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OPPORTUNITIES AND CONSTRAINTS TO COMMUNITY FOREST USER GROUPS
PARTICIPATING IN REDD+ PAYMENT PROGRAMS IN NEPAL

By

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Thesis

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Opportunities and Constraints to Community Forest User Groups Participating in REDD+ Payment Programs in Nepal.

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Abstract

In response to global concern for the consequences of climate change, the United Nations' Reducing Emissions from Deforestation and Forest Degradation (REDD+) program was developed to support greenhouse gas emission reduction and carbon sequestration in developing countries. While still being developed around the world, in Nepal a REDD+ pilot project is being conducted with the involvement of the Nepali government's Department of Forestry (DoF) and its community forestry program. The pilot project is called "REDD+ in Community Managed Forests in Nepal" (RCMFN). The commitment of Nepal's government to carry out this project makes it an ideal location to study carbon payment implementation. My study sought to understand the opportunities and constraints of REDD+ payment program participation by community forest user groups (CFUGs) enrolled in the pilot project. CFUGs are the main management group in Nepal's community forestry program. Research was conducted in two watersheds where RCMFN operates: Kayar Khola and Charniwati. Field research was undertaken January-August 2012 and involved largely qualitative methods including in-depth interviews with government and non-government staff working on REDD+ programs and with executives (presidents and secretaries) of twenty six CFUGs (35% of total in the two watersheds). Focus groups were held with CFUG members in each watershed to learn about their concerns (two focus groups in four CFUGs from each watershed). Results identified three sets of issues. The first involves constraints relating to the structure and requirements of global carbon standards and markets for community forest user group (CFUG) participation in REDD+. The main concerns were uncertainty regarding the program's future and the requirement that funds are controlled by the DoF. The second set of issues focus on the role of NGOs and government partners as a link between CFUGs and global carbon markets. Here ongoing conflict between priorities of the DoF (to improve forests) and CFUGs (to improve both forests and local socioeconomic conditions) has led to mistrust between the two groups and concern over control and allocation of any payments coming from REDD+. Communication between the RCMFN and full CFUG membership also creates challenges for CFUG knowledge and support of REDD+. The third set of issues relate to the capacity of CFUGs to conduct the technical tasks required by REDD+ (e.g. carbon measurement, analysis, verification) as well their ability to do so in an efficient and equitable manner. Despite these many concerns CFUG executives and members remain positive that with training and education they will be able to conduct their own measurements and increase their capacity for managing funds ultimately benefitting from opportunities from REDD+ as well as community forestry. However, to realize these opportunities, ongoing conflict between the DoF and CFUGs over payment control still need to be addressed.

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GLOSSARY OF ACRONYMS

UNFCCC	United Nations Convention on Climate Change
REDD	Reducing Emissions from Deforestation and Forest Degradation
RCMFN	REDD+ in Community Managed Forests in Nepal
FCPF	Forest Carbon Partnership Facility
DoF	Department of Forests
CFUG	Community Forest User Group
ICIMOD	International Center for Integrated Mountain Development
ANSAB	Asian Network for Sustainable Agriculture Bioresources
FECOFUN	Federation of Community Forest Users Nepal
FIP	Forest Inventory Program

CHAPTER 1. INTRODUCTION

Average global temperature has steadily risen over the last several decades (IPCC 2007) primarily because of increased consumption of fossil fuels and land conversion; both activities release carbon dioxide, methane and nitrous oxide into the atmosphere. These gasses trap solar radiation causing increases in temperatures across the Earth which in turn have altered weather patterns and intensified weather events. Collectively this process is known as climate change (IPCC 2007).

The consequences of climate change have encouraged many countries to advocate for global policy addressing this challenge. Concern about climate induced impacts led to the adoption of the United Nations Convention on Climate Change (UNFCCC) which focuses on the need to reduce carbon produced from industrial activities (about 82% of CO₂) and carbon from forest conversion (about 18 % of CO₂) (Stern 2006). The Kyoto protocol to the UNFCCC was ratified in 1997 and was the only international treaty that regulated greenhouse gas emissions. It expired on December 31st 2012. In the lead up to its expiration effectively no progress was made towards replacing it due to disagreements over reducing industrial produced greenhouse gasses; however, there was concurrence on the need to address greenhouse gas emissions related to forest conversion. In 2007, Reducing Emissions from Forest Degradation and Deforestation (REDD) was adopted at the 13th UNFCCC Conference of the Parties (COP-13) in Bali.

REDD is a forest carbon offsetting mechanism that aims to reduce carbon emissions from forest degradation and destruction. Its goal is “to generate a significant level of compensation or economic incentive to outweigh the income generated through deforestation” (FoEi 2008). In response to the adoption of REDD in 2007 at COP-13, the UN-REDD program, the Forest Carbon Partnership Facility (FCPF), and an associated assessment protocol, the Forest Inventory Program (FIP) were established. These organizations have pushed for the expansion of REDD to “REDD+” which will also cover conservation, sustainable management, and enhancement of carbon stocks (UNFCCC 2010). This expanded version of REDD was given the name REDD+ at COP-15 in 2009. The UN-REDD program and the FCPF are the multilateral REDD+ implementation programs. REDD+ has created global excitement (Angelsen et al. 2012); however, international negotiations have not reached a consensus on its institutional mechanisms, including financing, implementation and benefit sharing (Angelsen et al. 2012, Paudel & Karki 2013).

The World Bank created the Forest FCPF after the 2008 UNFCCC 13th Conference of the Parties meeting in Bali. The goal of this program is to assist developing nations in preparing to participate in REDD, and now REDD+ in an “economically effective and socially just” manner (FCPF 2013). Under the FCPF scheme, each country can design its own REDD+ implementation plan taking into account its unique environmental, social, and political issues (Kotru 2009).

The Forest Carbon Partnership Facility assists developing countries in their efforts to reduce emissions from deforestation and forest degradation and foster conservation, sustainable management of forests, and enhancement of forest carbon stocks (all activities commonly referred to as "REDD+") by providing value to standing forests (FCPF 2013).

