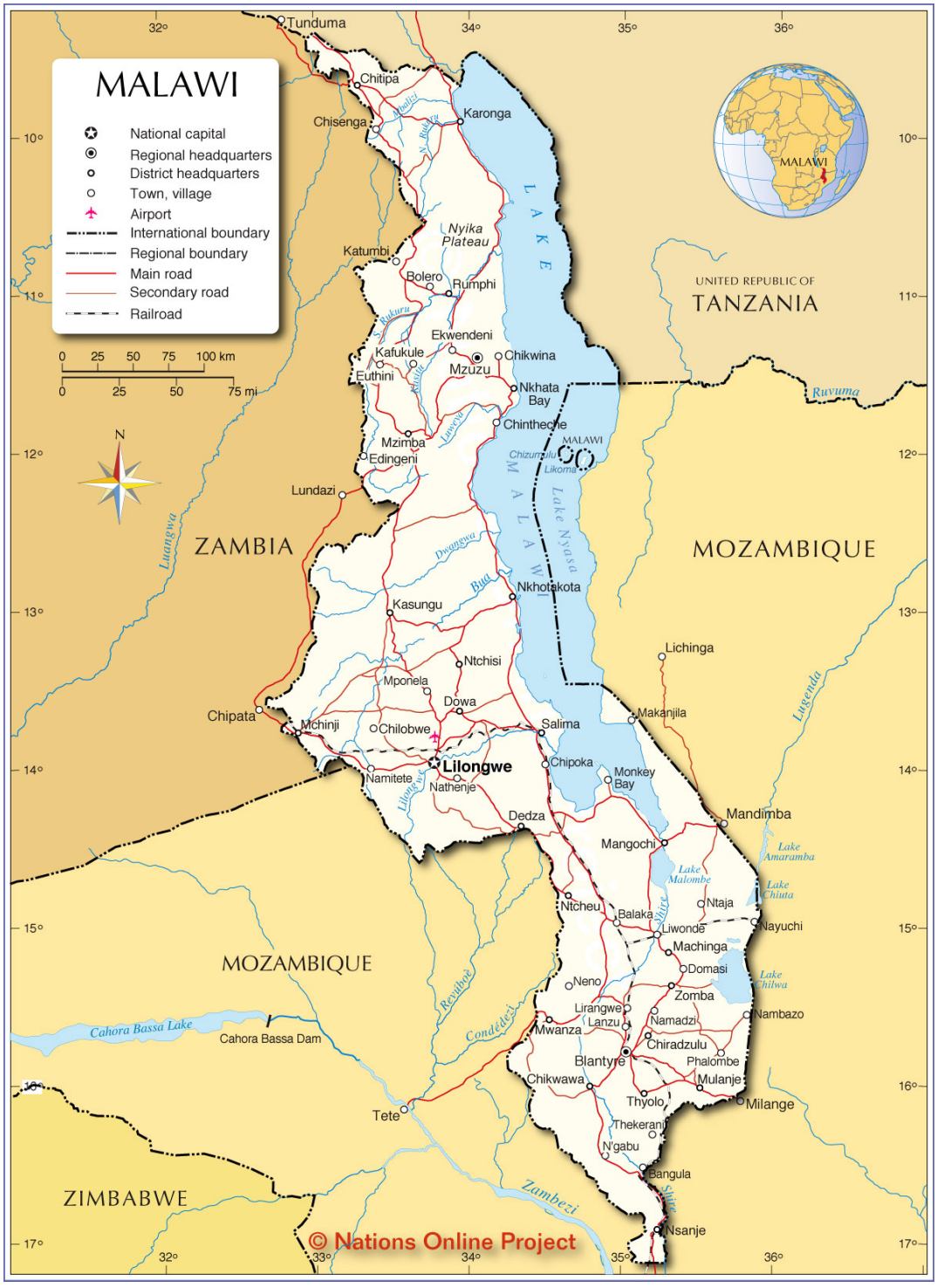

Figure 4.1: Map of Malawi. Source: Nations Online Project (2016).

4.2.1 Development challenges

Malawi is a small, landlocked country in Southern Africa that faces multiple interrelated social, political, economic and environmental stressors. It ranks 173rd out of 187 countries assessed by the Human Development Index (UNDP, 2015) and its population of approximately 17 million people (WHO, 2015) suffers various forms of deprivation (OPHI, 2013). Malawi is highly aid dependent, with international support accounting for approximately 37 per cent of government spending (AidData, 2016).

Gross national income per capita stands at $750 (WHO, 2015) and 73.9 per cent of the population live on less than $1.25 a day (OPHI, 2013). On average, food purchases account for 65% of household expenditure (Ibid.). Maize is the dominant staple crop, providing for 65% of the total calories consumed by the average Malawian (Takane, 2008). Most Malawian's are reliant on subsistence farming, but the small size of individual farms (typically below 1.5 hectares) means farmers often have difficulty meeting household food needs, with significant repercussions for national food security (FAO, 2016). The situation is exacerbated by population growth, which outstrips food production by one per cent (Edmonds et al., 2009). The country's economy is also highly dependent on agriculture, with tobacco, sugar, tea, coffee and cotton comprising major exports (GoM, 2011). In recent years, the Malawian government has sought to diversify the economy by expanding tourism, mining, manufacturing and the service industry (Ibid.). Yet, agriculture continues to account for around a third of the country's gross domestic product (Ibid.).

Environmental degradation exacerbates economic and food security challenges. The majority of Malawi's population depend on natural resources to sustain their livelihoods. High population growth, low levels of environmental awareness and expansion in the mining sector have led to widespread deforestation and degradation, soil erosion, soil fertility losses, pollution, and biodiversity losses (GoM, 2010). Between 1990 and 2010 alone, national forest cover dropped from 41 per cent to 34 per cent (FAO, 2010). Environmental degradation has reduced access to sufficient qualities and quantities of water (GoM, 2010). 1.7 million people lack access to safe water in the country and 10 million people are without access to sanitation facilities (WaterAid, 2016).

Limited access to safe water and hygiene lead to thousands of preventable deaths resulting from water-borne diseases (including diarrhoea and cholera) every year (Ibid.). Average life expectancy at birth is just 58.3 years (UNDP, 2012) and non-water borne

diseases, including malaria and tuberculosis, also present significant health risks (Devereux et al., 2016; UNICEF, 2016b). A high prevalence of HIV/AIDs (10.8 per cent of adults) (UNICEF, 2016b) puts additional pressure on a severely under-resourced health system (GoM, 2011). On average, there is just one doctor for every 50,000 people (UNDP, 2012). Infant (under five) mortality is estimated at 71 per 1000 (UNICEF, 2016b).

In 2015, the adult literacy rate stood at 66% (World Bank, 2016) and Malawians spend an average of just over four years in education (UNDP, 2012). Energy access is low: just 1% of the rural population (comprising 85% of the total population) have electricity in their homes, there are regular interruptions to electricity supply and over 90 per cent of the population depend on solid biomass for heating and cooking (Kambewa and Chiwaula, 2010). There is restricted coverage of transport and communications infrastructure across the country, with existing infrastructure often poorly maintained (GoM, 2011). Gender equality is also limited in Malawi, with women faring worse than men against a range of socio-economic indicators (OECD, 2016).

2.4.2 Governance systems

Having realised independence from British rule in 1964, Malawi became a one party-state under President Kamuzu Banda (Chirwa, 2014). In 1993, multi-party elections were held for the first time as the country began transitioning to a representative presidential democracy, characterised by separation of the executive, legislative and judicial branches of government (Ibid.). Parliamentary and presidential elections are held every five years (Ibid.). Malawi's dependence on international budget support (AidData, 2016) means development organisations (notably donor agencies and NGOs) also play a significant role in domestic governance.

Under the 1995 Constitution and 1998 Local Government Act, the devolution of political and administrative authority to district and sub-district levels is enshrined (O'Neil et al., 2014). Together, various district-level committees and sub-committees have assumed this authority. They must approve all proposed district development assistance before it can be actioned (GoM, 1998). Committees representing villages and groups of villages input into district-level committees (CLGF, No Date).

Legislation commits to decentralisation in the following areas: education, science and technology, health; public works and transport; planning; agriculture; water development;

gender, youth and community affairs; natural resources and environmental affairs; commerce and industry; finance; and home affairs and security (Ibid.). However, staffing and budgetary shortages and formal and informal recentralisation efforts have led to question marks over the extent to which decentralisation has been achieved in practice (O'Neil et al., 2014). Linked to the aforementioned development challenges, human and financial capacity shortages are pervasive across all levels of government (Ibid.). Corruption is also endemic in Malawi, which ranked 112th out of 168 countries assessed by Transparency International's Corruption Perceptions Index in 2015 (TI, 2016). Since the turn of the Millennium, it has been common for donor agencies to suspend aid to the country in response to allegations that government staff have misused financial resources (Anders, 2015).

Malawi's traditional governance structure is partially recognised by, and operates in conjunction with, the country's more formalised, bureaucratic governance system (Chirwa, 2014). Each district is divided up into 'traditional authority' areas, under the jurisdiction of individuals who assume authority based upon their family background and lineage (Bryceson and Fonseca, 2006). Traditional authority areas are broken down further into individual villages and groups of villages, where traditional power is devolved to village and group village heads (Chirwa, 2014). These traditional governance actors are considered to be "managers of customary land, custodians of customary law, and guardians of tradition and culture" (Ibid., p.117). Most arable land falls under customary tenure systems (FAO, 2016). Village heads have a strong influence over village and group village-level committees and traditional authority leaders are non-voting members of district-level committees (CLGF, No Date).

4.2.3 Land forms and vegetation

Malawi has five main landform areas (Reynolds, 2006):

1. The highlands – comprising mountainous areas at between 1,320 metres above sea level. Extensive highland plateaux exist around Nyika, Mzuzu and Mulanje, with less extensive plateaux areas in Dedza and Zomba (Figure 4.1). Soils are predominantly leached latosols;
2. The escarpments – comprising areas located around major fault lines of the Rift Valley, stretching from Karonga in the north to Nsanje in the south (Figure 4.1). Soils are predominantly thin latosols;

3. The plateaux – comprising three quarters of Malawi, at elevations of between 750-1,300 metres above sea level. The topography is flat to rolling, with some isolated mountains and hills. Soils consist of well drained latosols and poorly drained sand and clay;
4. The lakeshore and upper Shire Valley – lakeshore plains comprise eight per cent of Malawi's total land area at 465-600 metres above sea level. The upper Shire Valley area consists of flat valley around the Shire river from the bottom of Lake Malawi to Chikwawa (Figure 4.1). Calcimorphic soils are common, with mopansols found in some areas along the river;
5. The lower Shire Valley – comprises land between Chikwawa and Nsanje (figure 4.1), mostly at 180 metres above sea level. Soils comprise medium- to course-textured alluvial and colluvial to the east of the river, vertisols and grey brown earths to the west. Areas of saline soils are also found.

Miombo woodland is Malawi's predominant form of vegetation and is found in areas lying between 600–1 500 metres above sea level with an annual rainfall of 510 to 1 530 mm (Ibid.). Depending on levels of deforestation and degradation, the woodland varies in density between open woodland and dense, closed scrub (GoM, 2010). Tree species comprise different types of *Brachystegia* with *Julbernadia globiflora* (Reynolds, 2006). Grass species include *Hyparrhenia filipendula*, *Themeda triandra*, *Andropogon schirensis*, *Bewsia biflora, Andropogon amplectens*, *Anthephora acuminata*, *Tristachya inamoena*, *Sacciolepis transbarbuta*, *Rhynchelytrum nyassanum* and *Homozeugos eylesii* are also found. Grasses tend to be of medium height with low ground cover (Ibid.). Seasonal, shallow wetlands, known as *Dambos* are common, providing an important resource for livestock and crop production (Ibid.). Smaller areas of evergreen forests (highlands), broad-leaved deciduous woodland (central areas), lowland woodlands (Rift Valley escarpments), low altitude woodland and parkland (Shire Valley and lakeshore) and swampland (edges of lakes and swamps) can be found throughout the country (Ibid.).

4.2.4 Climate (change) and vulnerability

Malawi's climate is semi-arid in the Lower Shire Valley, arid in plateaux areas, and sub-humid in highland areas. Most of the country receives between 763-1143 millimetres of rainfall every year, but Mulanje, Nkhata Bay and the northern end of Lake Malawi commonly experience over 1524 millimetres of rainfall per annum. Approximately 90 per

cent of all rain falls between December and March. Mean annual temperatures are altitude-dependent, ranging from 25°C in the Lower Shire Valley to 13°C on the Nyika Plateau.

Malawi has been described as "the most climate vulnerable country in mainland Africa" (Barrett, 2013a, p.1821). Dominant economic sectors (notably agriculture) and associated livelihoods are highly sensitive to climate change impacts (MNREM, 2006). People in the country already contend with extreme weather events, such as dry spells, droughts, floods and wind storms. Future climate change projections suggest there is a high probability that extreme weather events in Malawi will increase and worsen throughout the 21st century (McSweeney et al., 2010), but climate information is poorly integrated into national level policymaking (Vincent et al., 2015). Due to wider development problems, adaptive capacity is low.

4.2.5 Reasons for choosing Malawi as a research location

Malawi was chosen as a research location for several reasons. The extent of the country's development problems and climate vulnerability stand out even in the context of sub-Saharan Africa (UNDP, 2015; Barrett, 2013a). However, the causes and symptoms of both are very similar to those found in other developing countries within and beyond the region (UNDP, 2015; Niang et al., 2014; Field et al., 2014). These similarities mean that research findings hold resonance for other countries and regions as well as being significant in the Malawi context. Moreover, the extent of the economic, political and socio-cultural forms of oppression faced by Malawians makes study of the social justice implications of CCD projects in the country highly relevant.

Owing to pervasive development problems and acute climate vulnerability, Malawian populations could benefit substantially from CCD projects that aim to generate development gains while reducing exposure and sensitivity to climate impacts. In recognition of this, the country's policy infrastructure facilitates CCD projects by encouraging the use of subnational interventions that advance development, mitigation and adaptation (GoM, 2012). 11 projects that pursue CCD goals were identified nationally during a scoping study completed in April 2014 (Appendix A, see section 4.3.2 for associated identification methods). Commonly, projects aimed to enhance and diversify livelihoods and transcended the agriculture, forestry, energy and water management sectors. They varied in terms of key governance variables (e.g. number of

community beneficiaries, type of implementing partners, funding streams) and were being operationalised through multi-stakeholder working, involving: donor partners; national and district government; NGOs and other civil society organisations; consultants; research organisations; and local people (Appendix A). The presence of these projects made Malawi a viable study location.

4.3 Research approach

This section sets out the research approach and methods adopted to explore the social justice implications of two subnational projects pursuing CCD goals in Malawi. In chapter three, a conceptual model was developed to explore the multi-level, cross-scalar social justice implications of CCD. A mixed methods research approach was chosen to enable application of this model.

CCD is operationalised in the context of substantial uncertainty and value plurality. The conceptual model utilised in this research starts from the premise that the social justice experiences of diverse CCD stakeholders will vary. Stakeholders have dissimilar priorities and needs that will be reconciled to varying extents during CCD design and implementation and, consequently, they will experience outcomes differently. This fits within a social-constructivist paradigm, which considers social justice to be the product of individuals' and groups' unique understandings and creation of the social world. Social justice (or injustice) claims and experiences are subjective and circumstantial (Laws et al., 2013). Determining some precise, universal definition of social justice is, therefore, impossible — the 'justness' of particular social arrangements is always relative. Social constructivism places emphasis on the extent to which context and people's understandings of the world co-produce one another (Crotty, 1998). As discussed in chapter three, context is essential for holistically understanding the causal factors that shape patterns of social (in)justice. Hence, social-constructivism was considered the most appropriate paradigmatic lens through which to pursue this research.

To understand the social justice implications of CCD, the researcher must understand and collate records of individuals' and collectives' justice claims and experiences. Engaging people in detailed dialogue is a useful way to reveal their unique constructions (Guba and Lincoln, 1994). This research, therefore, adopts a qualitative dominant mixed methods approach in which stakeholder testimonies are collected and analysed. Qualitative methods are commonly used to discern how human beings understand,

experience, interpret and produce the social world via inferences from rich information (Lewis-Beck et al., 2013). Their use is particularly pertinent to the study of CCD. This is because quantitative data (e.g. meteorological and socio-economic statistics), which are often used to measure climate change and development 'progress', do not always accurately reveal ground level impacts or diverse experiences when used in isolation (e.g. Simelton et al., 2013). Rich, detailed data attained through collating stakeholder testimonies is also important for elucidating contextual factors shaping patterns of social (in)justice.

Quantitative methods were used to supplement and triangulate qualitative techniques, ensuring that findings reflected the phenomena being studied (Johnson et al., 2007). Combining qualitative and quantitative methods enables a stronger body of evidence than is possible using either method in isolation (Yin, 2014).

4.3.1 Case study approach

A case study approach was adopted, whereby two projects pursuing CCD goals were chosen as cases. Case studies refer to the in-depth investigation of real-world phenomena within given settings (Yin, 2014; Noor, 2008; Baxter and Jack, 2008). They are well suited to the detailed exploratory inquiry required for this research. The conceptual model used considers social justice to be both multi-faceted and highly context-dependent. The case study approach performs well in instances of such complexity (Yin, 2014). Case study research allows for data collection and analysis that makes sense of multiple different variables and sources of evidence emanating from different spatial scales. Moreover, it is widely adopted to analyse feedbacks between real world phenomena and contextual settings (Ibid; Lijphart 1975). Hence, it was judged to be well suited: to a) the analysis, and adjudication between, multiple diverse social justice claims; and b) elucidating how relationships between project design and implementation processes and contextual factors conditioned these claims.

To avoid overly parochial research findings (one of the criticisms of case study research), two separate cases (projects) were analysed. Single case study findings are often criticised for lacking generalisability (Noor, 2008; Robson, 1993) and having limited value in scientific research (Pope and Mays, 2009; Ford et al., 2010). The analysis of two projects' allowed their social (in)justice implications and factors conditioning these implications to be compared. Similarities in findings across the two projects allowed

partial generalisations to be made. Where differences in findings between the two projects were found, reasons for differences could be investigated and understood (Lijphart, 1975). This allowed recommendations for CCD policy and practice to be made.

4.3.2 Project case study selection

Appendix A outlines projects pursuing CCD goals in Malawi that were considered as potential cases. 24 semi-structured interviews were completed with climate and development professionals in Malawi during a scoping trip that took place in April 2014 in order to identify projects that pursued CCD goals. Five employees managing integrated climate and development projects and four additional stakeholders with knowledge of the climate and development landscape in Malawi were identified as initial interviewees. They were identified using internet searches and through recommendations from colleagues at the University of Leeds with experience of working on related issues in Malawi. A snowball sampling approach distinguished 19 additional respondents (Atkinson and Flint, 2001).

The *Developing Innovative Solutions with Communities to Overcome Vulnerability through Enhanced Resilience* (DISCOVER) project (CU, No Date) and the *Enhancing Community Resilience Project* (ECRProject) (CA, No Date) were chosen as project case studies. Together, they form the *Enhancing Community Resilience Programme* (ECRP), which is financed by grants from the UK, Norwegian and Irish governments via the Joint Resilience Unit (that pools donor funding) (DfID, No Date). 75% of ECRP funding is provided by the UK government, via DfID (Ibid.). The University of Leeds' ethical clearance for this research (reference number: AREA 13-092 – Appendix B) did not require project names to be anonymised; nor did project staff request this.

Both projects began in September 2011 and run until March 2017. DISCOVER is implemented by a consortium of NGOs led by Concern Universal (CU, No Date) and ECRProject is implemented by a Christian Aid-led consortium (CA, No Date). Both projects have been developed in accordance with the key tenets of CCD (personal communication with DfID employees[1]). The activities implemented by projects are presented and described in Table 4.1, which also outlines the links between the activities

[1] DfID's desire to mainstream mitigation and adaptation within development initiatives was also an important precursor to the establishment of the concept of CCD (personal correspondence with Tom Mitchell, co-author of *Defining Climate Compatible Development* – see Mitchell and Maxwell, 2010).

and ECRP development, mitigation and adaptation goals. Particularly vulnerable households — female-headed (FH), elderly-headed (EH), extremely resource-poor, those with disabled or chronically ill adults — are primarily targeted by project activities (CU, No Date; CA, No Date).

Activities are labelled by the projects as 'community-based activities' because they were designed to enable the involvement of 'communities' of local people in their management (DfID, No Date). Prior to the implementation of each activity, village meetings were established with the aim of enabling households to self-select: participants to take part in different project activities; village extension multipliers (who provide technical support to households to help them carry out activities); and members of committees to administer project implementation. Some activities also comprise 'ecosystem-based activities', which pursue benefits by drawing on natural resources and the services they provide (Reid, 2015). Ecosystem-based activities are highlighted in Table 4.1.

Table 4.1: ECRP project activities and links to development, mitigation and adaptation goals. Ecosystem-based activities are highlighted in grey. Sources: CA (No Date); CU (No Date); surveys conducted with project employees.

ECRP activity	Description of activity	Associated development (D), mitigation (M) and adaptation (A) goals
Agroforestry and re/afforestation	Local people plant trees in areas where there was no previous tree cover and/or where deforestation and forest degradation has occurred. Tree species planted have been determined by the diverse ecological circumstances within villages and districts but include: fruit trees, and *Senna spectabilis, Faidherbia albida, Acacia polyacantha, Albizia lebbeck,* and *Senna siamea.*	D: Reduced and/or reversed loss of environmental resources M: Protected and increased forest carbon sinks A: Household and farmland protection from flooding and strong winds
Conservation agriculture	Local people undertake agricultural management practices that minimise disruption of soil structure and composition. Specific practices have been have been determined by the diverse ecological circumstances within villages and districts but have consistently been informed by the following three principles: 1. Permanent soil cover (e.g. using maize stalks, cover crops); 2. Minimum soil disturbance; 3. Crop rotation and/or crop associations.	D: Improved food and nutrition security M: Protected and increased soil carbon sinks A: Improved soil moisture and quality enhances households' abilities to deal with dry spells and drought

Small scale irrigation	Irrigation schemes, usually covering an area of less than 20 hectares, are constructed. They draw upon easily maintainable technologies (e.g. gravity-fed systems, treadle pumps) and enable water to be supplied to cropland at regular intervals. Schemes are managed by local people (through elected committees) and most schemes serve five or more households.	D: Improved food and nutrition security A: Ability to grow food throughout the year increases households' abilities to deal with climate shocks
Livestock production schemes	Local people are provided with animals and taught to rear them in order to achieve development resources (e.g. food, labour, income-generating opportunities). Specific animals reared are determined by the diverse contextual circumstances (e.g. ecology, religious beliefs) within villages and districts but commonly include goats, pigs and poultry. Schemes operate using a 'pass-on' principle, whereby initial participants give the offspring of the animals that they receive to other households in order for associated benefits to spread throughout villages.	D: Improved food and nutrition security; increased income A: Livestock are important safety nets for dealing with climate shocks
Solar light adoption	Local people chosen through community-selection processes are trained as sales agents. They are responsible for marketing and selling solar lamps within ECRP target villages and receive a set fee (MK 900) for every lamp sold (price = MK 6000).	D: Reduced dependency on unclean, inefficient fuel; electricity access M: Reduced carbon emissions compared with other lighting fuel (e.g. paraffin)
Improved cookstove adoption	Local people are trained in the production and marketing of fixed and portable stoves, which are more efficient (require less firewood) than traditional three stone fires that are commonly used for cooking and water sanitation purposes in Malawi. They derive income through selling stoves to other people within their local area, who receive benefits associated with stove adoption.	D: Reduced dependency on unclean, inefficient fuel; reduced time spent collecting firewood M: Protected and increased forest carbon sinks
Post-harvest management	Concrete grain silos are established in ECRP target villages in order to minimise post-harvest losses that result from heavy rains and flooding, attacks by insects and rodents and contamination by toxins. Access to silos is managed by locally elected committees.	D: Improved food and nutrition security A: Minimised post-harvest losses that result from heavy rain and flooding.
Seed multiplication schemes	Seeds that grow well under local climatic and ecological conditions and at different times during the year are provided to households. Additional seeds are collected from crops after every harvest and passed on to new	D: Improved food and nutrition security A: Ability to grow food throughout the year increases households' abilities to deal with climate shocks

	participants. Specific seed types that have been distributed were determined by the diverse ecological circumstances within villages and districts.	
Village savings and loans associations (VSLAs)	A VSLA comprises a group of people who save money together and take small loans from those savings. Savings contributions vary, depending on socio-economic circumstances within the districts and villages where VSLAs are implemented. The activities of the group run in cycles (length of time determined by VSLA members), after which savings and loan profits are distributed back to members. VSLAs enable people to access finance when formal financial services are unobtainable.	D: Increased income and asset ownership A: Loans and profits from small scale investments provide safety nets for dealing with climate shocks
Nutrition training (DISCOVER only)	Trainings are provided to local people in order to help reduce instances of child malnutrition. Trainings cover food preparation, hygiene and cooking practices and encourage the use of nutritionally-rich ingredients. They build upon local practices and encourage use of locally-available ingredients and food preparation resources.	D: Improved food and nutrition security
Institutional capacity building to improve preparedness to climate shocks	Civil protection committees are established at district and sub-district (including village) levels. Sub-district committees communicate climate risks and vulnerabilities to district committees, who communicate district-level risks and vulnerabilities to the national government. All committees are trained in, and tasked with taking, actions that deal with climate shocks and stresses and reduce the risk of disasters (e.g. early warning, co-ordinating evacuations). They also receive assistance to enable the development of disaster contingency plans.	A: District, sub-district and community governance structures better prepared to respond to climate-related risks and disasters.

ECRP projects were chosen as cases for further study for two reasons. Firstly, they have the most wide-reaching procedural and distributive justice implications of the 11 projects identified in Malawi that pursue CCD goals. This is because they seek to improve the lives of the most people (Appendix A) (DISCOVER targets 305,000 beneficiaries – CU, No Date; ECRProject targets 298,500 – CA, No Date). This relates to the fact that ECRP projects have also received more financial support (£21.5 million over a five-year period combined) than other projects within the initial sample (DfID, No Date). DISCOVER and ECRProject operate across five (CU, No Date) and seven districts (CA, No Date) in Malawi, respectively (Figure 4.2). Therefore, they have national significance.

Secondly, ECRP projects are similar in multiple key respects. For example, their aims, sectoral focus, number of target participants, funding streams, and lead implementing organisations are analogous (see Table 4.2). Hence, it was possible to draw generalisations between the two projects. Generalisations between projects that differed radically in terms of one or more of these characteristics would have been harder to draw.

In some instances, the projects are operationalised using dissimilar approaches that correspond to different project development methodologies that are preferred by the implementing NGOs in each consortium. For instance, there are some differences between the activities implemented by DISCOVER and the ECRProject in target villages (e.g. DISCOVER implements nutrition training, ECRProject does not (CU, No Date; CA, No Date)). In some districts, the ECRProject uses village savings and loans associations (VSLAs) as entry-point activities to introduce other project activities within target villages, which DISCOVER does not (Ibid.). DISCOVER uses carbon market finance generated through project carbon savings as additional funding for development and adaptation, whereas the ECRProject does not (Ibid.).NGOs within the ECRProject consortium consider carbon markets to be unethical because they displace developed nations emissions reductions obligations to developing country populations who often have a negligible responsibility for climate change (personal communication with ECRProject staff).

The independent grievance procedures that have been proposed and adopted by each project also diverge. For instance, some DISCOVER NGOs are implementing community accountability boxes while some ECRProject NGOs have adopted ‘Scorecard’ techniques (for more information and descriptions of procedures, see chapter six).

The relatively few points of difference between projects meant that where operationalisation approaches were diverse, the social justice implications of this diversity could be isolated and understood. Prior to research taking place, project employees confirmed that academic and/or non-academic studies investigating projects from a similar standpoint to this PhD were not being conducted. Projects had been operational since autumn 2011, which was considered enough time for key social justice implications to have materialised.

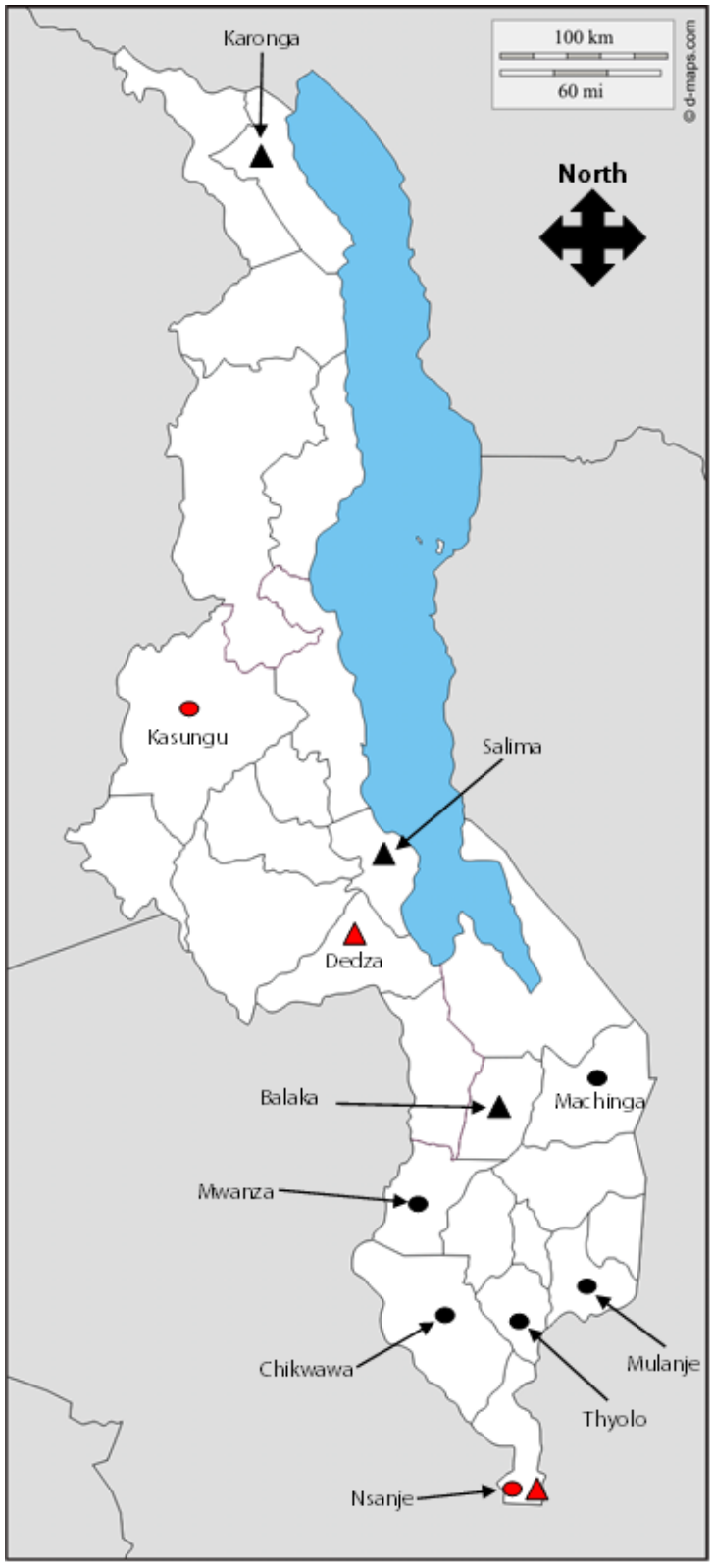

Figure 4.2: Districts targeted by the ECRProject (circles) and DISCOVER (triangles). Study districts highlighted in red. Adapted from: D-maps (2016); CU (No Date); CA (No Date).

Table 4.2: Similarities between the ECRProject and DISCOVER. Sources: CA (No Date); CU (No Date); DfID (No Date); surveys conducted with project employees.

	ECRProject	DISCOVER
Projects aim to achieve CCD triple-wins	Both aim to achieve a range of development goals and help households adapt to the consequences of: dry spells and drought; heavy rains and flooding; and strong winds. Projects activities are intended to be carbon neutral or able to contribute to carbon savings.	
Projects share a common sectoral focus	Both transcend the agriculture, forestry and energy sectors.	
Projects aim to benefit a similar number of people	61,000 households equating to 305,000 direct beneficiaries (800,000 indirect) across seven districts (Figure 4.1)	62,500 households equating to 298,500 direct beneficiaries* (604,300 indirect) across five districts (Figure 4.1)
Project funding streams are analogous	Both funded by the Joint Resilience Unit (see text).	
Organisations implementing projects are analogous	Both are implemented by consortia of NGOs.	

* According to interviewees involved in developing climate change and development projects in Malawi that were spoken to during the scoping trip in April 2014, the average number of individuals within a household is five. Project developers thus typically multiply total household beneficiaries by five in order to determine total individual beneficiaries. ECRProject adopts this methodology. However, DISCOVER multiplies total household beneficiaries by the more precise with the researcher's supervisory team. figure of 4.776 to determine total individual beneficiaries (CU, No Date).

4.3.3 District study site selection

A selection of comparable and diverse district study sites were chosen in order that: a) the social justice implications of case study projects could be isolated; and b) projects' consequences for populations living in areas with different socio-economic and climatic profiles could be understood. Based upon discussions with project staff and documentary material analysis, Dedza (DISCOVER), Kasungu (ECRProject) and Nsanje (both projects) districts were selected (Figure 4.2, Table 4.3). The same discussions with project employees were also used to confirm that district sites were accessible for research purposes and had suitable infrastructure to enable ongoing communications

Table 4.3 documents the socio-economic, environmental and climatic characteristics of each selected district. Specific characteristics were chosen because they are significant in terms of conditioning vulnerability in Malawi (Agard et al., 2014). As Table 4.3 shows, Dedza and Kasungu have comparable socio-economic profiles: food security levels, population sizes, average household wealth levels, dominant livelihood activities,

agricultural conditions and productivity, market access and ethnic diversity are similar across the two districts. They also share analogous climate conditions, in terms of seasonal trends and major climate shocks and stresses.

Both are considered to have a superior socio-economic status to Nsanje, where: agricultural productivity is lower; HIV prevalence is higher; households are more isolated from markets; and incomes are markedly lower (MVAC, 2005). Nsanje is regarded to be amongst the most climate vulnerable districts in Malawi: populations experience more regular and severe floods and droughts than Dedza and Kasungu (NDG, 2015). Similarities between Dedza and Kasungu meant DISCOVER and the ECRProject could be compared across each location. Projects were compared directly in Nsanje, where they were implemented within the same contextual surrounds.

Table 4.3: Socio-economic and environmental characteristics of Dedza, Kasungu and Nsanje. Sources: DDG (2014); KDG (2007); NDG (2015); MVAC (2005); Climate-data.org (2016). Information based on most recent available data sources.

	Dedza	**Kasungu**	**Nsanje**
Political administration	Located in the Central Region of Malawi.		Located in the Southern Region of Malawi.
	Administrative powers decentralised to district governments under Malawi's Local Government Act 1998.		
Food security	Household food shortages common in January and February. 59,104 adults received farm input subsidies in 2011/12.	Household food shortages common between January and March. 58,315 adults received farm input subsidies in 2006/07.	Household food shortages common between December and March. No data on farm input subsidy recipients available.
	Majority of household food supply commonly provided for by subsistence farming, irrespective of household wealth.		
Population	625,555 adults and children according to figures produced in 2008. 2.6% growth rate 1998-2008.	608,917 adults and children according to figures produces in 2005. Estimated 3.6% growth rate.	238,089 adults and children according to figures produced in 2008. Estimated 2.1% growth rate.
Religious diversity	79% Christian, 10% Muslim, 7% none, 4% other.	92.4% Christian, 3.6% Muslim, 4% other.	70% Christian, 10% Muslim, 20% Mbona.
	Land divided between public (government owned) land, customary land and privately owned land. Most land under customary tenure.		

Land ownership and use	48% land used for agriculture (smallholder farming), 30% forested and 22% covered by lakes, rivers or settlements.	41% land used for agriculture (smallholder farming and estates), 31% forested or national park, 28% settlements.	25% land used for agriculture (smallholder farming), 29% forested, marshland and game reserves, 23% settlements, 22% vacant.
Average household wealth	Average annual incomes for lower-than-average wealth, average wealth and higher-than-average wealth households estimated at Malawi Kwacha (MK)8500-10000, MK29000-33000 and MK65000-75000 respectively in 2005[+].		Average annual incomes for the lower-than-average wealth, average wealth and higher-than-average wealth households estimated at MK10500, MK23000 and MK48000 respectively in 2005.
Dominant livelihood activities	Subsistence and commercial agriculture, livestock production, ganyu.		Fishing and firewood sales are more prominent than in Dedza and Kasungu. Otherwise, dominant livelihood activities are analogous.
Quality of transport infrastructure	8% roads paves, 92% unpaved. Unpaved roads in poor condition, which creates accessibility problems, especially in the rainy season.	24% paved roads, 76% unpaved. Unpaved roads in poor condition, which creates accessibility problems, especially in the rainy season.	Majority of roads unpaved (exact figures unavailable). Unpaved roads in poor condition, which creates accessibility problems, especially in the rainy season.
Health	7.5% HIV prevalence rate according to official estimates. Under-five mortality rate: 140 deaths per 1000 children.	13.2% HIV prevalence rate, according to official estimates. Under-five mortality rate: 207 deaths per 1000 children.	16.3% HIV prevalence rate, according to official estimates. Under-five mortality rate: 131 deaths per 1000 children.
	Malaria is a leading cause of death and illness. Cholera outbreaks relatively frequent in Nsanje and Kasungu.		
Education	48% adult literacy rate	58% adult literacy rate.	52% adult literacy rate.
Market access	District located 86km south of Lilongwe, Malawi's capital city.	District located 127km north of Lilongwe.	District located 182km south of Blantyre, Malawi's

	34 agricultural markets in the district.	26 agricultural markets in the district.	commercial capital. However, poor road networks reduce ease of access (paved road between Nsanje and Blantyre remains under construction). Railway network previously used for transport of people and goods now defunct. 24 agricultural markets in the district
Ethnic diversity	Predominant tribes are the Chewa, Ngoni and Yao. District borders Mozambique and home to a significant number of Mozambican nationals.	Predominant tribes are the Chewa, Ngoni and Tumbukas. District borders Zambia.	Predominant tribes are the Sena and Mang'anja (Chewa origin). Shire river separates district from Mozambique.
Agricultural productivity	Productive but undiversified maize (both) and tobacco (Kasungu) growing zone.		Agriculturally productive by standards of southern Malawi, but not as productive as districts in the Central Region.
Soil composition	Clay and sandy loam soils dominant.	Clay and sandy loam soils dominant, reddish soils dominant in the east of the district.	Predominant soils are the lithosols. Pockets of ferrallitic soil, alluvial calcimorphic soils and grey brown.
Main crops grown	Maize, beans, groundnuts, soybeans, potatoes, sweet potatoes, white rice.	Maize, tobacco, groundnuts, cassava, sweet potatoes, beans, white rice, sorghum.	Sorghum, millet, maize, sweet potatoes.
Cropping seasons	Summer: October-March, Winter: April-September.		Summer: November-April, Winter: May-August.
Climatic conditions	• Dry season from April to October; rainy season between November and March. • Annual precipitation averages 1041 millimetres in Dedza and 822 millimetres in Kasungu. • District rainfall records show high rainfall variability over the last three decades. • Storm winds, hail storms, flooding and dry spells cause major climate-induced shocks and stresses for development.		• Dry season from May to October; rainy season between November and April. • Annual precipitation averages 907 millimetres.

		• Average temperature hotter than in Dedza and Kasungu — reaching up to 42 Degrees Celsius in the dry season. • Major climate shocks and stresses identical to Dedza and Kasungu but those experienced are often more prolonged and severe.

[+] The exchange rate of Malawi Kwacha (MK) to Great British Pounds (GBP) is highly changeable and fluctuates regularly. During the period when fieldwork was being conducted in Malawi (April 2014 to May 2015), 1 GBP was typically equivalent to between MK400-500.

4.3.4 Village case study selection

In each district, two villages were chosen as study sites. The advice of project field staff was sought to ensure that villages were made up of similar numbers of households, close to each other geographically and targeted with similar project activities. This allowed the social justice implications of projects to be further isolated. However, in Dedza and Kasungu, two villages with different average levels of household resource wealth were purposively chosen based on field staff advice. This allowed for consideration of whether and how the social justice experiences of households differed accordingly. For confidentiality reasons, study village names are anonymised. Dedza study villages are referred to henceforth as Dedza Village 1 (DV1) and 2 (DV2); Kasungu villages as Kasungu Village 1 (KV1) and 2 (KV2); and Nsanje villages as Nsanje Village 1 (NV1) and 2 (NV2). Project activities began in all villages in 2012 and will run until March 2017.

DV1 and DV2 are located roughly 10 km from each other in the south east of Dedza in Traditional Authority Kachindamoto. Village settlements are located approximately 1 km and 5 km from nearby rivers, respectively. However, in both villages, households own farmland nearer the rivers. Each village lies approximately 5 km from a major trading centre in Malawi's Central Region. At the time of research, DV1 comprised 97 households and DV2 comprised 116. In DV1, tree planting, conservation agriculture,

nutrition training and livestock production were being implemented. The same activities were being implemented in DV2, where VSLAs have also been introduced.

KV1 and KV2 are located roughly 15 km away from each other in Traditional Authority Wimbe, central Kasungu. Both lie approximately 7 km away from the nearest trading centre. At the time of research, KV1 comprised 53 households and KV2 comprised 41. In KV1, VSLAs, livestock production, and seed multiplication schemes had been introduced. In KV2, improved cookstove production was also being implemented.

NV1 and NV2 are located roughly 10 km away from each other in the centre of Nsanje. They are located in bordering traditional authorities: NV1 in Traditional Authority Tengani; NV2 in Traditional Authority Malemia. Both villages are less than 10 km away from the Shire River, which separates Malawi from Mozambique along the easterly border of Nsanje. Some households from both villages own land close to the river. Other people own land on the slopes of nearby hills and mountains, which surround the villages. At the time of research, NV1 comprised 90 households and NV2 comprised 109. In NV1, VSLAs, tree planting, livestock production and conservation agriculture were being implemented. In NV2, improved cookstove production and irrigation were also being implemented.

4.4 Data collection

Table 4.4 summarises the methods used to gather the requisite data within study villages and from professional stakeholders (individuals, including employees of organisations, who earn a living through work related to mitigation, adaptation and/or development). Data collection took place between September 2014 and May 2015. Five recent BSc graduates from the Lilongwe University of Agriculture and Natural Resources were recruited as research assistants to assist data collection (although no more than four were employed at any one time). Details related to how research assistants were trained and their work monitored to ensure quality is provided in section 4.6.4.

4.4.1 Stakeholder identification

A comprehensive analysis of stakeholders (Atkinson and Flint, 2001; Desai and Potter, 2006; Scheyvens, 2014) with links to the design and implementation of the ECRP within study districts and villages was undertaken. An initial sample of 10 stakeholders (three

donor agency employees; seven NGO employees managing the ECRProject and DISCOVER) was identified through ECRP project design documentation.

Table 4.4: Methods used to collect data in study villages and from professional stakeholders

	Surveys conducted with	Interviews conducted with
DV1	90/97 households (93%)	25 households; Preliminary interviews with village heads and six wealth informants
DV2	106/116 households (92%)	23 households; Preliminary interviews with village heads and six wealth informants
KV1	37/41 households (90%)	24 households; Preliminary interviews with village heads and six wealth informants
KV2	48/53 households (91%)	23 households; Preliminary interviews with village heads and six wealth informants
NV1	78/90 households (87%)	23 households; Preliminary interviews with village heads and six wealth informants
NV2	98/109 households (90%)	22 households; Preliminary interviews with village heads and six wealth informants
Professional stakeholders	N/A	32 interviews with: 21 NGO employees; one national and eight subnational government employee(s); two donor agency employees

A snowball sampling approach was adopted whereby identified project stakeholders were asked to recommend further stakeholders in their social networks[2] for interview to expand the number of participants and sample size (Ibid.). There was no target sample size — exploring social justice through the ECRP required that all stakeholders were identified and, where possible, their voices heard. Consequently, the snowball sampling process continued until no further stakeholders could be identified. Snowball sampling techniques were chosen because they have been used effectively in Malawi and other developing countries where poor communications infrastructure makes information access difficult (Stringer et al., 2012b; Wood et al., 2016). Information obtained was used to construct stakeholder lists for each ECRP project. Identified stakeholders included 506 households who resided in study villages and those professional stakeholder organisations presented in Table 4.5.

[2] Defined as social structures comprised of interactive ties between individuals and groups (Atkinson and Flint, 2001).

Table 4.5: ECRP professional stakeholders categorised by employer organisation type

Stakeholder type	Number
Donor agency	3
NGO	13
National government	1
Subnational government	3

Selection bias inherent in snowball sampling approaches can limit sample validity. Stakeholders who are in some way disconnected from the social networks of others could be overlooked (Van Meter, 1990; Kaplan et al., 1987; Goodman, 2011). Stakeholders may also have their own covert rationales that dictate the individuals and groups to whom they refer the researcher (Atkinson and Flint, 2001; Scheyvens, 2014). In order to mitigate these biases, care was taken to ensure that the full range of project stakeholders identified were asked to suggest additional stakeholders. Where representatives of professional stakeholder organisations were spoken to, they were asked to identify other representatives within the same organisation who may have been relevant. This helped capture the diversity within the stakeholder sample. Wider evidence of any additional project stakeholders was actively sought by the researcher throughout fieldwork in Malawi but none were identified.

4.4.2 Preliminary information gathering in villages

Initial interviews with village heads enabled preliminary information to be gathered about selected village sites. All village heads in study villages were male. This is typical in Malawian villages although, occasionally, village heads are female (Munthali, 2008). Village heads were asked to detail characteristics related to the village context (e.g. main livelihood activities, development and climate shocks and stressors, number of village households) and suggest information that would be relevant to the research.

Village meetings were conducted in each study village to: introduce the researcher and the research to local people; allow local people to ask questions about the research; and break the ice and build trust with local people. Village heads were asked to invite all adults residing in villages to meetings. As per the terms of the University of Leeds' ethical clearance for this research (Appendix B), attendance was voluntary.

Village heads were asked to identify residents to act as informants to assist in the identification of locally appropriate wealth indicators. Indicators were used to wealth rank households (section 4.5.1). Six informants were interviewed per village to obtain the

necessary information. Village heads identified two informants each from 'lower-than-average wealth' (LAW), 'average-wealth' (AW) and 'higher-than-average wealth' (HAW) households. One man and one woman were chosen for each category in order to reduce possible gender bias. Informants were asked to identify indicators for all wealth categories. This helped ensure that indicators both incorporated experienced realities and accounted for misreporting or strategic responses. For example, in the mistaken anticipation that they might receive development services following the wealth ranking exercise, village residents may have understated the wealth levels of households that fell within wealth categories in which they were included (Zeller et al., 2005). It was intended that observations of informants from other wealth categories would help offset this. Research assistants from the Lilongwe University of Agriculture and Natural Resources were fluent in local languages — Chichewa (in all study districts) and Sena (in Nsanje) — and translated questions and answers to and from the researcher during interviews with village heads and informants. Notes were taken throughout and were later analysed and synthesised in order to determine a single set of wealth indicators for each study village.

4.4.3 Household surveys

Both ECRP projects seek to provide benefits to households rather than individuals (CA, No Date; CU, No Date), meaning households were the most appropriate data collection unit. Surveys were used to gather descriptive data from households in study villages. Exploring possible intra-household social justice implications was, therefore, beyond the scope of this study. Survey responses were sought from all households in each village. In total, 457 out of 506 households were surveyed. Some households did not consent to take part in research (due to ill health or being too busy) but most non-respondents were unavailable (e.g. away from the village) during the data collection process, which explains why not all households were ultimately sampled. Where possible, the household head was surveyed. If the household head was unavailable, another adult household member was asked to respond. In some cases, respondents asked other adult household members to help them answer questions. The survey was piloted with 12 households who resided in DV1 (six AW, two HAW, one LAW, one AW and EH, one AW and FH, one LAW and FH) to ensure questions were appropriate, understood by all household types and able to yield required data. No substantive changes were made to the survey.

A copy of the survey used in the research is presented in Appendix C. Survey questions sought information on household characteristics and residents' livelihood activities before questions specifically related to objectives one, two and three were posed. Surveys comprised four main parts:

Part one: *Household characteristics* – information was obtained about the number, gender, ages and occupations of householders and if/how they were related to one another. ECRP projects profess to target project activities at households considered to be the most vulnerable in Malawi (CU, No Date; CA, No Date). They include resource-poor, FH and EH households. The presence of these households was determined via analysis of household characteristics and allowed for evaluations of whether and how projects' social justice implications differ within and between different household types. Indicators derived from interviews with village informants (see sections 4.4.2 and 4.5.1) guided the collection of household resource wealth data. In the context of sub-Saharan Africa, the United Nations consider people aged 60 years or older to be 'elderly' (UN, 2013). This criterion was used to identify EH households.

Part two: *Perspectives on, and priorities for, project development* — households were questioned on their priorities (development, mitigation, adaptation, other) for project development. Household responses to part two of the survey were very similar and data saturation was reached quickly. Consequently, survey responses were sought from random samples of 50% of consenting households in each study village. This was considered suitable for capturing inter-household response diversity. Households were asked how important they perceived ECRP development, mitigation and adaptation goals to be, relative to their own priorities for projects. They were asked to rate the importance of ECRP project development goals and any other development priorities that they identified using a scale of 0-3: 0 meant goals were perceived to be unimportant for improving the lives of household members; 3 meant goals were perceived as extremely important. They were also asked to rate how problematic they considered different climate shocks to which ECRP projects aim to help households adapt. Again, a scale of 0-3 was used: 0 meant shocks were not considered problematic; 3 meant they were considered to be very problematic. Views on activities by which development, mitigation and adaptation goals should be achieved were also sought. This data aided completion of objective one.

Part three: *Recognition, participation and resources* – information was obtained on whether and how households perceived that they were recognised and able to participate in ECRP projects. Households were asked questions related to: whether they were taking part in ECRP projects; particular activities they were taking part in; whether they felt respected by projects; and whether they felt able to express their views and able to influence projects. This data aided completion of objective two.

Part four: *Distribution of project outcomes* – information was obtained on whether and how households perceived that they have benefitted from, or experienced negative side-effects as a result of, case study projects up to that point in time. So as not to prejudice results, questions were open-ended. Answers were not pre-empted by proposing lists of benefits and negative side-effects that may have been achieved through projects. Households were asked to rate the importance of any benefits and negative side-effects that they had identified using a scale of 1-3: 1 meant that outcomes were insignificant to lives of household members; 3 meant outcomes were highly significant. This data aided completion of objective three.

Low literacy levels meant it was necessary for surveys to be completed verbally. Research assistants from the Lilongwe University of Agriculture and Natural Resources translated survey questions from English into local languages (Chichewa, Sena). Households' answers were then translated and recorded in English.

4.4.4 Semi-structured interviews

Questionnaire surveys are useful for gathering bounded, descriptive information but do not allow the researcher to pursue tangents (Robson, 1993). Additional household data were required to enhance understanding of, and generate explanations for, questionnaire results. Semi-structured interviews were identified as the most suitable tool with which to collect this data.

Survey data were coded to elucidate key themes related to households' social justice experiences (Babbie, 2008). Purposively selected households were then interviewed in order to follow up on these themes (Teddlie and Yu, 2007). For example, 'households' limited scientific climate change knowledge' was a key theme that emerged from surveys. Interviews were used to gather richer insights into, and explanations for, this finding. Households were selected for interview in a manner that allowed the full range

of views expressed in survey responses by AW, LAW, HAW, FH and EH households to be explained and expanded. Overall, 140 households were interviewed (between 20 and 25 in each study village), which is in line with other similar studies from across sub-Saharan Africa (Mertz et al., 2009; Ingram et al., 2002; Yaro, 2006). Research assistants from the Lilongwe University of Agriculture and Natural Resources provided translation between interviewees and the researcher. Detailed notes were taken throughout the interviews. Key quotes were recorded word-for-word.

Semi-structured interviews were also the main vehicle for collecting data from professional stakeholders. All identified professional stakeholders (Table 4.5) were approached for interview via email and/or telephone. Interviews were conducted with 32 stakeholders (Table 4.6). The total number of professional stakeholder interviewees outnumbers the total number of professional stakeholder organisations (Table 4.5) because sometimes more than one representative from each organisation was interviewed. One donor agency and one NGO from the identified sample of professional stakeholder organisations were not represented in the data collection process due to a lack of response. Interviews were used to explore: stakeholders' priorities for project development; whether and how they were recognised and able to participate in case study projects; and any benefits and/or negative side-effects that they perceived to have experienced due to ECRP projects.

Table 4.6: Professional stakeholder interviewees categorised by employer organisation type

Employer organisation	Number
Donor agency	2
NGO	21
National government	1
Subnational government	8

In order to maximise the richness of qualitative data, attempts were made to ensure interview questions were relevant and understandable to individual interviewees (e.g. based on their backgrounds and knowledge of project dynamics). Interview content was, however, comparable throughout. Notes were taken during interviews, which were audio recorded where consent to do so was obtained.

4.4.5 Documentary material

Some professional stakeholder interviewees guided the researcher towards documents that supported, or provided more detail on, their responses. Internet searches were also

conducted to identify documents containing information with which to estimate ECRP projects' mitigation benefits. Table 4.7 presents documentary material that was collected and analysed. This material is distinct from the academic literature that was reviewed and presented in chapters two and three. Specific documents that were analysed to complete the research presented in chapters five, six and seven are detailed in those chapters.

Table 4.7: Collected documentary material categorised by document type

Type	References
Programme/ project design document	CA (No Date); CU (No Date); DFID (No Date); ECRProject (2011; 2012; 2014); DISCOVER (2012; 2015)
NGO complaints and response mechanism protocol	GOAL (2015)
Project monitoring report	ECRProject (2015)
Donor government policy document	DfID (2011a, 2011b); ICF (No Date)
Malawian national government policy document	GoM (1998; 2006, 2011, 2012); MVAC (2005)
District government-produced document	DDG (2013); NDG (2014; 2015); KDG (2013)
Consultancy report	LTSI (2014); Phiri (2010)
Documents containing information used to estimate ECRP projects' mitigation benefits	SA (2015); CDI (2011)

4.5 Data analysis

A predominantly qualitative approach was used to analyse data. However, some quantitative techniques were also used to support and triangulate qualitative analysis. In this section, an approach adopted for wealth ranking village households is set out before quantitative and qualitative analysis methods are discussed. Wealth ranking allowed village households to be grouped into categories related to their ownership of, and access to, material resources. It aided qualitative analysis by uncovering whether and how local social justice experiences differed in relation to household wealth.

Projects profess to target activities at resource-poor, FH and EH households (CU, No Date; CA, No Date). Accordingly, when assessing projects' social justice implications within villages, the experiences of different household types were differentiated. For ethical reasons, an understanding of the experiences of other vulnerable household types (e.g. those with disabled or chronically-ill adult members) was not actively pursued. However, in some cases these households volunteered information related to these types of vulnerabilities and the implications of them for their social justice experiences. Such volunteered information was accounted for during data analysis.

4.5.1 Wealth ranking

Interviews were conducted with informants in the study villages to identify locally appropriate wealth indicators (section 4.4.2). A participatory approach for developing indicators was adopted that follows the work of Jefferies et al. (2005). Local people's participation within wealth ranking exercises can help enhance their precision and contextual appropriateness (Chambers, 1994). Notes taken during interviews were later analysed and synthesised in order to determine a single set of wealth indicators for each study village. Indicators enabled the researcher to distinguish between the social justice experiences of LAW, AW and HAW households. Using information obtained from part one of household surveys, every household that consented to take part in research was wealth ranked.

4.5.2 Quantitative analysis

Household survey data were input into Microsoft Excel and amalgamated. Univariate statistical techniques were used to analyse amalgamated data. Numbers and percentages of households involved in design and implementation processes and experiencing project outcomes were calculated (Babbie, 2008). Mean ratings given to ECRP development and adaptation goals by different household types were generated. Two-tailed t-tests were used to determine whether differences between mean ratings given to ECRP development goals by diverse household types were statistically significant.

Mean numbers of project activities participated in, and benefits experienced by, different household types were also calculated. Two-tailed t-tests were used to determine whether variances were statistically significant. The magnitudes of project outcomes experienced by different stakeholders were also assessed using quantitative techniques. Mean importance ratings were calculated for different project outcomes (Tschakert, 2007 - see chapter seven).

In all these cases, the mean was calculated as a measure of central tendency because the data were neither skewed (in which case the median may have been preferable) nor based on categorical variables (in which case the mode may have been preferable). Mean calculations and two-tailed t-tests are appropriate for use with both continuous (data on household activity participation and benefits experienced by households) and

Likert data (household ratings of development and adaptation goals and benefits received) (Carifio and Perla, 2008).

4.5.3 Qualitative analysis

Professional stakeholder interview recordings were transcribed on an ongoing basis throughout the process of data collection. Survey transcripts, household interview notes, professional stakeholder interview transcripts and documentary material were manually catalogued by stakeholder and stakeholder group. The conceptual model set out in chapter three was used as an overarching guide for data analysis. Whether, how, and to what extent different stakeholders were recognised and afforded participatory opportunities through project processes, and impacted on by the distributive outcomes of projects, was appraised. An analytical framework was developed for analysing the procedural justice implications of project design and implementation processes. It enabled completion of objectives one and two and is presented and utilised in chapters five and six. Another analytical framework was developed to analyse the distribution of project outcomes. It enabled completion of objective three and is presented in chapter seven.

It is possible that contextual impediments to social justice might differ in terms of their visibility to those experiencing their consequences. To facilitate holistic understanding of contextual factors that conditioned ECRP projects' social justice implications, data analysis techniques needed to both consider perceptions and search for concealed meanings in stakeholder testimonies. Use of both content analysis and critical discourse analysis techniques was deemed necessary to meet these requirements.

Content analysis breaks data into smaller summaries and representations of its meaning (Scott and Marshall, 2009). It was used to elucidate the overt procedural and distributive justice implications of projects that are documented in stakeholder testimonies. It was also used to explain how these implications are experienced by stakeholders and why stakeholders perceive them to have occurred. Content analysis was used to analyse all forms of data collected.

Critical discourse analysis, by contrast, sees language use as socially consequential. It thereby seeks to analyse language in order to delineate reasons why social life is organised and structured in certain ways (Wodak and Meyer, 2009). This often relies

upon revealing hidden, latent belief systems (Ibid.). Critical discourse analysis techniques were used to uncover projects' procedural justice implications that were not openly acknowledged by, or concealed to, survey respondents, interviewees and those who produced documentary material. They also helped reveal covert causal factors that shaped patterns of social (in)justice.

The researcher is not fluent in local languages spoken within study districts and villages. Critical discourse analysis techniques were, therefore, only used to analyse English language project documents (written by fluent and native writers) and data from interviews conducted in English (with fluent and native speakers). Use of critical discourse analysis techniques with data produced by non-fluent speakers and writers may have led to the researcher misrepresenting data. Critical discourse analysis techniques were not used to analyse survey and interview data that was translated into English from local languages. This is because translations may have distorted language used and thus 'uncovered' belief systems that did not exist. Where stakeholders were fluent but non-native English speakers or writers, care was taken to account for differences in how word meanings were interpreted and understood.

Discourses, analogous with ideas, refer to ways of constituting knowledge. A three-step approach for completing critical discourse analysis was adopted in which data were analysed as 'text', in terms of their contextual setting, and in terms of social practice (Fairclough, 1992). The approach is now presented.

1. **Data as text:** The main observations and arguments being made by interviewees and in documentary material were delineated. The means by which these points are made — i.e. words, phrases and propositions — were denoted.

2. **Context:** The main observations and arguments identified within the data were situated within their context. The contextual setting helps give meaning to the data by outlining the conditions in which they were produced.

3. **Social practice:** Specific observations and arguments in the text were examined. Those that were defended or seemingly made without anticipation of being challenged were assumed to be taken from some dominant discourse. Alternative discourses were used by stakeholders to make different points and multiple discourses were sometimes used to justify the same point.

Critical discourse analysis results enabled understanding of how discourses provided utility to stakeholders (Dick, 2004). Understanding how contextual factors enabled certain discourses to be assimilated into and/or inform project design and implementation processes helped shed light on forms of power that impacted on, or were created by, ECRP projects.

Although the aims of content analysis and critical discourse analysis approaches differ, the processes by which they were carried out were similar (Wodak and Meyer, 2009). To facilitate both types of analysis, data were reviewed line-by-line and open coding was used to identify initial themes (Babbie, 2008). Initial codes with similar characteristics were then grouped together using axial coding methods in order to draw out key themes of relevance to the research objectives (Ibid.). For example, instances where households mentioned water access and availability as an important local priority were catalogued alongside similar observations made by professional stakeholders and in documentary material. Grouping these mentions enabled 'local prioritisation of water access and availability' to emerge as a key theme relating to the completion of research objective one.

Themes arising from particular data sources were cross-checked with other data sources using constant-comparison techniques to ensure validity (Ibid.). There were some instances of conflicts between data sources. In such cases, conflicting viewpoints are outlined within results presented in chapters five, six and seven.

Analytical frameworks developed and presented in chapters five, six and seven were used to structure the coding process in order to complete research objectives one, two and three. Together, these frameworks enabled the procedural and distributive justice implications of the ECRP to be explored across governance dimensions and spatial and temporal scales. Frameworks account for how the ECRP's contextual surrounds condition its social justice implications. Their combined use allowed for the operationalisation of the conceptual model developed in chapter three.

4.6 Research reflections

Four important considerations were identified throughout the research process that complicated the compilation of robust, valid data. These are: 1) the positionality of the research team; 2) ethics; 3) working with project staff; and 4) working with the research

team. Each consideration is now presented alongside discussion of steps that were taken to alleviate their impact on the research.

4.6.1 Positionality

The research process represents a shared space between the research team and participants. Consequently, the identities and perceptions of each can shape research outputs (Bourke, 2014). Reflexive understanding of such 'positionality' is considered important for ensuring the robustness and validity of data attained through research in developing country contexts (Twyman et al., 1999).

The researcher is a white, British male. Many Malawians living in rural areas have limited experience (if any) of interacting with white people, who are considered to be richer and more educated than local people. Hence, it is to be expected that some local people within study villages may have adopted a cautious approach towards the researcher. Consequently, they may have in some way modified their answers to surveys and semi-structured interviews. This dynamic may have been exacerbated because research assistants were well-educated Malawian people from Lilongwe, which is considered by rural Malawians to be a wealthy place to live.

Efforts were made to make local people feel comfortable and reduce perceived points of difference between themselves and the research team. For example, the researcher took lessons in Chichewa, the most widely spoken language in Malawi, developing a basic understanding. Consequently, pleasantries, greetings and some short conversations with local people were possible. The team also took lunch and refreshments breaks within villages, eating local foods cooked using traditional methods. Conservative clothing was worn at all times. Professional and understated behaviour was maintained in order to adhere to cultural sensitivities. The research team took care not to sit in a position that was higher than research participants when conducting surveys and interviews (e.g. if participants sat on the floor, the researcher and research assistants also sat on the floor, not on a chair). Open (e.g. avoiding crossed legs and arms) and non-threatening (e.g. avoiding towering over or pointing) body language was adopted and research assistants were encouraged to maintain good eye-contact with research participants. Two female research assistants were recruited to enable the participation of women who were uncomfortable being questioned by males. Similar techniques were

also adopted when interviewing professional stakeholders below the district level, who may have been unfamiliar with dealing with a white male.

Local people often initially assumed that the research team worked for an NGO or the Malawian government and were in study villages with a view to contributing resources for development. The research team were concerned that such misconceptions would condition local people's answers. In particular, the team was wary that people might exaggerate the extent of their poverty through their responses in order to try and make a case for additional development support. During introductory village meetings, it was made clear to all attendees that research was part of an academic exercise and that participants would not receive material benefits for taking part. These points were re-iterated at the beginning of each survey and interview. Throughout the research process, responses provided by different households were triangulated with each other and information provided by professional stakeholders in an attempt to ensure data validity.

4.6.2 Ethics

Ensuring that the research process is ethical has intrinsic value but is also linked to data reliability and validity (Dowling, 2000). The research approach met the University of Leeds' strict ethical clearance requirements (Appendix B). Harrison (2006) suggests that ethical research requires: cultural sensitivity; privacy; informed consent; and the avoidance of harm and/or exploitation. Efforts to meet these requirements throughout the research process are now discussed in turn.

4.6.2.1 Cultural sensitivity

Traditional leaders, which include village heads, are highly respected in Malawi and have significant decision-making authority within rural areas. In appreciation of this cultural nuance, project field staff were asked to facilitate meetings with village heads in order to gain their consent for the research team to operate in study villages. In the absence of modern technological infrastructure, village meetings remain the major forum for organising village life. Hence, introducing the research to local people using village meetings was culturally appropriate. Village heads helped facilitate these meetings. As discussed above, they also helped select informants who were interviewed to develop locally-appropriate wealth ranking criteria. Village heads were not involved in determining local research participants or privy to the identities of, or information

provided by, those who participated. Therefore, they had limited opportunities to bias the data collection process. It was hoped that ensuring the confidentiality of information provided by local people would allow them to speak freely and without fear of suffering repercussions.

4.6.2.2 Informed consent

Prior to research activities occurring, thorough introductions were provided to participants and their informed consent to take part was obtained. Interviewees and survey respondents were informed that their involvement was voluntary, that their anonymity would be ensured and that they could withdraw at any point during the time that the researcher spent in their village.

Professional interviewees were provided with an informed consent form to read before their verbal agreement was sought. In study villages, English was not widely spoken and illiteracy levels were high. To tackle this issue, the details of the informed consent document were verbally explained to each participant, with the assistance of translators where necessary. Their verbal agreement was then sought.

4.6.2.3 Privacy

The names of individual participants and/or their employer organisations are anonymised throughout chapters five, six and seven. Only the stakeholder groups that respondents belonged to (e.g. local people, district government employee, NGO staff) are presented. The names of study villages and the dates during which research took place in different villages have also been concealed in all written and non-written outputs. This decision has been taken so as to provide an extra level of protection to the identities of those who participated in research; in particular, to protect their identities from NGO employees implementing ECRP projects. Due to the potentially sensitive nature of the research, local people were advised that survey and interview questions should be answered in a place where they could not be overheard.

Research data were stored in paper form, in a Dropbox folder and on the researcher's personal computer. Data in paper form were secured in a locked cupboard during time spent in Malawi. Both the Dropbox folder and the researcher's personal computer are secure and password-protected. On return to the UK, data were backed-up using a

portable hard-drive and transferred onto the University of Leeds server, which is also secure and password protected. Data in paper form were kept in a secure location in the researcher's home.

4.6.2.4 Avoiding harm and exploitation

No financial or other type of inducements to attract the participation of local people or professional stakeholders were offered at any time. In order to avoid placing participants under undue stress, interviews and surveys were designed so as to take no more than one hour to complete. Indirectly, participants may have experienced the opportunity costs of time not spent on alternative activities (including livelihood activities in study villages). However, this was minimised by informing participants about the details of their prospective involvement in advance and gaining their consent to participate.

Interviews and surveys took place during working hours at a time convenient to participants. To put participants at ease, research activities with local people took place within study villages. When invited to do so, the research team asked questions within participants' houses. Although vulnerable participants (e.g. members of resource poor, FH, EH households) were recruited, no participants who were unable to provide for themselves (e.g. due to ill health, mental or other disabilities, those with addiction issues) were involved in the research.

4.6.3 Working with project staff

An absence of relevant written information to guide village case study choices meant working with project staff was necessary (see section 4.3.4). In addition, working with project field staff was vital for securing introductions to traditional leaders and other local people. However, information provided by project staff may have been biased in ways unknown to the researcher. For example, a desire to showcase ECRP projects in a positive light may have led staff to recommend villages performing well under projects for detailed study. In an attempt to reduce possible bias, information obtained from particular project staff was verified through discussions with other stakeholders, including those operating at different governance levels (e.g. village area, district).

4.6.4 Working with the research team

Five research assistants were recruited to assist data collection in study villages (a maximum of four working with the researcher at any one time). All were BSc Environmental Science graduates from the Lilongwe University of Agriculture and Natural Resources. As part of their degree programmes, they studied climate change and its implications for development in Malawi. Hence, their understanding of the research area was sound. Each was recruited based on discussions with, and recommendations from, colleagues at the Lilongwe University of Agriculture and Natural Resources to ensure their suitability. All had some experience of completing household surveys in Malawi, although none had worked as translators before.

Research assistants were variously responsible for conducting surveys in local languages, translating respondents' answers into English and acting as translators between the researcher and local people — the latter enabling semi-structured interviews to be conducted. Research assistants' abilities, application and motivation enabled robust, timely data collection. The researcher provided thorough training to assistants on: the background to, and scope of, the research; translation; how to use data collection methods; and issues of positionality and ethics. Max Kudzala was the first research assistant to be appointed. He assisted with the majority of wealth ranking interviews conducted and helped pilot the household survey. Later he was promoted to the role of senior research assistant and provided training to other research assistants on how to best translate survey questions into local languages.

Research assistants completed the majority of household surveys without direct supervision. This was because some local people may have been uncomfortable speaking with a white, male 'outsider'. Hence, the researcher observed the progress of the first ten surveys that each assistant completed, before stepping back from the process. Thereafter, the researcher ensured the quality and consistency of data by closely monitoring the results of surveys as they were completed. The senior research assistant was asked to monitor a small sample of (up to 10) survey results each day to double-check quality and consistency. In a few, isolated cases, there were inconsistencies between the content of survey questions and related answers. Reasons for these inconsistencies were investigated with the help of the senior research assistant. In all cases, inconsistencies resulted from minor translation problems that were

corrected. Research assistants were asked to return to village households to repeat questions where mistranslations had occurred in order to correct the data.

All semi-structured household interviews were conducted by the researcher, with research assistants taking on the role of translator. Overall, all research assistants performed their roles diligently and with professionalism throughout.

4.7 Summary

This chapter has set out how the research was designed in order to achieve the aim and objectives of this thesis. Together, the research approach and data collection and analysis methods chosen enabled the conceptual model presented in chapter three to be operationalised. In this thesis, the research design facilitates a holistic social justice analysis of the ECRP in Malawi but the approach and methods can also be utilised to appraise other project level CCD initiatives in different contexts. The following three chapters showcase results derived from evaluation of the ECRP. Each chapter summarises specific methods that were used to collect and analyse data that it presents. Analytical frameworks that have been developed and used to analyse the data related to each chapter are also detailed in those chapters.

5 Exploring procedural justice and power within climate compatible development project design: whose priorities are being considered?

Summary

Understanding whether and how CCD design processes reconcile different stakeholder priorities can reveal how the concept contends with socio-cultural and political forms of oppression that condition patterns of development. However, research has yet to investigate this. This chapter explores procedural justice and power within the design of ECRP projects. Household surveys, semi-structured interviews and documentary material were analysed using content analysis and critical discourse analysis methods. A framework that was developed to evaluate procedural justice and its links to power in CCD was used to guide the analysis. Findings show that donor agencies have driven design processes and involved other stakeholders selectively, with local people's participation having been particularly constrained. Whilst overlap existed between stakeholders' 'revealed' priorities for CCD, invisible power encouraged the suppression of 'true' preferences, reducing the likelihood that CCD will be contextually-appropriate and have widespread stakeholder buy-in. Visible, hidden and invisible forms of power created barriers to procedural justice in CCD design. Five recommendations are presented to help policymakers and practitioners overcome these barriers: 1) avoid epistemological certainties; 2) put local priorities first; 3) make participatory assessments robust and reflexive; 4) take steps to reconcile different world views; and 5) harness co-production between professional stakeholders.

5.1 Introduction

Procedural justice requires that stakeholders can participate in, and have their priorities recognised through, CCD design processes (Schlosberg, 2007). Our limited understanding of the climate system (Curry and Webster, 2011) and development data shortages (Devarajan, 2013) mean CCD design must navigate substantial uncertainty. In the absence of certainties, stakeholder priorities for climate change and development interventions, which are conditioned by distinct cultures and value positions, often conflict with one another (Hulme, 2011). There is contention over how development should be defined and progressed, debate over key issues related to how mitigation and adaptation should proceed and disagreement over how development, mitigation and adaptation priorities should be balanced (see chapter two).

Pursuing, and recognising the importance of, development, mitigation and adaptation simultaneously through policies, programmes and projects could encourage common ground between different constituencies (Ayers and Huq, 2009). However, little attention has so far been paid to: a) whether and how stakeholder preferences for CCD align or differ in the context of specific interventions; and b) whether and how CCD policies, programmes and projects have reconciled stakeholder priorities through design processes. Some studies have touched upon procedure through the design of interventions that pursue CCD goals (e.g. Mustalahti et al., 2012; Sova et al., 2015), but systematic evaluations are scarce. Empirical insights from project level initiatives that explicitly pursue CCD triple-wins are particularly lacking. Power constitutes the networks of societal institutions (formal and informal) and resources that delimit the boundaries and scope of procedural justice opportunities (Gaventa, 2006). However, linked to a shortage of tools and frameworks that facilitate their holistic analysis, there is limited understanding of the relationships between procedural justice and power within CCD design.

Limited consideration of procedural justice and power mean it is unclear which stakeholders are ‘driving’ the design of CCD interventions. Linked to this, it is uncertain how CCD contends with patterns of socio-cultural and political oppression that condition underdevelopment (Sen, 2001). Considering the procedural justice implications of CCD design is also important because development, mitigation and adaptation outcomes are experienced differently across diverse temporal and spatial scales (Klein et al., 2007). Understanding whether and how different components are prioritised and balanced

within design processes can help signpost which individuals and groups are likely to 'win' and 'lose' from subsequent outcome distributions.

This chapter, therefore, explores procedural justice opportunities and power within the design of ECRP projects in Malawi. In doing so, it contributes towards objectives one and two of this thesis. In this chapter: 1) a framework is developed for exploring CCD's procedural justice implications in the context of power; 2) different stakeholders' priorities for ECRP project design are identified; and 3) stakeholder recognition and participation in ECRP design processes are evaluated.

5.2 Designing climate compatible development: priorities, procedural justice and power

CCD design partnerships incorporating multiple stakeholders across global, national and local scales allow linkages between development, mitigation and adaptation to be harnessed and trade-offs to be minimised (Dyer et al., 2013). Multi-stakeholder partnerships can also help reduce implementation costs (Skutsch and Ba, 2010; Larrazábal et al., 2012) and encourage longer-lasting benefits (Peskett et al., 2008). Hence, stakeholder recognition and participation within design processes could make CCD effective and efficient, as well as socially just. Accordingly, policy standards (e.g. REDD+, the Clean Development Mechanism) mandate that integrated development-mitigation-adaptation interventions consider stakeholder priorities and preferences (UNFCCC, 2016; UNFCCC, 2011; CCBA, 2013).

Professional stakeholders commit resources that enable CCD (e.g. finance from donor agencies, implementation expertise from NGOs and host governments) (Dyer et al., 2013). CCD initiatives operate across diverse governance levels but commonly aim to reduce the vulnerabilities of groups of 'local people' bound together by the proximities of their homesteads (CDKN, 2016). Local people often desire access to climate change and development decision-making processes (Cromberg et al., 2014; Atela et al., 2015a). Involving them in design can: help them expand their intellectual capabilities (Alkire, 2005); enable understanding of conditions that facilitate their engagement in implementation; and help ensure that project outcomes improve their lives (Gustavsson et al., 2014; Huq and Khan, 2006). However, achieving these benefits is unlikely when local people are involved tokenistically and/or populations are considered socially

homogenous or knowledge poor. In such cases, vulnerable populations can even be detrimentally affected (Cook and Kothari, 2001).

Studies that touch upon issues of procedure in CCD suggest that design processes have a mixed record in terms of reconciling stakeholder priorities and may be creating patterns of both procedural justice and injustice. Professional stakeholders have sometimes collaborated successfully to design climate and development interventions (Corbera et al., 2007; Dyer et al., 2013). However, other initiatives have been designed in isolation from local and national government representatives (Mathur et al., 2014). Questions have been raised about the accountability of projects that operate without host government involvement (Spiro, 2002) and their implications for state sovereignty (Whitfield, 2008). Without government oversight, CCD lesson-sharing may be limited, initiatives may be poorly harmonised and contributions towards national CCD trajectories may go unrecognised. NGO representation in CCD design can help to ensure that interventions for overcoming vulnerabilities are locally-appropriate. However, there have been instances when private-sector led CCD has excluded NGOs (Leventon et al., 2015).

Local people that CCD interventions target have diverse identities and needs, giving way to dissimilar priorities for CCD (e.g. according to age, gender, resource wealth) (Leventon et al., 2015). Evidence of CCD design that has successfully reconciled professional stakeholders' and local people's preferences is scarce, although exceptions exist. For example, Awono et al. (2014) show how village residents targeted by carbon forestry projects in Cameroon were encouraged to suggest livelihoods improvement strategies. As a consequence, activities such as housing, beekeeping and agroforestry were advocated for by local people and some of these activities were incorporated within project design. Likewise, local people were able to identify activities for implementation under a voluntary carbon market project in the Democratic Republic of Congo (Mathur et al., 2014).

The design of cross-level interventions pursuing CCD goals in low income countries is often 'top-down' and 'expert-led', with minimal local level involvement and decisions imposed on target populations (Kalame et al., 2011; Mustalahti et al., 2012; Sova et al., 2015; Atela et al., 2015a; Leach and Scoones, 2013). Yet, these initiatives are commonly cloaked in the rhetoric of 'participation' and 'inclusion' (Dodman and Mitlin, 2013). Local people may manipulate top-down project implementation processes in order to meet their own goals (Cook and Kothari, 2001). However, restricted participatory opportunities

with design processes can result in local people's misrecognition — the absence of recognition — because their priorities are ill-considered (Kalame et al., 2011; Hardee and Mutunga, 2010; Atela et al., 2015a).

Power conditions whether stakeholders can achieve procedural justice (Gaventa, 2006). Visible, hidden and invisible forms of power exist (Ibid.) but holistic analyses that consider how all three types of power shape CCD design are rare. Visible power refers to formal rules, structures and institutions that govern decision-making. Whether different stakeholders can engage with visible decision-making processes hinges on their capabilities to do so (VeneKlasen and Miller, 2002). Hidden power concerns 'who' can make decisions about 'what'. Invisible power is exerted when stakeholders influence the belief systems of others, which include considerations of who is worthy of recognition and participatory opportunities (Ibid.).

The climate change and development literature predominantly considers stakeholders' inability to achieve procedural justice through design processes to result from visible and hidden powerlessness (Sova et al., 2015). For instance, resource shortages and insufficient policies are often used to explain governments' non-involvement (Byigero et al., 2010). Likewise, limited local participation is frequently attributed to low education levels and the opportunity costs of forgoing livelihood activities (Gustavsson et al., 2014; Mathur et al., 2014). In contrast, professional stakeholders commit resources that enable CCD outcomes and, therefore, commonly have their priorities considered (Sova et al., 2015).

Well-articulated hidden forms of power can constrain stakeholders' procedural justice opportunities. For instance, host governments have been excluded from the design of carbon market-funded climate change and development interventions when standards do not oblige project developers to involve them (Mathur et al., 2014). In other integrated climate and development initiatives, key design decisions (e.g. identifying project aims and objectives, implementation timescales) have been taken prior to any community-engagement (Kalame et al., 2011; Awono et al., 2014). This is particularly likely when interventions are funded through climate finance because upward accountability to international frameworks outweighs downward accountability to local people (Awono et al., 2014; Boyd, 2009). Professional stakeholders have justified limited local involvement in design processes by stressing that it can encourage unrealistic expectations for projects (Cromberg et al., 2014).