The Nepal government has been a participant in the FCPF program since 2008 and is currently developing a REDD+ national strategy (FCPF 2013). The Department of Forests (DoF) recognizes REDD+'s potential to combat climate change, deforestation and biodiversity loss and is preparing to administer REDD+ in all types of forests in Nepal. The government and national NGOs are particularly interested in involving community forest. In Nepal community forestry is based on a model similar to other countries in South Asia where forest management authority is transferred to registered community forest user groups (CFUG), but forest ownership remains with the government (Acharya 2002). Globally, community forests were initially designated on degraded forest lands with government expectation that management efforts would enhance forest sustainability while providing CFUGs with tangible economic benefits (Arnold 2001). Economic benefits from community forests have tended to come from access to forest products for home use. Under REDD+ current benefits will be augmented by payments for carbon sequestration (Bleaney et al. 2009). Since REDD+'s inception, inclusion of CFUGs has been of particular interest in Nepal because REDD+ is viewed as a mechanism to potentially increase the income and wellbeing of members of CFUGs through payments for carbon sequestration (Shrestha 2008).

A pilot project, REDD+ in Community Managed Forests in Nepal” (RCMFN), is making carbon payments to CFUGs (ANSAB 2010). Media attention of REDD+ and the pilot RCMFN program has generated growing grass roots awareness and interest in carbon payments. RCMFN was designed to be compliant with REDD+ standards for carbon monitoring and measurement while creating specific guidelines and testing techniques for carbon monitoring and payment

distribution that would meet the challenges specific to community forestry in Nepal. The project operates in one watershed within three of Nepal's 75 districts: Charnawati watershed in Dolakha district (58 participating CFUGs); Kayar Khola watershed in Chitwan district (16 participating CFUGs); and Ludikhola watershed in Gorkha district (31 participating CFUGs).

Carbon payment programs targeting CFUGs add a new dimension to the already complex and evolving institutional structure of CFUGs. There are existing controversies in community forestry regarding ownership, management, benefit distribution across and beyond CFUGs, and inclusion of disadvantaged groups in CFUGs. A core issue is that the government of Nepal owns community forest that CFUGs manage; this structure raises issues of benefit distribution and the degree of autonomy of CFUGs to make management decisions independent of the Nepalese Department of Forests. It is unclear and hotly debated as to whether REDD+ will exacerbate these long standing challenges within community forestry or provide an opportunity to address them (Springate-Baginski & Wollenberg 2010, and Cotula & Mayers 2009). In addition community forest participation in REDD+ will create new challenges for CFUGs for monitoring and verification of community forest carbon stocks. Furthermore, uncertainty around carbon market formation makes current CFUG decision making more complex (Dahal & Banskota 2009).

Research Question

Building on the above background, this research examines: What are the opportunities and constraints for community forest user groups to benefit from REDD+ participation?

To answer this research question, the project more specifically seeks to evaluate:

- 1) How global carbon standards and the ongoing negotiations surrounding them offer opportunities and constraints for community forest user group (CFUG) participation in programs based on REDD+;
- 2) How each of the different actors -- CFUGs, NGOs and Nepali government employees -- view their roles within the development and operation of REDD+ programs in Nepal, and
- 3) The capacity of CFUGs to participate in and manage tasks required by REDD+ in an effective and equitable manner.

Structure of the Thesis

The thesis consists of five chapters. Chapter 1 introduces REDD+, issues associated with its implementation in community forests in Nepal and the study's major objectives. Chapter 2 summarizes the published and secondary literature to provide further background on REDD+, community forestry in Nepal, and the RCMFN project. Chapter 3 summarizes the research methodology used in this project and describes procedures undertaken to analyze the data. Chapter 4 presents the study's major findings and Chapter 5 discusses the conclusions and implications for REDD+ efforts to succeed in community forests in Nepal in the future.

CHAPTER 2. LITERATURE REVIEW

This chapter provides background and prior work conducted on Reducing Emissions from Deforestation and Forest Degradation (REDD+) and community forestry in Nepal. It pays particular attention to processes and dynamics regarding the interaction of these two programs, especially what is known about community forests that will likely impact REDD+ implementation in them. Given my focus on the pilot program, REDD+ in Community Managed Forests in Nepal (RCMFN), literature related to this effort is also summarized.

Reducing Emissions from Deforestation and Forest Degradation and Conservation, Sustainable Management, and Enhancement of Carbon Stocks (REDD+)

REDD+ is a global payment for ecosystem services mechanism designed to reduce greenhouse gas emissions from forest degradation and destruction. Many aspects of REDD+ are still under negotiation. These include: what activities will be eligible for carbon payments, carbon baseline calculations, measurement and verification of carbon stocks, and techniques to conduct monitoring and verification. (Alvarado & Wertz-Kanounnikoff 2007, Angelsen 2008, FoEI 2008, Densham et al. 2009). Nonetheless it does have clear objectives and a designated work plan. A description of REDD+ and its primary challenges follows.

Challenges Related to REDD and REDD+ Negotiations:

Since the introduction of REDD in 2007 and its expansion to REDD+ in 2009, there has been significant debate within the UNFCCC over how it will be implemented. For this review, I separate the challenges surrounding REDD+ negotiations into two areas. The first is: REDD+ negotiations are tied to the broader climate negotiations that have been ongoing for the past 20 years, specifically emission reductions. Virtually no progress has been made in reducing emissions and the negotiations have been highly contentious and political. The UN is not the ultimate decision maker; decisions are dependent on agreement among the 195 countries that are members of the UNFCCC. Furthermore, the largest CO₂ emitters, China and the United States, have been unwilling to set any limits on their emissions (Hiraldo 2011). Until an agreement can be reached on emissions reductions, REDD+ will not be finalized. The second challenge to REDD+ negotiations, and the one most pertinent to my research, involves the specifics of REDD+ negotiations. Those parties involved in negotiations come from a wide range of

institutions including: national governments, intergovernmental organizations, multilateral as well as private financial institutions, environmental organizations, research institutes and indigenous organizations (UNFCCC 2010) and each has its own goals for what its members seek from REDD+. These groups agree that REDD+ is an appropriate mechanism for carbon mitigation, however overlapping and competing proposals for how it should be implemented have often left much of the policy details unfinished (Angelsen et al. 2012). More than 33 governmental and non-governmental proposals have been submitted to the UNFCCC regarding REDD+ methodologies and approaches (Parker et al. 2009). These proposals range from being market to government funding based, and place a different focus on the importance of social and ecological impacts and benefits from REDD+. Because some similarity exists among different groups (e.g. a focus on free market principles within developed nations; a focus on indigenous rights within indigenous rights organizations) they should not be viewed as monolithic blocks; varying views are held by organizations about different components of REDD+.

How REDD+ Works:

Below is a review of the main features of REDD+, which include funding mechanisms; carbon sequestration and additionality; carbon leakage; permanence of carbon storage; carbon base line calculation; and measurement and verification of carbon stocks. As noted above, I will also discuss literature that addresses interactions between REDD+ and community forestry efforts and the challenges for community forest user groups in Nepal to participate in REDD+ programs.