Even when local people are involved, methodological limitations can obscure and conceal their priorities. 'Participatory' tools for assessing vulnerability often pre-determine vulnerability parameters and withhold opportunities to suggest solutions for overcoming vulnerability and/or evaluate intervention designs (Alkire, 2005). The cost of conducting participatory assessments can mean only limited 'samples' of local people are engaged (Kalame et al., 2011). Misrecognition can occur when assessments are focussed at, or aggregated to, the community level, and overlook diverse and/or dissenting preferences (Bours et al., 2014).

Explicit consideration of how invisible power conditions procedural justice opportunities within the design of climate change and development interventions is scarce (Sova et al., 2015). However, Käkönen et al. (2014) suggest that internationally-driven, 'expert' knowledge and western science are being privileged within CCD design. Meanwhile, the realities of host governments and local people are being misrecognised (Käkönen et al., 2014; Sova et al., 2015). For example, Mustalahti et al. (2012) show that a carbon forestry project in Tanzania failed to integrate local priorities (water access, food security, housing, improved infrastructure, income-generating activities) because they were not conducive to global mitigation goals. Sometimes, 'expert' knowledge has been imported from abroad and is unsuitable within local contexts. For example, Leventon et al. (2015) reflect on how Zimbabwean conservation agriculture techniques were incorporated within Zambian CCD project designs, but were incongruous with local conditions. Consequently, local people achieved reduced crop yields compared to those before the project.

Local people's recognition is also linked to CCD having their informed consent (Resodudarmo et al., 2012). Strictly speaking, informed consent requires that people choose activities to participate in based upon their full understanding of all available information pertaining to these activities (Alkire 2005). However, worldviews of local people are often grounded in indigenous values, which can be at odds with western science (Hulme, 2011). In situations where CCD design is framed using scientific realities, gaining informed consent for CCD on such stringent terms, especially mitigation activities (that require an understanding of the causes of climate change), may be difficult. The often low education levels of vulnerable local people may complicate this further (UNDP, 2015).

Overall, existing studies suggest that the design of interventions pursuing CCD goals have created patterns of both procedural justice and injustice. These interventions risk

being designed in a way that furthers the values and priorities of the already powerful (e.g. donor agencies, NGOs) but marginalises those with less power (e.g. local people). So far, studies have touched on participation and recognition through CCD-related design processes rather than systematically analysing procedural justice, meaning further research is required. The literature predominantly considers stakeholders' inability to achieve procedural justice as a product of visible and hidden powerlessness. Barriers to procedural justice that are created by invisible forms of power have been ill-considered. In the following section, a theoretical framework is presented that facilitates holistic exploration of power and procedural justice within CCD project design.

5.3 Theoretical framework

A framework was developed to guide evaluation of the procedural justice implications of CCD in the context of power and across governance levels and (temporal and spatial scales) (Figure 5.1). It enabled the recognition and participation components of the conceptual model presented in chapter three to be operationalised. Gaventa's (2006) 'power cube' approach was used as the starting point; it facilitates understanding of participatory 'spaces' through which stakeholders can meaningfully engage with governance systems and the visible, hidden and invisible forms of power that delimit these spaces. The power cube was adapted to consider 'procedural justice spaces' rather than 'participatory spaces', thereby enabling explicit consideration of both stakeholder recognition and participation in CCD.

Procedural justice spaces can be classified as: closed spaces, where stakeholders are not recognised as legitimate actors and decision-making takes place in their absence; invited spaces, where stakeholder priorities are in some way recognised by CCD interventions and they are offered participatory opportunities; or claimed spaces, which stakeholders' establish to pursue their interests and base upon their own recognition patterns. These spaces, the governance levels at which they occur and the forms of power that shape their existence make up the cube's axes (Gaventa, 2006).

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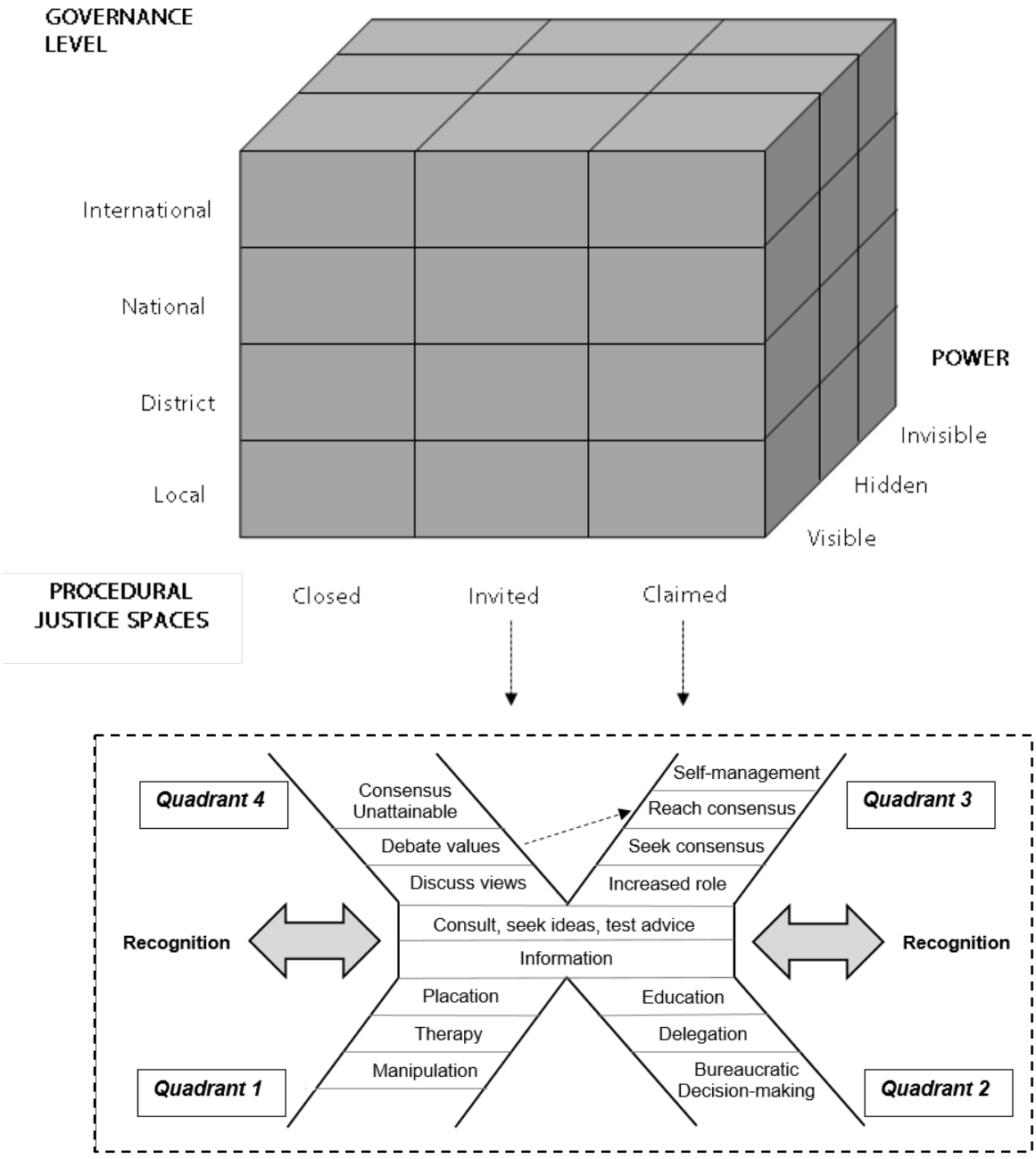

Figure 5.1: A framework to guide exploration of procedural justice spaces.
Adapted from: Gaventa (2006); Hurlbert and Gupta (2015).

Hurlbert and Gupta's (2015) 'split ladder of participation' guides analysis of stakeholders' participatory opportunities in invited and claimed spaces (see dashed arrows in Figure 5.1). The typology is an advance on hierarchical alternatives (e.g. Arnstein, 1969; Choguill, 1996; Pretty, 1995) that consider participation as symptomatic of binary power struggles between governing bodies and citizens. It considers participation as a social

learning process whereby multiple independent stakeholders collaborate for diverse reasons and are involved in unique ways. The specific problem being addressed determines the appropriate form of stakeholder participation (Hurlbert and Gupta, 2015).

Figure 5.1 presents four quadrants of the split ladder. Information summarised in Table 5.1 describes each quadrant. Locating participatory opportunities within different quadrants allows appraisal of whether they are pertinent to policy problems being addressed. Reciprocal linkages between recognition and participation, which feedback on one another, are considered by the framework (see two-way arrows in the dashed box). However, the literature has not yet developed typologies for analysing stakeholder recognition.

Development, mitigation and adaptation decision-making occurs across different governance levels (Klein et al., 2005). The framework facilitates multi-level analyses, enabling investigation of whether and how the procedural justice spaces open to stakeholders differ across these dimensions (Gaventa, 2006). For this research, the power cube has been adapted to reflect the levels at which ECRP decision-making processes have occurred: international; national; district; and local (below the district level).

Table 5.1: Quadrants for examining the depth of stakeholder participation.
Source: Hurlbert and Gupta (2015).

	Description
Quadrant 1	• Stakeholders disagree over values and/or specific approaches for achieving goals. • Information flows one-way, from projects to stakeholders. • Participation often illusory or aimed at adjusting stakeholder values and/or extracting information. • Stakeholders not involved in final decision-making. • Negligible learning between decision-makers and stakeholders.
Quadrant 2	• Policy problems are structured: there is substantive agreement on principles and aims between stakeholders. • Technocratic decision-making representing stakeholder interests is possible. • Decision-makers may interact with stakeholders to educate them about decisions taken: information flows are unidirectional. • Social learning is incremental (‘single-loop learning’).
Quadrant 3	• Policy problems are moderately structured: stakeholders share trust but facts are uncertain or there is disagreement over values/ approaches for achieving goals. • Stakeholders are highly engaged in decision-making processes, with opportunities to shape ideas and outcomes.

	• Iterative information flows allows assumptions to be reflected on and questioned ('double-loop learning').
Quadrant 4	• Policy problems are unstructured: there is great uncertainty in knowledge and disparate value positions are disparate. • Solutions appear intractable and require significant deliberation between stakeholders. • Extensive participatory opportunities are required to develop trust and understanding. • Deeply-held value positions and norms are scrutinised, leading to rich understanding of decision-making contexts ('triple-loop learning').

5.4. Data collection and analysis

Household surveys and semi-structured interviews were used to ask local people and professional stakeholders about their priorities (development, mitigation, adaptation, other) for project design and whether they were afforded participatory opportunities. Some professional stakeholder interviewees guided the researcher towards documents that supported, or provided more detail on, their responses. These documents were subsequently analysed. They comprised: six programme and/or project design documents (ECRProject, 2012; DFID, No Date; DISCOVER, 2012; CA, No Date; CU, No Date; ECRProject, 2011); three donor government policy documents (DfID, 2011b; ICF, No Date; DfID, 2011a); four policy documents produced by the Malawian national government (GoM, 2006; GoM, 2012; MVAC, 2005; GoM, 2011); four policy documents produced by Malawian district governments (DDG, 2013; NDG, 2014; NDG, 2015; KDG, 2013) and two consultancy reports (LTSI, 2014; Phiri, 2010).

Content analysis (see Babbie, 2008) and critical discourse analysis techniques were used for data analysis (see Fairclough, 1992). Univariate analysis techniques were used to analyse statistics derived through amalgamating survey data (Babbie, 2008). Two-tailed t-tests were used to determine whether variances between mean ratings given to ECRP development goals by different household types were statistically significant. The framework developed in section 5.3 was used to guide data analysis and evaluate: 1) whether and how different stakeholders were afforded recognition and participatory opportunities within the ECRP '*Design Space*'; and 2) whether and how power conditioned procedural justice opportunities.

The *Design Space* comprised those opportunities and channels through which project design was determined. It represented an unstructured problem because: knowledge of future climate impacts was (and remains) uncertain (DfID, No Date); and stakeholders

held diverse CCD priorities. Therefore, the achievement of procedural justice required that decision-making was based on significant deliberation between stakeholders (Quadrant 4, Table 5.1).

Stakeholder participatory opportunities were classified using 'the split ladder' (Hurlbert and Gupta, 2015). An inductive approach was used to identify instances within the data where stakeholders' identities, cultures and values were (mis)recognised. Constant comparison techniques were used to identify linkages between individual instances, allowing patterns of (mis)recognition to emerge (Glaser and Strauss, 1967). Whether and how stakeholder recognition and participation differed across governance levels was considered. Combined use of content analysis and critical discourse analysis techniques enabled identification of how visible (content analysis), hidden (content and critical discourse analysis) and invisible power (critical discourse analysis) conditioned procedural justice opportunities.

5.5 Results

In this section, opportunities for professional stakeholders and local people to participate and have their priorities recognised are set out in turn.

5.5.1 Professional stakeholders

The *Design Space* was an invited space (Gaventa, 2006), led and controlled by donor agencies — predominantly DfID, the largest ECRP funding provider. Donors selectively recognised and requested other stakeholders' participation. The primary aim of ECRP was donor-determined: to *"increase the resilience of vulnerable communities to climate variability and change"* (ECRP, No Date, p.1). It was conceived to help meet two DfID goals (see DfID, 2011a) within the Malawian context: combatting climate change (ECRP, No Date) and reducing economic poverty (donor agency employee).

In April 2011, donors invited NGOs to propose project designs for implementing the ECRP. Through communications with prospective consortia, donors set out a prescriptive overarching framework for project design. Four key principles informed the framework (Table 5.2). Principles balance upward and downward accountability. They aimed to ensure that projects are tailored to local conditions and local people can participate in activities and receive significant, long-lasting benefits. However, projects

must also provide value-for-money (DfID, 2011b) and meet developed country policy goals: upward accountability to donor governments and their tax-paying citizens.

The framework dictated that ECRP projects pursued CCD objectives by integrating development with climate change mitigation and adaptation goals. Donors commissioned a consultant to review disaster risk-reduction and adaptation programmes and projects in Malawi: *"information which would assist in the development of the design"* (Phiri, 2010, p.7). This occurred through discussions with NGO personnel responsible for interventions but local people's views were not considered. Results stressed that project adaptation and development goals should be pursued through multiple mutually reinforcing *"soft"*, community- and ecosystem-based project activities rather than *"hard"* engineering-based activities (Ibid.).

Activities with mitigation co-benefits (e.g. solar energy, improved cookstoves and afforestation) were prioritised: *"a win-win approach"* (donor agency employee). According to two NGO employees, low-carbon approaches are "*high on their [DfID's] agenda"* because they *"fit into the bigger UK policy agenda [of mitigation]"*. Implementing low-carbon technologies through the ECRP helps the UK to deliver its international climate commitments: collectively, developed nations have committed to raising $100 billion annually to finance low-carbon development in developing countries by 2020. Funding for low-carbon technologies under the ECRP (and leveraged carbon market finance under DISCOVER – see below) can be counted towards this target (ICF, No Date; donor agency employee). Another UK government objective was to build the evidence base to encourage developing countries to move towards low-carbon pathways and help *"lay the foundations for a global climate deal"* (ICF, No Date). Data concerning the numbers of *"poor men and women"* provided with energy access under the ECRP is being collated to help show that moving towards low-carbon pathways can enhance global development (ICF, No Date).

ECRProject and DISCOVER — the two NGO consortia chosen to implement ECRP — responded to the donors' call for proposals. Consortia member organisations collaborated to design projects, engaging in dialogue and learning visits with one another. Three NGO employees commented that *"we were having workshops with the whole team for almost three weeks"*, *"we debated a lot"* and that *"it was an inclusive process"*. Consortia members' design priorities were borne out of organisational pragmatism. Four NGO interviewees agreed with an NGO employee who considered

Table 5.2: Overarching project design framework principles, as prescribed by donors

Principle	Rationale
"*Soft",* ecosystem-based development and adaptation approaches should be prioritised over *"hard"* engineering-based activities	• *"Cost-effective and more robust than hard measures";* • *"Result in significant benefits";* • *"Socially and institutionally more sustainable"* (DfID, No Date); • Enable local participation: *"if we just bring hardware to them, they would not know what to do"* (donor agency employee).
Project activities should involve high levels of local participation	• Helps *"tailor adaptive measures to local circumstances";* • Encourages *"cultures of preparedness";* • Builds social capital (DfID, No Date).
Packages of mutually reinforcing activities should be implemented in villages	• Enables flexibility and the tailoring of projects to *"specific needs and capacities"* of different villages and households (DfID, No Date).
Activities should have climate mitigation co-benefits	• Fit with UK policy goals: 1. Financing low-carbon development across the developing world; 2. Encouraging consensus around an international climate deal (ICF, No Date).

that organisations prioritised implementation of *"activities in which we had expertise…in areas where we already had presence"*. A donor employee validated these testimonies by suggesting that implementing NGOs had proposed activities for the ECRP that they were already familiar implementing: *"if you [NGOs] are very good at livestock, you put that forward. If you are very good at irrigation, you put that forward. If you are very good at conservation agriculture, you put that forward"*.

This prescriptive project design framework allowed donors to exert hidden power that curtailed NGO opportunities to participate in substantive decision-making. NGO employees were nevertheless afforded significant autonomy to shape project implementation approaches. This led ECRProject and DISCOVER to pursue quite different approaches. For example, carbon emissions reductions enabled by household improved cookstove adoption have been used to leverage carbon market finance under DISCOVER but not ECRProject (CU, No Date). Some ECRProject NGO organisations have used VSLAs and disaster-risk reduction training sessions as entry points for introducing other project activities within target villages, unlike DISCOVER NGOs.

However, consortia opportunities to determine projects' strategic aims and objectives were restricted. According to one NGO interviewee: *"'there was an awful lot of negotiation with DfID, a lot of back and forth. [In the end], everything was heavily influenced by DfID thinking".* Two more NGO employees reported that: *"over 90% of what was in the call for proposals ended up in the project";* and "*the call for proposals*

from DfID already highlighted the major areas of focus". Donors were able to exert hidden power because "*NGOs are completely dependent on donor funding opportunities…to continue our operations"* (NGO employee). That donor funding opportunities involve a high level of prescription is an established norm (two NGO employees). According to one NGO interviewee: *"we validated [the project design framework proposed by donors]. This is a common approach. When donors invite NGOs to submit proposals, they have already done their assessments"* (NGO employee). However, limits to NGO participation within design processes may reduce the chances that projects are locally appropriate.

Over time, dependency on funding has led to donor project design preferences being institutionalised within NGO practices: visible power has produced, and been reinforced by, invisible power. Five NGO interviewees considered that, in recent years, community-based approaches — first introduced by donors well over a decade ago — have become the accepted blueprint for climate and development projects: *"it's the new way of thinking"* (NGO employee). Likewise, NGOs *"can't miss emissions reductions out in projects that deal with climate change now"* (NGO employee). Hence, development and adaptation activities favoured by donors and included within project design are also those that NGOs have expertise in and wish to continue implementing (six NGO employees). Because donor and NGO value positions coalesce, opportunities for social learning are reduced. Invisible donor power over NGO value positions may have crowded out space for these value positions to incorporate local priorities.

NGOs were afforded Quadrant 3 participation (Figure 5.1, Table 5.1). Information flows with donors were iterative but consortia members were recognised as technical, rather than strategic, decision-makers. Consortia members were responsible for proposing specific implementation strategies within the context of the overarching framework set out by donors.

National and subnational government policy documents were consulted during project design. According to the ECRP business case, the programme *"is consistent with the Government's National Adaptation Programme of Action and the Government's DRR strategy"* (DfID, No Date, p.2). Documentary analysis highlights that project development and adaptation goals and specific activities implemented by ECRP projects (Table 4.2) largely reflect national and subnational government priorities for development and adaptation (GoM, 2006; GoM, 2011; NDG, 2014; KDG, 2013; DDG, 2013). Traditional leaders, who are integrated within district government systems in Malawi, have contributed to defining these preferences. However, improved access to electricity and

new cooking technologies were not priority goals for the district government in Dedza (DDG, 2013). Information produced by national government bodies (e.g. MVAC, 2005) was used to locate projects within Malawi's most climate vulnerable districts (two NGO employees; ECRP, No Date). Climate mitigation, which will reportedly create "*positive local and global socio-economic as well as environmental benefits",* was also considered a governmental priority at national (GoM, 2012, p.10) and subnational levels (two district government employees).

National government actors perceived that they were side-lined from decision-making (hidden powerlessness). One government employee stated: *"we were not involved in deciding the project goals; we were just informed"*, adding that *"[the ECRP] has disrespected the government".* This contradicts consortia suggestions that they held face-to-face project design discussions with government representatives (CU, No Date; CA, No Date). For example, the DISCOVER project design document states that:

> *At a national level the DISCOVER consortium has held discussions with the National Climate Change Programme under the Ministry of Development Planning and Cooperation and the Department of Disaster Management Affairs in order to agree on a set of activities, target areas and project approach that is in line with the Government of Malawi's objectives.*

However, the same government employee considered that limited government involvement could also be explained by an absence of policy frameworks mandating government input into climate and development projects (visible powerlessness): *"government…[is] also to blame. We did not have policy in place… they [donors and NGOs] think that government is not there".* A donor employee set out reasons why national government was overlooked, citing low capacity (visible powerlessness) and concerns about misplaced government priorities:

> *We did not want [national government] to have a hand in the ECRP. We did not want them to make decisions on behalf of the people on the ground. The chain is so long for the government, it would take so long…Their eyes would be on the money...They just want you to buy them things like four-by-four vehicles.*

5.5.2 Local people

Projects pay considerable rhetorical attention to local people's participation and recognition. Local 'participation', 'empowerment' and 'ownership' are mentioned 23, 22 and 24 times, respectively, within ECRProject (CA, No Date) and DISCOVER (CU, No Date) design documentation. However, local people were only afforded Quadrant 1 participation in project design.

Consortia invited households to take part through participatory vulnerability and capacity assessments (PVCAs) (November 2011). Assessments were conceived to capture household perspectives, identifying: key risks and hazards experienced by households; livelihood activities practised by households; important local institutions and approaches for sharing climate information; household asset ownership; and existing household approaches for dealing with difficult weather conditions. Documentary review suggests that PVCA design adopted a flexible approach that allowed households to define vulnerability in a locally-appropriate way. Households were also given scope to suggest solutions to climate and development problems (ECRProject, 2011). However, they were unable to take any decisions relating to project design, which is an example of hidden powerlessness. They were recognised only as information providers; PVCA processes encouraged a one-way flow of information from local people to NGOs and donors (ECRProject, 2012; DISCOVER, 2012).

PVCA information validity is limited by small sample sizes. ECRProject PVCAs took place in 55 villages under 40 group village areas across Malawi (ECRProject, 2012). By 2014, the ECRProject was operational in 948 villages under 122 group village areas (LTSI, 2014). DISCOVER PVCAs took place in 35 target group village areas (DISCOVER, 2012). By 2014, DISCOVER was operational in 1149 villages in 110 group village areas (LTSI, 2014). Assessments within sample villages involved group exercises in which 20-50 people took part (DISCOVER, 2012; NGO employee). Yet villages can comprise over 1000 people. Sample sizes are not sufficient for findings to be generalised within and between villages. This is acknowledged within the ECRProject design document: "*the sample of villages per traditional authority was…not large enough to allow for generalisation of the findings"* (CA, No Date). Two NGO employees blamed sampling limitations on limited capacity: *"to do PVCAs in all the villages could take a lot of…time and resources"* (NGO employee). The visible powerlessness of NGOs restricted opportunities for local priorities to be considered within project design.

Information generated through PVCAs was used only to validate consortium design decisions already taken: two NGO employees commented that *"the PVCA validated the programme design…the project proposal was written from desk work";* and *"we didn't submit a concept note, conduct the PVCAs and then, from there, work out what direction we should go in…that didn't happen"*.

Consortium members disagreed on the extent to which project designs incorporated PVCA findings. One NGO employee considered that "*PVCAs confirmed what everyone was talking about…you cannot say that the results and the project proposal do not speak to each other".* However, according to a different NGO employee who worked as part of the ECRProject Western NGO staff preferences were prioritised over household priorities:

> *After we had agreed on objectives we went out to do PVCAs. But the output of the PVCAs, I didn't see them much fitting in to the finalisation of the project concept. We had a lot of expats on the table from the consortium members. Each expat wanted his ideas included in the project to the extent that, according to me, the views of the communities might have been left out.*

A NGO employee working as part of the DISCOVER project supported this testimony, reporting that *"the project proposal was written from desk work".*

Professional stakeholders and documentary material provided no evidence that PVCA information changed any decisions made during desk-based design. Given the limited use of PVCA information and reported secondary recognition of local priorities, it is unsurprising that additional resources were not provided to help address sampling limitations. Local people's misrecognition may have translated into invisible power that reinforced their aforementioned hidden powerlessness.

Despite PVCA sampling limitations and their restricted consideration within decision-making, household survey results show that many strategic design decisions aligned with local priorities. Most ECRP development and adaptation goals were highly valued by study village households, as indicated by Tables 5.3 and 5.4. Using surveys, households were asked to rate the importance of ECRP development goals using a scale of 0-3: 0 meant goals were perceived as unimportant for improving household members' lives; 3 meant goals were perceived as extremely important (Table 5.3). Similarly,

households were asked to rate how problematic they perceived particular climate shocks (Table 5.4).

Table 5.3: Importance ratings of ECRP development goals by households. Source: 256 household surveys.

Household Type	Improved food and nutrition security	Increased household income	Improved abilities to do business	Access to electricity	New cooking technolo-gies	Access to natural resources	Increased ownership of valuable items
All	2.98	2.92	2.73	2.4	2.67	2.76	2.71
Average wealth households	2.98	2.95	2.78	2.46	2.68	2.7	2.83
Lower-than-average wealth households	2.98	2.91	2.59	2.03	2.48	2.78	2.43
Higher-than-average wealth households	2.96	2.87	2.76	2.62	2.84	2.91	2.8
Elderly-headed households	2.97	2.9	2.38	2.03	2.54	2.65	2.64
Female-headed households	3	2.95	2.54	2.08	2.64	2.74	2.79

Table 5.4: Household perceptions of climate shocks targeted under the ECRP. Source: 256 household surveys.

Type of climate shock	% surveyed households who				Problem rating
	Have experienced shock(s)	Believe them to be worsening over time	Believe them to be becoming more frequent over time	Believe them to be becoming more unpredictable over time	
Dry spells/ drought	95%	50%	56%	47%	2.72
Heavy rainfall/ flooding	85%	49%	52%	45%	2.45
Strong winds	91%	40%	39%	44%	2.04

Interviews conducted with household heads validated these findings. One household head in KV1 stated: *"our lives will be improved [by ECRP development goals] and as such we feel honoured and respected"*. One household head in NV2 said: *"I am happy that the project is bringing new ways to deal with weather problems because floods were predicted and we needed help. Without the project the [2015] flooding would have been more severe".* Another NV2 household head commented: *"people had no idea how to deal with the issues [climate shocks] in the past but now we are being educated – we are happy about that".*

However, by prioritising climate change mitigation alongside development and adaptation in order to pursue CCD triple-wins through ECRP design, donors have prevented collaborations with local people that are based upon strict definitions of informed consent. Donor rationales for including low-carbon technologies within projects are not understood by households; knowledge of what greenhouse gases are or how they affect the climate is minimal.

37% of household survey respondents were unsure why weather patterns change over long periods of time, while 5% believed that changing weather patterns shows that *"the world is coming to an end, as predicted in the Bible"* (HAW household, DV2). 52% of household survey respondents believed trees were the most important regulators of climate, supporting the sentiment of one AW household in DV1: "*trees help to bring in rainfall. When people in the village cut down trees unnecessarily it increases the possibility of us now having enough rains*". Commonly, this reflected a belief that God rewards villages who look after natural resources with good weather. Only two household respondents reported that greenhouse gas emissions cause climate change. Therefore, many households chose to participate in low-carbon activities based on perceived benefits associated with a worldview informed by local religious beliefs rather than scientific knowledge of climate change.

Development goals (electricity access, new cooking technologies) pursued through household solar lighting and improved cookstove adoption, which produce mitigation co-benefits, were least highly prized by households (Table 5.3). LAW, EH and FH households gave these goals the lowest importance ratings. They routinely rated these goals as "not very important" or "not important at all". Two-tailed t-tests showed that differences between mean electricity access ratings provided by all households and both LAW ($t=2.50$, $p=0.01$) and EH households ($t=2.82$, $p=0.005$) were statistically significant. Electricity access and new cooking technologies' importance ratings were lower-than-

average in Nsanje: a district considered amongst the most vulnerable in Malawi (NDG, 2015). One LAW household head in DV1 described electricity access as a *"luxury".* A LAW female household head from NV1 said that *"electricity, through solar or another way, is not important for us at all. What matters to our household is good shelter and food".* Low prioritisation of improved cookstoves may result from limited household awareness of potential benefits. For example, one household interviewee in NV2 suggested that her neighbours *"are not fully aware of the benefits that improved cooking technologies would bring*".

Improved water access is a development goal that can also contribute to adaptation because flooding and drought conditions water security in Malawi (GoM, 2006). It emerged as a local priority but was not incorporated within project design. In DV1 and KV2, 24% and 38% of survey respondents respectively considered poor water access and availability a significant problem. The village head of DV1 explained how households had relocated to a new village site 20 years ago. The current village location has no infrastructure for accessing water but the previous village location had become uninhabitable due to perpetual flooding. Five interviewees in KV2 reported that households rely on shallow wells dug close to a nearby stream. However, wells take a long time to refill once emptied, especially in the afternoons and the dry season. Large queues form to access them at peak times. Other households commute to a trading centre where the nearest borehole is located. Two interviewees reported that they make a three to four hour round trip at least twice a day; reducing time available to engage in productive livelihood activities.

DISCOVER PVCA findings also reveal water access and availability as an important local priority: *"water, sanitation and hygiene were identified as priorities in a number of the communities where we conducted PVCA"* (CU, No Date, p.11). However, the consortia decided not to alter project design to incorporate water security activities. This was because *"we do not want to overstretch the set of activities"* (Ibid.). An alternative reason for non-inclusion was provided by a donor agency employee. He said that *"DfID was also implementing a water and sanitation programme in some [non-ECRP] districts*" but considered that DfID preferred not to duplicate activities through different programmes and projects. An NGO employee, meanwhile, reported that *"the reason why [water access] was not part of the…project was because DfID said that it was too expensive as an individual intervention".* Choices pertaining to the scalar properties of DfID's activities in Malawi, therefore, obstruct procedural justice. This is further evidence

that local priorities were secondary to professional stakeholder preferences within the *Design Space*.

5.6 Discussion

Findings presented in this chapter show that interlinked and mutually reinforcing forms of visible, hidden and invisible power condition stakeholders' procedural justice opportunities during CCD design, which further reinforces the value of holistic power analyses. In the following, results presented in the previous section are situated within the climate change and development literature. Stakeholder priorities for CCD are discussed before recommendations are presented to facilitate pathways to procedural justice through design processes.

5.6.1 Stakeholder priorities for CCD design

Overlap existed between different stakeholder priorities for ECRP project design. Donors, NGOs and government representatives prioritised CCD triple-wins, to be delivered through packages of mutually-reinforcing community-based project activities. Local people's priorities for project design translated into the pursuit of double-wins across development and adaptation. Overall, they perceived most ECRP development and adaptation goals as important for improving their lives. Common ground could help facilitate multi-stakeholder partnerships and constitute a previously unidentified driver for advancing CCD (see Ellis et al., 2013 for other drivers).

Local people's and professional stakeholders' contrasting worldviews could impede collaborations around mitigation actions that are based upon strict definitions of informed consent. Local people prioritise ECRP low-carbon activities for different reasons than DfID and other implementing partners. Studies from across Africa, South America and Asia show that values placed on low-carbon activities by local people and project implementing partners are often dissimilar (e.g. Dyer et al., 2014; Subak, 2000; Jindal et al., 2008; Boyd et al., 2007). In such cases, incorporating mitigation activities within CCD presents an ethical dilemma that is overlooked in climate justice debates. If incorporated, populations will unwittingly take action to help solve a problem for which they have negligible responsibility but is exacerbating their vulnerabilities (Adger et al., 2006). However, mitigation activities may be associated with locally-valued benefits. Mitigation finance can also help augment traditional aid funding and provide extra resources for reducing vulnerabilities (Ellis et al., 2013).

Donor and NGO employees suggested that mitigation is achieved as a co-benefit of ECRP development and adaptation activities. However, activities with mitigation benefits (solar lighting, improved cookstoves) were the least prioritised by local people, especially the most vulnerable households living in particularly climate sensitive locations. In areas where water access was poor, activities focussed on improving the situation would have been more highly prized. Donor prioritisation of mitigation benefits may have crowded out opportunities for pressing local priorities to be pursued through ECRP projects. Mustalahti et al. (2012) raise the same concerns about REDD+ projects in Tanzania. Climate change is expected to have profound, negative consequences for water security across sub-Saharan Africa, meaning that improved water access is likely to be even more highly prized in the future (Field et al., 2014). There is a risk that if CCD (and low-carbon development) design frameworks pre-determine the pursuit of mitigation outcomes, resultant interventions may be prone to procedural injustices that are not created by development and adaptation initiatives.

Further points of contention between stakeholders may be obscured by power. Apparent overlap between different stakeholders' priorities is surprising because climate change and development projects operate in a context of uncertainty and value plurality (Stocker et al., 2014; Devarajan, 2013). However, NGO dependence on external funding creates invisible power that allows donor expectations to shape their activities, both in the ECRP and elsewhere (Schmitz et al., 2011; Chahim and Prakash, 2014). Government dependence on external budget support also enables donor priorities to permeate national policy positions (Swedlund, 2013; Hayman, 2009). There are also suggestions that local people often suppress their 'true' preferences and confirm project developers' convictions in order to maintain relations and increase their chances of receiving benefits (Leach and Fairhead, 1994; Chambers, 1995). New sources of climate finance (e.g. market mechanisms, private sector investment) that go beyond donor government budgetary support are being channelled into CCD-related initiatives (Ellis et al., 2013). This raises the possibility that the pursuit of CCD may create opportunities for stakeholders that are not present in traditional development contexts to exert invisible power over development organisations, governments and local people in developing countries.

Invisible power presents a challenge for advancing CCD. Because CCD design is an unstructured policy problem, design decisions should be predicated on deliberative participatory processes in which diverse stakeholder priorities are considered and critiqued (Hurlbert and Gupta, 2015). This would encourage decision-making that is

contextually-appropriate and has widespread stakeholder buy-in (Collins and Ison, 2009). The suppression of government, NGO and local priorities undermines this process, reducing the chances that CCD will be well-suited to local conditions and constituencies (Leventon et al., 2015), encourage local involvement during implementation and generate life-changing outcomes (Hendrickson and Corbera, 2015; Larrazábal et al., 2012).

5.6.2 Stakeholder recognition and participatory opportunities

ECRP project design was 'top-down' and donor-led, with only selective involvement of other stakeholders, which further compromises the collaboration and deliberation required to solve unstructured policy problems (Hurlbert and Gupta, 2015). Studies of other climate change and development interventions report similar design procedures (Sova et al., 2015; Atela et al., 2015a; Leach and Scoones, 2013).

Visible and hidden forms of power created barriers to procedural justice in CCD design. NGO budgetary and resource constraints — a form of visible powerlessness — created a hidden power dynamic that prevented most target households from taking part in PVCAs. Opportunities for widespread PVCA participation may have also been constrained by the ECRP's national-scale approach and very large number of target households relative to other CCD-related projects in the Malawi context. Limited visible power resulting from an absence of guiding policy frameworks also restricted government involvement in ECRP design (see also Stringer et al., 2012b). NGO dependence on external funding (visible powerlessness) enabled donors to exert hidden power over NGOs, limiting their strategic contributions to the design process. Invisible power has not been accounted for within the study of climate change and development projects. Yet research presented here shows that it influenced the extent to which stakeholders considered each other worthy of recognition and participatory opportunities. Donor control of resources upon which NGOs, governments and local people are dependent in Malawi enabled them to determine recognition patterns that were assimilated into ECRP design processes and conditioned stakeholder participatory opportunities.

It is increasingly suggested that integrated climate change and development design problems are routinely being framed and solved using belief systems that privilege 'expert' knowledge and draw on western science (Käkönen et al., 2014; Sova et al., 2015). Stakeholders, such as donors, whose visible and hidden power enables them to

control design processes, consider expert knowledge necessary for navigating uncertain and complex operating contexts. However, subsequent design processes misrecognise stakeholder (including local people's) priorities that do not align with western, scientific worldviews (Sova et al., 2015).

5.6.3 Lessons for current and future CCD project design

Based on research findings and the literature, five recommendations are now presented to encourage procedural justice and avoid injustice through CCD project design.

I. Avoid epistemological certainties

Solutions to well-defined policy problems can be designed using linear approaches that draw upon particular epistemological positions, but such approaches are unsuitable for designing integrated climate change and development problems (Hulme, 2011). The institutionalisation of expert knowledge as the appropriate means to 'solve' CCD design is not consistent with uncertainty and complexity in the CCD operating context. It creates an invisible power dynamic that serves to reinforce visible and hidden forms of power that create procedural injustices. In order to overcome invisible power and create pathways towards procedural justice, policymakers must avoid making design decisions on the basis of epistemological certainties and accept that CCD has no definitive reality. Uncertainty and value plurality in the CCD operating context means that, depending on how they are designed, CCD initiatives might create further problems that also require solutions (Ibid.). Adopting circumstantial, discursive design procedures that draw on diverse stakeholder perspectives could reduce the likelihood of this.

II. Put local priorities first

The crowding out of local priorities by professional stakeholder design preferences compromises procedural justice but may also demotivate people from taking part in project implementation. This reduces the chances that CCD will meaningfully improve people's lives or offer value-for-money. Climate change is often only one amongst many vulnerability drivers for developing world populations and may not be the most destructive in the short-term. Designing activities that address local development priorities is crucial for encouraging local people to undertake mitigation and adaptation activities that generate longer-term benefits (Reid et al., 2009). Therefore, advancing CCD requires that local priorities become central to project design. In this context,

targeted, robust and reflexive participatory needs assessments remain an important tool for integrating a range of local priorities within CCD design.

III. Make participatory assessments robust and reflexive

Methodological limitations mean project developers' reluctance to make participatory assessment results central to CCD project design is unsurprising. Small sample sizes mean findings from ECRP and other climate change and development project assessments are not generalisable and may have overlooked diverse priorities (Kalame et al., 2011; Awono et al., 2014). Greater provision of resources is required to facilitate robust participatory assessments that avoid tokenism, especially in the context of large-scale projects such as those comprising the ECRP.

CCD should follow the lead of ECRP projects, which used flexible categories to help local people classify their priorities and vulnerability. This is preferable to the use of closed categories or open-ended questions for revealing 'true' priorities (Alkire, 2005). One-on-one interviews that purposively target vulnerable individuals and households can help ensure that assessments capture diverse local priorities. Harnessing indigenous knowledge can facilitate innovation when local people are able to suggest solutions for overcoming local vulnerabilities (Nyong et al., 2007). Incorporating non-linguistic processes is important when tacit understandings are an important source of local knowledge (Mohan, 2006). Opportunities should be provided to allow local people to feedback on prospective project designs (Alkire, 2005).