Funding:

Proposed funding models for REDD+ include public funds, market based approaches or a combination of public and market based funding (Hufty & Haakenstad 2011), however there is no consensus among international REDD+ negotiators on how the final system will or should operate. The funding models that are most likely to be adopted involve a combination of private and public funding. Initial investments to build capacity to implement REDD+ in community forests will derive from public sources with an eventual move towards a private market (Minang & Murphy 2010, UNFCCC 2010, Verchot & Petkova 2009). Currently, REDD+ projects operate at the national level with countries working with an international financing organization such as

the UN-REDD program (UNFCCC 2010). I turn now to key challenges discussed in the literature.

Carbon sequestration:

A highly contested topic related to REDD+ includes the types of forest conservation and avoided degradation or destruction that REDD+ will cover. Originally, REDD only covered reforestation and directly avoided deforestation (Hufty & Haakenstad 2011). Currently, “REDD+”, an expanded version of REDD, will also cover conservation, sustainable management and other activities that maintain or increase forest carbon stock (UNFCCC 2010).

Carbon leakage:

A critical issue regarding REDD+ implementation is whether forest protection in one location shifts extraction to another location; this is referred to as "leakage" (Plantinga & Richards 2008). In the context of community forestry this would occur when CFUG members reduce resource use in their forest but increase extraction from their private land or from other nearby national forests to meet their household needs thus negating any overall gain in carbon sequestration.

Permanence of carbon storage:

Another issue related to implementation is the long-term storage of carbon. A key component of achieving REDD+'s goals is that the carbon sequestered remain in solid form and out of the atmosphere (Dutschke & Angelsen 2008). Many of the payment programs require that the carbon stays sequestered; 100 years is a common standard and 20 years is an absolute minimum (Anderson 2011). Timber can be extracted but it must be done in a manner that maintains carbon in solid form. For example, timber can be harvested and used in construction or furniture (Parker et al. 2009), but it cannot be burned. Furthermore if a forest is destroyed due to fire, insects or deforestation, the associated carbon credits become worthless. How to maintain carbon stocks is a concern (Dutshke & Angelsen 2008, Olander et al. 2009).

Carbon base line calculation:

Determining the level of emissions that would occur in the absence of carbon payments is a challenge (Olander et al. 2007). One approach is to use time series remote sensing data to determine past rates of forest loss and then to project these rates of forest loss into the future (Hufty & Haakenstad 2011). Plantinga and Richards (2008) argue that this approach creates perverse incentive that rewards countries with a history of overexploitation. In response to this criticism, some countries want to use forest cover levels from 10 or 20 years ago as their base line so they may receive credit for the gains they have made in forest conservation (Griscom et al. 2009). Limited data from these time periods and reluctance from multinational players to expand carbon payment eligibility have created uncertainty around carbon baseline estimates (Karsenty 2008).

Measurement and verification of carbon stocks:

Many questions surround the issue of measurement and verification of carbon sequestration. The proposed mechanisms estimate how much carbon a forest contains and how much is added or sequestered per year. Traditionally, these calculations are based on measurements of trees, smaller woody vegetation and soil (Parker et al. 2009) but currently there are efforts to integrate remote sensing to develop an economic and rigorous protocol (Gibbs et al. 2007). There is consensus among international REDD+ stakeholders that whatever methods are used to measure carbon sequestration, they should produce broad public confidence in measurement and verification (Verchot & Petkova 2009). The newness of REDD+, and conflicts between those who designed it and the people who are participating and feel they deserve benefit from it, have kept many components of REDD+ from being finalized (UNFCCC 2010).

Critiques of REDD+ and Carbon Markets:

REDD+ and REDD+ based programs have support and significant momentum from the UNFCCC, the UN-REDD program and the World Bank's FCPF program. However studies raise concerns regarding governance, land tenure, equitable benefit distribution, and the concept of using free market principles, as well as the top down nature of the entire REDD+ process.

Governance:

Competence at the national level of governance, and local governance and engagement will be key factors in the implementation of REDD+ (Peskest et al. 2010, Muñoz-Pina et al. 2008). Because many developing countries have poor track records for transparency and institutional capacity, there is concern among carbon funding organizations about proper use of carbon funds and technical capacity to implement payment, monitoring and verification systems (Peskest et al. 2010). Some argue that REDD+ will improve national governance capacity (Orlander et al. 2009) while others doubt its ability to do so (Bullock et al. 2009). The development of local governance and engagement of local communities has proven key to successful conservation projects in the past (Muñoz-Pina et al. 2008; Agrawal et al. 2001). Investing in local level involvement in REDD+ implementation can be a positive way to avoid program constraints and raise prospects for the success of the program (Hufty & Haakenstad 2011).

Finally, governments seek a share of carbon payments and community groups such as CFUGs may be wary of recentralization of forest governance. CFUGs are not likely to relinquish management of forests that have taken nearly 30 years to establish (Skutsch 2005); but this is an issue with land tenure which I discuss next.

Local people's rights and land tenure:

Appropriation of land rights, especially of poor and indigenous peoples is another concern related to REDD+ (Griffiths 2007, Peskest et al. 2010). Land must be properly demarcated as part of the forest measurement process under REDD+ and this requirement has been theorized to lead to formulation or erosion of current land rights that are not well defined (Flunder 2009, TNC 2009, Bond et al. 2009). Furthermore Griffiths (2007) point out that REDD+ can also lead to loss of traditional local or indigenous access rights to forest that are entirely government and managed owned.

Equity:

There is considerable concern regarding who actually will control and benefit from REDD+ payments. Some question whether benefits from REDD+ will be appropriated by the elites which has been the case in other development and conservation mechanisms (Fritzen

2007). Concerns over elite appropriation have lead Sommerville et al. (2009) to argue that if equitable carbon payment distribution is not considered it may undermine REDD+ projects. Another concern is that the added value REDD+ will increase the economic value of community forests and make them more vulnerable to appropriation (Cotula 2009). Local communities may also be priced out of participation. The high cost of forest carbon monitoring and transaction costs related to carbon sale casts doubt on whether local villagers can participate, and in an economical way (Adhikari 2005, Bond et al. 2009).

Appropriateness of market driven solutions:

A central assumption of carbon markets is that bringing what is now an economic externality of land conversion into the market calculation is the best way to encourage forest protection, regeneration and expansion. The measurement matrix of free market capitalism (e.g. gross national product) is notorious for not taking environmental externalities into account, and some suggest it plays a large role in many current environmental crises including climate change. Some critics question why turning to market mechanisms appear to be the answer rather than other approaches that focus on root causes of changing climate (Stavins 1997). Carbon trading does not target and work to change the root cause of climate change which is the global increase in burning of fossil fuels.

Top down implementation:

Due to the structure of large development organizations such as USAID, other bilateral donor agencies and UNDP, and the financial cost and resources required to undertake development projects, most projects are developed at the national or international level. As a consequence of being administered through these high level authorities, many development and conservation projects are structured in a top down fashion. REDD+ and the World Bank's FCPF program in Nepal is following this top down trend (Bushley & Khatri 2011). This is likely to result in projects that are not appropriately adapted to local conditions and local people's needs and concerns may be ignored as is common in conventional development programs (Chambers 1983). The top down and external creation of most projects means that local people are unlikely to develop a sense of ownership over the project and may even accumulate feelings of antipathy towards them (Escobar 1995). To address these issues, a more inclusive and participatory style is

advocated. Easterly (2002) envisions an approach based on locally identified needs and generated ideas in partnership with outside experts and local participation in pre- and post-evaluation. While these ideas are discussed in REDD+ and REDD+ project documentation in Nepal, limited evidence exists that they have been implemented (Bushley & Khatri 2011).

Section summary:

While many of the components of REDD+ are still under negotiation, there is a large and growing literature on REDD+ which suggest both its opportunities and constraints. Many of the latter could raise problems for REDD+ implemented in smaller scale forests administered by local managers. Yet there is growing interest in applying REDD+ at these smaller scales. Proponents of community forestry see the overarching goals of REDD+ including combating climate change, biodiversity protection, and poverty alleviation as consistent with the current goals of community forestry which emphasize local environmental protection, income generation, and resource conservation (Bushley & Khatri 2011; Hufty & Haakenstad 2011). Given that REDD+ will be implemented within the framework of the existing community forestry program it is important to understand current challenges within community forestry (Barr & Sayer 2012, Staddon 2009).

Community Forestry in Nepal

In Nepal existing conditions and institutions will shape REDD+ so it is imperative to understand the history and evolving dynamics of community forestry in Nepal. (Dahal & Banskota 2009).

History of Community Forestry:

Community forestry in Nepal is a rediscovery of community level management that was in existence in many parts of the country prior to the mid-1950s (Gautam et al. 2004). In 1957 the Nepalese government nationalized its forests replacing local management with a centralized, scientific forest management system administered by the Department of Forests (DoF). Due to Nepal's mountainous topography and lack of roads and financial resources, the DoF was not able to effectively manage this vast forest system (Dev & Adhikari 2007). The result was widespread uncontrolled and unsustainable forest use that degraded and destroyed forests (Gautam et al.

2004). Movements seeking local recontrol of forests for improving livelihoods, cultural survival, and political representation were encouraged by international NGO presence (e.g. the FORD Foundation). Gradually the concept of a modern, state driven community program emerged and in 1978, the Forest Act of 1961 was amended to establish the rudiments of community forestry (Kanel 2006, Gautam et al. 2004). This act gave local communities increasing management autonomy, but not legal ownership nor total autonomy of the Panchayat Forests. The Panchayat was the smallest unit of local governance in Nepal. A decade later the 25-year Master Plan for the Forestry Sector, 1989 laid the groundwork for the Forestry Act of 1993, which established community forests (Gautam et al. 2004). Nepali NGOs such as the Federation of Community Forestry Users, Nepal (FECOFUN) actively advocate for reforming old policies and developing new policy that favors community forestry (Kanel 2006). In addition to community forests, leasehold forests were established. Lease hold forests are small patches of government forests that are handed over to groups of poor households on forty year leases. The leaseholders are allowed to manage these forests for household use (Kanel 2006).

Nepal's Forest Department formally allocates forest land to CFUGs. A CFUG is an association of rural households from an area near a forest that joins together to participate together and with the DoF in planning, establishing, managing and protecting a local forest (Gautam et al. 2004). CFUGs are required to draft a constitution and formulate a management plan that is submitted to the DoF for approval. The CFUG makes rules regarding forest access and resource harvest that restricts and manages use of the forest. Ideally these plans result in improvement of community forests conditions, provide access of CFUG members to community forest products. Members can request permits to harvest fuel wood, animal fodder, medicinal plants, wild food, and timber. The off sale of forest products is usually restricted to the CFUG. Income generated from these sales as well as the collection of fees for membership and harvesting permits is an important component of most CFUGs. Local people value managing their forests sustainably because they know the consequences of unsustainable management and have an understanding of ecological services that healthy forests provide (Arnold 2001).

Within the DoF there was initial resistance to community forestry, but gradually government forest officers embraced community forestry. Currently CFUGs are in every district of Nepal (Gautam et al. 2004). Spielman (2010) reported that 14,439 CFUGs cover 1,229,669 ha

or about 25 % of Nepal's forests and 1,659,775 households or about 32 % of Nepal's population were members of these organizations.

Community forests have had significant successes in reversing deforestation while still providing economic benefits to local people, improving local institutional capacity, increasing resource access, and improving local ecological conditions (Gautam et al. 2004, Yadav et al. 2003). These achievements have made Nepal's community forestry program one of the most successful in the world (Gautam et al. 2004, Springate-Baginski 1998). However these successes have not occurred uniformly in community forests across Nepal and there are significant challenges that community forestry still faces (Gautam et al. 2004); many which have relevance for their involvement with REDD+ programs.

Current Challenges within Community Forestry:

Existing problems in Nepali society have been carried over into community forestry. For example, power disparities between women and men and a lack of well-educated people in rural areas have led to continued gender inequality and a lack of institutional capacity in CFUGs. Efforts to address some of these issues (e.g. inclusion of poor members and women in CFUG management) have had success in some places (Forest 2003, Varughese & Ostrom 2001).

Community forestry has been more successful in the Middle Hills of Nepal compared to the Terai (or lowland areas of Nepal). Although the Terai region has 31.5% of Nepal's forested lands and 48% of the population, it only contains 4.4% of registered CFUGs and 6.6% of total CFUG lands (Gautam et al. 2004). The primary reason for lack of CFUGs in the Terai is government unwillingness to hand over these forests here. Illegal harvesting of timber by CFUGs, greater ethnic heterogeneity, easier access to markets and high value of the forest resources have been noted as reasons for lack of handover (Kanel 2006, Gautam et al. 2004).