IV. Take steps to reconcile worldviews

To avoid misrecognition through the incorporation of mitigation in CCD design, efforts should be made to reconcile the worldviews of local people and other stakeholders. Reid et al. (2009) outline a range of methods (e.g. community mapping and modelling, climate 'schools', theatre-for-development) that can expand local people's climate knowledge whilst broadening project employees' understanding of indigenous worldviews and vulnerabilities. Research suggests that people are more likely to invest the necessary effort to encourage successful mitigation and adaptation actions when they are aware that climate change is human-induced (Mutabazi et al., 2015). There is no single optimum co-learning method. What is important is that reconciliation processes enable stakeholders to identify, classify and understand worldviews held by themselves and

others. This will rely on project staff acknowledging the subjectivity inherent in CCD design decisions.

Local people may in some cases be unable to give their full, informed consent for mitigation activities if this requires that they understand and assimilate a scientific worldview. Explaining the value positions behind, and complexities inherent in, carbon trading may present particular problems when market funding mechanisms are utilised (Granda, 2005). In such cases, CCD project developers must make decisions that result in trade-offs between procedural and distributive justice. Pre-determining the pursuit of mitigation through CCD design frameworks would risk creating procedural injustices that are additional to those that would be created by development and adaptation interventions. However, psychological theories suggest that people in extreme resource-poverty prioritise the achievement of material benefits over procedural freedoms (Maslow et al., 1970; Inglehart, 1971). Hence, proceeding with activities that create mitigation benefits may be sensible providing they are adequately designed to also facilitate substantial and locally-valued development and adaptation gains.

V. Harness knowledge co-production between professional stakeholders

Knowledge co-production between professional stakeholders can strengthen CCD design (Dyer et al., 2013). Donors offer financial resources contingent on democratic mandates from developed country populations. Their global reach makes them well-placed to help integrate CCD projects in particular places with innovative learning from elsewhere. However, opportunities for NGO and national and subnational government representatives to offer unfettered strategic insights are required to ensure projects offer locally-appropriate solutions to overcome vulnerabilities alongside optimal resource allocations within the domestic context (Leventon et al., 2015).

Donors must accept that empowering stakeholders through co-production may result in their own disempowerment (Chambers, 1995). Barriers to this may be created when invisible belief systems mean donors hold unfavourable cognitive framings of other stakeholders (VeneKlasen and Miller, 2002). Positive perceptions of government representatives require that they avoid malpractice. A recent spate of arrests followed allegations that public officials in Malawi have been systematically misusing public funds (Anders, 2015). Such incidents make donors wary of trusting governments with project resources and taking steps to enhance their capacity to do so. Sound understanding of

complexities related to the unique governance systems found in different developing countries (in Malawi, for example, state bureaucracies and traditional structures overlap – see section 4.2) will also be crucial for empowering government representatives.

5.7 Conclusion

Findings presented in this chapter have revealed that donor agencies have driven ECRP and the design processes of other interventions that pursue CCD goals, with other stakeholders only selectively recognised. Opportunities for local people to participate and achieve recognition have been particularly constrained. This has resulted in procedural injustices but may also restrict project abilities to achieve effectiveness, efficiency and distributive justice benefits. Overlap between stakeholders' 'revealed' priorities could help advance CCD. However, divergent worldviews and suppression of 'true' preferences could lead to misrecognition and prevent projects from improving local people's lives. Visible, hidden and invisible forms of power create barriers to stakeholder participation and recognition in CCD design.

Policymakers and practitioners can overcome these barriers and facilitate patterns of procedural justice if they: put local priorities first; make participatory assessments robust and reflexive; take steps to reconcile worldviews; and harness co-production between professional stakeholders. However, the institutionalisation of expert knowledge as the appropriate means to 'solve' CCD design is at odds with these recommendations as well as the value plurality and complexity in the CCD context. In order to create pathways towards procedural justice, policymakers must avoid making design decisions on the basis of epistemological certainties, accept that CCD has no definitive reality and embrace discursive solutions. The development and improvement of tools to assist CCD decision-making in the context of uncertainty will be crucial. Research findings and lessons presented here are crucial to facilitate CCD project design that challenges, rather than exacerbates, socio-cultural and political drivers of underdevelopment.

The next chapter of this thesis explores procedural justice through the implementation of the ECRP. It shows how decisions that have consequences for participation and recognition during CCD design (e.g. choices of goals to be pursued and activities with which to pursue these goals) can also have procedural justice implications when they shape and condition implementation processes. Together, this and the following chapter contribute to a comprehensive procedural justice analysis of the ECRP.

6 Implementing climate compatible development in the context of power: lessons for encouraging procedural justice through community-based projects

Summary

CCD is being operationalised across the developing world through projects that integrate community-based development, adaptation and mitigation — community-based CCD (CB-CCD). By drawing on local knowledge and experiences, community-based approaches profess to enhance projects' effectiveness, efficiency and sustainability. The literature suggests that CB-CCD projects that facilitate procedural justice for local people will be well placed to live up to this promise. However, little attention has been paid to procedural justice and power within CB-CCD implementation. The research gap is addressed in this chapter through evaluation of ECRP projects. Household surveys, semi-structured interviews and documentary material were analysed using content analysis and critical discourse analysis techniques. The framework that was developed in chapter five to appraise procedural justice and power through CCD was used to guide the analysis. Findings showcase that CB-CCD projects risk creating patterns of procedural injustice when there is a poor fit between implementation processes and contextual power relationships. While many households were well-engaged in project activities, management and decision-making, the participation of others — including many of the most vulnerable households — was inappropriate given the policy problems being addressed through project implementation. CB-CCD projects must understand, manage and directly challenge cross-scalar visible, hidden and invisible forms of power in order to facilitate widespread recognition and genuine participatory opportunities for local people. Five recommendations are suggested to help facilitate this: 1) co-produce power analyses; 2) reduce opportunities for domination; 3) identify enabling factors to engage the most vulnerable; 4) establish independent grievance procedures; and 5) challenge supralocal vulnerability drivers.

6.1 Introduction

Following on from the previous chapter, which appraised the procedural justice implications of CCD project design, this chapter analyses recognition and participation within CCD project implementation. CCD is being operationalised across the developing world through projects that integrate community-based development, adaptation and mitigation (Stringer et al., 2014) — community-based CCD (CB-CCD). Community-based projects that pursue CCD goals are often positioned in contrast with 'top down' climate and development solutions that have been criticised for marginalising local people's concerns (Dodman and Mitlin, 2013).

It is proposed that local involvement can help projects that seek to reduce vulnerabilities to achieve their goals. By drawing on local knowledge and experiences, community-based approaches profess to enhance projects' effectiveness, efficiency and sustainability (Wright et al., 2014; Mansuri and Rao, 2004). For example, Shrestha et al. (2014) suggest that community-led processes for measuring forest carbon help build local people's capabilities whilst being more resource efficient than, but just as accurate as, technological, expert-led alternatives.

However, criticism of community-based approaches is widespread. It is often suggested that local people's involvement is insufficient and/or causes harm. For example, Cook and Kothari (2001) showcase multiple examples where so-called 'community-based' projects allow outsiders to dominate decision-making and/or reinforce already-powerful local people's interests. Often, these projects' aims are not valued locally and they have exacerbated inequalities by marginalising the most vulnerable individuals and groups.

Eschewing tokenism and offering people genuine participatory opportunities (and choices over whether they wish to harness these opportunities) can help community-based projects fulfil their promise and manage their potential for harm (Hurlbert and Gupta, 2015). As discussed in chapter three, together with recognition, meaningful participation is required to achieve procedural justice. It is suggested that outcomes resulting from fair decision-making processes are more likely to be acceptable to recipients (Bozmoski and Hultman, 2010). Hence, procedural justice can facilitate distributive justice (Schlosberg, 2007). However, procedural injustices can result when projects fail to comprehensively consider and manage cross-scalar power relationships that exist within their implementation contexts (e.g. Cook and Kothari, 2001; Hickey and Mohan, 2005).

Community-based climate and development solutions are being implemented at a faster pace than their implementation is being critically analysed (Dodman and Mitlin, 2013). Little attention has been paid to the procedural justice implications of implementing community-based projects that simultaneously pursue triple-wins across development, mitigation and adaptation. Addressing this literature gap is crucial because local involvement in, and acceptance of, projects are important enabling conditions for the successful rollout of CCD (Anton et al., 2014) and determine how implementation processes contend with patterns of socio-cultural and political oppression that condition underdevelopment (Sen, 2001).

This chapter, therefore, evaluates the procedural justice implications that result from interactions between ECRP project implementation processes and forms of power that act upon these processes. In doing so, it contributes towards the completion of research objective two of this thesis.

6.2 Community-based projects and procedural justice: evidence from theory and practice

Integrated community-based climate and development projects are well-established in developing countries (Ensor and Berger, 2009; Suiseeya and Caplow, 2013). Their origins lie in the surge of interest around community-based development in the 1980s (Mamimine, 2000). Around this time, policymaking was increasingly informed by the subsidiarity principle: the idea that decision-making should be devolved to the least centralised competent authority (Marshall, 2008). Sustainable development discourses that were formalised at the 1992 Rio 'Earth Summit' stressed the need for decision-making based on "the participation of all concerned citizens, at the relevant level" (UNEP, 1992, p.2). Value was placed on encouraging greater local involvement in resource management and decision-making (Mansuri and Rao, 2004).

A similar paradigm change occurred with respect to climate adaptation around a decade later. Policymakers and practitioners began to acknowledge that large scale engineering and/or technology-centric investments are not always the optimal way to reduce climate vulnerability. Adaptation projects involving indigenous people that make use of locally-available resources are now widespread (Ayers and Forsyth, 2009; Sabates-Wheeler et al., 2008). Although local people's responsibility for climatic change in developing

countries is minimal, it has also been recognised that these populations could make a significant contribution to global mitigation efforts (Niles et al., 2002).

Community-based projects that simultaneously pursue climate and development goals are championed by policy standards, supranational organisations, donor agencies and NGOs (Ayers and Forsyth 2009; Suiseeya and Caplow 2013). Integrating development within community-based climate projects can encourage local people to undertake mitigation and/or adaptation activities that generate longer-term benefits (Tanner et al., 2009; Wright et al., 2014).

There is significant overlap between the theoretical basis of community-based approaches and procedural justice. Both propose that local people should have direct control over decisions affecting their lives; and that decision-making processes should be participatory and locally appropriate. Hence, both aim to enhance people's political and socio-cultural freedoms to live the lives that they choose (Sen, 2001; Ayers and Forsyth, 2009). A range of participatory methodologies has been developed to help operationalise local involvement in projects (Reid et al., 2009). Toolkits have been designed to aid practitioners (e.g. CARE, 2010; CA, 2009).

Nevertheless, there is mixed evidence over whether community-based climate and development projects facilitate procedural justice in practice. Lawlor et al. (2013) and Mathur et al. (2014) evaluate multiple projects implemented in developing countries with the potential to achieve CCD triple-wins and highlight that some succeed in engaging a diversity of local people in project activities, management and decision-making. However, in others, the participation and recognition of target populations is uneven and/or curtailed.

It is suggested that community-based projects struggle to achieve procedural justice because they do not comprehensively consider and manage cross-scalar visible, hidden and invisible power relationships within their implementation contexts (e.g. Cook and Kothari, 2001; Hickey and Mohan, 2005). Table 6.1 shows how the achievement of procedural justice through community-based project implementation can be complicated by different forms of power. Difficulties are likely linked to failures to reconcile stakeholder priorities during CB-CCD design. In chapter five, it was shown that design processes often: provide local people with insufficient opportunities to articulate their vulnerabilities and priorities; and do not account for their divergent interests, capabilities and power bases. Projects also design mitigation activities without attempting to

reconcile the divergent worldviews held by local people and project developers with respect to climate change.

In summary, mixed evidence exists over whether community-based climate and development from projects have facilitated procedural justice for local people. Inadequacies often result from mismatches between project implementation strategies and forms of power within cross-scalar operating contexts. In some cases, mismatches have exacerbated existing procedural inequalities.

Table 6.1: Power issues that can complicate the achievement of procedural justice through community-based project implementation

Issue	Procedural justice implications	References
Local leaders and other powerful actors subvert 'fair' decision-making processes	• Powerful actors dominate decision-making with opportunities for less powerful people curtailed. • Powerful actors, their families and friends benefit disproportionately from projects (although sometimes control of participatory processes is used to benefit vulnerable groups – 'benevolent capture'). Resources entrench their domination over decision-making processes.	Wong (2009); Stringer et al. (2007); Mansuri and Rao (2004); Barrett (2013a)
Project developers overlook that 'communities' are made up of local people with diverse interests and capabilities	• Particularly vulnerable groups lack resources required to participate in project activities and decision-making e.g. financial capital/ assets, land, time. • Particularly vulnerable groups suffer from low self-esteem and, therefore, fail to identify for activity involvement or speak within decision-making fora.	Agrawal and Gibson (1999); Hendrickson and Corbera (2015); McDermott and Schreckenberg (2009); Ellis (2012); Nation (2010)
Worldviews of local people at odds with scientific understandings of climate change	• Local people regard climate change as a natural phenomenon beyond human control. Understandings of climate change grounded in non-scientific worldviews. • Local participation in mitigation activities may be motivated by incomplete or mis-understandings.	Mustalahti and Rakotonarivo (2014); Jindal et al. (2008)
Projects frame target populations' vulnerability to climate and development shocks as an exclusively local issue	• No efforts to overcome transnational (e.g. globalisation, trade agreements), national (e.g. ill-conceived government policies) and regional factors (e.g. inadequate extension support) that condition local vulnerabilities and might compromise project success.	Dodman and Mitlin (2013); Tompkins et al. (2013); Cunguara and Moder (2011); O'Brien and Leichenko (2003); Moore (2005)

6.3 Data collection and analysis

Household surveys and semi-structured interviews were used to ask local people and professional stakeholders about the extent of local people's recognition and participation during project implementation and factors conditioning these procedural justice opportunities. Some professional stakeholder interviewees guided the researcher towards documents that supported, or provided more detail on, their responses. These documents, which were subsequently analysed, comprised: two project design documents (CU, No Date; CA, No Date); one NGO complaints and response mechanism protocol (GOAL, 2015); one project monitoring report (ECRProject, 2015); one government policy document (GoM, 1998); and one consultancy report (LTSI, 2014).
Data were all analysed using content analysis (see Babbie, 2008) and critical discourse analysis approaches (see Fairclough, 1992). Statistics derived through combining survey responses were analysed using univariate analysis techniques (Babbie, 2008). Two-tailed t-tests were used to determine whether variances between mean numbers of project activities participated in by different household types were statistically significant. The framework developed in chapter five (see Figure 5.1, Table 5.1) was used to evaluate household recognition by, and participation in, ECRP project implementation processes.

Three procedural justice spaces were identified during ECRP implementation: 1) the *Introduction Space*, that encompassed processes by which projects were instigated within target villages; 2) the *Execution Space*, that encompassed processes by which specific project activities were carried out; and 3) the *Monitoring and Evaluation Space*, that encompassed processes by which project performance was tracked and reported. Project implementation processes are less time bound than design processes and may remain ongoing even after projects have formally ended. Therefore, the temporal evolution of procedural justice spaces was considered.

Introduction and *Execution Spaces* comprise moderately structured policy problems: local people participating in the projects and other stakeholders agreed on the need to introduce and execute project activities within villages. However, cultural, climatic and other differences require that the projects are implemented differently across target villages (CU, No Date; CA, No Date). Likewise, there is potential for disagreement over implementation strategies between households within individual villages. The *Monitoring and Evaluation Space* comprised an unstructured problem: project design documents stress the fact that different stakeholders and types of information (e.g. qualitative,

quantitative) may present project performance in different ways and must be considered. All spaces were invited spaces whereby NGO staff pre-determined procedural justice opportunities that were offered to local people. NGO staff intend that the *Execution Space* will transition into a claimed space once ECRP projects formally end in March 2017.

Content analysis and critical discourse analysis methods helped to elucidate overt and covert stakeholder procedural justice opportunities in each space, respectively. They enabled visible (content analysis), hidden (content analysis and critical discourse analysis) and invisible forms of power (critical discourse analysis) that conditioned procedural justice opportunities to be identified.

6.4 Results

Procedural justice opportunities afforded to local people within *Project Introduction*, *Execution* and *Monitoring and Evaluation Spaces* are now presented.

6.4.1 Introduction Space

In Malawi, proposed development assistance must be approved by district governments (GoM, 1998). District government employees directed ECRP projects towards villages perceived as most vulnerable to climate and development shocks and that were not already benefitting from similar development interventions (five NGO employees; five district government employees): "w*e discussed at the district level and…evaluated its [the ECRP's] objectives and gave direction to the implementers…[in terms of] where it should be implemented and who should be the beneficiaries"* (district government employee).

The projects were introduced to target villages through traditional governance structures. Traditional Authorities, which form part of district governments (GoM, 1998), facilitated meetings between project staff, group village heads and village heads. There was consensus amongst NGO employees and village authorities that meetings were used to provide a general overview of projects' aims and activities. Group village heads and village heads were then given opportunities to accept or reject the implementation of projects in their jurisdictions. The testimony of the village head of NV1 supported NGO interviewees' statements that village development committees sometimes played an advisory role.

Having accepted the projects, group village heads and village heads used village meetings to introduce them to households. Meetings were also established with the aim of enabling households to self-select: household participants to take part in different project activities; village extension multipliers; and committee members. Village extension multipliers provide technical support to households to help them carry out activities. They were introduced by the projects because "*government extension workers do not always give people enough support [in project activities]"* (NGO employee). In addition, the projects have established committees made up of local people for administering individual activities within target villages. They have also ensured that target villages have functioning civil protection committees. These committees communicate local vulnerabilities to area and district governments, develop disaster contingency plans and are tasked with taking actions (e.g. early warning, co-ordinating evacuations) to deal with climate shocks and stresses. All village extension multipliers and committee members are volunteers.

Households across all study villages unanimously considered that the projects have recognised and respected their customs by involving traditional governance structures and utilising village meetings. One NV2 AW household head remarked: *"ECRP respects our culture and ways of doing things but just offers us new opportunities".* Another AW household in NV2 commented that the ECRProject has *"not disturb[ed] our traditional values and ways of life".*

Four NGO employees reported that households in target villages were given opportunities to self-manage project introduction. They stated that households were presented with, and briefed about, packages of project activities during meetings. Particular activities to be implemented within villages were then chosen through deliberation. The same employees suggested that activity participants, village extension multipliers and committee members were chosen through popular nomination and election. However, working through traditional governance structures reinforced the hidden power of village heads; they allegedly subverted participatory processes designed to help local people self-manage project introduction. Table 6.2 outlines how this, and other issues, led to reported instances of procedural injustice.

Table 6.2: Reported instances of procedural injustice during project introduction

Issue	Description	Reported by
Mismatches between district government records of village boundaries and local people's conceptions meant some intended target households not introduced to projects	• 20 KV2 households not invited to introductory meetings because local leaders did not regard them as village residents. • Issues likely to be widespread because, in Malawi, groups of households often form 'breakaway' villages in the hope of receiving increased development assistance from government and NGOs.	5 NGO employees; 5 KV2 households (1 EH HAW; 1 FH AW; 1 HAW FH and EH; 1 AW; 1 AW FH).
Households unable to ask questions and express their opinions about projects during introductory meetings	• *"In village meetings, authorities say things but they do not ask for comments which makes us feel bad and like we are worth nothing"* (LAW, EH household head, KV1).	11 household interviewees spanning all household types across all study villages.
Households unable to self-manage selection of committee members, village extension multipliers and project activity participants.	• Field staff reportedly chose activities prior to local engagement in NV2: "*We were just told of the activities. There were no opportunities for us to choose"* (village head of NV2). • Committee members and village extension multipliers were chosen by the village head in NV2. • Village heads, committee members and village extension multipliers control the selection of participants for project activities: *"the leadership and committee members chose everything"* (household interviewee).	The village head of NV2. 5/22 NV2 household interviewees (2 AW; 1 AW FH and EH; 1 EH AW; 1 HAW) 21 households spanning all types across study villages in Dedza and Nsanje.

18 interviewees (from n=93) spanning all household types across all villages in Dedza and Nsanje reported that village heads, committees and village extension multipliers had used their hidden power to control and manipulate selection processes. This has reportedly translated into preferential access to project activities for these actors, their friends and families: *"they leave the most deserving and brightest people out [when selecting activity participants, committee members and VEMs] and just choose their relatives"* (HAW household, NV2). Interviewees considered that they had been excluded from decision-making and were recognised as subjects rather than active citizens (hidden powerlessness). Local people were afraid to complain publically about their perceived exclusion because village heads have the authority to marginalise them from village life. The head of an EH LAW household in DV1 reported that *"when people raise negative points [in village meetings] they get in 'hot soup' with the authorities. When people are in hot soup they will not receive other benefits brought by the authorities because their card has been marked."*

Using VSLAs as a project entry point helped reduce instances of misrecognition and exclusion errors. In Kasungu, household participation in the ECRProject was conditional on their assembly into VSLAs of 15-25 people, while additional project activities were introduced through associations. VSLAs 'separate the powers' within villages by creating new spheres of influence outside of traditional leaders' control. According to five household interviewees taking part in VSLAs in Kasungu (total n=62) (3 AW, 2 LAW), members appoint people into key positions (e.g. chair, treasurer) based on deliberation and free election. Group constitutions, drawn up with assistance from field officers and village extension multipliers, support members in expressing their views and participating in decision-making: *"We have equal opportunities to share our views within VSLAs. We are all bound by the constitution, even the Chief [village head]. So no one is superior to anyone else"* (HAW household interviewee, KV2).

Five household interviewees (covering all household types) reported that members self-determined target beneficiaries of project activities implemented through VSLAs. One household in KV2 reported that they were excluded from all village development activities on racial grounds: *"We face discrimination because my husband is a Yao and a Muslim. In the village, everyone else are Chewa and Christian [and] we are not told about anything that happens within the community"*. This occurrence aside, there were no reported instances of the project introduction process involving bias of any kind in Kasungu, which contrasted starkly with findings from villages in Dedza and Nsanje.

Making project participation dependent on household abilities to join VSLAs can exclude those suffering from extreme income poverty. 16 LAW, 3 AW and 2 HAW households from villages in Dedza and Kasungu where VSLAs had been established reported that they could not afford the required contributions.

6.4.2 Execution Space

ECRP projects contributed human and material resources with the intention of allowing households to self-manage the execution of project activities. Nine village extension multipliers reported that they received up to five days of training on how to implement particular activities before passing on this expertise to households. Additional training was provided to households by field officers and government extension workers (four NGO employees; two government extension workers). The projects operate in accordance with DfID's *"no handouts"* policy (donor agency employee) but some material inputs are provided. Village extension multipliers have received bicycles to travel within

and between villages. Some activities, such as livestock, seed systems (initial animals and seeds) and irrigation (treadle pumps) have also required inputs (CA, No Date; CU, No Date). Self-management opportunities were intended to equip households with skills to enable their continued participation in activities once ECRP formally ends in 2017 (Ibid.).

Village extension multipliers were often regarded to be performing well, providing useful training and responding to household needs: *"I feel very comfortable raising issues with the village extension multipliers"* (LAW female household head, KV2). Likewise, the majority of household interviewees considered committees to be administering project activities well, allowing households to ask questions and express concerns.

However, poor governance in the *Introduction Space* carried over into the *Execution Space*. Village heads, committee members and village extension multipliers reportedly had superior access to resources required for implementation in Dedza and Nsanje. For example, six interviewees (three AW; one EH LAW; one EH AW; one AW, FH and EH) across both Nsanje villages (total n=55) accused them of hoarding seeds and treadle pumps needed to execute irrigation and agricultural activities. Testimonies showcasing the sentiment of these interviewees included *"all the good seeds are just taken by committee members but they refuse to pay them back like everyone else"* (elderly, LAW household head, NV1 and *"[irrigation] committee members are hoarding treadle pumps and refuse to let us use them"* (elderly, AW household head, NV2. Those not afforded chances to sign up for activities during project introduction were excluded from participating, leading to despondency:

> *We feel very bad about being side-lined. Others are benefitting – I have seen it myself. The village is becoming more unequal; I feel disrespected as I have not been chosen amongst the participants; I feel sad as I really wanted to take part but I am prevented from doing so…If I was taking part it would help improve things for me and my household* (LAW household head, NV1).

Using VSLAs as an entry-point activity minimised misrecognition and exclusion during the *Introduction Space*. In the *Execution Space*, VSLAs facilitated both procedural justices and injustices. According to one household interviewee (AW, KV1), VSLAs offered a forum for participants to *"share experiences about activities"* that improved implementation quality and efficiency. Moreover, two female interviewees, both from AW households in KV2, supported the sentiment that VSLAs are *"especially empowering for*

women as we can take part without our husbands watching". They explained that VSLAs help women look after the needs of their households. In the past, they explained, men controlled household finances within the village.

Nevertheless, emergent power dynamics within VSLAs have caused misrecognition and restricted some households' participation. Household interviewees reported that elected VSLA leaders (e.g. Chair, Treasurer, Secretary) were misusing their hidden power by not granting members equal opportunities to speak during meetings. For example, one HAW household head in KV1 explained, *"I am not considered worthy to ask questions because I am not in the leadership".* Another household head (AW, NV2) considered that *"VSL is a command and control activity"*, adding that, *"people do not get opportunities to speak".* 10 interviewees reported that disagreements within VSLAs related to loan payback and profit sharing have led to ill-feeling and caused members to drop out. One household in KV2 (AW) suggested that *"arguments have got so bad that some people threaten to leave the village".*

When households fail to pay back loans to VSLAs, other members sometimes confiscate their property as a form of repayment. Six debtors, three of which were female, elderly household heads (the remainder comprised two LAW household heads and one AW male household heads) reported that they were subject to verbal and physical insults during debt collection. A female, elderly-head of a LAW household explained that: *"debt collectors…were very rude and violent. They came to my house at 5am…[and] just started chasing my goats [to confiscate them]".* Another elderly, female household head in NV2 commented that *"they [VSLA members] are ruthless".*

The most vulnerable households often struggled to participate in project activities. Table 6.3 breaks down participation in ECRP projects by household type. 50%, 46% and 32% of LAW, FH and EH household survey respondents, respectively, did not participate in the projects. Study village households engaged in fewer activities than ECRP households overall. A mid-term evaluation found that 61% of all ECRP households took part in three or more activities (although the target was 80%) (LTSI, 2014). However, only 38% households in study villages that participated in ECRP projects took part in three or more activities. On average, these households took part in 2.14 activities. AW, LAW, FH and EH households who were able to participate in the ECRP took part in fewer activities, on average, than HAW households (Table 6.3). Differences between mean numbers of activities participated in by HAW households and AW ($t=2.67$, $p=0.009$), LAW ($t=3.25$, $p=0.001$) and FH household ($t=2.71$, $p=0.007$) were statistically significant.

Table 6.3: Participation in ECRP projects by household type

	Number (%) of households taking part in one or more project activities	Average number of activities per ECRP participant
All Households	329/457 (72%)	2.14
Average Wealth	201/258 (77%)	2.07
Lower-than-average Wealth	53/105 (50%)	1.83
Higher-than-average Wealth	75/88 (85%)	2.57
Female-Headed	53/94 (56%)	1.94
Elderly-headed	92/135 (68%)	2.34

The participation of LAW, FH, EH and some AW households was constrained by 'resource poverty', 'caregiver' and 'incapacity' barriers (visible powerlessness) (Table 6.4). Poor water access also curtailed women's participation across all household types. In KV1, a village without boreholes or shallow wells, two women from AW households reported that they walked for four hours at least twice a day to collect water. This reduced the time that they had available to take part in project activities.

Participation in low-carbon activities occurred without people necessarily fully understanding what they were doing or how it related to climate change. As discussed in chapter five, the worldviews of local people, which contrasted with project developers' belief systems that have been used to underpin project design, did not incorporate scientific explanations for climate change. 35/202 and 5/21 of households participating in forestry and improved cookstove activities, respectively, reported that they were solely motivated by their belief that growing or protecting trees would bring improved rainfall consistency and predictability.

An NGO employee reported that efforts had been undertaken to educate local people about mitigation through village meetings: *"we say that if you use dirty energy then the gases that come out of the smoke are bad for the atmosphere and destroy gases in the air that are important for our existence".* However, she admitted that: *"for people who plant with the mind-set of getting rainfall, this is a problem".* Overall, reconciliation between the worldviews of project developers and local people was limited, resulting in the latter's invisible powerlessness.

Table 6.4: Barriers constraining households' participation in the ECRP

Barrier type	Description	Reported by
Resource poverty	Households' lack of material wealth limited project participation: 1. Adult household members unable to take part in activities because they took part in alternative income-generating activities (e.g. *tenant* work — seasonal labour on commercial farms —, selling firewood and *ganyu* — rural piecework contracted by better-off households) in order to meet their families immediate needs. 2. Poor access to land limited involvement in forestry and agricultural activities. 3. Extremely low incomes made VSLA contributions unaffordable (in Kasungu, where VSLAs act as entry points to ECRProject, households unable to afford contributions prevented from engaging in other project activities).	50 LAW and AW households across all study villages
Incapacity	Physical disability and frailty due to old age prevented adult household members from taking part in project activities.	26 EH households across all villages and five households (one from DV2, KV1 and KV2; two from DV1) whose adult members suffered from disabilities
Caregiver	Female household heads, who were often widowed, spent most of their time doing domestic work and caring for children.	17 FH households from DV1, DV2 and KV2

6.4.3 Monitoring and Evaluation Space

Households had opportunities to discuss their views about project implementation through village-wide meetings with field officers and one-on-one dialogue with village extension multipliers and committee members. Ongoing monitoring and evaluation has been verified through annual DfID project management field visits (donor agency employee) and an independent mid-term evaluation (LTSI, 2014).

Table 6.5 provides examples of multi-level project responses to households' concerns. Despite evidence of project responsiveness, one donor agency employee and two NGO employees considered monitoring and evaluation processes to be cumbersome, leading to delayed responses. They perceived that *"the chain of command is really too long"* meaning *"transmitting information takes a long time"* (donor agency employee) and *"trickle down of information to the field level can be difficult"* (NGO employee). Two NGO

employees also considered that information-sharing between consortia is limited, which is an issue that is highlighted in the independent mid-term evaluation (LTSI, 2014).

Table 6.5: Examples of multi-level ECRP monitoring and evaluation responses

Level	Monitoring and evaluation issue	Response
Village	1) Village livestock destroyed stalks required for organic soil cover under conservation agriculture. 2) Households unsure on techniques for practising conservation agriculture. 3) Households worried about theft of VSLA savings.	1) The field officer *"taught us a new method of storing the stalks that involved tying the stalks together and looking after them at our homes"* (AW household head, KV2). 2) "*Once we approached the village extension multiplier because we were not clear on how to create planting stations for conservation agriculture. He came and solved everything"* (AW household head, NV1. "*[The village extension multiplier] helped us set up an account at the Malawi Savings Bank to make things safe"* (EH AW household head, NV1).
District	Externally-reared goats transported to Kasungu (ECRProject) and Salima (DISCOVER) for livestock production schemes died of local diseases.	Coupons provided to households for purchase of local goats (two NGO employees).
National	1) ECRProject afforestation targets were missed. 2) Households suffering from poor water access struggled to participate in DISCOVER.	1) Switch to all-year round tree-planting (ECRProject, 2015). 2) Households incorporated into Concern Universal-led 'Water, Sanitation and Hygiene' programme in Dedza (NGO employee).

Advocacy strategies have been developed to communicate issues identified through monitoring and evaluation with district and national level policymakers. CISONECC, Malawi's Civil Society Network on Climate Change, is an umbrella organisation with dedicated staff operating across national and international levels. CISONECC provides ECRP projects with a forum to communicate issues with other civil society actors and build coalitions with a view to influencing national and international climate change policymaking (three NGO employees). These institutional linkages mean ECRP projects are well-placed to challenge supralocal drivers of vulnerability.

However, household opportunities to participate in monitoring and evaluation have been constrained (hidden powerlessness) by limited NGO resources (a lack of visible power). For example, according to an NGO employee: "*one field officer looks after four group village areas…[comprising] up to 32 villages…The [monitoring and evaluation] plan hasn't been followed because of office work demands. Of late there haven't been many*

field visits". The same interviewee highlighted high staff turnover as a compounding factor: low field officer salaries have led them to constantly seek better-paid job opportunities and options for further study. Limited resources for monitoring and evaluation also meant that the ECRP mid-term evaluation was based upon a small, random sample of 2,798 household participants (LTSI, 2014). These households represent 0.005% of the total number of households targeted by the programme (Ibid.).

NGO resource shortages mean that village extension multipliers are strongly relied upon to report accurate, quality village level information. Yet households considered that poor local project governance has constrained monitoring and evaluation effectiveness: "[The village extension multiplier] *does not listen to our views or help us fix problems"* (HAW household, NV2). Limited access to mobile phones and transport facilities has meant that households have had to communicate with the projects via village extension multipliers and field officers. Yet, *"it is difficult to communicate concerns [about village extension multipliers and local leaders] to the village authorities"* (AW household head, DV2). Households may have also supressed complaints about field officer performance because they have had to be made directly to field officers. The projects have recognised the need to reinforce local people's hidden power by introducing independent grievance procedures that allow households to communicate directly with project management. Table 6.6 sets out methodologies that are proposed and were adopted shortly before data collection under DISCOVER and ECRProject, respectively.

Two NGO employees suggested that monitoring and evaluation has had implications for household participation in the *Execution Space*: "*where we do a lot of monitoring…there are more people participating because they feel encouraged".* Owing to a legacy of colonialism and dictatorship, one NGO employee described Malawi as *"a country that is top down in approach"*. He suggested that households require support from 'above' the village level — via NGOs, government and other organisations — to ensure their engagement in project activities. This suggests that households have internalised a sense of inferiority that has translated into dependency on external assistance (invisible power). Malawian district extension services are often patchy and insufficient, which could present a problem for the sustainability of project activities beyond the formal end of the ECRP.

Table 6.6: Adopted and proposed ECRP grievance procedures

Methodology	Project: location	Description	Possible limitations
Scorecard	ECRProject: Kasungu, Nsanje (in operation)	Local people rate different aspects of project performance within focus groups and give qualitative insights that explain their answers (three NGO employees).	- Resource-intensiveness of the approach at odds with NGO resource-shortages – *"it's a bit costly"*. - Project village targeted with the methodology once during project lifecycle: unsuitable for identifying and responding to issues quickly. - Focus groups engage only small samples of total households. (NGO employee)
Community Accountability Boxes	DISCOVER: Nsanje (proposed)	Suggestion boxes located in villages allow local people to express comments and grievances. Boxes will be "*locked at all times and…keys will be kept by the monitoring and evaluation officer"* who will open them every month in the presence of a district government employee (GOAL, 2015). It is intended that this will allow households to *"comfortably deposit their issues in confidence*" (NGO employee).	- Could marginalise illiterate local people.

6.5 Discussion

Findings presented in this chapter showcase interrelationships between the concepts of procedural justice, vulnerability and power in the context of CB-CCD. Reducing vulnerabilities relies on projects decreasing societal marginalisation and providing local people with the political and socio-cultural freedoms to engage in implementation procedures. However, visible, hidden and invisible forms of power condition these freedoms and shape patterns of procedural (in)justice. Study of the ECRP uncovered instances where project implementation processes confronted power and thereby facilitated procedural justice. However, overall, ECRP projects have had only limited success in facilitating procedural justice for target populations. Households' meaningful engagement in project activities, management and decision-making was often curtailed because local power asymmetries went unchallenged. Findings mirror those of wider research into community-based projects that pursue single- or double- wins across

development, mitigation and adaptation (Dodman and Mitlin, 2013; Mustalahti and Rakotonarivo, 2014; Cook and Kothari, 2001).

According to Cleaver (2001, p.36), considering power within the implementation of community-based projects is often regarded as “divisive”, “obstructive” and best avoided. By contrast, it is suggested here that, in order to facilitate procedural justice, current and future CB-CCD projects must understand, manage and, where necessary, directly challenge cross-scalar forms of power. Others have recognised the need to contend with power within development contexts (Barnaud and Van Paassen, 2013). However, little attention has been paid to how this might be done. A five-step approach for assisting power management through CB-CCD implementation is, therefore, proposed. Despite that power management is complex and challenging, it is integral for facilitating procedurally just CB-CCD.

I. Co-produce power analyses

Findings presented in this chapter suggest that project ‘neutrality’ in respect to power is seldom possible — in practical terms, neutrality translates into implementation processes that serve the powerful and disadvantage those with less power. However, the legitimacy of outsiders’ efforts to intervene and challenge cross-scalar forms of power is questionable. Interventions may even be counterproductive if implementing partners misunderstand local complexities and/or use processes to reinforce their own power and drive particular normative agendas (Innes, 2004). One way to rectify this legitimacy deficit is to underpin interventions with power analyses that are co-produced by local people and other stakeholders with insights into local contexts (Barnaud and Van Paassen, 2013). Promising participatory methodologies exist for analysing power, including the REFLECT methodology that integrates power analysis with participatory rural appraisal techniques and has been used successfully in different developing country contexts (Reflect Action, 2016). The need for co-produced power analyses follows because power management is an unstructured policy problem involving hidden and invisible layers, disparate perspectives and diverse values. Substantive deliberation between stakeholders is, therefore, required to navigate it (Hurlbert and Gupta, 2015).

Co-produced power analyses can help reveal visible, hidden and invisible power that create procedural justices and injustices. *Ex-ante* evaluations should take place as part of project baseline data collection, with projects configured accordingly thereafter. Baseline data should be used as a benchmark against which changes can be periodically

assessed. Periodical re-evaluations can aid understanding of whether and how the introduction of projects have altered and/or created new forms of power and how this translates into procedural justice.

Participatory methodologies used for conducting power analyses should proceed in a reflexive manner, with appreciation that power will also shape their implementation. Insights from subnational government officials, extension workers and/or other independent local level stakeholders should be utilised to verify community level findings and reduce the likelihood that methodologies are subverted by powerful community actors.

II. Reduce opportunities for domination

Traditional governance structures, which operate in conjunction with Malawi's more formalised bureaucratic governance system (see section 4.2), have played an important role in implementing the ECRP. In Malawi and other developing countries, traditional leadership positions are determined by tradition and lineage rather than incumbents' suitability (Bryceson and Fonseca, 2006). 'Culture' can be both a 'resource' for and a 'constraint' to the achievement of procedural justice (Cleaver, 2001). When VSLAs were not used as entry-point activities in the ECRP, some traditional leaders used their reinforced hidden power to subvert project implementation processes. Exclusion errors prevented local people from taking part in project activities and decision-making and isolated them from monitoring and evaluation processes. Meanwhile, leaders and their friends and families monopolised opportunities (see also Barrett, 2013a; Stringer et al., 2007).

Based on insights from power analyses, steps should be taken to reduce opportunities for powerful local actors to dominate and manipulate project implementation. One notable finding from this research was that when ECRP projects introduced activities through VSLAs it helped prevent powerful local leaders from subverting procedural justice opportunities; improving the legitimacy and accountability of project management. Associations were beyond the authority of leaders who were unable to capture project processes. This finding is novel within the literature on community-based climate and development where VSLAs are commonly regarded as tools for reducing material aspects of vulnerability rather than enhancing socio-cultural and political freedoms.

However, extremely resource poor households' inability to make mandatory financial contributions to VSLAs in Kasungu led to their exclusion from the ECRProject. Therefore, alternative fora with fewer participation barriers would make more suitable entry-points. Introducing projects through multiple fora with few exit and entry barriers could prevent power dynamics that emerge within entry-point groupings from translating into procedural injustices. Yet this would dramatically increase the complexities involved in administering projects for implementing organisations. Moreover, formal institutions created by 'outsiders' within villages to organise projects are criticised for lacking meaning for local people (Cleaver, 2000). Further research that experiments with different entry-point institutions (both locally- and externally-conceived) is crucial for identifying suitable methodologies and uncovering their merits and defects.