In addition to regional variation in the success of community forestry implementation, other broad issues have been identified throughout Nepal. These include equity in resource distribution and the inclusion of disadvantaged groups in CFUG decisions, conflict between CFUGs and the DoF, benefit distribution between areas with access to forests and those without nearby forests, and challenges with implementation of modern forestry practices.

Equity and the inclusion of disadvantaged groups:

Equitable distribution of CFUG income and forest resources among CFUG members is an issue of concern at all levels in Nepal. Within the laws governing community forestry there are provisions that require CFUG income to be invested in pro-poor activities (Kanel & Kandel 2004). However there is extensive documentation of elite capture and corruption within CFUGs due to elite domination of CFUG governing structures (Thoms 2008). Elite control of decision making structures is further compounded because poor CFUG members are also less likely to be engaged in CFUG decision making (Kanel 2006, Kotru 2009, Thoms 2008). Elite members tend to favor resource conservation over management and distribution of resources (Thoms 2008). While elites are able to afford alternatives to the resources available in the forest, poorer households are not (Thoms 2008). Elite members are also not as dependent on the forest for additional income. Charcoal production and the outside sale of fuelwood have been banned in many CFUGs removing a key source of income from very poor members (Putz 2009). Furthermore Nightingale (2002) points out that even when women or people of lower cast have the opportunity to speak their voice at CFUG meetings it does not necessarily translate into influencing decision making.

CFUG and DoF conflict:

An enduring issue in community forestry in Nepal has been disagreement between CFUGs and the government over each side's rights and responsibilities (Thoms 2008, Gautam et al. 2004). As noted above, the Nepali government remains the forest land owner and is the final decision making authority over how the forests and its particular forest products can be used and managed. Permanence of forest rights has been a major concern to CFUG members who have, in some cases, invested decades of time and energy into improving and protecting their forests (Gautam et al. 2004). The government of Nepal was reluctant to hand over degraded land to adjacent communities at the inception of community forestry and now that some of these forests have become increasingly valuable, there is significant desire on the part of the DoF to exert more control over this land and the revenues generated from these forests (Paudel et al. 2012). In 1999, the Forestry Act of 1993 was amended to require 25% of CFUG income to be invested in forest development and in 2012 increased taxation of the off sale of forest products and greater DoF oversight were proposed (Dahal & Banskota 2009).

In addition to unresolved issues related to increased taxation and oversight, debate also exists over the basic goals of community forestry. Thoms (2008) points out that this dates to some of the founding policy on community forestry in Nepal. The 1988 Master Plan states that community forests were meant to meet the essential needs of CFUG members; in contrast, the Forest Act of 1993 asserts that CFUGs have the right to manage forests for both substance and commercial purposes. Some DoF staff are still opposed to CFUG investment in “community development” (Thoms 2008, Kanel 2006); however, these types of investments are often recognized as principal benefits of community forestry (Kanel & Kandel 2004).

Benefit distribution among members and non-members of CFUGs:

Lack of access to existing community forests or forest land eligible for CFUG management is a common issue especially pertinent in the Terai (lowland areas of Nepal) (Kanel 2006). Indigenous Terai ethnic groups (inhabiting lowlands) believe they have been historically dominated in the National government by the hill peoples. Furthermore, in many places in the lowlands, the land available for community forests is adjacent to locations where the last wave of hill migrants settled (Kanel 2006). Consequently, traditional ethnic groups of the Terai perceive community forestry predominately benefit recent settlers from the hills.

Implementation of modern forestry practices:

The Forestry Act of 1993 requires each CFUG to prepare an operational plan, which includes a forest inventory and a user group constitution; additionally, the operational plan must be updated every five years. A component of the operational plan is a forest inventory that measures forest biomass and recruitment. Many CFUGs cannot complete these inventories without assistance from the DoF and many local DoF offices lack the personnel and resources to assist with these inventories. This backlog has left many CFUGs operating without their legally required management plans (Kanel 2006).

Furthermore, active forest management and establishment of optimal harvesting rates are new concepts to many CFUGs. Reluctance by CFUGs to implement modern forest management techniques for fear of destroying the forest has led many CFUGs to avoid optimally managing their forests (Yadav 2003, Kanel 2006). Members of Nepal’s community forests need to be trained in forest management techniques but the process of transferring technical forestry

practices into local forestry knowledge is slow due to the decentralized nature of community forestry in Nepal (Kanel 2006). Nightingale (2005) suggests that modern forestry management may not meet the objectives of CFUGs that are more interested in ecological services and traditional forest use that community forests provide.

Section summary:

Currently, only a few pilot carbon payment projects have made or anticipate making payments to community forests in Nepal (ANSAB 2010). As a consequence, the long term viability and broad applicability of these types of projects is still in doubt (Peskest et al. 2010). Community forests that originated prior to the widespread recognition of climate change are natural initial targets for REDD+. Many of the goals of CF programs and REDD+ are similar; however, how the existing challenges within community forestry interplay with issues within REDD+ will shape the feasibility of REDD+ program implementation and affect potential benefits to participants.

Community Forestry and REDD+ in Nepal

Existing problems within community forestry and Nepal will most likely carry over to REDD+ unless these issues are specifically addressed. Some of the issues associated with implementation are unique to REDD+, however, many will also relate to existing challenges in community forestry and Nepal. Benefit distribution and inclusion of disadvantaged groups are current challenges within community forestry that will likely impact the implementation of REDD+. REDD+ will also create new management challenges such as carbon related forest measurement, verification, carbon accounting, data analysis, and technical capacity building to manage REDD+.

According to the literature, the primary opportunities and constraints of implementing a carbon monitoring system in Nepal's community forests include the following which I will discuss in more detail in following sections.

Constraints: The following have been identified as factors that may limit implementation of REDD+ in Nepal: benefit sharing, equitable resource distribution among people who do not live near any forest, inclusion of disadvantaged groups, collaborative participation in REDD+

implementation, uncertainty around carbon markets, and verification, carbon accounting, forest measurement, data analysis and other technical aspects of REDD+.

Opportunities: These issues have been identified as positive factors that will result from REDD+ implementation: inevitability of carbon markets, pro-ecosystem services, biodiversity and climate change mitigation, financial benefits and help addressing longstanding issues in community forestry.

Constraints:

Carbon payment distribution:

Given current concerns over equity issues in community forestry, it is likely that conflict over distribution of community forest funds will increase as CFUGs begin to receive additional economic benefits in the form of carbon payments (Dhital 2009).

Resource distribution for people not living near a forest:

Increased taxation on community forests has been proposed as a method to distribute CFUG benefits to people without access to nearby forests or to a CFUG group to join. Benefit redistribution is especially pertinent in the Terai because lowland forests have the potential to be highly valuable in carbon markets and over 90% of the population in this area does not have a CF group (Bleaney et al. 2009) because of reticence on the part of the DoF to handover forests (Kanel 2006, Gautam et al. 2004). This issue affects all CFUGs in Nepal because Terai based political parties have been major supporters of the most recent legislation attempting to change the 1993 Forestry Act. This law is the legal basis for community forestry. Lack of access to community forests or alternative benefits from them has created a powerful ally of Terai based parties for those who wish to take power and money from the CFUGs (i.e. members of the Department of Forests and those attempting to expand legal and illegal timber harvest) (Paudel et al. 2012). Inability to provide benefits to people without community forest access is likely to increase when community forests receive carbon payments (Dahal & Banskota 2009).

Equity and the inclusion of disadvantaged groups:

Nepal's official position on REDD+ at UNFCCC negotiations emphasized the importance of including disadvantaged groups that depend on forest resources in REDD+

planning (Bleaney et al. 2009). One risk REDD+ participation poses for disadvantaged groups is that CFUGs may favor management regimes that favor carbon sequestration at the expense of other uses that are essential for poorer CFUG member livelihoods (Bleaney et al. 2009). Also poor users are less likely to be engaged in CFUG decision making and have less influence over those decisions when they do participate. Restrictions on the sale of fuelwood and charcoal production have already occurred under existing CFUG management regimes thus removing a key source of income for poor CFUG members (Thoms 2008, Putz 2009). While restrictions on forest use has been an essential part of CF restoration, further tightening of restrictions to enhance potential carbon earnings will likely put the most pressure on poor CFUG members who often are not the main beneficiaries of CFUG expenditures (Thoms 2008).

Collaborative participation in REDD+ implementation:

CFUG participation is designed into Nepal's REDD+ implementation strategy; however, an important concern is whether or not participation will be meaningful (Bleaney et al. 2009). The FCPF and the UN-REDD program have advocated for national standardization across participating countries and Nepal has worked toward conforming its readiness strategy to the blue print provided by these organizations. Thus, many of the rules regarding REDD+ have already been decided at the international level leaving little opportunity to adapt REDD+ to local conditions (Dahal & Banskota 2009, McDermott et al. 2013). In Nepal, the Department of Forests in turn collaborates primarily with national level community forestry NGOs (Bushley & Khatri 2011). Although many of these NGOs advocate for consultation with CFUGs, user group members have had little input (Bushley & Khatri 2011). Finally, without education about REDD+, CFUG members would have difficulty participating in planning for carbon payment implementation (Bleaney et al. 2009).

Technical aspects of REDD+:

Nepal is in the process of establishing country specific carbon accounting and verification standards. Currently, REDD+ regulations require international third party verifiers. This is problematic because the high cost of international verifiers will erode the potential profits a CFUG would receive from participating in REDD+ (Larrazábal et al. 2012). Furthermore, CFUGs in Nepal do not have the skills or knowledge needed to conduct the measurements and

data analysis required to calculate forest carbon (Kanel 2006). This issue is exacerbated by out migration for urban and international employment (Seddon et al. 2002). Significant investments still need to be made to develop a national carbon payment infrastructure and to prepare CFUGs to participate in carbon payments.

Another challenge CFUGs face is their small size; the median area of these forests is < 80 hectares (Kanel & Kandel 2004). Many of the costs of measurement and verification are fixed, limiting CFUG profitability. Furthermore, their size makes them unattractive to carbon investors who are more interested in large projects (Dahal & Banskota 2009). Technical structure of forming REDD+ cooperatives or other marketing techniques to overcome these issues are under development (ANSAB 2010).

There are concerns around CFUG participation in carbon payment programs because carbon payments are intended as an incentive for curbing deforestation or increasing carbon stocks in existing forests and it may be difficult to increase carbon stocks in community forests that are already sustainably managed (Bushley & Khatri 2011, Dahal & Banskota 2009). This is especially an issue in the middle hills where efforts to curb deforestation have been most successful (Bushley & Khatri 2011). Over 90 percent of CFUGs are located in the Middle Hills raising concerns that most CFUGs in Nepal will either be ineligible for carbon payments or will not be able to generate significant income from them (Dahal & Banskota 2009).

Finally, change in forest management in Nepal as seen in its embracing of community forestry reflects a trend observed throughout South Asia whereby forest governance has shifted from a top down, centralized system, to a participatory decentralized one (Phelps et al. 2010). Carbon payments could reverse this trend to a certain degree. Bushley and Khatri (2011) have raised concerns that payments may weaken local management authority and provide incentives to re-centralise forestry in Nepal by forcing participating CFUGs to work under a government managed system with little ability to provide input into its operation.

Opportunities:

Popularity of carbon market strategy:

While many unknowns exist surrounding carbon markets and their creation, there is consensus among scientists that carbon sequestration is an essential component to combating global climate change (Parker et al. 2009). Today market based approaches to conservation are

emphasized. For example, the only components of global climate policy to be approved by the UN are mandatory and voluntary markets operating around the world. Furthermore, REDD+ is being implemented in several test countries, including Nepal based on a market approach (Dahal & Banskota 2009). For these reasons it is likely that some type of global carbon market will develop.

Pro-ecosystem services, biodiversity and climate change:

The UNFCCC has stated that REDD+ has the potential to address several of the major problems affecting Nepal by providing money for the poor, reduce climate change impacts and protect and enhance biodiversity (UNFCCC 2010). However, although these co-benefits appear very positive, past experiences, especially with clean development mechanisms, have shown that these types of co-benefits often fail to materialize (Staddon 2009).

Financial benefit:

The global carbon market is estimated to be worth tens of billions in U.S. dollars (Point Carbon 2011). A significant amount of these funds will be available for carbon mitigation under a UN/World Bank sponsored programs for the restoration of destroyed and degraded forests. Thus CFUGs in Nepal and similar groups everywhere have an incentive to participate in carbon markets because involvement could potentially provide significant extra income (Peskett et al. 2010). Furthermore, extra income generated from forest conservation will not necessarily alter existing forest product collection such as non-timber forest product collection and the sale of timber for construction and manufacturing (Anderson 2011). The income provided by sequestration payments may help meet short term economic needs that otherwise would have been met by intensive and unsustainable extraction (Bleaney et al. 2009). Nepal is a very poor country and there are many basic services in all parts of Nepal that go unmet for lack of money. This limitation puts significant pressure on CFUGs to provide where the government cannot and it is still a question as to whether carbon payments will provide enough financial incentive to reduce timber harvest.