III. Identify enabling factors to engage the most vulnerable

The specifics of climate and development vulnerability can vary across spatial scales but also between individuals and groups within particular localities (Field et al., 2014). ECRP design processes were not adequately configured to capture these differences (see chapter five). This has resulted in activities being inadequately tailored towards inter-household diversity. Sometimes, cultural constructions of roles and identities mean that local people derive more benefit and can better safeguard their social statuses through choosing not to participate in projects (Adams et al., 1997). However, the persistency of factors associated with the vulnerability of LAW, FH and EH households, as well as those encompassing chronically ill and/or disabled adults, prevented their non-participation from being an empowering choice.

Households' limited economic and human resources resulted in their visible powerlessness that translated into 'resource poverty', 'caregiver' and 'incapacity barriers' to procedural justice. Barriers to climate action in developing countries associated with gender roles and ill-health are well-articulated (Shackleton et al., 2015). Issues associated with chronic poverty are also commonly discussed, although predominantly in terms of poor access to finance, land and other inputs and in the context of autonomous local adaptations (Ibid.). Obstacles related to the livelihood profiles of the extreme rural poor in the context of planned actions — including NGO projects — are less frequently mentioned. However, in Malawi, LAW households' hand-to-mouth existence often prevented them from taking part in ECRP projects; circumstance forced them to prioritise participation in other income-generating activities that better helped meet their families' immediate needs.

Barriers to procedural justice may even exacerbate the vulnerability of affected households, trapping them into cycles of increasing marginalisation. Dependence on *ganyu* in Malawi forces poor men and women to sell their labour on highly exploitative terms. Women sometimes exchange transactional sex for food and money, which increases their chances of contracting HIV/AIDs (Bryceson and Fonseca, 2006). Moreover, terms of exchange become more unfavourable in times of food insecurity (Ibid.), which are predicted to become more common under future climate change (Vincent et al., 2015). Hence, procedural justice barriers in the present could trap people into downward spirals of vulnerability that worsen over time.

Results of power analyses should be used to identify context-specific enabling factors that help overcome resource barriers to procedural justice for the most vulnerable. Findings from Malawi and elsewhere (e.g. Nation, 2010; Jennings and McGrath, 2009; Eriksen et al., 2005) suggest that childcare provision and access to improved cookstoves (that use less firewood) could reduce caregiver barriers to procedural justice for female-household heads. Improved water access could also encourage more widespread involvement of women because household water collection burdens often fall upon women across sub-Saharan Africa (UNICEF, 2016a). The literature emphasises that community-based projects pursuing climate and development goals simultaneously can usefully incentivise mitigation and/or adaptation activities in developing countries by generating short-term development benefits (Tanner et al., 2009; Wright et al., 2014). However, to encourage the involvement of the extremely resource poor in CB-CCD, immediate-term benefits may be needed to offset the opportunity costs of foregoing alternative livelihood activities that sustain their hand-to-mouth existence.

In the context of resource scarcity, projects that create links with wider development efforts and pool resources may be best placed to help incentivise the involvement of the most vulnerable. Linking vulnerable households identified through CB-CCD with social protection schemes, such as food and cash transfers (immediate-term benefits), could help incentivise involvement of the extreme resource poor. It has been suggested that social protection schemes in developing countries will likely be compromised by future climate change. Therefore, linking these schemes with mitigation and adaptation efforts could produce complementary benefits (Davies et al., 2009). Collaborative working between donors, NGOs and national government can also enable linkages with cross-scalar projects and policies to be harnessed (Stringer et al., 2012b).

CB-CCD projects must also consider how to overcome barriers to procedural justice for vulnerable people that result from invisible forms of power. A culture of dependency on external development organisations exists in Malawi because households doubt that their own capabilities are enough to ensure prosperity. This is likely linked to a legacy of colonialism and dictatorship in the country. Limited extension services could close down procedural justice opportunities once project field assistance is removed following the ECRP's formal end in 2017. Under the ECRP, well-trained village extension multipliers have helped many local people develop the necessary human resources to implement project activities. The 'village extension multiplier approach' could help overcome problems associated with patchy extension services that are found in many developing countries (Cunguara and Moder, 2011; Wright et al., 2014). The approach appears particularly pertinent for large-scale projects, such as those comprising the ECRP, that target large numbers of households but lack the resources to provide intensive support to, and/or closely monitor the progress of, those households. However, households' longing for external assistance means the village extension multiplier approach may be insufficient to prevent the closing down of procedural justice opportunities once extension assistance is removed.

IV. Establish independent grievance procedures

Independent grievance procedures allow local people to report their concerns about project governance and facilitation. They could also identify causes of procedural injustice that are not captured by power analyses. ECRP project staff have recognised the value of independent grievance mechanisms and have begun to implement different approaches, including 'Scorecard' (see also Mwanza and Ghambi, 2011) and Community Accountability Boxes.

The majority of International NGOs are now signed up to accountability standards such as the INGO Accountability Charter, the ISO26000 Standard and the Core Humanitarian Standard on Quality and Accountability. These standards commit to ensuring that local complaints about project implementation are heard and addressed (INGOAC, 2015; CHS, 2015). However, most grievance procedures are NGO or project specific and lesson-sharing around good practice is limited (CHS, 2015). Peer-reviewed evaluations of different methodologies are scarce. Research that addresses these gaps will be crucial for developing robust mechanisms that can be tailored to specific local conditions.

V. Challenge supralocal drivers of vulnerability

Institutional linkages mean ECRP projects are well-placed to challenge supralocal drivers of vulnerability. Advocacy strategies provide channels for local issues identified through monitoring and evaluation to influence district, national and international policy making. Efforts to strengthen and link village civil protection committees with area and district governments have provided opportunities for local people to communicate the specifics of their marginalisation and powerlessness. Projects, therefore, break with previous community-based approaches that focussed exclusively on the local level (Dodman and Mitlin, 2013). The widespread coverage of the ECRP, both within target districts and Malawi at large, also leaves staff well-placed to feed into aggregated governance processes. However, exclusion and limited NGO resources mean only a very limited sample of households have gained a voice in these processes.

To holistically contest local vulnerabilities, community-based climate change and development projects must form part of wider social movements for change (Hickey and Mohan, 2005). Resource-limitations might prevent projects from taking supralocal action. In such circumstances, umbrella organisations, instituted by civil society or governments, could help draw on project experiences and co-ordinate appropriate responses. Projects (particularly those operating on a smaller scale than the ECRP) are likely to have a greater influence on policymaking when operating as part of coalitions.

6.6 Conclusion

This chapter has showcased ways in which CB-CCD implementation processes can better facilitate procedural justice. Study of ECRP projects finds that many households have been well-engaged in project activities, management and decision-making. However, the participation of others — including many of the most vulnerable households — is inappropriate given the policy problems being addressed through project implementation. Projects risk creating patterns of injustice when there is poor fit between implementation processes and forms of power in the CCD operating context. It has been argued that CB-CCD projects must understand, manage and in some cases, directly challenge, cross-scalar visible, hidden and invisible power in order to facilitate widespread recognition and genuine participatory opportunities.

To ensure the legitimacy of power management strategies, they must be underpinned by co-produced analyses that draw on local stakeholders' insights. It has been suggested here that procedurally just CB-CCD implementation requires that projects build on the findings of these analyses to reduce opportunities for powerful actors to dominate implementation processes and identify enabling factors to engage the most vulnerable. To help households challenge cross-scalar power asymmetries, projects must also establish independent grievance procedures and integrate co-produced knowledge into wider movements for change. Although managing power through CB-CCD is complex, project 'neutrality' in respect to power is seldom possible — in practical terms, neutrality translates into implementation processes that serve the powerful and disadvantage those with less power.

Methodologies that can translate recommendations into practice need to be developed and refined. Some promising participatory methodologies already exist for analysing and managing power (e.g. REFLECT— Reflect Action, 2016; Scorecard — Mwanza and Ghambi, 2011; co-learning techniques — Reid et al., 2009). They need to be road-tested and, where necessary, adapted to the context of CCD. Building on lessons presented here is crucial for improving local involvement in, and acceptance of, projects and, in so doing, helping to reduce vulnerabilities through CB-CCD.

In tandem with chapter five, this chapter has contributed to a comprehensive evaluation of the procedural justice implications of ECRP design and implementation. The next chapter analyses how ECRP project outcomes are distributed amongst stakeholders.

7 Investigating climate compatible development outcomes and their implications for distributive justice

Summary

Interventions that are designed and implemented to achieve CCD 'wins' (for development, mitigation, adaptation) also stand to create negative side-effects. Benefits and negative side-effects may differ across time and space and have diverse consequences for individuals and groups. Current literature showcases how CCD wins can be achieved and focuses disproportionately on 'winners'. Assessments of the full range of outcomes created by CCD projects and their implications for distributive justice are scarce. Framing CCD research in a way that is weighted towards consideration of wins and winners may encourage policy and practice that is overly optimistic about what CCD can achieve and lack safeguards to prevent or cushion the impact of negative side-effects. This chapter addresses these research gaps by comprehensively analysing the outcomes that are created by the ECRP. First, a framework is developed that enables holistic CCD outcome evaluation over seven parameters identified using a systematic literature review. Thereafter, ECRP outcomes are explored using this framework. Data derived through household surveys, stakeholder interviews and the collection of documentary material was analysed using content analysis and univariate statistical analysis methods. Results reveal that uneven outcomes are experienced between stakeholder groups and will likely change over time. Although CCD triple-wins can be achieved through projects, they do not represent the full range of outcomes produced. Hence, outcome patterns created by projects do not reflect the popularised depiction of CCD. Ecosystem- and community-based activities are becoming institutionalised as approaches for achieving CCD goals. However, findings suggest that they face political-economic and climatic limits and are currently unable to facilitate distributive justice in study villages.

7.1 Introduction

Following analyses of the procedural justice implications of CCD design and implementation presented in the preceding two chapters, this chapter evaluates CCD project outcomes and their links to distributive justice.

The literature has empirically examined circumstances in which CCD wins might be achievable (Rahn et al., 2014; Bruggink, 2012; Bryan et al., 2013; Chhatre and Agrawal, 2009; Goklany, 2007; Leventon et al., 2015). Studies have also assessed the development co-benefits (anticipated or unanticipated positive impacts) of mitigation and adaptation (e.g. West et al., 2013; Harlan and Ruddell, 2011). Other work has: assessed drivers of, and challenges for, CCD (Ellis et al., 2013); appraised its value as a conceptual framework for guiding policymaking and natural resource valuation (Huxham et al., 2015); and presented lessons for its operationalisation (Dyer et al., 2013; Broto et al., 2015). Overall, research has focussed on facilitating CCD, showcasing how CCD wins can be achieved and, to a lesser extent, identifying the winners.

However, CCD interventions stand to create multi-level patterns of both benefits and negative side-effects that may differ across time and space and have diverse consequences for individuals and groups ('winners' and 'losers') (Tompkins et al., 2013). Linked to a shortage of suitable evaluation tools, analyses that consider the full range of CCD outcomes are scarce, meaning that the literature often obscures this reality. Framing CCD research in a way that is weighted towards consideration of wins and winners may encourage policy and practice that is overly optimistic about what CCD can achieve and lacks safeguards to prevent or cushion the impact of negative side-effects and encourage the identification of losers.

The CCD literature has also paid limited attention to distributive justice (i.e. what is to be distributed and how). Multiple identities, global inequalities and diverse cross-scale experiences with climate impacts and policy outcomes make a universal standard of distributive justice impossible to define with regards to CCD (Fisher, 2015). Rather, distributive justice is circumstantial and must be "negotiated and generated in the context of conflicting views and interests" (Paavola and Adger, 2006, p.600-601). This requires that individuals and groups who are impacted by CCD are afforded procedural justice: they must be granted recognition, or equality of status, and participatory opportunities within decision-making processes (Sen, 2009; Miller and Walzer, 1995). Yet predominant theories of distributive justice (e.g. contractarianism, egalitarianism,

utilitarianism, libertarianism) are underpinned by universal laws. This is problematic because they overlook how different contexts and cultures shape empirical justice claims (Sen, 2009).

This chapter seeks to address research gaps concerning CCD outcomes and distributive justice. In doing so, it fulfils objective three of this thesis. Multi-level, cross-scale outcomes that result from the implementation of ECRP projects are analysed. ECRP projects draw on community- and ecosystem-based activities to pursue CCD goals. Adopted together, they are considered to be a more cost-effective, flexible and less path-dependent way to create CCD outcomes compared with 'harder' engineering-based and/or 'top-down' solutions that are implemented without local involvement (Reid, 2016; Barnett and O'Neill, 2010; Mansuri and Rao, 2004). Projects profess to target particularly vulnerable households with activities, which represents a contractarian distributive justice approach (CU, No Date; CA, No Date).

In the following, a framework is developed that enables holistic evaluation of multi-level, cross-scalar CCD outcomes. ECRP projects are then critically assessed using this framework. In doing so, this chapter contributes towards the completion of research objective three of this thesis.

7.2 Framework development and application

A framework was developed to evaluate CCD project outcomes (Figure 7.1). It accounts for the contextual circumstances that condition these outcomes and facilitates analysis across governance dimensions and (spatial and temporal) scales. In doing so, the framework enabled the distribution component of the conceptual model presented in chapter three to be operationalised. A systematic literature review was conducted on English language, peer-reviewed literature in order to identify parameters with which to classify project outcomes. The methods of Ford et al. (2011) and Thompson et al. (2010) were adopted to guide the systematic review process. Six parameters were identified: type; direction; recipient; magnitude; governance level; spatial scale; and temporal scale. Results of the systematic literature review are summarised in Table 7.1, which defines and evidences outcome parameters.

Table 7.1: Descriptions of, and supporting evidence for, outcome parameter categories identified using a systematic literature review

Parameter	Description	Supporting Reference(s)	Summary of Supporting Evidence
Type	The nature of a project outcome e.g. development, mitigation, adaptation, auxiliary.	Gong et al. (2010); Bacon et al. (2014) ; Brown et al. (2011); Ayers and Huq (2009); Atela et al. (2015b); Boyd et al. (2007); Dyer et al. (2012); Foster and Neufeldt (2014); Jindal et al. (2012); Mathur et al. (2014); Mortimer and Grant (2008); Rindefjall et al. (2011); Stringer et al. (2014); Stringer et al. (2012b); Subak (2000); Weston et al. (2015); Li et al. (2015).	Projects aimed at achieving CCD double- or triple-wins often succeed in achieving development, mitigation and adaptation outcomes. However, supralocal outcomes, which are indirectly- or un-related to development, mitigation and adaptation — auxiliary outcomes — can also result.
Direction	Whether an outcome is positive — a benefit — or a negative side-effect.	Cavanagh and Benjaminsen (2014); Beyene (2015); Bele et al. (2014); Baudoin et al. (2014); Bacon et al. (2014); Atela et al. (2015b); Boyd et al. (2007); Dressler et al. (2012); Erlewein and Nusser (2011); Foster and Neufeldt (2014); Hoffman et al. (2015); Jindal et al. (2008); Jindal et al. (2012); Leventon et al. (2015); Li et al. (2015); Mathur et al. (2014); Nijnik and Halder (2013); Subak (2000).	Many development, mitigation, adaptation and auxiliary outcomes have positive consequences for stakeholders. However, projects have also incurred unintended negative side-effects.
Recipient	Stakeholders that experience a project outcome.	Atela et al. (2015b); Erlewein and Nusser (2011); Boyd et al. (2007); Dressler et al. (2012); Foster and Neufeldt (2014); Hoffman et al. (2015); Jindal et al. (2008); Jindal et al. (2012); Khadka et al. (2014); Li et al. (2015); Mathur et al. (2014); Osbahr et al. (2010); Poudel (2014); Stringer et al. (2014); Subak (2000); Weston et al. (2015).	Benefits and negative side-effects are often distributed unevenly amongst individuals and groups. Outcome distributions have sometimes been least favourable to the most vulnerable local people, especially women and the resource-poor.
Magnitude	The size or importance of a project outcome.	Atela et al. (2015b); Foster and Neufeldt (2014); Jindal et al. (2008); Jindal et al. (2012); Li et al. (2015); Mortimer and Grant (2008); Stringer et al. (2014); Subak (2000); Weston et al. (2015); Zhang et al. (2015).	Relative sizes of outcomes differ widely between projects. This is to be expected because projects are motivated primarily by one or two of CCD's components (development, mitigation, adaptation), but rarely all three. Analogous project activities may also create outcomes of differing magnitudes when implemented in diverse locations.

Spatial scale	The geographical area in which a project outcome is experienced.	Baudoin et al. (2014); Jindal et al. (2012); Li et al. (2014); Osbahr et al. (2010); Weston et al. (2015).	The type, direction, magnitude and recipients of project outcomes may be dissimilar across different geographical areas, jurisdictional spaces and over time. Projects implemented in one location may create benefits or incur negative side-effects in other places or at other scales. Over time, distributions of negative side-effects and benefits can change. There is a risk that outcomes experienced as a result of projects will end once implementing organisations' expertise is withdrawn at the end of project lifespans.
Governance level	The jurisdictional space in which a project outcome is experienced.	Foster and Neufeldt (2014); Jindal et al. (2012); Li et al. (2014); Mathur et al. (2014); Weston et al. (2015); Rindefjall et al. (2011).	
Temporal scale	The timescale over which a project outcome occurs.	Baudoin et al. (2014); Boyd et al. (2007); Foster and Neufeldt (2014); Jindal et al. (2012); Li et al. (2014); Mathur et al. (2014); Stringer et al. (2012b); Weston et al. (2015); Xu et al. (2007); Swilch et al. (2014).	

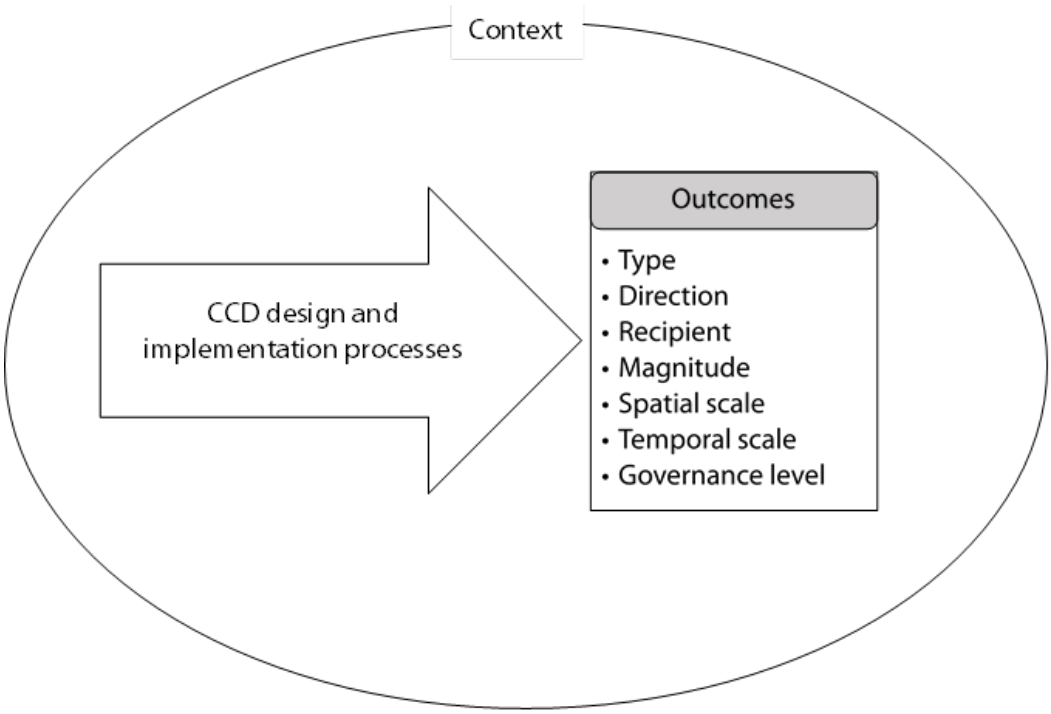

Figure 7.1: A framework to guide evaluation of CCD project outcomes.

Articles were sought that presented empirical findings related to the outcomes of projects that aimed to achieve CCD double- or triple-wins in developing countries. The scarcity of literature focussing on triple-wins meant the analysis of articles focussing on both double- and triple-wins was important for capturing a sufficiently broad list of outcome parameters.

Articles were located online using the Web of Knowledge electronic database. The following search terms were used:

("climat change" or "climat* change adaptation" or "carbon" or "climat* change mitigation") AND ("development" or "livelihoods") AND ("project*" or "action*" or "activit*" or "intervention*") AND ("Africa" or "Asia" or "South America" or "Central America" or "developing nation" or "developing country")*

The search yielded 2,122 results. Article titles and abstracts were manually reviewed to filter-out those that did not present empirical findings related to CCD project outcomes. The full texts of remaining articles were then assessed to confirm relevance, leaving 34 articles for final review.

A realist review approach was adopted. Realist review has an explanatory focus and, therefore, enabled understanding of why project outcomes differ across parameter categories (Pawson et al., 2005). Review findings highlight that interactions between project design and implementation processes and contextual factors can explain differences. For example, Mortimer and Grant (2008) show that the development outcomes of energy efficiency and renewable energy activities are contingent on local energy prices, availability of technologies and the ease with which investment capital can be accessed. Accordingly, the framework in Figure 7.1 considers how project processes shape particular outcomes in the context of the social-ecological system upon which they act, and taking into account wider political-economic factors.

In order to operationalise the framework for evaluating the ECRP, household surveys and semi-structured interviews were used to ask local people in study villages and professional stakeholders about the benefits and negative side-effects they had experienced as a result of ECRP projects. Evidence was sought pertaining to where project outcomes were experienced and whether they might last beyond the lifespan of ECRP projects (2011 - 2017). Information on project design and implementation processes and contextual factors that interact to create benefits and negative side-effects was also sought.

Documentary material was collected and analysed. Project employees guided the researcher towards the ECRP mid-term evaluation report produced by independent consultants (LTSI, 2014), which provided further information on project outcomes in target districts. Both the mid-term evaluation report and the following documents were used to estimate mitigation outcomes that result from projects' forestry, improved cookstoves and solar light components: CU (No Date); CA (No Date); SA (2015); CDI (2011); ECRProject (2014); and DISCOVER (2015).

Univariate techniques were used to analyse statistics derived through amalgamating household survey responses within and across villages. Content analysis was used to analyse survey, interview and documentary data (see Babbie, 2008). Categories used to classify the 'type' and 'direction' of outcomes are outlined in Table 7.2. Subcategories for classifying development, mitigation, adaptation and auxiliary project outcomes emerged inductively from the data. Data analysis uncovered four governance levels at which project outcomes were experienced: international; national; district; and household.

Household and professional stakeholder outcome recipients were asked to assess the magnitude of development, adaptation and auxiliary outcomes in interview and survey responses. Stakeholders reporting experience of benefits and/or negative side-effects were asked to rate outcomes in terms of their perceived importance (positive or negative). A rating scale of 1-3 was used (1 = outcomes had a near-negligible significance for stakeholders; 3 = outcomes had a very significant impact). Mean importance ratings were calculated for each outcome. Constant comparison techniques were used to determine how reported project outcomes differed within and between: a) stakeholder groups, and; b) different household types (demarcated by wealth categories, FH households and EH households). This allowed lists of outcome recipients to be produced. Two-tailed t-tests were used to determine whether differences between mean numbers of benefits experienced by dissimilar household types were statistically significant.

Table 7.2: Categories for classifying project outcome type and direction

Term	Definition
Development benefit	Enhances stakeholders' capabilities to live the life that they choose (Sen, 2001)
Development negative side-effect	Reduces stakeholders' capabilities to live the life that they choose (Sen, 2001)
Mitigation benefit	Could reduce the magnitude of climate change (Edenhofer et al., 2014)
Mitigation negative side-effect	Could increase the magnitude of climate change (Edenhofer et al., 2014)
Adaptation benefit	Helps moderate harm of, or exploit beneficial opportunities from, actual or expected climate change impacts (Field et al., 2014)
Adaptation negative side-effect	Increases harm of, or prevents exploitation of beneficial opportunities caused by, climate change impacts (Field et al., 2014)
Auxiliary project benefit	Any advantageous project outcome that do not fall within 'development', 'mitigation' or 'adaptation' framework categories
Auxiliary project negative side-effect	Any inconveniencing project outcome that do not fall within 'development', 'mitigation' or 'adaptation' framework categories

Ratings from stakeholder testimonies are inappropriate for measuring mitigation benefits. Climate inertia and variability make mitigation benefits and negative side-effects very hard to detect (Tebaldi and Friedlingstein, 2013). When successful mitigation occurs, benefits are usually evidenced only several decades after the activities creating these benefits are instigated. Some mitigation activities, especially those involving land-use changes, can also take a long time to yield benefits. Because ECRP projects only began in 2011, this study took place before most mitigation outcomes had occurred or affected the climate. The magnitude of mitigation outcomes was, therefore, estimated in

terms of tonnes of CO_2 (t/CO_2) expected to be saved through project activities (through emissions avoided or sequestered). Only direct mitigation benefits were considered. Difficulties inherent in estimating indirect mitigation benefits that are yet to materialise — positive outcomes (for e.g. development or adaptation) that result from reducing the magnitude of climate change (e.g. improved agricultural productivity owing to lower rainfall variability) — meant estimation of these benefits was beyond the scope of this study.

Direct mitigation benefits of solar lighting and improved cookstove activities were estimated by multiplying projected household adoption figures (CU, No date; CA, No Date; LTSI, 2014) with average carbon savings resulting from product use (SA, 2015). No data exist concerning the quality and quantity of biomass cover resulting from ECRP forestry activities; only numbers of households participating in activities have been recorded. Making estimations of possible carbon savings is, therefore, extremely difficult. The Clinton Development Initiative *Trees of Hope* project, operating in Neno and Dowa districts in Malawi, monitors carbon savings that result from forestry activities — woodlot regeneration, boundary planting — that are analogous with ECRP. Many tree species planted under ECRP and *Trees of Hope* are also identical: fruit trees*,* and *Senna spectabilis, Faidherbia albida, Acacia polyacantha, Albizia lebbeck, Senna siamea* (CDI, 2011; DISCOVER, 2015; ECRProject, 2014). The average expected carbon sequestration per participating smallholder farming household across the 50-year *Trees of Hope* crediting period was calculated (total expected carbon sequestration divided by total households). This number was then multiplied by figures projecting future ECRP household forestry activity participation rates (CU, No Date; CA, No Date; LTSI, 2014) to arrive at estimates of forestry mitigation benefits.

Conservation agriculture is also considered both by ECRP staff (CA, No Date) and within the wider literature (Whitfield et al., 2015) to be able to contribute to carbon savings. Yet no projects that measure soil carbon sequestration from conservation agriculture are operational in Malawi. A soil carbon project is being implemented in Kenya (VCS, 2014). However, conservation agriculture techniques implemented in this project differ from those promoted by the ECRP. The Kenyan project also promotes additional agricultural techniques (e.g. improved fallows, spreading of organic fertiliser) alongside conservation agriculture techniques but does not disaggregate carbon savings that result from different techniques. Moreover, the agro-ecological conditions in Kenya differ from the Malawi context. Hence, basing estimations of soil carbon savings that result from conservation agriculture under the ECRP on data derived from the Kenyan soil carbon

project would have been subject to severe limitations. As such, no estimates of enhanced soil carbon storage can be provided, meaning results may underestimate direct mitigation benefits provided by the ECRP.

7.3 Results

Outcomes experienced by ECRP stakeholders due to their involvement in projects are now presented. Appendices D, E, F, G and H include further detail on, and quotes evidencing, these results.

7.3.1 Household development and adaptation benefits

Local people in study villages have experienced a range of development benefits due to their participation in the ECRP (Table 7.3; Appendix D). However, benefits were only experienced by a minority of participating households. Economic development gains, including increased income (135 households out of 329 participating in projects within study villages) and asset ownership (48/329), were the most frequently reported development benefits. Most commonly, these benefits were attributed to household participation in VSLAs (by 100 and 47 households out of a total of 154 households that participated in VSLAs for increased incomes and improved asset ownership, respectively). Households reported that returns on investment made using VSLA loans and interest payments received at the end of VSLA lending cycles have improved their abilities to generate income and purchase assets. For example, one elderly, AW household head in KV1 commented that *"with the money from VSLA we bought livestock…we would not have been able to own livestock on our own"* .

22 households who practised conservation agriculture (total n=156) reported that the activity had helped them to realise increased income. Predominantly, they considered that this is because the activity has helped them to produce excess crop yields that can be sold for cash: *"we, the people practising conservation agriculture, are even able to sell [excess] maize"* (AW household head, DV2). Respondents also reported that conservation agriculture has helped to increase household incomes because: reduced land and agricultural input requirements (relative to traditional agricultural techniques) have translated into decreased household expenditure; and reduced labour requirements (relative to traditional agricultural techniques) have freed up time for household members to engage in alternative income-generating activities. 11 households practising seed multiplication (total n=62) reported experiencing increased

incomes owing to reduced expenditure on agricultural inputs and an ability to sell excess yield.

Projects have contributed to better food security through: enhanced crop yields (149/329); year-round harvesting (44 households out of 329 participating in study villages); improved food purchasing power (27/329); and better nutrition (18/329). 122 households practising conservation agriculture (total n=156) across all study villages and 25 households practising irrigation activities (total n=35) in NV2 considered these activities to have been responsible for enhancing crop yields: *"we get much more food through practising conservation agriculture and irrigation"* (HAW household head, NV2). 28 households participating in seed multiplication schemes (total n=62) and 16 households practising irrigation (total n=35) (in NV2 only) considered that these activities had enabled them to harvest food all year round: *"we have food up to the end of March [from first harvest in April] when previously we only had it until July"* (HAW household head, NV2). 27 household heads participating in VSLAs (total n=154) considered that the activity had enabled them to improve their food purchasing power: *"VSLAs have helped us buy more food and improve our lives"* (elderly, AW household head, KV2).

Other reported development benefits included: improved firewood access (14/202 households practising forestry activities and 4/21 that had adopted improved cookstoves); improved education for children (7/154 households participating in VSLA — their participation helped them to pay school fees and purchase school uniforms); and reduced incidences of smoke-related illness (5/21 households that had adopted improved cookstoves). As shown by the mean importance ratings presented in Table 7.3, all development benefits were considered by households experiencing them to have had a very significant positive impact on their lives. Hence, although benefits were experienced only by relatively few ECRP participants, for these people they were substantial.

Adaptation benefits experienced by households within study villages were even less widely reported than development benefits but they were also considered to have had a very significant positive impact by those experiencing them (Table 7.3; Appendix E). 81 households undertaking conservation agriculture (total n=156) stated that the moisture content and quality of soils on their farmland had improved as a result. They reported that this had facilitated adaptation because agricultural productivity is compromised less by dry spells: *"when rainfall has happened there is prolonged moisture due to the maize stalks [which provide soil cover]"* (HAW household head, DV1).

32 households taking part in forestry activities (total n=202) considered trees to have protected their homes, assets and farmland from heavy rainfall and flooding: *"we plant trees and grasses along the rivers because they can be strong against the force of flood waters. We started two or three years ago and it is working!"* (elderly, female LAW household, NV2). 16 households practising forestry activities also considered that the trees they have planted act as natural wind breaks that protect their property: *"we have protection from heavy winds and now no problems arise"* (AW household head, KV2). 33 households reported that VSLAs (total n participating = 154) provide them with access to emergency finance with which to respond to the consequences of climate shocks: *"we used VSLA money to buy thatching grass after the wind carried away the roof of our house"* (AW household head, NV1).

There is evidence that household benefits have multiplied across spatial scales, spreading to non-participating households and non-target villages. Households in Dedza and Kasungu reported that people who do not participate in ECRP projects can benefit from VSLAs. This is because *"we are able to borrow money…even though we are not members"* (HAW household head, DV2). The village extension multiplier for VSLA in KV1 also considered that private loans have increased because "*people now have a source of income".*

One HAW household interviewee in NV2 suggested that project activities implemented by the ECRProject were being copied by nearby households who do not reside in target villages: *"those people (in surrounding villages) are admiring that our lives are improving. They try to copy the activities, although some activities, like irrigation, are difficult to copy. But VSLAs are not so hard and now they have their own".* Two DV1 households reported that people from neighbouring villages have adopted conservation agriculture after being impressed by increased crop yields in DISCOVER target villages.

Table 77.3: Development and adaptation benefits experienced by households in study villages

Outcome	Main project activities attributed to	Number of reporting households (total participating households in study villages = 329)	Mean importance rating (0= unimportant, 3= extremely important)
Development benefits			
Increased income	• VSLAs • Conservation agriculture	135	3.00
Improved business opportunities	• VSLAs • Conservation agriculture	19	3.00
Improved asset ownership	• VSLAs	48	2.96
Improved food security (enhanced crop yields)	• Conservation agriculture • Irrigation	149	3.00
Improved food security (year-round harvesting)	• Irrigation • Seed multiplication schemes	44	3.00
Improved food security (enhanced food purchasing power)	• VSLAs	27	3.00
More nutritious diet	• Malnutrition training	18	3.00
Improved firewood access	• Forestry and improved cookstoves	18	3.00
Ability to finance better education for children	• VSLAs	7	3.00
Reduced incidence of smoke-related illness	• Improved cookstoves	5	3.00
Adaptation benefits			
Reduced vulnerability to dry spells due to improved soil moisture and quality	• Conservation agriculture	81	2.97
Houses, assets and farmland protected from heavy rainfall and flooding	• Forestry	32	2.95
Houses, assets and farmland protected from heavy winds	• Forestry	16	3.00
Ability to grow food throughout the year increases households' abilities to deal with individual climate shocks	• Seed multiplication	8	3.00
Access to emergency finance enables responses to the consequences of climate shocks	• VSLAs	34	3.00

7.3.2 Global mitigation benefits

In contrast to the modest adaptation benefits reported by households, the ECRP could make a significant global scale mitigation contribution. All activities that create mitigation benefits have also led to development gains (Tables 7.3 and 7.4), generating significant development-mitigation synergies. Table 7.4 outlines a range of carbon savings that could be made through household adoption of improved cookstoves, solar lights and forestry activities. Findings from the ECRP mid-term evaluation (LTSI, 2014) show that adoption of low-carbon technologies and forestry has so far been under target. Hence, mitigation benefits that would result from projects meeting adoption targets and continuing to follow mid-term evaluation adoption trends are presented.

Table 7.4: Estimated mitigation benefits resulting from adoption of low-carbon technologies and forestry activities under the ECRP. Sources: SA (2015); LTSI (2014); CA (No Date); CU (No Date); ECRProject (2014); DISCOVER (2015); CDI (2011); personal communication with Hestian Innovation

Low-Carbon Technologies				
Activity	**Average yearly CO_2 saving (t/CO_2)**	**Average service life (years)**	**Households adopting**	**Total CO_2 saving (t/CO_2)**
Improved cookstoves	1.6	3.92	*Project target:* 55,210	346,279
			Project following mid-term evaluation trends: 16,010	100,420
Solar lights	0.2	3	*Project target:* 45,841	27,504
			Project following mid-term evaluation trends: 5,333	3,319
Forestry Activities				
Performance indicators	**Households adopting**	**Average CO_2 savings per participating household over a 50-year period under the Trees of Hope Project (t/CO_2)**		**Projected total CO_2 savings over a 50-year period under ECRP (t/CO_2)**
Project target	58,187	76.92		4,475,744
Mid-term evaluation trends	33,534			2,579,435

DISCOVER intends to generate carbon market revenues from improved cookstoves and reinvest the proceeds in communities to generate additional development and adaptation benefits. Carbon finance has already been successfully generated and reinvested to fund a community health centre under a Concern Universal (the DISCOVER lead NGO) improved cookstoves project in Balaka (three NGO employees; one Donor Agency Employee). The World Bank also subsidises solar lights under the ECRP based on their expected carbon savings (NGO employee). According to a donor agency employee, ECRP donors encourage NGOs to use the carbon market to raise

additional funds for development activities. However, the same employee said: *"There is no attempt to measure carbon except from improved cookstoves (under DISCOVER). It would be beyond the capabilities of the NGOs"*.

7.3.3 Issues hindering benefit creation

As revealed through household and professional stakeholder interviews, various issues have hindered the translation of project activities into household benefits (Table 7.5; Appendix F).

These issues may also undermine the longevity of project benefits once the ECRP formally ends; compromising households' abilities to keep practising project activities and thereby also undermining possible mitigation benefits. Intractable financial poverty and poor market access — contextual factors that are beyond the control of local people — were detrimental to the performance of a range of activities. For instance, financial poverty has compromised irrigation scheme upkeep (six households, one donor agency employee) and household abilities to purchase solar lamps (four NGO employees). One NGO employee observed that financial poverty was particularly detrimental to extremely resource poor households' abilities to purchase solar lamps:

> *Targeting the [most resource poor] is not ideal. They have just enough to pay for phones…they have breathing room. But I think you will observe when you go to communities that those who buy the [solar] lights are not the poorest.*

Revenue shortages across Malawi, a consequence of widespread financial poverty, has meant that extension support for ECRP projects has been patchy (12 households, 2 NGO employees): "e*xtension workers have not come to this village since 2013"* (elderly, HAW household head, KV1). Unreliable extension hinders projects' current ability to deliver CCD benefits and, once project field support is withdrawn, could be extremely detrimental to benefit longevity. Restricted access to markets has limited income gains from the ECRP because households have been forced to accept low prices for cash crops that they have produced through participating in agricultural activities (one NGO employee, two household interviewees): *"vendors come and will only buy for very low prices. But we have no other options because there is no nearby place to sell"* (elderly, HAW household head, KV2).

Project activities have often failed to help people to adapt to current or future climate change because their practice was hindered by extreme weather events, including dry spells and heavy rains. Ecosystem-based activities, including agricultural (reported by 26 households and two NGO employees) and forestry activities (reported by eight households), have been particularly sensitive to climate shocks (Table 7.5; Appendix F). Across all study districts, 11 households reported that, although conservation agriculture is compromised less by dry spells than traditional agricultural techniques (e.g. tilling, ridging and burning crop residues), it is still detrimentally affected: *"even under conservation agriculture, soil moisture is not enough"* (HAW household head, NV2). Even when soil moisture and fertility is improved by conservation agriculture, heavy rains and flooding often undo progress, according to nine household interviewees across all study villages: *"it can be very difficult when the rains come as the crops and mulch [organic soil cover] are washed away and the goodness in the soil is lost"* (AW household head, NV1). Households also reported that heavy rainfall and flooding have destroyed crops and seedlings planted under forestry (four household interviewees), seed multiplication (five household interviewees) and irrigation activities (four household interviewees).

In study villages in Kasungu and Nsanje, four household interviewees considered that covering crop land with organic soil cover (a core principle of conservation agriculture) has led to waterlogging in instances of heavy rainfall. The issue was also noted by NGO field staff in both districts: *"those that mulched their fields have experienced waterlogging"* (NGO employee). As discussed in section 4.3.3, Kasungu and Nsanje experience 822 mm and 907 mm of precipitation annually, on average, respectively. Despite that average annual precipitation in Dedza (1041 mm) exceeds that in both Kasungu and Nsanje, issues of waterlogging were not reported in Dedza study villages or by NGO staff operating in the district. An NV1 interviewee wondered whether silt distributed by floods in Nsanje in early 2015 might have compounded the problem.