Address longstanding issues in community forestry:

REDD+ faces many challenges in Nepal but it also provides an opportunity to address many of the structural issues that have emerged as community forestry has matured (Dahal & Banskota 2009). For REDD+ to operate effectively, silvicultural and administrative capacity will need to be built at all levels of the forestry sector. The influx of funds to help develop this capacity, if used correctly, has the potential to benefit both current DoF management objectives as well as prepare CFUGs to participate in carbon and other emerging ecosystem service payment schemes. DoF staff, CFUG members and executives will require training and education, and marginalized CFUG members will need to be included in the decision making process (Dahal & Banskota 2009). Furthermore, the program has potential to help improve tenure security, sustainable management of forest resources, benefit sharing, and revenues (Dahal & Banskota 2009).

Although there is significant literature on the theoretical opportunities and constraints of CFUG participation in REDD+ based programs, there is limited research on existing REDD+ projects due to their recent implementation. The only project in Nepal that is implementing a REDD+ based carbon payment program is RCMFN. Research conducted on this project, including my own, will be some of the first work to assess how REDD+ and the issues surrounding it operate in Nepal.

REDD+ in Community Managed Forests in Nepal (RCMFN)

While conducting preliminary research, I found one project in Nepal that was making carbon payment to CFUG, REDD+ in Community Managed Forests Nepal (RCMFN). My first goal in Nepal was to determine if any other carbon payment projects existed. After concluding my initial interviews in Kathmandu I determined no other large scale projects were present and I decided to focus my research in areas where RCMFN was functioning. There is limited information written on this project. This section is based on a project summary document titled: Forest Carbon Stock of CFUG in three Watersheds (Ludikhola, Kayar Khola and Charnawati) and written by a project staff person (ANSAB 2010).

The RCMFN project was funded by the Norwegian Development Corporation (Norad). The project is implemented by three NGOs: International Centre for Integrated Mountain

Development (ICIMOD), the Asia Network for Sustainable Agriculture and Bioresources (ANSAB) and the Federation of community Forestry Users Nepal (FECOFUN).

RCMFN was designed to be compliant with REDD+ standards for carbon monitoring and measurement while at the same time creating specific guidelines and testing techniques for carbon monitoring and payment distribution that would meet the challenges specific to community forestry in Nepal. An example of this are protocols for carbon measurement which I discuss below.

RCMFN's approach to carbon market participation for CFUGs is to group the forests into larger forest blocks to create economies of scale for measuring and monitoring the forests as well as to overcome the marketing limitations of small forests. Under this arrangement all of the participating CFUGs would collectively share the cost of forest measurement and verification. This proposed method has popular support for overcoming issue of scale (Skutsch 2012). The grouping for RCMFN is delineated by watershed boundaries which incorporate several CFUGs. These CFUGs are treated as one large forest for sampling purposes, however, RCMFN staff work with each CFUG individually to measure and monitor their forests carbon sequestration and each forest receives payments based on their forests size.

Forest plots are randomly selected for measurement throughout the forest sample area, with at least one plot placed in each community forest. Community forest boundaries are demarcated and measured by teams of CFUG members led by RCMFN technical experts. The first measurements, made in 2010, were used to establish a baseline for measuring forest carbon. Two subsequent rounds of carbon monitoring followed in 2011 and 2012 with corresponding payments for sequestered carbon. Forest measurement data as well as leaf litter and soil samples are sent to Kathmandu for analysis and carbon measurement. Starting in 2012, leasehold forests were added to the project's monitoring scope (Joshi 2011).

Due to the large numbers of researchers and project staff that need to repeatedly travel to the study sites from Kathmandu it was necessary to choose places that were easy to access. Dolakha, Chitwan and Gorkha district are all within 5 hours of Kathmandu. Chitwan is the closest district to Kathmandu that is located in Nepal's lowlands and contains forests that are distinct to those areas. Gorkha and Dolakha are two of the most accessible hill and mountain districts from Kathmandu. Once these districts were selected, a team of people was sent to each

district to work with district forest officers and local government personnel to collaboratively select which watershed within each district to implement the project.

Charnawati watershed, Dolakha district (fifty eight participating CFUGs) is located in the Central Development Region of Nepal and is predominately hilly. Its altitude ranges from 835m-3549m and covers 14,037 hectares, 5,996 of which are under CFUG management. The fifty eight CFUGs are made up of 10,270 households with a total population of 48,504. The average CFUG income in Chitwan district was 30 thousand NPR (\$ 375) (Nepal DoF CFUG summary statistics).

Kayar Khola watershed, Chitwan district (sixteen participating CFUGs) is located in the Central Development Region of Nepal and is a large low valley that opens onto the flat plains or Terai. Its altitude ranges from 245m-1944m and covers 8,002 hectares, with 2,381 under CFUG management. The sixteen CFUGs are composed of 3,935 households with an estimated population of 22,090. The average CFUG income in Chitwan district was 2.6 million NPR (\$ 32,500) (Nepal DoF CFUG summary statistics).

Ludikhola watershed, Gorkha district (thirty one participating CFUGs) is located in the Western Development Region of Nepal and is predominately hilly. Its altitude ranges from 318m-3549m and covers 5750 hectares, 1888 of which are under CFUG management. The thirty one CFUGs are made up of 3800 households with a population of 23,197. The average CFUG income in Gorkha district was thirteen thousand NPR (\$163) (Nepal DoF CFUG summary statistics).

One of the central components of the RCMFN project is to include CFUG's in its design and implementation so that RCMFN may provide a successful blue print for future carbon payments programs. To achieve this goal, three regional and one national level working group were established. The regional working groups are composed of two representatives, one man and one woman, from each CFUG. The national level group is made of members from the regional groups. Through this system concerns and ideas about the project are passed from CFUG to RCMFN staff and from staff back to the CFUG.

Carbon payments are made to the regional working groups that represent each of the participating watersheds. These groups distribute the money based on amount of carbon each CFUG has sequestered the previous year and several other socioeconomic factors. These include the number of poor and indigenous members in each CFUG as well as budgetary pledges to

invest a set amount of carbon payments into pro sequestration forest management. The component of the payment distribution system designed to give extra benefit to CFUGs with greater number of poor and indigenous groups is specific to the RCMFN project and was not directly addressed in my research.

Section summary:

RCMFN was designed as a pilot program for REDD+ and operates in one watershed in each of three districts. Two of the districts are in the mountains and one is in the lowlands. RCMFN introduces the concept of carbon payments to CFUGs, sets up a measurement and verification system in their forests, and makes carbon payments to them.