Table 7.5: Issues that hinder the translation of project activities into climate compatible development benefits and threaten their longevity

Issue	Description	Reported impact(s)	Reported by
Agricultural activities			
Negative perceptions of conservation agriculture	• Traditional agricultural practices involve farmers digging the soil • Households are teased and abused by other villagers for participating in conservation agriculture, which requires minimum soil tillage	• Conservation agriculture dis-adoption • Only small areas of land committed to conservation agriculture	9 households, 1 NGO employee
Delayed conservation agriculture benefits	• Organic nutrients are fully absorbed into soils only after two to three years, leading to delayed development and adaptation benefits		2 households, 2 NGO employees
Poor fertiliser access	• Application of synthetic fertilisers can help offset delayed conservation agriculture benefits but household access is poor	• Poor harvests • Conservation agriculture dis-adoption	7 households, 1 NGO employee
Pest attacks	• Insects and weeds damage crops and organic soil cover	• Poor harvests • Conservation agriculture benefits lost	9 households
Co-existence with livestock and other animals	• Goats and baboons eat and damage crops and organic soil cover		7 households, 3 NGO employees
Expense of irrigation and seed multiplication upkeep	• Households cannot afford to replace a) irrigation infrastructure when it breaks down, and b) seeds required for multiplication schemes	• Irrigation and seed multiplication benefits lost	6 households, 1 donor employee; 1 NGO employee
Poor market access	• Households — especially residents of remote villages — have inadequate access to suitable markets for selling cash crops	• Agricultural activity benefits reduced or lost	2 households, 1 NGO employee

Extreme weather events	• Droughts and severe dry spells compromise benefits of agricultural activities • Heavy rains destroy crops and organic soil cover and undermine conservation agriculture soil fertility gains • Heavy rain can lead to waterlogging when conservation agriculture is practised	• Agricultural activity benefits reduced or lost • Seed multiplication compromised • Poor harvests • Conservation agriculture dis-adoption	26 households, 2 NGO employees
Livestock production			
Prioritisation of short-term benefits	• Livestock participants give the offspring of the animals that they receive to other households in order for associated benefits to spread throughout villages. However, households sometimes eat or sell livestock shortly after passing on offspring in order to access food and income quickly or in response to climate and development shocks	• Sustainable livestock production benefits (e.g. access to manure, goats milk) lost	14 households
Forestry			
Communal, non-immediate benefits	• Participating and non-participating households benefit similarly from afforestation. Households are disillusioned about participating in afforestation, which does not yield immediate benefits, for 'free'. They would like to receive additional, immediate benefits in return for their labour	• Limited participation in forestry activities • Forestry benefits reduced or foregone	3 households, 1 NGO employee
Extreme weather events	• Dry spells and drought mean tree seedlings do not receive enough water • Heavy rains and floods damage and destroy trees	• Forestry benefits reduced or foregone	8 households
VSLA			
Drop-outs	• VSLA members struggle to pay back loans and are forced to withdraw from groups.	• Reduced availability of loans	32 households
Challenges for doing business	• **Financial poverty translates into limited markets for new businesses** • **Low education levels limit innovation that is required for business success**	• **Business profits limited**	**4 households**

Low-carbon technologies			
Limitations of market-based approaches	• Financial poverty in ECRP target villages makes it difficult for households to afford products (e.g. solar lamps, improved cookstoves) • Unsensitised households in non-ECRP target villages are unaware of products	• Low affordability and lack of awareness reduces markets for solar products and cookstoves • Few have capital required to become solar entrepreneurs	4 NGO employees
Opportunity costs of improved cookstove production	• Other livelihood options are more profitable than improved cookstove production • DISCOVER pledged to top-up income from cookstove sales with money obtained from carbon credit sales, but this has yet to materialise	• Stove production eschewed in favour of other livelihood activities	3 NGO employees
Cheaper solar products available	• Cheaper solar products than those sold under ECRP are available • Poor quality of alternative products deters investments in solar	• Products unaffordable • Solar entrepreneurship too capital intensive	4 NGO employees
All activities			
Patchy extension worker services	• Extension service capacity across Malawi is patchy. Reduced training and policing of project activities could create problems in villages without sufficient support once the ECRP comes to an end	• Households get insufficient technical advice • Few incentives to spread project resources	12 households, 2 NGO employees

ECRP projects are predominantly framed in terms of their pursuit of development and adaptation goals, with activities prioritised that also create mitigation benefits (see chapter five). There is a mismatch between this framing and the outcomes reported by project stakeholders. Participating households received over three times as many development benefits (1.66) as adaptation benefits (0.45), on average. That extreme weather events acutely hinder the translation of project activities into adaptation benefits provides one explanation for this. Activities' climate sensitivity could also undermine current and future development benefits, as well as mitigation gains that they stand to create over time.

In some cases, implementation issues have been reduced or overcome. For example, some households hold negative perceptions of conservation agriculture because they contrast with traditional farming practices. However, a village extension multiplier in NV2 suggested that negative perceptions of conservation agriculture have sometimes softened when those holding them witness superior crop yields achieved by conservation agriculture adopters.

Non-adopters have reportedly *"been impressed"* and have *"said they will re-join"*. Likewise, project field workers have reduced instances of crops and organic soil cover being destroyed by livestock. One AW household in KV1 explained that *"we have been taught a new method [by field officers]…which involves tying together stalks and looking after them at home…this means goats cannot get to them".* NGOs have also encouraged villages to develop bylaws to prevent livestock from damaging crops (NGO employee). Other implementation issues (e.g. activities' climate sensitivity, those linked to financial poverty and poor market access) appear more persistent.

7.3.4 Negative side-effects

Issues hindering the performance of project activities have led to negative side-effects for local people (all receiving mean importance rating scores of between 2.88 and 3.00) for local people (Appendix G). Nine households reported that they had lost money as a result of participating in VSLAs. They reported that financial poverty often translates into limited output markets and means small businesses established through VSLA loans are unprofitable. Unprofitable investments have meant that some debtors are unable to pay back VSLA loans. Consequently, other VSLA members have lost money that they have invested in associations: *"many people are not able to give back loans…which makes others suffer"* (AW household head, NV1).

Sometimes, VSLA members confiscate the property of those who default on their loans, and the property of their families, leading to additional asset losses. One elderly-headed, female, LAW household head in KV2 complained that *"debt collectors took two goats from me while my son paid his debt but I never got them back".* Three households in NV2 reported that increased resource wealth resulting from ECRP activities has led to greater instances of crime. Practising project activities in the context of extreme weather events has also led to negative side-effects for local people. For instance, three households considered that, under conditions of heavy rainfall, conservation agriculture has led to waterlogged fields and reduced crop yields.

Increased inequality within target villages was the most frequently reported negative side-effect (by 16 households). Analysis of how project benefits are distributed amongst different household types supports these testimonies. On average, 2.11 benefits were experienced by households participating in ECRP project activities. However, HAW households experienced significantly more development and adaptation benefits than any other household type. They experienced 2.72 total benefits, on average, compared with 2.08, 1.67, 1.46 reported by AW, FH and LAW households, respectively. EH households experienced 2.30 benefits, on average. LAW households experienced the fewest development benefits (1.08) and FH households experienced the fewest adaptation benefits (0.36), on average. Two-tailed t-tests showed that differences between mean numbers of benefits experienced by HAW households and AW ($t=2.25$, $p=0.025$), LAW ($t=3.82$, $p=0.0002$) and FH households ($t=3.03$, $p=0.003$) were statistically significant.

One NGO employee considered that the processes by which participants are chosen for livestock production activities have created negative side-effects for the extremely resource poor. In some DISCOVER villages, households were asked to spend time and resources building corrals to show they were 'capable' of keeping livestock. Some took loans to afford construction materials. However, livestock were rarely distributed to extremely resource poor households. Livestock activities operate on a 'pass-on' principle whereby initial participants give the offspring of the animals that they receive to other households in order for associated benefits to spread throughout villages. NGOs worried that extremely resource poor households might: a) sell livestock for immediate cash benefits; and/or b) lack the capabilities to look after animals properly. Hence, they were concerned that distributing animals to these people might compromise the pass-on principle. According to the NGO employee: "*there have been cases whereby we say no, you have the corral but you are not fit".*

Growing inequality has occurred despite that ECRP projects target the most vulnerable households (CU, No Date; CA, No Date). Local people were not involved in the decision to target benefits towards the most vulnerable but they agreed with the principle of doing so. There was broad consensus amongst household interviewees that all residents within study villages deserve assistance to reduce their vulnerabilities. This was attributed to residents' widespread inability to fulfil their basic needs: *"everyone should receive the benefits (from the ECRP). These are the basic needs for everyone and all should be considered. Weather problems affect us all"* (HAW, NV1 household head). However, respondents believed that certain groups require particular attention, including the resource poor, elderly-headed households, the disabled, the chronically-ill, women and orphans. For example, one household head (elderly, AW) in NV2 commented:

> *Very poor and disabled people should benefit first because they need most help…The very poor should also receive help to deal with difficult weather conditions first because they have few sources of livelihood. It would also help reduce the gap between the rich and the poor.*

Increased inequality being experienced in study villages as a result of the ECRP is, therefore, at odds with conceptions of distributive justice held by local people and espoused by the projects themselves.

7.3.5 Auxiliary benefits

In addition to producing CCD outcomes, the ECRP has also generated auxiliary benefits for stakeholders operating at supralocal levels (Appendix H). Access to financial resources was reported as an auxiliary benefit by nine NGO employees and three district government employees: *"DISCOVER is the largest contract [redacted NGO name] has ever had, not just in Malawi but worldwide"* (NGO employee). Subnational government, NGO and donor agency employees also considered that their employer organisations had variously benefitted from: improved organisational capacities (10 district government employees); the ability to learn from consortia partners (13 NGO employees); improved reputations (eight NGO employees, one donor employee); enhanced lobbying influence (two NGO employees). Professional stakeholders unanimously agreed with one NGO employee who considered that many of these benefits would "*last beyond the lifespan of the project and inform future work".* All auxiliary benefits received average importance rating scores of between 2.50 and 3.00.

Overall, ECRP projects have produced patterns of benefits and negative side-effects that differ across geographical scales and governance levels. Outcomes are distributed unevenly between stakeholder groups and will change over time. CCD triple-wins are being achieved, but they do not represent the full range of outcomes produced.

7.4 Discussion

Results presented in this chapter point to two key findings that resonate with the CCD literature and are now discussed in turn:

1) Outcome patterns created by projects do not reflect the popularised depiction of CCD;
2) Community-based CCD may be insufficient to enable contractarian distributive justice.

7.4.1 Outcome patterns created by projects do not reflect the popularised depiction of climate compatible development

CCD interventions are popularly depicted as achieving development, mitigation and adaptation benefits of equal magnitudes (Figure 1.1, p.4). Akin to this, ECRP projects are presented as achieving development and adaptation benefits through activities that contribute to carbon savings or are carbon neutral (CU, No Date; CA, No Date). Yet analysis of the ECRP suggests that projects create a range of negative side-effects (e.g. increased inequality within villages, decreased resource wealth, increased crime) and auxiliary benefits (e.g. improved capacities, innovativeness, reputations, access to resources, lobbying influence and organisational cohesion experienced by professional stakeholder organisations) alongside triple-wins.

ECRP project outcomes will change over time because most mitigation benefits have yet to develop and a range of issues threaten the sustainability of project activities. Outcomes are also experienced differently by diverse individuals and groups operating across dissimilar geographical locations and governance levels. For instance, households experience development and adaptation outcomes but mitigation benefits will be experienced at the global scale and auxiliary benefits are experienced by professional stakeholders at supralocal levels. Within villages, benefits and negative side-effects are distributed unevenly between household types. Findings presented in this chapter extend the work of Tompkins et al. (2013) who criticise the popularised depiction of CCD because it fails to draw attention to the full range of outcomes that

might be created. Figure 7.2 illustrates this point, comparing the outcomes created by ECRP projects during and beyond the projects' lifespan with the popularised depiction of CCD.

Although projects create CCD triple-wins, the balance between development, mitigation and adaptation benefits produced by the ECRP is at odds with its framing. ECRP projects are presented predominantly in terms of their pursuit of development and adaptation goals. By contrast, the ECRP stands to further local level development progress in Malawi and make a significant global scale mitigation contribution. However, expected project adaptation benefits in ECRP villages may have been over-estimated. Low carbon technologies and forestry activities implemented by projects could avoid and/or sequester up to 2,683,174 t/CO_2 over a 50 year period if household participation continues along mid-term evaluation trajectories. These carbon savings are enough to offset the annual footprint of: 157,833.77 citizens of the United States of America (a high-emitting developed country); 515,995 French citizens (a low-emitting developed country); or 400,473.73 Chinese citizens (the highest developing country emitter) (World Bank, 2016). Further carbon savings might result from ECRP conservation agriculture activities but, as discussed, estimating these carbon savings was beyond the scope of this study. Because activities that create mitigation benefits also lead to development gains (e.g. forestry activities improved firewood access, improved cookstove use reduced smoke-related illness) ECRP activities generates significant development-mitigation synergies (Figure 7.2).

Mitigation estimates do not account for issues that could hinder the translation of project activities into benefits over time (e.g. climatic limits, patchy extension services - see Table 7.4). These issues are likely to compromise estimates of forestry mitigation benefits because they are projected over a 50-year period. By contrast, carbon savings from improved cookstove and solar light adoption are only measured over short product lifespans (3-4 years).

Carbon markets provide opportunities for CCD projects to generate revenue from emissions reductions that can be used to generate additional development and/or adaptation benefits for local people. However, capacity shortages and other barriers present significant challenges for raising carbon market finance in many developing countries, irrespective of activities used to create mitigation benefits (Wood et al., 2016; Herold, 2009).

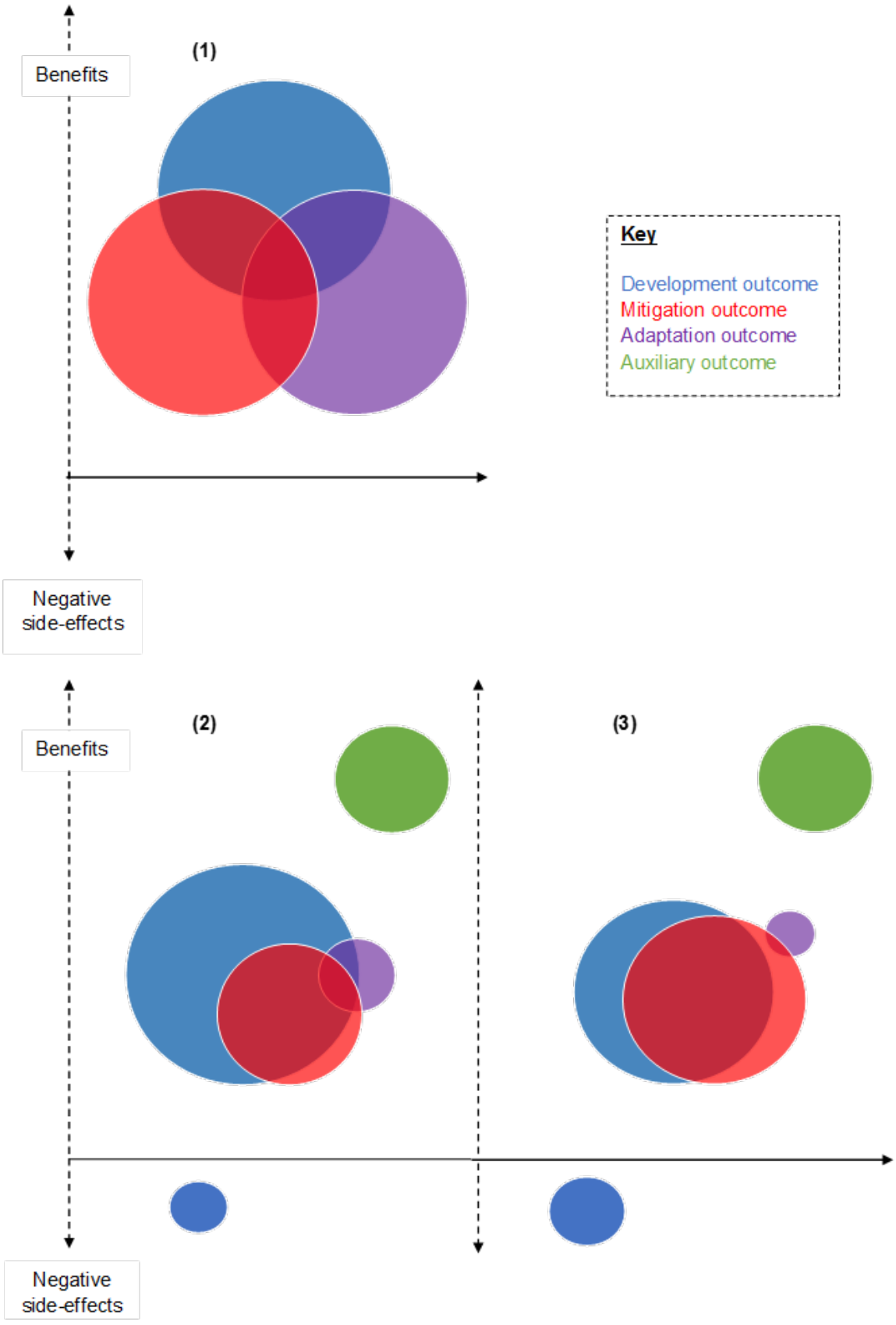

Figure 7.2: A comparison between the popularised depiction of CCD outcomes (1) and patterns of benefits and negative side-effects created by the ECRP during (2) and beyond (3) project lifespans. Descriptions of, and differences between, (1), (2) and (3) are outlined in the text.

ECRP projects appear to make only a modest contribution to adaptation in study villages (Figure 7.2). Curtailed scientific understandings of climate change amongst local people related to limited education levels and traditional belief systems (Simelton et al., 2013) may have meant adaptation benefits were underreported. However, modest adaptation benefits are more likely explained by the fact that activities implemented by ECRP projects are themselves very sensitive to climate shocks and stresses. In some cases, practising project activities in the context of extreme weather events led to negative side-effects for local people.

Ecosystem-based activities are increasingly used to pursue CCD goals (Munang et al., 2013). Yet they were particularly sensitive to climate shocks under the ECRP. This finding is mirrored by wider research across the developing world (Schwilch et al., 2014; Leventon et al., 2015) and suggests there may be climatic limits to ecosystem-based CCD. Benefits may be time-bound and activities may even increase local people's vulnerabilities (Noble et al., 2014). There is a danger that supposed adaptation benefits that can be created by ecosystem-based CCD may have been over-estimated. Given the speed at which they are being adopted by practitioners, possible climatic limits to the CCD benefits that might be achieved by ecosystem-based activities is a pressing research gap in need of further investigation.

Over-estimation of adaptation benefits under CCD may even extend beyond ecosystem-based approaches. This is because projects profess to pursue adaptation goals are frequently composed of re-packaged rural development activities that are fundamentally unaltered (Ireland, 2012). Repackaging is incentivised by NGOs' desire to attract development funding that is increasingly being channelled into adaptation finance (Ibid.). Indeed, many of the activities intended to create adaptation benefits under the ECRP are not new: the literature highlights their enduring presence within development discourse and practice (e.g. Wall, 2007; Buckley, 1997; Nieuwenhout et al., 2001; Wiggins and Cromwell, 1995; McCracken and Smith, 1998). Non-financial auxiliary benefits (e.g. enhanced reputations, innovation and lobbying influence) that were shown to accrue to NGOs in this study may also incentivise repackaging.

Improved use of climate information should be utilised within CCD project design to ensure the suitability of activities intended to produce adaptation benefits over time. However, barriers (e.g. modelling limitations, limited capacity) mean integration of climate information within development planning remains inadequate (Semazzi, 2011; Jones et al., 2014; Vincent et al., 2015). Future research aimed at reducing barriers to

climate information is urgently required to ensure that project developers have the informational resources to create the adaptation benefits that CCD aims to achieve.

7.4.2 Community-based climate compatible development may be insufficient to enable contractarian distributive justice

The plurality of values and interests that coexist and conflict in the CCD operating context mean it is impossible to underpin the concept with a universal standard of distributive justice (Fisher, 2015). Ideally, the particular nature of distributive justice adopted through specific interventions should negotiate between these interests (Paavola and Adger, 2006). Given that CCD is being implemented to reduce the vulnerabilities of local people (Stringer et al., 2014), the principles of procedural justice require that their voices must be heard (Schlosberg, 2007).

The contractarian standard of distributive justice underpinning the ECRP was determined without local involvement. However, results presented in this chapter show that local people are supportive of project intentions to provide development and adaptation benefits to all households within target villages whilst focussing project activities and associated benefits towards particularly vulnerable households. Notwithstanding a) significant debate over the specifics of vulnerability (Liverman, 2001; Eakin et al., 2009) and b) misgivings over whether labelling individuals and groups as 'vulnerable' is deterministic and disempowering (Adger, 2001), these contractarian principles have been institutionalised within climate and development research and practice (Field et al., 2014; Gaillard, 2010).

In contrast to its stated goal, ECRP outcomes have been perceived to exacerbate local inequalities within study villages and provided least benefit to underprivileged household types. LAW and FH households, who are considered amongst the most vulnerable in Malawi (MNREM, 2006), received the fewest benefits of all household types. Similar findings have also resulted from evaluations of other projects that pursue CCD in developing countries (Mathur et al., 2014; Mustalahti and Rakotonarivo, 2014; Khadka et al., 2014; Subak, 2000).

A paradox of vulnerability appears to compromise fulfilment of a contractarian standard of distributive justice through ECRP projects. The same socio-economic conditions that lead local people to be labelled as 'the most vulnerable' have also prevented them from reducing their vulnerabilities through project activities. ECRP projects' community-based

approach is premised on the idea that local people have the skills, knowledge, resources and networks to further their own development. However, findings presented in chapter six show that limited access to human and material resources (e.g. finance, time, health) often obstructed the participation of LAW, FH and EH households in project activities. Consequently, these groups have accrued fewer project benefits than other household types. Some were unable to participate in any project activities and missed out on benefits entirely. The participation of others was restricted relative to less vulnerable households. Findings point to a reciprocal relationship between procedural and distributive justice: something that is often theorised (e.g. Schlosberg, 2007; Fraser, 2005) but infrequently supported by empirical evidence.

Even when households have been able to meaningfully participate in the ECRP, benefits accrued have been curtailed. Issues associated with wider patterns of underdevelopment in Malawi that are beyond the control of local people obstruct development and adaptation progress. Poor market access and availability means households are often unable to sell crops produced through agricultural activities and make profitable investments using VSLA loans (see also Bele et al., 2014). As a result, they are unable to escape from intractable financial poverty, which itself compromises the performance of project activities (e.g. inability to afford fertiliser, households are forced to eat or sell livestock). These conditions have even resulted in the creation of development negative side-effects (e.g. when financial losses resulted from poor VSLA loan payback). Patchy extension support — a consequence of national resource poverty and associated revenue shortages — both in Malawi and elsewhere (Wright et al., 2014; Dyer et al., 2014) also hinders local people's abilities to achieve CCD benefits in the present. Implications will be even more detrimental once project field support is withdrawn, threatening benefit longevity (Orchard and Stringer, In Press).

Community-based activities akin to those implemented by the ECRP are becoming institutionalised alongside contractarian distributive justice approaches within climate and development practice (Reid, 2016). However, evidence concerning whether and to what extent these activities are able to contribute to CCD benefits at all, let alone direct those benefits towards the most vulnerable, is often highly contested. Existing evidence is politicised, based on experimental trials rather than real world experiences and outpaced by success claims (Whitfield et al., 2015; Brau and Woller, 2004; Urmee and Gyamfi, 2014; Lee and Chandler, 2013; Nieuwenhout et al., 2001). Findings presented in this chapter suggest that community-based CCD projects may be insufficient for easing the plight of vulnerable people, especially the most vulnerable. These groups

often lack the necessary human and material resources to participate in project activities. Moreover, structural issues, which originate at supralocal governance levels and are beyond both the control of 'communities' of local people and the scope of projects, conspire to prevent households from flourishing, even when they are able to meaningfully participate.

Contending with resource scarcity and structural issues that condition local vulnerability will require community-based CCD projects to create links with wider development efforts across levels and scales. As discussed in chapter six, linking very vulnerable households identified through projects with social protection schemes, such as food and cash transfers, could help enable their involvement. There is also an acute need for projects to identify context-specific enabling factors that help overcome non-material barriers to participation. Collaborative working between donors, NGOs and governments (national and subnational) will be crucial for isolating and contending with particularly onerous structural issues that condition vulnerabilities. Building broad coalitions that advocate for cross-scalar initiatives that reduce these issues and are well-coordinated with projects will be vital.

7.5 Conclusion

This chapter has addressed the underdeveloped evidence base around outcomes created by CCD projects and their links to distributive justice. A framework was developed that enables holistic CCD outcome evaluation across seven parameters. The framework was used to analyse qualitative and quantitative data in order to evaluate outcomes that result from the implementation of ECRP projects.

Results show that projects have produced multi-level patterns of benefits and negative side-effects that differ across time and space and that are sometimes misaligned with both popular depictions of CCD and the projects themselves. Outcomes have diverse consequences for different individuals and groups and are at odds with contractarian principles of distributive justice that are institutionalised with climate and development research and practice. Findings point to a need for greater transparency in terms of: a) the outcomes that CCD approaches can realistically achieve; b) who these outcomes stand to benefit; and c) at whose expense. Only then can the expediency of pursuing CCD be properly evaluated. In particular, this would allow the utility of pursuing CCD triple-wins to be assessed relative to the merits of pursuing single- or double-wins.

Projects are increasingly utilising ecosystem- and community-based activities in order to pursue CCD goals. However, previous studies suggest that success claims pertaining to these approaches lag behind the rate at which they are being operationalised. Results presented in this chapter support this proposition and call into question: a) the suitability of ecosystem-based activities for furthering adaptation progress; and b) the complementarity between community-based activities and efforts to target CCD benefits towards the most vulnerable. A strengthened evidence base is required to ensure that these approaches are able to meet CCD goals in a manner that furthers distributive justice.

In conjunction with chapters five and six of this thesis, this chapter has contributed to a holistic social justice analysis of the ECRP. In the next chapter, the wider implications of research conducted are discussed and this thesis is concluded.

8 Discussion and conclusions

8.1 Introduction

This thesis has presented a multi-scalar, cross-level analysis of the social justice implications of the ECRP in Malawi at a particular point in time. In doing so, it has contributed new insights to the CCD literature. To date, there has been a scarcity of empirical research that critiques the operationalisation of CCD, particularly initiatives that simultaneously pursue development, mitigation and adaptation goals. However, like other concepts concerned with environment-development issues, CCD represents only one particular way of clustering knowledge and has the potential to side-line alternative ways of knowing and doing (Käkönen et al., 2014). Specific CCD polices, programmes and projects are designed and implemented in a context where multiple forms of uncertainty mean a plurality of values and interests coexist and conflict with one another (Stocker et al., 2014). How these interventions are designed, implemented and their outcomes experienced depends on whose values and interests are 'winning out' amidst this uncertainty and value plurality.

Social justice research that considers issues of procedure and distribution can help adjudicate between stakeholders' competing priorities and perspectives for CCD. In doing so, it can also indicate whether and how the 'development first' CCD discourse (Picot and Moss, 2014) is contending with socio-cultural, political and economic forms of oppression. Chapter three developed a conceptual model for evaluating social justice, seeking to address the shortage of tools for guiding cross-level, multi-scalar CCD analyses in the literature. At the core of the model are three interdependent pillars of justice: recognition, participation and distribution. A mixed methods research approach (chapter four) was then drawn on to evaluate the ECRP on the basis of the conceptual model, with results presented in chapters five, six and seven.

The present chapter discusses the wider implications of research conducted. It starts by demonstrating how the findings together contribute towards achieving the research aim and objectives. The research approach is then reflected upon before the findings are situated in the environment, development, climate change and social justice literature. Lastly, further avenues for research are suggested before final conclusions on the thesis as a whole are drawn.

8.2 Fulfilling the research aim and objectives

Research presented in this thesis has aimed to explore the social justice implications of two subnational projects that pursue CCD triple-wins in Malawi and together form the ECRP. Three objectives aided fulfilment of this aim:

1. Understand different stakeholders' priorities for case study project design;
2. Identify procedural justice opportunities afforded to stakeholders within case study project design and implementation;
3. Investigate the outcomes created by the case study projects and their links with distributive justice.

This section demonstrates how research findings presented in chapters five, six and seven contributed to the achievement of the research objectives. It concludes by showing how, together, completion of the research objectives enabled the thesis research aim to be fulfilled.

8.2.1 Understanding different stakeholders' priorities for case study project design

Chapter five contributed towards completion of objective one. A comprehensive stakeholder analysis enabled a range of ECRP stakeholders to be identified, including donor agencies, NGOs, national government, subnational governments and households who reside in study villages. There was overlap between stakeholders 'revealed' priorities for ECRP design. Professional stakeholders prioritised the delivery of CCD triple-wins through packages of mutually-reinforcing ecosystem- and community-based project activities. Local people's preferences for project design translated into the pursuit of double-wins across development and adaptation. This common ground could encourage multi-stakeholder collaborations that are critical for advancing CCD.

However, local people and professional stakeholders have contrasting worldviews, leading to local people prioritising ECRP low-carbon activities for different reasons than donor agencies and other implementing partners. Local values placed on low-carbon activities (solar, improved cookstoves) were associated with traditional religious beliefs. These values were at odds with the scientific worldview held by professional stakeholders, who valued the mitigation benefits of low-carbon activities.

Development goals pursued through low-carbon activities were the least prioritised by local people, especially the most vulnerable households living in particularly climate sensitive locations. For those experiencing acute, multi-dimensional poverty, solar energy access benefits were considered to be a luxury whereas awareness of the potential benefits of improved cookstoves was limited. In areas where water access was poor, activities focussed on improving the situation were prioritised over low-carbon activities.

Further points of contention between stakeholders may be obscured by power. In particular, NGO dependence on external funding for projects creates an invisible power relationship that allows donor expectations to shape their priorities for CCD. Consequently, development and adaptation activities favoured by donors are also those that NGOs have expertise in and wish to continue implementing. Because donor and NGO value positions coalesce, opportunities for social learning are reduced and chances for local people's priorities to permeate NGO value positions are limited.

8.2.2 Identifying procedural justice opportunities afforded to stakeholders within case study project design and implementation

Chapter five also contributed towards completion of objective two by exploring procedural justice through ECRP design. It was found that ECRP project design was 'top-down' and donor-led, with other stakeholders only involved selectively. Visible and hidden forms of power created barriers to procedural justice. NGO's visible powerlessness in the form of budgetary and resource constraints created a hidden power dynamic that prevented the participation of most target households. An absence of guiding policy frameworks also restricted government involvement (visible powerlessness). NGOs' dependence on external funding allowed donors to exert hidden power over them, restricting their strategic input within design processes. Donor control of resources upon which NGOs, governments and local people are dependent in Malawi also enabled them to determine recognition patterns that were assimilated into ECRP design processes and conditioned stakeholder participatory opportunities (invisible power). Subsequent design processes treated local preferences as secondary to professional stakeholder preferences, creating patterns of misrecognition.

Chapter six built on these findings and explored procedural justice through ECRP project implementation. Findings showed ways in which ECRP implementation processes have facilitated participation and recognition for local people. Results show that many

households have been well-engaged in project activities, management and decision-making. Opportunities for traditional leaders to dominate implementation processes and exclude others were reduced when new, entry-point institutions were used to introduce project activities. Institutional linkages also mean ECRP projects are well-placed to challenge supralocal drivers of vulnerability.

However, in some instances, projects risk creating patterns of procedural injustice. This is because there is poor fit between implementation processes and contextual power relationships. Extremely vulnerable households' limited economic and human resources resulted in their visible powerlessness and translated into 'resource poverty', 'caregiver' and 'incapacity' barriers that have reduced their involvement in projects. Limited NGO resources have also constrained household opportunities to participate in monitoring and evaluation processes (hidden powerlessness). Where new, entry-point institutions are not used to administer project activities, traditional leaders have used their hidden power to manipulate implementation processes, leading to instances where other local people were misrecognised and excluded. Because donors' worldviews were assimilated within the design of the ECRP at the expense of local belief systems (invisible power), participation in low-carbon activities occurred without people necessarily fully understanding associated mitigation benefits.

8.2.3 Investigating the outcomes created by case study projects and their links with distributive justice

Chapter seven addressed research objective three. Results revealed that the ECRP succeeds in creating CCD triple-wins but that projects also create a range of negative side-effects and auxiliary benefits. Hence, outcome patterns created by projects do not reflect the popularised depiction of CCD, which focusses only on development, mitigation and adaptation 'wins'. Moreover, findings suggest that the ECRP is being framed in a way that underestimates the mitigation benefits that projects can achieve but overestimates their potential adaptation benefits. ECRP outcomes are distributed unevenly between stakeholder groups operating across dissimilar geographical locations and governance levels. For instance, households have experienced development and adaptation outcomes but mitigation benefits will be experienced at the global scale and auxiliary benefits have been experienced by professional stakeholders at supralocal levels. Due to inertia in the climate system and issues that threaten the longevity of CCD benefits, outcomes will likely change over time.

Ecosystem- and community-based activities are becoming popular approaches for achieving CCD outcomes. However, findings suggest that ecosystem-based activities might be subject to climatic limits, with particularly negative consequences for their propensity to progress adaptation. Community-based activities appear insufficient for creating outcomes that align with the contractarian distributive justice principles that underpin the ECRP. Community-based approaches are premised on the idea that local people have the skills, knowledge, resources and networks to further their own development. However, barriers to participation in ECRP activities for the most vulnerable households also reduce the likelihood that these households are able to realise benefits from projects. Issues associated with wider patterns of underdevelopment in Malawi that are beyond the control of local people also obstruct CCD outcomes under the ECRP.

8.2.4 The reality of climate compatible development: multi-level, cross-scalar patterns of social justice and injustice

Together, completion of the research objectives has enabled fulfilment of the research aim. Findings reveal that the ECRP has created a complex web of interrelated social justice implications (Figure 8.1). These implications are experienced unevenly by stakeholders, depending on where they are located across governance, spatial and temporal dimensions.

The ECRP seeks to improve the lives of over 600,000 Malawians by reducing their climate and development vulnerabilities (DfID, No Date). However, projects have not consistently afforded households in study villages new opportunities to holistically enhance their socio-cultural, political and economic freedoms. All households in study villages are vulnerable to development and climate change shocks and stresses. Yet those with relatively superior resource access were: 1) likely to have had their development and adaptation priorities recognised through design processes, 2) often able to participate in implementation processes; and 3) often able to achieve (albeit time bound) valued benefits and avoid negative side-effects. By contrast, the goals of the ECRP were less well aligned with the priorities of the most vulnerable households. These households commonly faced barriers to their participation in implementation processes and were, therefore, unable to realise benefits from projects. Households' uneven social experiences are a result of the ECRP's poor fit with pre-existing power relationships and

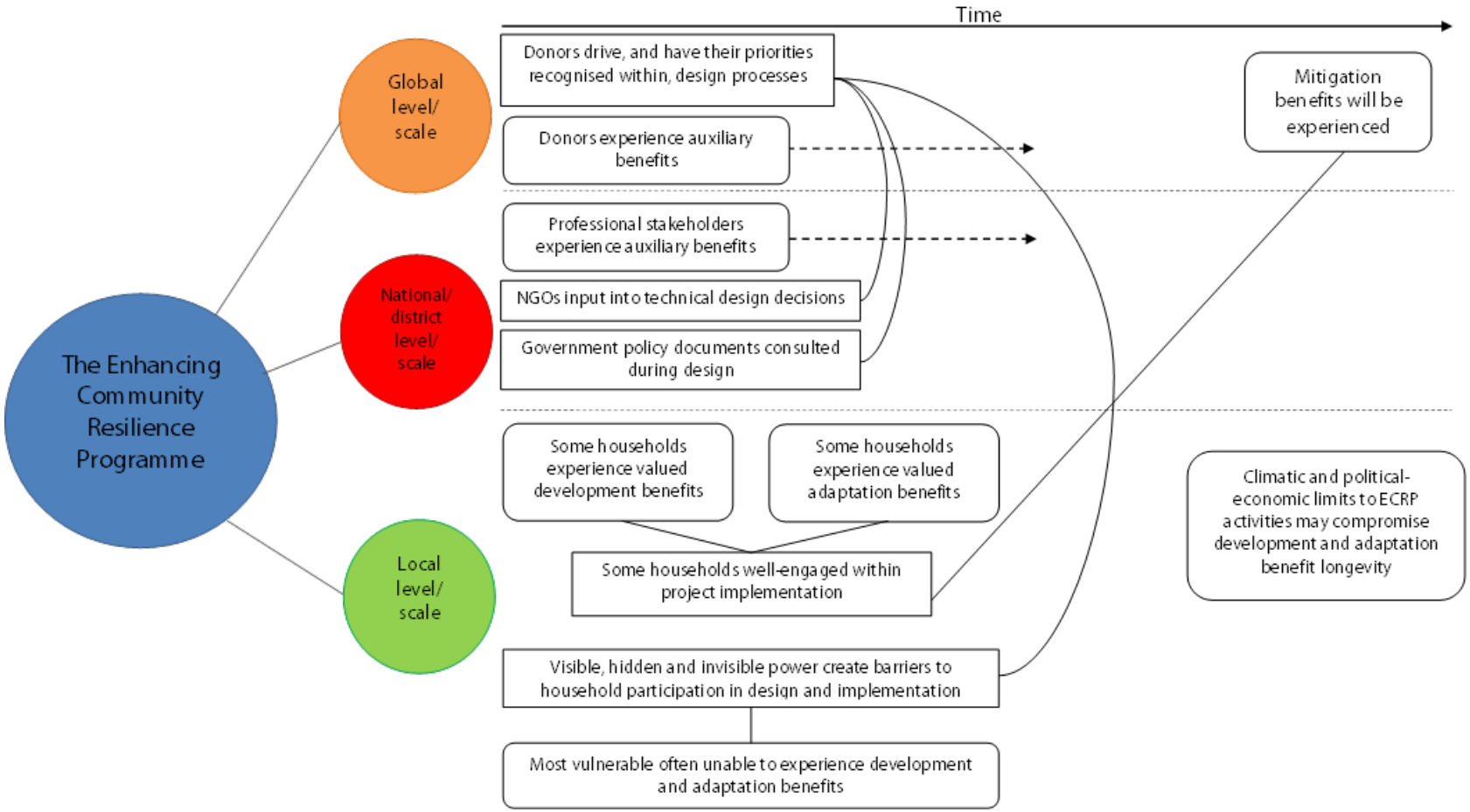

Figure 8.1: The interrelated, multi-level, cross-scalar social justice implications of the ECRP. Sharp-cornered boxes indicate procedural (in)justice implications of the ECRP. Soft-cornered boxes indicate distributive (in)justices. Lines connecting different social (in)justice implications indicate links between them. Dotted arrows indicate that professional stakeholder auxiliary benefits will be sustained over time.

contextual circumstances, which include political-economic issues and climatic conditions. Overall, the uneven social justice experiences of households mean that the ECRP has sustained and exacerbated inequalities within study villages.

National and regional ownership of the ECRP has been curtailed by the restricted input of government representatives and NGOs within design processes, which are a result of their lack of visible (limited budgetary and staffing resources) and/or hidden power (few opportunities to influence strategic design decisions). However, these stakeholders have, in many cases, experienced auxiliary benefits as a result of the ECRP.Donors who fund the ECRP and operate at the international level have social justice opportunities that are not afforded to other stakeholders. Donor design decisions have determined patterns of recognition, participation and outcome distributions that condition other stakeholders' social justice experiences under the ECRP. Their prioritisation of low-carbon activities has led to the creation of global mitigation benefits that will be experienced over time.

Overall, research shows that, depending on how it is designed and implemented, CCD can give way to multi-level, cross-scalar patterns of social justice and injustice. These patterns betray popularised CCD narratives that emphasise multiple wins and encourage unrealistic expectations for the concept's operationalisation. Decisions to incorporate and combine development, mitigation and adaptation goals and activities, which have dissimilar spatial, temporal and governance properties, condition CCD interventions' propensity to create social justices and injustices. Recommendations presented in chapters five, six and seven can help policymakers and practitioners encourage the former and avoid the latter.

8.3 Reflections on the research approach

This section reflects on the research approach adopted. Firstly, the choice of data collection and analysis approaches is discussed. Thereafter, the implications of the case study projects' scalar properties for research findings and recommendations are considered.

8.3.1 Data collection and analysis approaches

The conceptual model developed in chapter three to guide holistic social justice evaluations of CCD is further validated by the research findings presented in chapters five, six and seven. As discussed in section 8.4.2, findings showcase the connections between recognition, participation and distribution that are theorised in the model. Findings also confirm the model's contention that procedural and distributive justice implications can differ across time, space and governance dimensions and are shaped and conditioned by issues of context. Overall, research findings validate the model's utility as a CCD social justice analysis support tool for both academics and practitioners. It can be used by policymakers and project developers to help embed social justice considerations with the design, implementation and evaluation of interventions initiated across diverse governance levels.

Although the model considers contextual issues that condition the achievement of social justice, greater emphasis could be placed on the need to analyse different types of power (visible, hidden and invisible). This is particularly important in relation to invisible power, forms of which may not be immediately obvious to practitioners and may be concealed from the views of local people and implementing partners. For CCD practitioners who make use of the conceptual model, reflexive consideration of power will also be crucial. They must acknowledge that, by virtue of their role in designing and implementing projects, they will influence power relationships. In particular, they have visible power over vulnerable people that they seek to benefit and who are dependent on them for resources to progress development and reduce climate risk. The opportunities that practitioners grant to other stakeholders to contribute to social justice evaluations will shape hidden power relationships. Visible power may also translate into invisible power that conditions stakeholder contributions. For example, local people may censor their contributions to social justice evaluations through wariness of offending project developers on whom they depend to access resources for vulnerability reduction. Thus, although the conceptual model provides a useful tool, its utility will be determined by the manner in which it is put to use.

Two analytical frameworks developed and applied in chapters five, six and seven enabled the conceptual model to be operationalised in order to evaluate the social justice implications of the ECRP. Both helped focus data collection and allowed for comparison and amalgamation of data gathered from dissimilar sources. They can be used to facilitate further research that unpacks and systematically critiques the design and

implementation of multi-level CCD interventions. Studies that adopt the frameworks to analyse CCD interventions operating above the local level and in contexts dissimilar to those found in rural Malawi would be particularly useful for testing the frameworks and making any necessary refinements to enhance their usability.

The framework developed in chapter five and utilised in chapters five and six facilitated comprehensive evaluation of the procedural justice implications of ECRP project design and implementation. By incorporating a holistic power analysis, the framework helped further understanding of the contextual factors that delimit stakeholders' procedural justice opportunities through CCD. To date, frameworks for conducting procedural justice evaluations have been underdeveloped and have not holistically considered how power shapes stakeholder participation and recognition. Hence, the framework offers a unique contribution to the social justice literature.

The framework incorporates Hurlbert and Gupta's (2015) 'split ladder of participation' but lacks a comparable typology for evaluating stakeholder recognition. There may be limits to the extent that developing a standardised typology for analysing recognition is possible. This is because recognition is determined by socio-cultural factors that are heavily conditioned by contextual circumstances (Fraser, 1998). Content analysis techniques were adopted in this thesis to overcome the need for a standardised typology of recognition. However, without such a typology, CCD researchers and practitioners who are unfamiliar with content analysis or other suitable data analysis methods may find it difficult to analyse recognition using the framework. This could create an imbalance in their consideration of procedural justice. Therefore, although subject to limitations, a typology that incorporates generalised recognition categories that account for diverse contextual circumstances would be a useful addition to the framework and could enable ease of application.

An absence of suitable evaluation tools has been a constraint to improved understandings of CCD outcomes. This thesis has addressed this constraint by developing a framework that enables holistic evaluation of CCD outcomes across seven parameters. By supporting understanding of how contextual factors shape outcomes, the framework allows insights to be drawn that can help current and future CCD to maximise benefits and avoid unintended negative side-effects. Analysis of ECRP projects shows that by comparing CCD outcomes identified using the framework with outcome fairness principles held by stakeholders, the distributive justice implications of interventions can be elucidated.

This research has predominantly drawn upon qualitative stakeholder testimonies. A ‘qualitative dominant' approach was appropriate because social justice (or injustice) experiences are unique, subjective and circumstantial (Laws et al., 2013). Rich testimonies need to be gathered for these experiences and the contextual factors conditioning them to be properly understood. Analysis of stakeholder testimonies enables a deeper level of detail to be captured compared with purely statistical evaluations (Marin, 2010). Understanding how CCD is perceived and experienced by target populations also matters because local acceptance is critical for its successful rollout (Anton et al., 2014).

However, evaluating social justice based upon stakeholder testimonies has limitations. For example, local people may have been wary of reflecting negatively on the ECRP for fear of damaging their relationships with implementing NGOs. Conversely, in the false belief that the researcher worked for an NGO, they may have overstated the drawbacks of projects in the hope of receiving additional development support. Local people were briefed by project staff about what benefits they should expect to receive from the ECRP. This may have led them to over-attribute benefits to project activities and overlook possible alternative explanations. As per discussion of the conceptual model above, these considerations show that CCD practitioners should take a reflexive approach when using analytical frameworks. Other procedural and distributive justice implications may not have been perceived by stakeholders to have resulted from the ECRP and may have been underreported.

Available data for estimating carbon sequestration from ECRP forestry and conservation agriculture activities was limited. Consequently, it was impossible to measure and calculate precise mitigation benefits that result from ECRP activities (see chapter seven). By developing different scenarios relating to household participation in ECRP activities over time (which results of this thesis could contribute towards) and gathering new field data for use with carbon measurement techniques, the longevity of development, mitigation and adaptation outcomes could be more precisely estimated and modelled. For use in conjunction with modelling techniques, the ‘temporal scale’ parameter of the framework used to guide evaluation of CCD outcomes could be augmented with detailed and bounded timeframes. This would encourage a more granular analysis of outcomes over time.

8.3.2 Case study projects' scalar properties

As outlined in chapter three, the ECRP is a large-scale project with national significance in Malawi. Nevertheless, it's decentralised organisational structure means findings and recommendations presented in this thesis also have significance for smaller scale projects operating across the country and other similar contexts. Implementing NGOs who form ECRProject and DISCOVER consortia are responsible for implementing the projects within up to three districts each (CU, No Date; CA, No Date). In some cases, these NGOs work alongside local organisations to implement the projects. For example, CARE Malawi works in conjunction with the River of Life Evangelical Church Organisation and RUO (a small, local NGO) to implement the ECRProject in Nsanje.

Although the projects' strategic aims and objectives were largely prescribed by donor partners (chapter five), implementing NGOs were afforded significant autonomy to determine implementation processes in the districts where they have jurisdiction. In some cases, they have pursued dissimilar approaches. For example, carbon emissions reductions enabled by household improved cookstove adoption are being used to leverage carbon market finance under DISCOVER by Concern Universal in Balaka (CU, No Date). This approach is not being pursued in other DISCOVER districts or under the ECRProject (CU, No Date; CA, No Date). Some ECRProject NGO organisations have used VSLAs and disaster-risk reduction training sessions as entry points for introducing other project activities within target villages, unlike DISCOVER NGOs (Ibid.).

Implementing partners have also responded to monitoring and evaluation feedback in different ways. For example, livestock production was hindered in the early phase of implementation of both DISCOVER and the ECRProject. This is because goats initially distributed to households were reared outside of target districts and were dying of local diseases to which they had not previously been exposed. CARE Malawi (ECRProject, Kasungu) and *Cooperazione Internazionale* (DISCOVER, Salima) have responded to this by providing coupons to households to support the purchase of locally-reared goats for livestock production. Yet, this approach has not been adopted by all implementing partners (see chapter six).

These examples highlight that, for the purpose of implementation, the ECRP and its component projects operate akin to a portfolio of smaller scale initiatives. Most small-scale projects identified within the initial sample of projects considered as case studies

(Appendix A) are also donor-funded, meaning that findings related to the power of donors over design processes (chapter five) are also pertinent to them.

8.4 Wider research implications

In chapters five, six and seven, findings of this research were discussed in reference to the CCD literature. This section now situates these findings more widely within the environment, climate change, development and social justice literature that was introduced in chapters two and three. In turn, it discusses the key implications of research for: environment and development concepts with links to CCD; social justice and climate justice discourses; and the post-2015 climate change and development agenda.

8.4.1 Reflections on the theoretical foundations and practical application of environment and development concepts

CCD is linked to other concepts that seek to address relationships between environment and development issues. In chapter two, this thesis discussed the conceptual evolution of CCD in reference to sustainable development, green economy, low-carbon development and climate resilient development framings. In this subsection, the implications of results presented in this thesis for the theory and practice of these concepts are discussed. The conceptualisation of CCD is also reflected upon.

8.4.1.1 Optimising usage of sustainable development, green economy and other broad, integrative concepts

CCD pursues the integration of development, mitigation and adaptation (Mitchell and Maxwell, 2010). As results presented in this thesis have shown, these components have complex and often dissimilar spatial, temporal and governance properties (see also Klein et al., 2005; Swart and Raes, 2007). Albeit to different extents and in diverse ways, development and adaptation were valued by all ECRP stakeholders. Both created outcomes that manifest themselves at the local scale and have been realised over the short-term. Theoretically, the utility of ECRP adaptation benefits should increase as climate impacts worsen in Malawi, safeguarding development progress over time. However, climatic limits that burden project activities may prevent this.

From a social justice perspective, development and adaptation appear more natural bedfellows than either development and mitigation or mitigation and adaptation. Incorporating mitigation within the ECRP complicated the achievement of local level procedural justice. This is because local people held a non-scientific worldview that prevented them from having a complete understanding of mitigation (see also Jindal et al., 2008; Boyd et al., 2007). Development goals related to low-carbon activities were valued least by the most vulnerable households living in particularly climate sensitive locations. Mitigation activities stand to create benefits that will be experienced over time at the global scale but were also associated with locally-valued benefits that are experienced across shorter timescales.

Concepts such as sustainable development and green economy represent even broader and more integrative framings than CCD. As well as development (framed narrowly in terms of economic development or poverty reduction in the case of green economy), mitigation and adaptation, they emphasise the importance of simultaneously achieving a host of additional, and often fundamentally dissimilar, environmental (e.g. biodiversity protection, ecosystem service maintenance), economic (e.g. resource use efficiency) and/or social goals (e.g. cultural integrity, building social capital) through policy and practice (Kates et al., 2005; Allen and Clouth, 2012).

This thesis has showcased the challenges involved in integrating development, mitigation and adaptation into individual CCD interventions with respect to their design, implementation and outcomes. As shown by results presented in chapter five and six, achieving consensus over how to design and implement CCD policy and practice can be complicated. Achieving consensus via a procedurally just process that manages power in order to reduce suppression of stakeholders' preferences is particularly difficult. Reaching a procedurally just consensus over the design and implementation of policy and practice in a manner that also incorporates the near-endless additional environment, social and economic concerns of sustainable development and green economy may not always be feasible. From this perspective, it is perhaps unsurprising that sustainable development, the broadest and most integrative environment and development concept of all, has been criticised as an "ambivalent cliché" (Mitcham, 1995, p.92) that is unable to generate consensus and, therefore, serves to sustain business-as-usual practices (Grist, 2008). Findings presented in this thesis reinforce this argument, showing how already-powerful stakeholders can dominate the decision-making processes of interventions that seek to integrate environment and development goals.

Augmenting CCD goals with other environmental, social and economic objectives could also undermine the achievement of predictable and desirable outcomes through the management of environment and development problems. As demonstrated in chapter seven, contextual issues hindered the translation of ECRP activities into cross-scalar CCD benefits, threatened benefit longevity and created negative side-effects for local people. Moreover, the ECRP created auxiliary outcomes that are not captured by the popularised depiction of CCD (Mitchell and Maxwell, 2010). Studies have recorded similar findings when interventions have pursued other environmental, social and economic goals (McShane et al., 2011; Brand, 2012; Resnick et al., 2012). Augmenting the pursuit of CCD outcomes with these goals is, therefore, likely to result in even more complex outcome distributions than were created by the ECRP. This would likely involve the creation of more unintended outcomes and more complicated patterns of winners and losers that might differ across spatial and temporal dimensions.

There was no evidence that ECRP development, mitigation and adaptation outcomes were in tension. However, other environment and development goals have been shown to have negative consequences for each another when pursued simultaneously (Nelson et al., 2009; Sunderland et al., 2008). For instance, McShane et al. (2011) highlight how different conservation objectives (e.g. protecting biodiversity and maintaining ecosystem services) can have detrimental implications for one another and human livelihoods. Tension between different objectives pursued by broad, integrative framings such as sustainable development and green economy further undermines their propensities to generate predictable and desirable outcomes. It may also intensify disagreement between stakeholders that complicates the achievement of consensuses over design and implementation processes.

Taking steps to rectify and compensate for the negative side-effects and inequalities created by the cross-scalar, multi-level properties of development, mitigation and adaptation actions may be possible. For instance, it has been suggested in chapters six and seven that linking the ECRP and other projects that pursue CCD goals with social protection schemes, such as food and cash transfers (immediate-term benefits), could help incentivise involvement of the extreme resource poor. Childcare provision, access to improved cookstoves (that use less firewood) and improved water access could also reduce barriers to procedural and distributive justice for female household heads (Nation, 2010; Jennings and McGrath; UNICEF, 2016a). This is because childcare, firewood and water collection burdens often fall upon women across sub-Saharan Africa and other developing countries (Ibid.).

Compensation schemes have also been proposed and initiated (e.g. through 'payments for ecosystem services' — see Milder et al., 2010; Sánchez-Azofeifa et al., 2007) as a way to address negative outcomes created by the simultaneous pursuit of multiple environment and development objectives. However, developing compensation schemes to isolate and overcome negative-side effects and inequalities would become more complicated with every additional augmented environment and development objective. There is a danger that developing adequate approaches for rectifying the unpredictable and undesirable outcomes created by interventions that are framed using broad, integrative concepts would be overwhelmingly complex.

Moreover, it has been shown that these social support programmes and compensation schemes do not always function as planned and have sometimes created further unanticipated, negative outcomes (Ellis, 2012; Harrison, 2015). Shortcomings related to compensation schemes may become more likely as the complexity of initial interventions increases. Moreover, schemes often use financial transfers to compensate for ecological and social losses (Ibid.). Yet when the environment and society are valued for non-material reasons, this may not be satisfactory (Walzer, 1983). Social protection schemes also run the risk of encouraging dependence amongst benefit recipients (Devereux and Sabates-Wheeler, 2007).

Overall, findings presented in this thesis suggest that the all-encompassing scope of broad, integrative concepts such as sustainable development and green economy limits their utility for framing individual interventions. Although there are challenges for underpinning CCD interventions with consensus and compensating losers that result from these interventions, their more limited scope means there is potential for this to be achieved. The same is likely of other concepts that encourage a narrow range of environment and development goals to be integrated (e.g. low-carbon development, climate resilient development). By contrast, the inclusivity of more broadly conceived concepts will likely compromise the extent that associated policies, programmes and projects can achieve procedural and distributive justice.

The world is moving towards nexus and Earth systems thinking that consider a wide range of sectors and environmental, economic and social objectives. In this context, broad, integrative concepts still have an important role to play (Hornborg and Crumley, 2007). They provide useful theoretical tools for encouraging consideration of interlinkages between development and environment challenges at aggregated governance dimensions (Cook and Bakker, 2012). For instance, Hartig et al. (1996)

show how stakeholder deliberation over sustainable development principles enabled the integration of the environment-society-economy interface within national and regional decision-making in Canada and the United States. From this starting point, decision-makers were able to determine circumstantially-relevant policy objectives with a more focussed scope. The Sustainable Development Goals (SDGs) and related targets are the result of a similar process at the international level (UN, 2016). Broad, integrative concepts can also facilitate the establishment of large support coalitions around policy objectives (Cook and Bakker, 2012).

However, concepts with a more clearly defined scope may be required to support the design and implementation of specific interventions aimed at meeting more narrowly conceived objectives. CCD, low-carbon development and climate resilient development could support interventions aimed at achieving objectives that transverse climate change and development. For instance, Harkes et al. (2015) and Huxham et al. (2015) suggest that a CCD framing can help encourage practical actions that have simultaneous, joined-up development, mitigation and adaptation benefits. However, as shown by this thesis, this will not be without challenges. A learning-by-doing approach needs to be taken to help configure interventions so that they are able to achieve social justice. A possible drawback to framing specific interventions more narrowly is the risk that they might impede other environment and development objectives being pursued elsewhere. Ensuring multi-level, cross-sectoral co-ordination between projects, programmes and projects will be crucial for avoiding this. This issue is taken up in more detail in section 8.4.3.1.

8.4.1.2 Operationalising low-carbon development

This thesis makes a significant contribution to literature that explores whether low-carbon development can facilitate progress towards short-term livelihood benefits and poverty and inequality reduction in developing countries. Supposed near-term productivity and well-being gains have been proposed as a reason for investing in low-carbon development that also reduces long-term climate risk (Bowen et al., 2011). However, research in different contexts has questioned the extent of these gains and has suggested that low-carbon development can result in negative side-effects for local people (Wood et al., 2016; Boyd et al., 2009). For example, Prouty (2009) and Carrere (2009) highlight that forestry carbon market projects in Uganda have led to some local people being displaced and have interfered with the long-standing tenure arrangements and livelihood activities of others.

Findings presented herein show that ECRP low-carbon activities that create mitigation benefits have, in some cases, also led to development gains for local people (e.g. forestry activities improved firewood access, improved cookstove use reduced smoke-related illness). Based on religious beliefs, households in study villages considered that low-carbon activities (e.g. improved cookstove use, forestry activities) that protect natural resources can help regulate microclimates. Carbon finance has been successfully generated and reinvested to fund a community health centre under a Concern Universal improved cookstoves project in Balaka with links to DISCOVER. The World Bank also subsidises solar lights under the ECRP based on their expected carbon savings. Findings support suggestions in the literature that mitigation finance can be harnessed to help augment traditional aid funding and provide extra resources for reducing vulnerabilities in the short-term (Ellis et al., 2013).

However, in study villages, development goals pursued through low-carbon activities were the least prioritised of all ECRP development goals by local people, especially the most vulnerable households living in particularly climate sensitive locations. Some households experiencing acute, multi-dimensional poverty considered solar energy access benefits to be a luxury and had limited awareness of the potential benefits of improved cookstoves. In some circumstances, development goals that were not pursued under the ECRP (e.g. improved water access) would have been valued more highly than low-carbon activities. Low-carbon activities also made a minimal contribution towards achieving adaptation benefits, which were highly valued by local people. In contrast to adaptation, mitigation is poorly understood by local people, preventing them from giving their full, informed consent to participate in low-carbon activities (this issue is taken up in more detail in section 8.4.2).

In summary, findings suggest that low-carbon development can create locally-valued development benefits and generate additional development resources. However, activities framed by the concept do not align with the needs and of interests all individuals and groups. Research suggests that low-carbon development can facilitate progress towards short-term livelihood benefits and poverty and inequality reduction in certain circumstances but this may not be the case for everyone, everywhere. Consequently, its operationalisation should be selective and well-targeted. Underpinning prospective low-carbon development interventions with formative research that draws on the priorities of heterogeneous groups of local people will be crucial for this.

8.4.1.3 Re-conceptualising climate resilient development and climate compatible development

Whereas findings can help improve the operationalisation of low-carbon development, they point to a need to reconceptualise climate resilient development. Emphasising synergies between development and adaptation, the latter is often defined in terms of societies' capacities to withstand and recover from climate change impacts in order to ensure their long-term stability (Mitchell and Maxwell, 2010; USAID, 2014). Hence, it encourages approaches that accept, rather than challenge, the structural parameters of existing social systems. By emphasising the stability of existing systems, the concept risks closing down space for transitioning beyond them.

Findings presented herein support suggestions that such a conceptualisation of climate resilience is problematic (see e.g. Pelling, 2011). Unless accompanied by transformative change — systemic alterations that challenge the assumptions that underpin business-as-usual approaches (O'Brien, 2012) — ECRP activities will have only a limited impact in progressing development and adaptation. The ECRP pursues development and adaptation benefits through incremental change focussed at the local level. However, multi-level structural issues associated with wider patterns of underdevelopment (e.g. poor market access, intractable financial poverty, patchy extension support) obstruct development and adaptation progress. These findings resonate with the study of other interventions in low-income countries (Wright et al., 2014; Dyer et al., 2014; Bele et al., 2014). Patterns of underdevelopment are often conditioned by international structures, processes (e.g. globalisation, trade agreements) and ideas (e.g. neoliberalism) (O'Brien and Leichenko, 2003) that cannot be altered through locally-focussed incremental change.

Thus, study of the ECRP points to a need to redefine climate resilient development so as to open up space for mutually-reinforcing incremental and transformational approaches. This might reduce the political expediency of the concept by encouraging challenges to vested interests. However, it is required in order to help vulnerable people reduce their sensitivity to climate shocks and stresses. By extension, and because it incorporates climate resilient development, CCD needs to be reconceptualised accordingly. The literature on CCD (e.g. Mitchell and Maxwell, 2010) discusses transformations towards low emissions development pathways. However, it is ambiguous as to whether the concept should encourage challenges to political-economic structures that obstruct development and adaptation progress (Ibid.). Other studies also

stress that incremental change may be insufficient to enable all vulnerable populations to achieve CCD goals (Tanner et al., 2014; Quan et al., 2014; Bizikova et al., 2007). Redefining climate resilient development and CCD to also include the possibility of challenging prevailing political-economic structures would help ensure that these concepts promote change that works for all individuals and groups, not just those invested in the status quo.

Growing attention is being paid to situations that require transformations to progress development in the context of climate change. Understanding of general principles for encouraging transformations in order to achieve climate resilient development and CCD goals is advancing (e.g. the need for adaptable institutions, multi-level and cross-sectoral learning and collaboration, leadership and mutually-reinforcing technical, economic, political and socio-cultural innovations) (Denton et al., 2014). However, little is known about what transformational climate resilient development and CCD constitute in different contexts or how opportunities for transformation differ across space and time. This should be a priority for further research. Transformations may themselves have characteristics that threaten or advance social justice and care will need to be taken to ensure the latter (Ibid.). Therefore, future study that examines procedure and distribution in the context of transformative climate resilient development and CCD strategies is also required.

8.4.2 Implications for social and climate justice discourses

Empirical research presented in this thesis reinforces the limitations of the social and climate justice literature that were presented in chapter three. As noted by Barrett (2013b), the climate justice literature has been dominated by normative ideals rather than empirical appraisals. The same is true of the wider social justice literature. A key contribution of this thesis, therefore, is its attempt to transfer theory into practice.

The complex web of social justice claims and experiences uncovered by analysis of the ECRP showcase the inadequacies of social justice theories that overlook pluralism with respect to what can and ought to be distributed (see also Schlosberg 2007; Fisher, 2015). Notwithstanding common ground, project stakeholders prioritised ECRP development, mitigation and adaptation goals differently, reflecting their multiple identities and diverse vulnerabilities to climate and development shocks and stresses. Different development, mitigation and adaptation goals were valued in dissimilar ways, both within and between stakeholder groups. Barriers to procedural justice that were

linked to invisible forms of power may have suppressed further points of contention. There was agreement between stakeholders over the contractarian standard of distributive justice that underpins the ECRP. This suggests that, although not prioritised by all actors in all circumstances (Klinsky and Dowlatabadi, 2009), the "inverse distribution of risk and responsibility" in respect to climate change (Barrett, 2013a, p.1) gives way to a well-established logic to take action that protects the most vulnerable. Nevertheless, the relevance of this logic in different circumstances should not be automatically assumed.

Findings also point to instances of reciprocity between procedural and distributive justice: something that is often theorised (e.g. Sen, 2009; Fraser, 1998) but has less frequently been supported by empirical evidence (see also Derman, 2014; Bulkeley et al., 2013). ECRP project outcomes advanced the interests of stakeholders who were afforded recognition and meaningful participatory opportunities during project design and implementation. For instance, projects have the potential to create significant global scale mitigation benefits that were prioritised by donors. However, this crowded out space for locally-valued development and adaptation benefits (e.g. water access) to be pursued through the ECRP. Likewise, projects sustained and increased material inequality within study villages because extremely vulnerable households struggled to realise procedural justice through project implementation processes. Increased inequality may condition which households are recognised (e.g. deemed eligible to be village extension multipliers and committee members) and able to participate in any CCD activities and projects that are introduced within target villages in the future.

This research endorses the idea that, for individuals and groups to pursue ends that they value, they must enjoy political, socio-cultural and economic freedoms. It, therefore, supports use of the 'capabilities approach' (Sen, 2001) as the final arbiter of social justice. The conceptual model developed in chapter three is further validated by findings that showcase the connections between recognition, participation and distribution.

In some circumstances, findings from study of the ECRP suggest that, in practice, trade-offs between procedural and distributive justice may be necessary. However, little attention is paid to such trade-offs within the literature, providing limited guidance to practitioners who must attempt to navigate them. The mitigation component of the ECRP was predicated on donors' scientific worldview. By contrast, local people lacked a complete understanding of mitigation and were unable to give their full, informed consent to participate in low-carbon project activities. Including mitigation within the ECRP has

complicated the achievement of procedural justice for local people, a finding that resonates with the work of Jindal et al. (2008), Boyd et al. (2007) and Dyer et al. (2014).

In chapter five, it was suggested that when efforts are made to reconcile the world views of local people and professional stakeholders, more complete local understandings of mitigation may be possible. In turn, this would create pathways towards procedural justice. Findings showcase a power imbalance between worldviews because local people depend on resources held by stakeholders who subscribe to scientific value systems. Reconciling worldviews requires that professional stakeholders accept that CCD has no definitive reality and avoid making design decisions on the basis of epistemological certainties. However, this is contingent on them understanding that empowering stakeholders through knowledge co-production may result in their own disempowerment. Irrespective, low education levels in developing countries mean that world views may be irreconcilable. People may in some cases be unable to give their full, informed consent for mitigation activities if this requires that they understand and assimilate a scientific worldview.

By contrast, and as discussed in section 8.4.1.2, mitigation activities can be associated with locally-valued benefits and can be harnessed to augment resources for reducing vulnerabilities in the short-term. This may not automatically hold for all local people, particularly the most vulnerable. Yet projects that pursue a contractarian standard of distributive justice could use emissions reductions to leverage carbon market finance in order to generate additional resources for encouraging the most vulnerable households to participate. Barriers that limit access to market-based carbon finance mechanisms in low income countries may nevertheless restrict this in practice (Wood et al., 2016). Overall, however, findings suggest that, for some vulnerable people at least, mitigation activities can help create pathways towards distributive justice.

Consequently, trade-offs between procedural and distributive justice can result irrespective of whether or not mitigation activities are pursued through CCD. In the context of worsening climate change, these trade-offs will likely alter and evolve over time. Yet trade-offs between procedural and distributive justice are seldom discussed within the social justice literature. Justice approaches that holistically consider issues of recognition, participation and distribution (e.g. Fraser, 2005; Sen, 2009) hold that each are complementary and of equal and universal importance. Little attention is paid to scenarios in which the sanctity of each pillar of justice could be legitimately violated. This

theoretical rigidity is insufficient for dealing with real world fluidity and provides insufficient guidance for social justice practitioners.

Psychological theories could provide lessons for managing trade-offs. For example, Maslow et al. (1970) and Inglehart (1971) suggest that people in extreme resource-poverty prioritise the achievement of material benefits over procedural freedoms. Therefore, proceeding with activities (e.g. mitigation) that create procedural injustices might be justifiable in cases where these activities are also able to facilitate substantially and locally-valued material (e.g. development and adaptation) gains. By the same token, these theorists consider that when people's material needs are met, they prioritise procedural freedoms over further economic benefits (Ibid.). Therefore, achieving a certain level of economic well-being may preclude circumstances where procedural freedoms can be legitimately traded off. Still, these theories are the product of research conducted in particular times and places (Ibid.) and are unlikely to hold across diverse spatial and temporal dimensions. They, therefore, fail to provide a suitable foundation for practical guidance.

As suggested by Sen (2001), there is a need for the social justice literature to focus less on abstract theory and more on how to solve real world justice dilemmas in order to enhance its practical relevance. The absence of guidance on how recognition, participation and distribution ought to be traded-off against one another in particular circumstances represents a pressing gap in the literature. Further research that addresses this gap would make a critical contribution to a more practical social justice research agenda. Research should examine how these trade-offs might differ and evolve across spatial and temporal dimensions in the context of different problem scenarios, including climate change and CCD.

8.4.3 Reflections on the post-2015 climate change and development agenda

2015 is already considered a watershed year for efforts to reduce global climate risk and progress development. In September 2015, the SDGs were adopted by the 193 countries of the United Nations General Assembly as a global development framework to succeed the Millennium Development Goals (UN, 2016). Three months later, the Paris Climate Agreement was concluded, setting objectives for mitigation, adaptation and the provision of climate finance (UNFCCC, 2015). Although both the SDGs and the Paris Agreement represent significant diplomatic achievements, their legacy will be determined by the manner in which they are operationalised. Based upon findings

presented in this thesis, this section draws implications for their operationalisation. Lessons for programmes and projects that seek to progress the post-2015 climate change and development agenda are first discussed. Thereafter, it is proposed that adopting 'common but differentiated responsibilities' (CBDR) as an ethical principle for guiding these interventions could help them to achieve social justice and avoid injustice.

8.4.3.1 Progressing the post-2015 climate change and development agenda through programmes and projects

Although not legally binding, the preamble of the Paris Agreement sets developed nations a goal of raising $100 billion annually in order to help developing nations reduce their vulnerabilities to climate change (Ibid.). The Green Climate Fund, a mechanism formally established by the 2010 Cancun Agreements, is expected to be a key player — perhaps the key player — in the distribution of this funding (Fridahl and Linnér, 2016). The Fund finances programmes and projects that pursue low-carbon (or low-emissions) development, climate resilient development and CCD goals in developing countries. Interventions are to be designed in accordance with countries' National Adaptation Plans and Nationally Determined Mitigation Contributions, which they have committed to develop and/or periodically strengthen under the Paris Agreement (UNFCCC, 2015). The Fund's first financial commitments were approved in November 2015 and it is currently supporting eight programmes and projects (GCF, 2016a).

Akin to the ECRP, external finance from the Fund is utilised by NGOs, other development organisations and/or host government departments who initiate interventions aimed at achieving benefits for local people as part of multi-stakeholder partnerships (Ibid.). The Fund professes to pay particular attention to the needs of societies that are most vulnerable to climate change (Ibid.). Therefore, like the ECRP, Green Climate Fund projects pursue a contractarian approach to distributive justice.

These similarities between the ECRP and Green Climate Fund projects mean the recommendations presented in chapters five, six and seven are directly relevant to those interventions. The infant nature of Green Climate Fund interventions means analysis of their social justice implications has not yet been possible. However, early, anecdotal evidence has raised question marks over the extent to which local people have been afforded a voice within design processes (Kumar, 2015). Findings presented in this thesis show that achieving procedural justice through programmes and projects that pursue low-carbon development, climate resilient development and CCD goals will not

be a given. Moreover, independent reviews that assess projects' potential negative side-effects have not been publically released. Initial funding proposals are the only publically available information about interventions (Ibid.). Given that the Fund will represent the largest public climate fund (Ibid.), it is crucial that interventions are properly scrutinised through future research.

Recently-developed actions aimed at achieving progress against the SDGs have also received limited scrutiny. Akin to the Millennium Development Goals, the SDGs, and specific targets related to these goals, provide a framework to help structure bilateral and multilateral development funding and direct investment. Much of this investment will be targeted towards programmes and projects (Le Blanc, 2015; Fehling et al., 2013).

Recommendations presented in this thesis can be generalised for use by interventions pursuing the SDGs. This is because progressing towards the SDGs through programmes and projects will require that these interventions navigate contextual factors that share similarities with those that condition CCD. For instance, developing interventions that seek to improve the availability and management of water and sanitation (SDG six — UN, 2016) involve dialogue with diverse stakeholders operating across different governance levels and sectors (e.g. forestry, agriculture, industry) (Gupta et al., 2013; WaterAid, 2011). In the context of their dissimilar interests and needs and myriad uncertainties related to how human and physical systems will impact on water security over time, these stakeholders often have different agendas for water and sanitation management (Garrick et al., 2012; Allan et al., 2013; WaterAid, 2011).

Moreover, the SDGs encourage an integrative approach, with targets related to many thematic areas covered by their namesake goal and also integrated within targets for achieving other goals (Le Blanc, 2015; Kanie et al., 2014). Climate change is included as a standalone SDG (number thirteen) but adaptation and mitigation are mainstreamed throughout many other goals (numbers one, two, seven and eleven) (UN, 2016). Consequently, the SDGs directly encourage the pursuit of CCD in many cases, making lessons presented in this thesis even more transferable.

The SDGs are the outcome of a multi-level negotiation process that aggregated the priorities of governments, private sector organisations, NGOs and civil society organisations, academics, parliaments and United Nations agencies (some of which were shaped by the views of local people) (Bhattacharya et al., 2014). Packaging the SDGs into a suite of supposedly globally-relevant goals and targets has significant

advantages in terms of generating interest and promoting awareness (Sachs, 2012). However, doing so ignores the circumstantial nature of the beliefs, cultures and values that underpin development goals and targets (Sen, 2001). It may close down space for subnational priorities to be considered within the design of interventions aimed at achieving progress against the goals.

Findings presented in this thesis suggests that tension between the 'one-size-fits-all' SDGs and their targets and diverse local priorities is likely (see also Kainie et al., 2014). For instance, the SDGs accord goal seven (improving "access to affordable, reliable, sustainable and modern energy") equal status with goals one (ending financial poverty) and two (ending food and nutrition insecurity) (UN, 2016, no page number available). This does not align with local priorities within study villages in Malawi where research presented in this thesis took place. As discussed in chapter five, improved access to electricity and better cooking technologies were considered a lower priority than enhanced food and nutrition security and improved household incomes, particularly by the most vulnerable households.

Achieving lasting progress against the SDGs may be conditional on ensuring that programmes and projects avoid top-down, 'blueprint' design and implementation processes. Wild et al. (2015) note that, notwithstanding notable successes (e.g. the halving of extreme poverty globally), progress against the Millennium Development Goals was sluggish and uneven. Wild et al. (2015) and others (Andrews, 2011; Andrews et al., 2013; Valters, 2015) contend that this is because predominant development approaches have been driven by externally-determined priorities and 'best practice' solutions that deal poorly with contextual complexity and local power relationships. Development funding frameworks often encourage such approaches because, faced with a need to maintain inflows of external finance and ensure "organisational survival" (Andrews et al., 2013, p.235), host governments and NGOs are incentivised to 'do development' in a manner that complies with bilateral and multilateral donors' expectations. Senior staff within implementing organisations are able to further their careers by furthering donor priorities, but this comes at the expense of incorporating contextually-relevant ideas and innovations into policies and projects (Andrews, 2011; Andrews et al., 2013).

As detailed in this thesis, these trends have continued under the ECRP, with professional stakeholders' dependency on external aid having enabled donors to dominate design processes. Local people's input into design was also constrained and the prioritisation

of donor preferences may have crowded out space for locally-valued development and adaptation priorities to be pursued through ECRP projects. In particular, the rollout of low-carbon development risks solving problems that are not prioritised by local communities. Linked to the insufficient opportunities for NGO, national and subnational government representatives and local people to input into design processes, there is poor fit between project implementation processes and contextual circumstances. This has compromised the success of community- and ecosystem-based activities, which are implemented by the ECRP and are being institutionalised as 'best practices' for CCD (Munang et al., 2013; Reid, 2016). Ecosystem-based activities have dealt poorly with prevailing climatic conditions in Malawi, struggling to facilitate ECRP adaptation goals. Meanwhile, their failure to adequately account for local power relationships has meant that community-based activities have been unable to create outcomes that align with the contractarian distributive justice principles that underpin the ECRP.

Building upon this critique of predominant development approaches, there is growing clamour amongst academics and practitioners for development to be 'done differently' in order to achieve progress against the SDGs (DDDM, 2016; Andrews, 2011; Wild et al., 2015; Valters, 2015). Commonly, these voices stress that efforts to progress development should: allow locally-defined problems to drive action; ground implementation strategies in contextual realities; develop iterative feedback processes that encourage experimentation and learning-by-doing; and ensure broad engagement with individuals and groups that have a stake in action taken (Ibid.). The lessons and recommendations presented in chapters five, six and seven resonate strongly with these proposed solutions and could help facilitate their achievement. For instance, underpinning interventions with co-produced power analyses and independent grievance processes (see chapter six) can help ensure that design and implementation processes are well-aligned with evolving contextual circumstances. Alignment with the lessons and recommendations presented in this thesis suggests that 'doing development differently' could also encourage pathways towards social justice.

Ensuring that Green Climate Fund programmes and projects and those that pursue the SDGs work collaboratively with other policies, programmes, projects and stakeholders operating across levels and scales will also be crucial for their success. The SDGs integrative approach is considered to be able to incentivise joined-up working across governance and spatial dimensions (Le Blanc, 2015). Although interventions being funded under the Green Climate Fund stress the importance of multi-level integration

(e.g. GCF, 2016b; 2016c; 2016d), evaluations are required to assess how well they are interacting and building partnerships with other programmes and projects.

As shown in this thesis, there are limits to what discrete programmes and projects can achieve. Results presented in chapters six and seven indicate that multi-level, cross-sectoral collaborative working is essential for advancing development and reducing climate vulnerabilities. The conditioning influence of multi-level contextual factors mean that individual, discretely-implemented programmes and projects will likely be insufficient for creating meaningful change. Advancing development, reducing vulnerability and furthering social justice requires that these multi-level factors are challenged (see also Osbahr et al., 2008; Green, 2000). As discussed in section 8.4.1.3, this may require combinations of incremental and transformative change.

Studies have begun to show that when programmes and projects work collaboratively across levels and scales, multi-level change is more likely (Dodman and Mitlin, 2013). As shown through analysis of the ECRP, umbrella organisations that have dedicated staff operating at supralocal levels can play an important co-ordination role (see also Ibid.; Stringer et al., 2012). These organisations may also help to overcome rivalries between different programmes, projects and NGOs that are driven by the often competitive climate change and development fundraising system (Cooley and Ron, 2002).

Where necessary, programmes and projects will also need to foster alliances with stakeholders working at dissimilar levels in order to put pressure on others working at different jurisdictional dimensions. For instance, Keck and Sikkink (1998) highlight how subnational organisations have engaged in international advocacy efforts in order to pressure national governments into policy change. Multi-level co-ordination could enable transformative change because many of the structural factors that obstruct development and adaptation progress emanate from aggregated governance levels (see section 8.4.1.3). Collaborative working could also reduce the likelihood that different inventions will create negative implications for one another. Heeding these lessons will, therefore, be crucial to the success of programmes and projects aimed at progressing the post-2015 climate change and development agenda.

8.4.3.2 Common but differentiated responsibilities (and respective capabilities and priorities): a guiding principle for subnational action

CBDR has become an important ethical principle in global environmental governance (Deleuil, 2012). In essence, the principle comprises the idea that states have shared responsibility for solving environmental problems but that their responsibilities differ in line with their diverse capabilities and priorities (Brunnée and Streck, 2013; Honkonen, 2009). Reference is often made only to the abbreviated term 'common but differentiated responsibilities' but states' dissimilar 'capabilities' and 'priorities' are also widely recognised as conditioning their responsibilities (Deleuil, 2012).

CBDR underpins the UNFCCC (Gehring, 2009) and is operationalised through the Paris Agreement (UNFCCC, 2015). As well as the Green Climate Fund, the Least Developed Countries Fund, the Special Climate Change Fund and a yet to be established market-based carbon trading mechanism will provide finance to support nationally-determined low-carbon and climate resilient development actions in developing countries (Ibid.). These mechanisms, therefore, play a key role in subnational governance. However, unlike international level UNFCCC processes, these subnational actions operate in the absence of a guiding ethical principle (GEF, 2016a; 2016b; GCF, 2016a).

As highlighted by findings presented in this thesis, externally-funded programmes and projects that pursue development, mitigation and adaptation goals in developing countries can give rise to a complex web of interrelated social justices and injustices that differ across governance levels, space and time. Interventions' social justice implications may be experienced unevenly by stakeholders, depending on where they are located across these governance, spatial and temporal dimensions. Extending CBDR to also provide a guiding principle for subnational interventions funded by UNFCCC mechanisms could help encourage these interventions to realise social justice and avoid injustice.

This would involve an acknowledgement that programme and project stakeholders (be it national and subnational governments, NGOs and other civil society organisations, local people and/or others) have different priorities, capabilities and responsibilities for reducing climate risk and advancing development. In particular, it would require appreciation that local people are heterogeneous and that the most vulnerable groups (e.g. caregivers, the elderly, the chronically ill, extremely resource poor people) may

need extra support to help them participate in, and achieve recognition and realise benefits through, interventions.

Reconceptualised in this way, CBDR would acknowledge the importance of both procedural and distributive justice considerations (Sen, 2009). It would create space for the particular nature of distributive justice adopted through interventions to be negotiated between the plurality of stakeholder values and interests in specific contexts (Paavola and Adger, 2006). Concerns have been expressed about the subnational social justice implications of programmes and projects that are funded by current UNFCCC market-based mechanisms and the Green Climate Fund (e.g. Boyd et al., 2009; Carrere, 2009; Mathur et al., 2014; Kumar, 2015). Extending CBDR to encompass subnational UNFCCC activities would provide a robust ethical framework for designing, monitoring and evaluating interventions and thereby encourage the achievement of social justice.

Adopting CBDR as an ethical principle to guide efforts to achieve progress against the SDGs could also help these interventions to achieve social justice. Although CBDR was explicitly recognised in the 1992 Rio Declaration, which was an essential precursor to the SDGs, it is not referenced in the SDG literature (UN, 2016). Specifically, the principle could help reconcile the SDGs and their targets, which are outcomes of internationally-aggregated priorities, with diverse subnational stakeholder priorities. CBDR could encourage a flexible approach to progressing towards the SDGs that enables emphasis to be placed upon achieving locally prioritised goals and targets. Where necessary, it might also allow for resources to be diverted away from goals and targets that are not considered locally relevant and towards more pressing priorities. Recognising subnational stakeholder priorities in this manner would also appear necessary for meeting SDG 17, target 15: “respect each country’s policy space and leadership to establish and implement policies for poverty eradication and sustainable development” (UN, 2016, no page number available).

To summarise, emerging evidence suggests that subnational interventions aimed at progressing the post-2015 climate change and development agenda risk exacerbating social injustices. Reconceptualising CBDR as a guiding principle for subnational action could encourage the achievement of social justice.

8.5 Further research

Findings presented in this thesis identify a number of further research gaps that require investigation and are now presented:

I. There is an absence of tools for assisting CCD decision-making in the context of uncertainty. Wariness about taking decisions in the absence of full knowledge can paralyse action for reducing climate and development vulnerabilities (Kok et al., 2008; Wilbanks and Sayathe, 2007). Professional stakeholders with the power to control CCD design processes often consider expert knowledge necessary for dealing with uncertainty (chapter five). However, subsequent design processes misrecognise stakeholder (including local people's) preferences that do not align with western, scientific worldviews. They are unsuitable for solving unstructured CCD design problems and could undermine the likelihood that interventions are contextually-appropriate and have widespread stakeholder buy-in. The development and refinement of decision-making support tools that encourage social learning approaches for dealing with uncertainty and value plurality in the CCD operating context could help create pathways to procedural justice. For example, the utility of participatory multi-criteria evaluation tools in this regard is highlighted by Garmendia et al. (2010) and Salgado et al. (2009) in relation to coastal zone management and water governance. Tools afforded stakeholders the opportunity to rank different policy options and reflect on each other's preferences and motivations. They can enable decision-making that: proceeds in a flexible, iterative manner; helps diverse stakeholders to understand each other's' positions; and, where necessary, helps facilitate conflict resolution (Ibid.). However, the time and resources required to complete multi-criteria evaluations may limit their expediency.

II. Chapter six presented recommendations for analysing and managing power through CCD implementation. Methodologies to translate recommendations into practice need to be developed and refined. Some promising participatory methodologies exist for analysing and managing power (e.g. REFLECT— Reflect Action, 2016; Scorecard — Mwanza and Ghambi, 2011; co-learning techniques — Reid et al., 2009) (see chapter six). They need to be road-tested and, where necessary, adapted for use by CCD interventions being designed and implemented in different circumstances. Future studies are required that examine whether and how integrating CCD projects with wider development efforts (e.g.

social protection schemes) could incentivise the involvement of the most vulnerable groups and help them to realise CCD benefits. Further research that experiments with different entry-point institutions (both locally- and externally-conceived) could help identify methodologies that reduce opportunities for powerful local actors (e.g. traditional leaders) to dominate CCD implementation. This would have to be underpinned by stringent ethical standards to ensure that experimentation avoids doing harm to local people. Peer-reviewed evaluations of different independent grievance procedures will be important for developing robust, locally-appropriate mechanisms that allow local people to report concerns about project governance.

III. Decisions about whether or not to incorporate mitigation activities within CCD can create trade-offs between procedural and distributive justice. Evidence in this thesis suggests that there may be instances when advancing locally-valued justice claims could require that CCD project developers trade off recognition, participation and distribution against one another. However, in the climate justice and social justice literature, little consideration is given to circumstances in which the sanctity of recognition, participation and distribution could be violated. Further empirical research that explores when, and what type of, trade-offs might be justifiable would make a useful, grounded contribution to the social justice literature, extending normative debates. Results would help provide guidance to practitioners who seek to achieve social justice, both through CCD interventions and in other circumstances.

IV. Results presented in chapter seven call into question: a) the suitability of ecosystem-based activities for furthering adaptation progress; and b) the complementarity between community-based activities and efforts to target CCD benefits at the most vulnerable. Ecosystem and community-based approaches are being institutionalised as means to achieve CCD benefits. However, a strengthened evidence base is required to determine whether these approaches are able to meet CCD goals over different timescales in a manner that furthers distributive justice.

V. Climate information should be utilised within CCD project design to ensure the suitability of activities intended to produce adaptation benefits over time. However, barriers (e.g. modelling limitations, limited capacity) prevent the integration of climate information within development planning (Semazzi, 2011; Jones et al., 2014). Future research aimed at reducing barriers is urgently required to ensure that project developers have the informational resources to create adaptation benefits that CCD aims to achieve.

VI. There is a need for further study that examines how transformational change can be encouraged in order to progress CCD (and/or climate resilient development) in different circumstances. There is a particular need for research that examines challenges and opportunities for encouraging transformations in, and from the perspective of, lesser-developed, climate vulnerable countries. These countries often benefit least from global political-economic processes (O'Brien and Leichenko, 2003; UNDP, 2015). Transformations may themselves have characteristics that threaten or advance social justice (Denton et al., 2014). Therefore, future research that examines procedure and distribution in the context of transformative climate resilient development and CCD is also required.

VII. By zoning in solely on the climate, it is unclear what implications — positive or negative — CCD's operationalisation might have for other environmental issues (e.g. biodiversity conservation, water security, the maintenance of ecosystem services). Further research is required to improve understanding. This would also augment knowledge on how CCD can be used to help facilitate progress towards the SDGs.

VIII. By evaluating the ECRP, this thesis has contributed to improved understanding of CCD's social justice implications across governance dimensions and (spatial and temporal) scales. Further analyses of interventions that pursue CCD goals at aggregated governance levels is required to broaden this understanding. This would augment knowledge concerning the levels at which CCD is best pursued in different circumstances.

8.6 Final conclusions

CCD professes to be a 'development first' approach that aims to help people improve their lives in the face of climate threats without exacerbating these threats for current and future generations. Yet a scarcity of research that critiques the operationalisation of CCD means its potential to live up to these grandiose claims has received little scrutiny. This thesis has contributed to the nascent body of critical CCD research by presenting a multi-scalar, cross-level analysis of the social justice implications of the ECRP in Malawi. It has shown that CCD can create complex webs of interrelated procedural and distributive justices and injustices. These social (in)justice implications can be experienced unevenly by stakeholders across governance, spatial and temporal dimensions. Although the ECRP primarily aims to improve the lives of vulnerable Malawians, households in study villages were less able to realise social justice

opportunities than other stakeholders. This was particularly true of the most vulnerable households.

Insights from this research have been used to develop a suite of recommendations that can help current and future CCD projects to encourage social justice and avoid injustices. The conceptual model and analytical frameworks developed in this thesis to guide evaluation of the ECRP can help guide social justice analyses of other CCD interventions. Findings presented herein also have important implications for: the theory and practice of environment and development concepts with links to CCD; social justice and climate justice discourses; and the operationalisation of the post-2015 climate change and development agenda.

CCD strategies and interventions are increasingly operationalised with little understanding of their consequences for different individuals and groups. Strategies and interventions risk adopting predefined ideas of socially just solutions, yet their actual social justice implications may be highly questionable. Embedding a social justice approach within CCD is crucial for ensuring that interventions safeguard and advance development freedoms by reducing, rather than exacerbating, vulnerabilities. In some cases, this could also contribute to effectiveness and efficiency gains. As the CCD discourse matures and gains traction, a future research agenda that systematically critiques the origins and operationalisation of the concept is needed to facilitate improved understandings of whether and how it should be used to underpin a new development landscape. CCD policymakers and practitioners should adopt a learning-by-doing approach and proceed with caution until the concept's processes and implications are better understood.

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Appendix A: Projects identified in Malawi that simultaneously pursue development, mitigation and adaptation goals

Project name	Sectoral focus	Duration	Location (districts unless stated)	Implementing partners	Funders	Local beneficiaries[3]
JANEEMO	Agriculture/ Forestry/ Energy	2011-2014	Dowa and Lilongwe	James Hutton Institute (research organisation); Climate Futures (consultancy); Kusamala (NGO)	Scottish government International Development Fund	700-800 smallholder farmers and their households
Trees of Hope	Forestry/ Agriculture/ Energy	2007-2050	Dowa and Neno	Clinton Development Initiative (NGO); Dowa and Neno district agricultural development offices (subnational government); Dowa and Neno district forestry offices (subnational government); Department of Environmental Affairs (national government department); Energy for Sustainable Development in Africa (NGO)	Clinton Development Initiative and Plan Vivo carbon finance	1,148 smallholder farmers and their households
Climate-smart Agriculture for Rural Smallholders in Malawi	Agriculture	2013-2016	Dowa and Lilongwe	James Hutton Institute (research organisation); Climate Futures (consultancy); Kusamala (NGO)	Scottish government International Development Fund	1,500 farmers and their households
Drought Mitigation Through Irrigation and Conservation Agriculture Extension	Agriculture/ Forestry/ Energy	2012-2015	Salima, Dowa, Ntcheu	Care International (NGO); various national government department and ministries; Total Land Care (NGO)	United States Agency for International Development	4,000 households

[3] According to interviewees involved in developing climate change and development projects in Malawi, the average number of individuals within a household is five. Project developers thus typically multiply total household beneficiaries by five in order to determine total individual beneficiaries.

Food, Income and Markets	Agriculture/ Forestry/ Energy	2012-2015	Dowa, Lilongwe and Nsanje	Concern Worldwide (NGO); area development committees and district executive committees (subnational government); National Association of Farmers in Malawi (NGO)	Irish Aid and Accenture	15,000 households
Mainstreaming Climate-Smart Agriculture in Solar Irrigation Schemes for Sustainable Local Business Development in Malawi	Agriculture/ Energy	2013-2015	Nsanje, Thyolo and Mzimba	DanChurchAid (NGO); Churches Action in Relief and Development (NGO); Christian Service Committee of the Churches in Malawi (NGO); Kusamala (NGO)	Nordic Climate Facility	15,000 households
Kulera Biodiversity Project/ Kulera REDD+	Forestry/ Agriculture/ Energy	2010-2013; 2014-ongoing	Nyika-Vwaza complex, Mkuwazi Forest Reserve and Nkhotakota Wildlife Reserve	Total Land Care (NGO); Washington State University (research organisation); CARE International (NGO); Terra Global Capital (consultancy); Department of Forestry (national government)	United States Agency for International Development and Climate, Carbon and Biodiversity Standard carbon finance	45,000 households
Mountain Biodiversity Increases Livelihood Security (MOBI+LISE)	Forestry/ Agriculture/ Energy	2010- 2013	Mulanje and Phalombe	Concern Universal (NGO); Mount Mulanje Conservation Trust (NGO); Wildlife and Environmental Society of Malawi (NGO)	United States Agency for International Development	53,995 households

Enhancing Community Resilience Project (part of the Enhancing Community Resilience Programme)	Forestry/ Agriculture/ Energy	August 2011- March 2017	Kasungu, Machinga, Mwanza, Mulanje, Thyolo, Chikwawa and Nsanje	Christian Aid (NGO); Action Aid (NGO); CARE International (NGO); CADECOM (NGO); River of Life Evangelical Church Organisation (NGO); RUO (NGO)	Joint Resilience Unit	61,000 households (305,000 local people)
Developing Innovative Solutions with Communities to Overcome Vulnerability through Enhanced Resilience (part of the Enhancing Community Resilience Programme)	Forestry/ Agriculture/ Energy	August 2011- March 2017	Nsanje, Dedza, Salima, Karonga and Balaka	Concern Universal (NGO); Cooperazione Internazionale (NGO); GOAL Malawi (NGO); Self Help Africa (NGO); Solar Aid (NGO); Small Scale Livestock Promotion Programme (NGO); Foundation for Community Support Services (NGO)	Joint Resilience Unit (efforts to leverage carbon finance are ongoing)	62,500 households (298,500 people)
Fuelling a Greener Future for Farmers in Malawi through the use of Jatropha Curcas	Forestry/ Agriculture	July 2008- ongoing	Rumphi, Mzimba, Kasungu, Nkotakota, Dowa, Salima, Lilongwe, Ntcheu, Dedza, Mangochi, Machinga and Lilongwe	Bio Energy Resources Limited (private sector organisation)	Verified Carbon Standard carbon finance	4,275 smallholder farmers

Appendix B: Ethical clearance to complete research from the University of Leeds

Performance, Governance and Operations
Research & Innovation Service
Charles Thackrah Building
101 Clarendon Road
Leeds LS2 9LJ Tel: 0113 343 4873
Email: ResearchEthics@leeds.ac.uk

UNIVERSITY OF LEEDS

Ben Wood
Sustainability Research Institute
School of Earth and Environment
University of Leeds
Leeds, LS2 9JT

ESSL, Environment and LUBS (AREA) Faculty Research Ethics Committee
University of Leeds

25 March 2014

Dear Ben

Title of study: **Exploring the implications of project level climate compatible development governance for social justice in Malawi**
Ethics reference: **AREA 13-092**

I am pleased to inform you that the above research application has been reviewed by the ESSL, Environment and LUBS (AREA) Faculty Research Ethics Committee and following receipt of your response to the Committee's initial comments, I can confirm a favourable ethical opinion as of the date of this letter. The following documentation was considered:

Document	Version	Date
AREA 13-092 Ethics_Ben Wood_information sheet for communities.docx	1	20/03/14
AREA 13-092 Response to the AREA Faculty Ethics Committee_Ben Wood.docx	1	20/03/14
AREA 13-092 Ethical_Review_Form_Ben Wood_final (3).pdf	1	25/02/14
AREA 13-092 Draft email to key informants and professional research participants.docx	1	25/02/14
AREA 13-092 Ethics_Ben Wood_information sheet.docx	1	25/02/14
AREA 13-092 Ethics_Ben Wood_consent form	1	25/02/14
AREA 13-092 High Risk Fieldwork RA form_Ben Wood.pdf	1	25/02/14

Please notify the committee if you intend to make any amendments to the original research as submitted at date of this approval, including changes to recruitment methodology. All changes must receive ethical approval prior to implementation. The amendment form is available at http://ris.leeds.ac.uk/EthicsAmendment.

Please note: You are expected to keep a record of all your approved documentation, as well as documents such as sample consent forms, and other documents relating to the study. This should be kept in your study file, which should be readily available for audit

purposes. You will be given a two week notice period if your project is to be audited. There is a checklist listing examples of documents to be kept which is available at http://ris.leeds.ac.uk/EthicsAudits.

We welcome feedback on your experience of the ethical review process and suggestions for improvement. Please email any comments to ResearchEthics@leeds.ac.uk.

Yours sincerely

Jennifer Blaikie
Senior Research Ethics Administrator, Research & Innovation Service
On behalf of Dr Andrew Evans, Chair, AREA Faculty Research Ethics Committee

CC: Student's supervisor(s)

Appendix C: Household survey template

Household Survey Consent Form

The following information should be translated and read to all being surveyed. After reading it to them, please allow time for questions to be asked and ensure that participants have fully understood what you have said. You must then obtain their verbal consent to take part in research.

Nature of research

We are completing research on the DISCOVER project, which is taking place in your village.

We want to understand what village community members think about how projects are being run and the outcomes that they produce. You are being asked to take part in a survey. This will take approximately 45 minutes to complete. You will be asked questions about your household and your involvement in the DISCOVER project.

The research team will ensure that other people do not know that the information you provide came from you. All the information that is collected from you during the course of the research will be kept strictly confidential. Your name and the identify of your village will be anonymised in any reports or publications.

Your involvement is voluntary and you will be able to withdraw without explanation. In this event, all data that you provide will be destroyed.

Would you like to take part in this research project? [participant to give verbal agreement]

Signature of Research Team Member: **Date:**

1. Household Characteristics

Please complete the table below for all people who live in the household. Please note down which household member is the household head.

Household Member	Gender (M/F)	Age	Relationship to Respondent
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

2. Household Wealth

For research assistant to tick:

Household condition	Good	Average	Poor
House made out of	Mud	Unburnt bricks	Burnt bricks
House roof made out of	Iron sheets	Grass	
Clothing condition	Good	Average	Poor

Does your household keep livestock? If so what types of animals?

Do your household have any of the following? TV, radio, bicycle, mobile phone?

What is the average income of the household per month?

How is the household income generated?

Does your household have electricity?

Does your household have a cement floor?

How many months of the year does the food that your household grows last?

How many meals per day do you have in your household?

3. **Priorities for Project Development**

a) Development

The DISCOVER project seeks to provide the following benefits to people in Malawi:

1. Increased household income
2. Improved abilities to do business activities
3. Access to electricity
4. New technologies for cooking
5. Access to resources produced by forests and trees (e.g. firewood, fruit)
6. Improved food security
7. Increased number of valuable items owned by a house (e.g. iron sheets, livestock, mobile phone, livestock, bicycle)

Is there anything else, aside from the above, which could improve your everyday life? Please list these below:

1.
2.
3.
4.
5.
6.

Using a scale of 0-3 (0 being not important, 1 being a little important, 2 being important and 3 being very important) please rate how the following could improve your everyday life:

	Rating
1. Increased household income	
2. Improved abilities to do business activities	
3. Access to electricity	
4. New technologies for cooking	
5. Access to resources produced by forests and trees (e.g. firewood, fruit)	
6. Improved food security	
7. Increased number of valuable items owned by a house (e.g. iron sheets, livestock, mobile phone, livestock, bicycle)	
8.	
9.	
10.	
11.	
12.	
13.	
14.	

What would most help your household to achieve the following goals:

Goal	Means of achievement
1. Increased household income	
2. Improved abilities to do business activities	
3. Access to electricity	
4. New technologies for cooking	

5. Access to resources produced by forests and trees (e.g. firewood, fruit)	
6. Improved food security	
7. Increased number of valuable items owned by a house (e.g. iron sheets, livestock, mobile phone, livestock, bicycle)	
8.	

9.	
10.	
11.	
12.	

13.	
14.	

b) Adaptation

Have you ever experienced any dry spells or seasonal drought? Yes ☐ No ☐

If yes, are these getting worse, more frequent and/or more unpredictable?

Do these create problems for your household? How?

Have you ever experienced intense rainfall/ flooding? Yes ☐ No ☐

If yes, are these getting worse, more frequent and/or more unpredictable?

Do these create problems for your household? How?

Have you ever experienced intense heavy winds? Yes ☐ No ☐

If yes, are these getting worse, more frequent and/or more unpredictable?

Do these create problems for your household? How?

Have you experienced any other unusual weather conditions? If so, please list them below.

Do these create problems for your household? How?

On a scale of 1-3, with 0 being unimportant, 1 being a little important, 2 being important and 3 being very important, how essential is it that solutions are found to help your household overcome the impacts of each of these weather conditions?

Event	Rating
Dry spells and seasonal drought	
Intense rainfall and flooding	
Increased unpredictability	
Strong winds	

Is your household doing anything to overcome weather-related problems? Please list activities undertaken to overcome them.

Event	Activities Taken
Dry spells and seasonal drought	
Intense rainfall and flooding	
Increased unpredictability	
Strong winds	

What do you think can be done to help your household overcome the impacts of these changing weather conditions?

Event	Solution(s)
Dry spells and seasonal drought	
Intense rainfall and flooding	
Increased unpredictability	

Strong winds	

c) Mitigation

What do you think causes weather conditions to change over long periods of time? Why?

Is there anything that you think human beings can do to help prevent this? If yes, why would this help?

Do you think households in your village should be taking action to help prevent changing weather conditions from occurring? Why/ why not?

Is your household taking any actions that might help prevent changing weather conditions? What are they?

4. Recognition, participation and resources

Is your household taking part in the DISCOVER project? Yes ☐ No ☐

If yes, what activities are you taking part in and why did you chose to take part in them? If not, why are you not involved?

Do you feel that your household is respected by DISCOVER? (Please tick) Yes ☐ No ☐ Not Sure ☐

If yes, what has the project done to make you feel respected? If not, why do you not feel respected?

Do you feel that you and your household have had enough opportunities to express your views about the project? (Please tick)

Yes ☐ No ☐ Not Sure ☐

What opportunities have you had? (Please list)

Is there anything that could help you better express your views? (Please tick)

Yes ☐ No ☐ Not Sure ☐

If not, why not?

Do you feel that you have been able to influence how the project has been implemented? (Please tick) Yes ☐ No ☐

Not Sure ☐

If yes, what makes you think you have been able to influence how the project has been implemented? If no, why not?

5. Project Outcomes

Please list any benefits that you have experienced as a result of the project. Please rate their impact on your household using a scale of significance from 1-3. 1 means the benefit is insignificant to your lives and 3 means it is highly significant.

Benefit	Rating

Has the DISCOVER project helped protect your household against weather conditions that have caused problems for you? If so, please list these benefits and rate their impact on your household using a scale of significance from 1-3. 1 means the benefit is insignificant to your lives and 3 means it is highly significant.

Benefit	Rating

Please list any ways in which you have been inconvenienced as a result of the project. Please rate the impact of any inconveniences on your household using a scale of significance from 1-3, 1 being insignificant and 3 being highly significant.

Negative side-effect	Rating

6. Further Research

Do you have any questions about this research? If so, please record them here and we will try to answer them:

Would you be willing to take part in a interview in the near future if required? This interview would involve answering more detailed questions about the topics that we have touched on in this survey. (Please tick)

Yes ☐ No ☐

Question for research assistants: do you think this person would be suitable for further interview? Y/N

Please thank the participants for their time. Tell them that the information that they have provided is very valuable to us!

For research assistants: was there anything else mentioned when completing this questionnaire that you think is important to consider in this research?

Appendix D: Development benefits resulting from the ECRP, as reported by participating households in study villages

Benefit	Main activities attributed to (fractions denote households attributing a benefit to a particular activity relative to those who participated in the activity)[4]	Number of reporting households (total n participating in projects within study villages = 329)	Mean importance rating
Economic benefits			
Increased income	VSLAs (100/154) • Easy access to loans • Returns on investments made using VSLA loans • Interest payments *"After sharing money from the VSLA I bought fertiliser which I used in vegetable farming and I got a lot of money from that."* (Kasungu household – LTSI, 2014)	135	3.00
	Conservation agriculture (22/156) • Sale of increased yields • Reduced land requirements decreases rent payments • Reduced labour requirements free up time to engage in alternative income-generating activities • Reduced expenditure on agricultural inputs *"The people practising conservation agriculture are even able to sell [excess] maize"* (DV2 household)		

[4] Sometimes, households attributed single benefits to multiple activities. Therefore, the combined numbers of households attributing a benefit to different activities may surpass total numbers of households who reported particular benefits. Only the main activities to which benefits were attributed are reported here. Hence, the combined numbers of households attributing a benefit to different activities may also be less than the total numbers of households who reported particular benefits.

	Livestock production (12/65) • Livestock sales provide quick access to cash *"Livestock is a source of income for us that improves the household condition"* (NV1 household)		
	Seed multiplication (11/62) • Improves access to seeds for growing 'cash crops' that can be sold for profit • Reduces expenditure on agricultural inputs *"We can sell and use proceeds to buy salt, soap, clothes and other things"* (Dedza household – LTSI, 2014)		
Improved business opportunities	VSLAs (7/154) • Access to capital facilitates business investments *"When I need money I go to the VSLA and borrow so I can buy screens, batteries, chargers and other things. With these things I can make a profit"* (DV2 household)	19	3.00
	Conservation agriculture (9/156) • Reduced labour frees up time to engage in business activities *"We save money; we do other jobs instead of being on the farm. We do business with the saved time."* (Nsanje household – LTSI, 2014)		
Improved asset ownership	VSLAs (47/154) • Loans, investment returns and interest payments finance asset purchases (including clothing, furniture, bicycles, radios, kitchen utensils, livestock, oxcarts, solar panels, batteries, building materials, property)	48	2.96

Food security benefits			
Enhanced crop yields	Conservation agriculture, irrigation, seed multiplication (122/156, 25/35, 4/62, respectively) • Activities improve agricultural productivity compared with traditional farming options *"We get much more food through practising conservation agriculture and irrigation"* (NV2 household)	149	3.00
	Livestock production and forestry (13/65, 3/202, respectively) • Manure and *Faidherbia Albida* trees — natural fertilisers — enhance soil quality and productivity *"Some thorny trees…fertilise the soil. When leaves fall down they are left to decompose and it makes manure"* (NV2 household)		
	VSLAs (13/154) • Increased and improved farm inputs (e.g. fertiliser) purchased using loans, investment returns and interest payments, improving productivity		
Year-round harvesting	Irrigation (16/35) • Access to water throughout the year allows for multiple harvests *"Because of irrigation we have food up to the end of March [from first harvest in April] when previously we only had it until July"* (NV2 household)	44	3.00
	Seed multiplication schemes (28/62) • Different crops and crop varieties reach harvest at times spread through the year, reducing dependence on staple crops (maize, sorghum, cassava) that are harvested only once		

Improved food purchasing power	VSLAs (27/154) • Food for the household purchased using loans, investment returns and interest payments, improving productivity *"VSLAs help us buy more food"* (KV1 household)	**27**	**3.00**
More nutritious diet	Malnutrition training (8/15) • Households have improved dietary knowledge *"[Because of the training] our children are healthier"* (DV1 household)	18	3.00
	Seed multiplication (6/62) • Dietary variety is provided by newly available food crops *"New seeds have improved our diet"* (KV1 household)		
Other development benefits			
Improved firewood access	Forestry and improved cookstoves (14/202, 4/21, respectively) • Regeneration and conservation of woodlands and boundary planting *"In the past we were spending about four hours in the mountain fetching firewood and now we only spend about two hours*" (Dedza household – LTSI, 2014)	18	3.00
Better education for children	VSLA (7/154) • Income benefits mean households can afford secondary school fees and uniforms (compulsory for school attendance) due to loans, investment returns and interest payments	7	3.00
Improved health	Improved cookstoves (5/21) • Reduced incidences of smoke-related illness	5	3.00

Appendix E: Adaptation benefits resulting from the ECRP, as reported by participating households in study villages

Benefit	Main activities attributed to (fractions denote households attributing a benefit to a particular activity relative to those who participated in the activity)[5]	Number of reporting households (total n participating in projects within study villages = 329)	Mean importance rating
Reduced vulnerability to dry spells due to improved soil moisture and quality	Conservation agriculture (81/156) • Soil coverage and minimum soil disturbance help retain soil moisture *"When rainfall has happened there is prolonged moisture due to the maize stalks"* (DV1 household)	81	2.97
Houses, assets and farmland protected from heavy rainfall and flooding	Forestry (27/202) • Trees and vetiver grasses act as natural flood barriers *"We plant trees and grasses along the rivers because they can be strong against the force of flood waters. We started two or three years ago and it is working!"* (NV2 household)	32	2.95
Houses, assets and farmland protected from heavy winds	Forestry (16/202) • Trees act as natural wind breaks *"We have protection from heavy winds and now no problems arise"* (KV2 household)	16	3.00

[5] Sometimes, households attributed single benefits to multiple activities. Therefore, the combined numbers of households attributing a benefit to different activities may surpass total numbers of households who reported particular benefits. Only the main activities to which benefits were attributed are reported here. Hence, the combined numbers of households attributing a benefit to different activities may also be less than the total numbers of households who reported particular benefits.

Ability to grow food throughout the year increases households' abilities to deal with individual climate shocks	Seed multiplication (8/62) • Access to crops with different maturity rates and harvest times lessens the impact of individual instances of flooding or drought • Access to crops (e.g. sweet potato, different maize varieties) considered more robust against climate shocks than staple food crops (e.g. traditional maize varieties) *"When wind and rains strike it affects maize. But now I grow legumes as well, which I sell and then buy maize for my family"* (DV2 household)	8	3.00
Access to emergency finance enables responses to the consequences of climate shocks	VSLAs (33/154) • Easy access to loans helps households repair damage caused *"We used VSLA money to buy thatching grass after the wind carried away the roof of our house"* (NV1 household)	34	3.00

Appendix F: Issues that hinder the translation of project activities into CCD benefits

Issue	Description	Reported impact(s)	Reported by
Agricultural activities			
Negative perceptions of conservation agriculture	• Traditional agricultural practises involve farmers digging the soil • Households are teased and abused by other villagers for participating in conservation agriculture, which requires minimum soil tillage *"Eight people have dropped out because when we were carrying stalks people were teasing us, saying 'you are mad, why are you doing this?'"* (DV1 household).	• Conservation agriculture dis-adoption • Only small areas of land committed to conservation agriculture	9 households, 1 NGO employee
Delayed conservation agriculture benefits	• Organic soil cover nutrients are fully absorbed into soils only after two to three years, leading to delayed development and adaptation benefits *"You see soil fertility benefits after two or three years. So if I am a farmer who is quite sceptical and I am forced to adopt conservation agriculture and after a year I don't see results then it is very probable that I quit"* (NGO employee)		2 households, 2 NGO employees
Poor fertiliser access	• Application of synthetic fertilisers can help offset delayed conservation agriculture benefits but household access is poor *"Until [conservation agriculture benefits emerge] fertiliser application needs to be intensive but we don't have fertiliser so we experience poor harvests"* (KV1 household)	• Poor harvests • Conservation agriculture dis-adoption	7 households, 1 NGO employee
Pest attacks	• Insects and weeds damage crops and organic soil cover *"It looks like we are not practising conservation agriculture because there are no stalks [due to termites]"* (NV2 household)	• Poor harvests • Conservation agriculture benefits lost	9 households

Co-existence with livestock and other animals	• Goats and baboons eat and damage crops and organic soil cover *"One of the pillars of conservation agriculture is to leave crop residues on the field. But this must be compatible with the presence of livestock. And the co-existence is not easy"* (NGO employee)		7 households, 3 NGO employees
Expense of irrigation scheme upkeep	• Households cannot afford to replace irrigation infrastructure when it breaks down *"Small scale irrigation, when it breaks down we don't know if they will have enough money to make sure that it starts working"* (Donor employee)	• Irrigation benefits lost	6 households, 1 donor employee
Seed replacement	• Households cannot afford to replace seeds required for multiplication schemes *"For those hybrid seeds you need to buy new seeds; that will be a problem"* (NGO employee)	• Seed multiplication benefits lost	2 NGO employees
Poor market access	• Households — especially residents of remote villages — have inadequate access to suitable markets for selling cash crops *"Vendors come and will only buy for very low prices. But we have no other options because there is no nearby place to sell"* (KV1 household)	• Agricultural activity benefits reduced or lost	2 households, 1 NGO employee

Extreme weather events	• Droughts and severe dry spells compromise benefits of agricultural activities • Heavy rains destroy crops and organic soil cover and undermine conservation agriculture soil fertility gains • Heavy rain can lead to waterlogging when conservation agriculture is practised *"Even under conservation agriculture, soil moisture is not enough"* (NV2 household) *"It can be very difficult when the rains come as the crops and mulch are washed away and the goodness in the soil is lost"* (NV1 household) *"Those that mulched their fields have experienced waterlogging"* (NGO employee) ***"(Seed) pass-on is difficult** when weather conditions are bad"* (NV1 household)	• Agricultural activity benefits reduced or list • Seed pass-on compromised • Poor harvests • Conservation agriculture dis-adoption	26 households, 2 NGO employees
Livestock production			
Prioritisation of short-term benefits	• Households eat or sell livestock shortly after pass-on to access food and income quickly or in response to climate and development shocks *"Once people pass-on, they sell goats to make short-term cash"* (KV2 household)	• Sustainable livestock production benefits (e.g. access to manure, goats milk) lost	14 households
Forestry			
Communal, non-immediate benefits	• Participating and non-participating households benefit similarly from afforestation. Households are disillusioned about participating in afforestation, which does not yield immediate benefits, for 'free'. They would like to receive additional, immediate benefits in return for their labour *"[Participants] don't work hard as it is for the group not individuals"* (NV2 household)	• Limited participation in forestry activities • Forestry benefits reduced or foregone	3 households, 1 NGO employee

Extreme weather events	• Dry spells and drought mean tree seedlings do not receive enough water • Heavy rains and floods damage and destroy trees *"The trees were washed away by flooding"* (NV1 household)	• Forestry benefits reduced or foregone	8 households
VSLAs			
Drop-outs	• VSLA members struggle to pay back loans and are forced to withdraw from groups. *"Only three quarters of our group can pay back on time"* (KV2 household)	• Reduced availability of loans	32 households
Challenges for doing business	• Financial poverty translates into limited markets for new businesses • Low education levels limit innovation that is required for business success *"People just copy each other's business ideas, which drives prices down"* (NV2 household)	• Business profits limited	4 households
Low-carbon technologies			
Limitations of market-based approaches	• Financial poverty in ECRP target villages makes it difficult for households to afford low-carbon products • Unsensitised households in non-ECRP target villages are unaware of low-carbon products *"Targeting the bottom 10% is not ideal. They have just enough to pay for phones…they have breathing room. But I think you will observe when you go to communities that those who buy the [solar] lights are not the poorest"* (NGO employee)	• Low affordability and lack of awareness reduces markets for solar products and cookstoves • Few have capital required to become solar entrepreneurs	4 NGO employees

Opportunity costs of improved cookstove production	• Other livelihood options are more profitable than cookstove production • DISCOVER pledged to top-up income from cookstove sales with money obtained from carbon credit sales, but this has yet to materialise *"Returns are not high compared with other options to make money [in Dedza], like rice cultivation or maize production…Producers sell cookstoves for 500MKW and should receive another 500MKW from carbon finance. [But] they have not received the carbon money…if they received this it would help a lot"* (NGO employee)	• Stove production eschewed in favour of other livelihood activities	3 NGO employees
Cheaper solar products available	• Cheaper solar products than those sold under ECRP are available • Poor quality of alternative products deters investments in solar *"There are cheaper Chinese products available"* (NGO employee)	• Products unaffordable • Solar entrepreneurship too capital intensive	4 NGO employees
All activities			
Patchy extension worker services	• Extension worker performance across Malawi is patchy. Reduced training and policing of project activities could create problems in villages without sufficient support once ECRP comes to an end *"Extension workers have not come to this village since 2013"* (KV2 household) *"Pass-on [of livestock and seeds] will not continue [in villages without extension support] unless local leadership apply pressure…people will just think 'why should I pass on'?"* (NGO employee)	• Households receive insufficient technical advice • Reduced incentives to spread project resources within villages	12 households, 2 NGO employees

Appendix G: Negative side-effects resulting from the ECRP, as reported by households in study villages

Cost	Description	Households experienced by	Mean importance rating
Increased inequality within villages	Uneven opportunities to participate in project activities mean some people within villages are able to improve their lives while others are not. *"They (participating households) get wealthier while we are just left behind"* (DV2 household)	16	2.94
Loss of money and assets	• Households lose money when VSLA members fail to pay back loans *"Many people are not able to give back loans…which makes others suffer"* (NV1 household) • Households who fail to pay back loans to VSLAs, and their family, have property confiscated *"Debt collectors took two goats from me while my son paid his debt but I never got them back"* (KV2 household) • Households are asked to spend time and resources building corrals to show they are 'capable' of keeping livestock. Some have taken loans to afford construction materials. However, they have not all received livestock from DISCOVER *"There have been cases whereby we say no, you have the corral but you are not fit"* (NGO employee)	9	2.88
Increased crime within villages	Increased resource wealth through project activities has led to greater instances of theft (e.g. of livestock and crops grown under irrigation) within villages. *"People steal the goats and this affects the progress of the project"* (NV2 household)	3	3.00

Reduced crop yields	Under conditions of heavy rainfall, conservation agriculture leads to waterlogged fields and reduced crop yields. *"Waterlogging is bad in some fields [in which conservation agriculture is practiced], especially when the topography is not suitable"* (NV1 household)	3	3.00
Opportunities to carry out important livelihood activities foregone	• Households in one Dedza village have participated in afforestation but poor access to water has constrained tree growth and prevented benefits *"There are no actual benefits. We are unsure what benefits will come"* (DV1 household)	5	3.00

Appendix H: Auxiliary benefits experienced by professional stakeholders at supralocal governance levels

Benefit	Description	Stakeholder experienced by	Mean importance rating
Increased organisational capacity	ECRP training has enhanced district government employees' expertise around disaster risk reduction, climate change and rural development. *"We have been trained in different types of activities…Now we have the knowledge and that knowledge will still be there for long"* (district government employee)	10 district government employees	2.90
Increased organisational innovation	Working as part of consortia has provided implementing NGOs with opportunities to engage with new climate change and development approaches; presenting opportunities for learning and innovation. *"Certain aspects of the project were not done previously but we can learn from other implementing partners coming together. We are doing new things and testing out new ideas."* (NGO employee)	13 NGO employees	3.00
Improved reputation	Involvement in the ECRP, which is Malawi's flagship climate-development programme, has brought NGOs positive publicity. Perceived ECRP success has enhanced donor agencies' reputations with the national governments that fund them. *"When the projects are discussed in the House of Commons and the House of Lords, they say 'DfID is really improving people's lives'. [ECRP] helps convince [the UK] Government that DfID is improving people's lives"* (donor employee) *"[ECRP] gave us some visibility, more recognition among stakeholders around the country"* (NGO employee)	8 NGO employees, 1 donor employee	2.71

Access to finance and material resources	ECRP resources (finance, fuel, protective clothing for field workers) allow NGOs and subnational government to continue their core operations. *"DISCOVER is the largest contract [redacted NGO name] has ever had, not just in Malawi but worldwide"* (NGO employee) *"It means the district has got money in terms of implementing these activities, so as part of the government we are relieved"* (district government employee)	9 NGO employees, 3 district government employees	2.92
Enhanced lobbying influence	By lobbying and developing policy positions as part of consortia, NGOs have greater influence over public decision-making. *"We are reaching a larger audience. DISCOVER has developed materials and literature…This allows us [NGOs] to contribute to wider debates and discussions"* (NGO employee)	2 NGO employees	2.50
District government cohesion and relationship building	Involvement in ECRP has improved co-ordination within district government: departments have better relationships with one another and development is considered holistically. *"Subnational government is now more joined up…. Now we write integrated proposals to NGOs that combine different aspects of development"* (district government employee)	District government employee	3.00