CHAPTER 3. METHODS

Introduction:

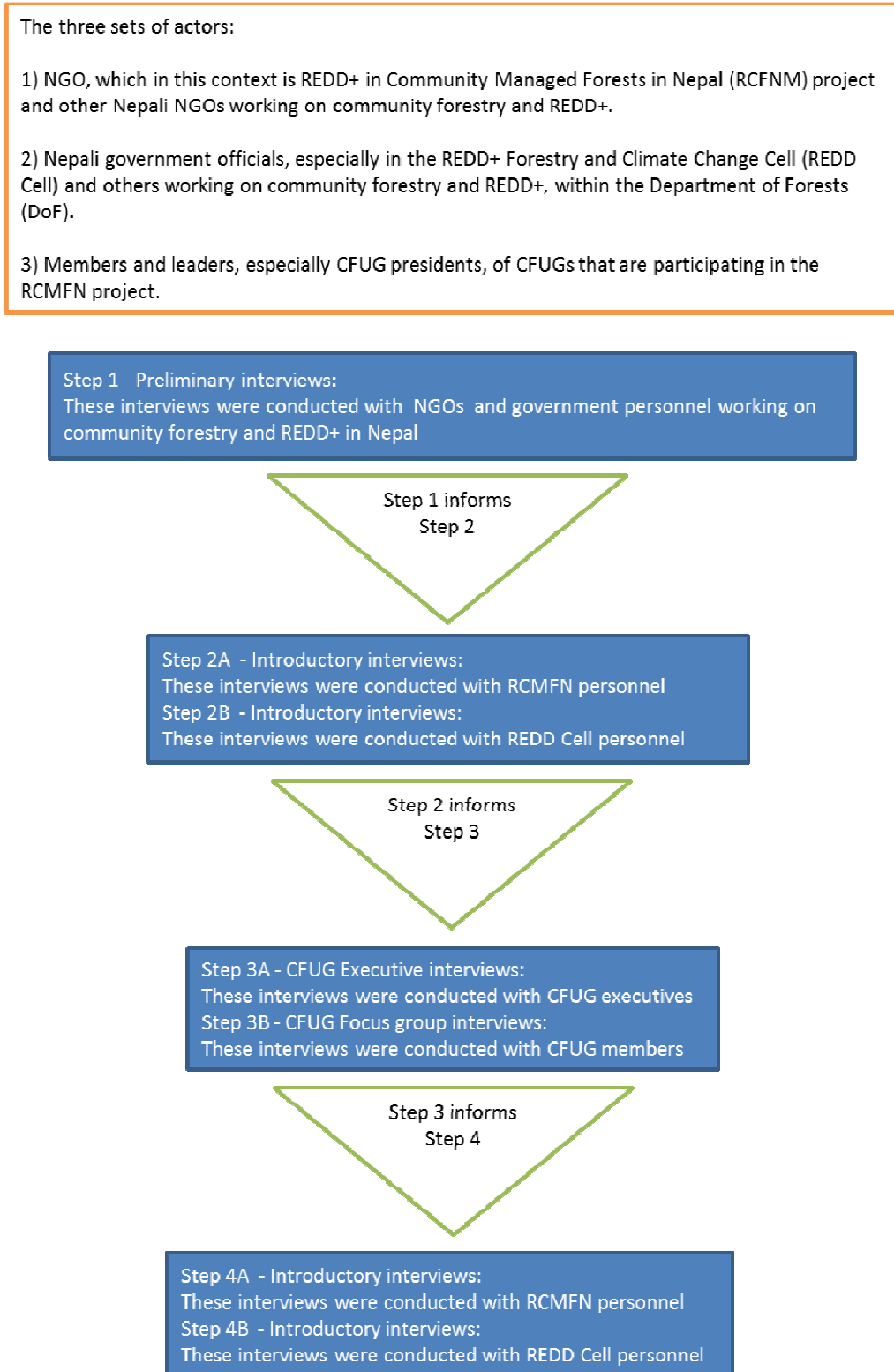
This study was conducted through a largely qualitative methodology which sought to explain community forest participation in REDD+ programs through in depth investigation rather than through testing of hypotheses. A qualitative approach is recommended when the topic is new, as is my focus on REDD+ implementation in Nepal, and also when the purpose of the research is to identify preliminary insights into a phenomena (Patton 2005), An empirical approach was chosen because much of the existing work focused on theoretical constraints to participation such as: benefit sharing, inclusion of disadvantaged groups, collaborative participation in REDD+ implementation, uncertainty around carbon payment implementation (Dhital 2009, Bleaney et al. 2009 and Bushley & Khatri 2011) as well as issues surrounding government and NGO implementation using limited data from practitioners working to implement REDD+ in particular forests.

To examine the opportunities and constraints regarding the participation of Nepal's community forestry user groups in REDD+, I will focus on three sets of actors and actions which I suggest are critical to answer my research question: 1) NGO, which in this context is REDD+ in Community Managed Forests in Nepal (RCFMN) project and other Nepali NGO's working on community forestry and REDD+; 2) Nepali government officials, especially in the REDD+ Forestry and Climate Change Cell (REDD Cell) and others working on community forestry and REDD+, within the Department of Forests (DoF); and 3) members and leaders, especially CFUG presidents, of CFUGs that are participating in the RCMFN project. In addition to learning about characteristics and concerns at each level, I sought to understand interactions across these levels to learn how they functioned together, or not, to enact carbon payment program participation for CFUGs. Also before initiating my research in Nepal, I conducted library and internet background research on community forestry and carbon payments in Nepal.

I conducted a preliminary set of interviews with NGO and government agencies working on carbon payments in community forests to gain a contextual understanding of REDD+ in community forestry and to determine the most pertinent actors at each level, (Fig 2) Step 1. From these interviews I discovered that the RCMFN project and the government REDD Cell were where I wanted to focus my government and NGO interviews. I then conducted introductory interviews at these organizations, (Fig 1), Steps 2A and 2B and used the information from these

interviews to inform my CFUG level interviews, (Fig 1), steps 3A and 3B. The CFUG interviews in turn informed my concluding interviews with the RCMFN project and the government REDD Cell, (Fig 4), steps 4A and 4B. At the beginning of each section describing these steps Figure 1 will be referenced to help keep the reader oriented.

Figure 1. Summary of three actors and data collection.



Currently the Nepal government is implementing a REDD+ preparedness program but is not yet conducting carbon measurement, analysis or making payments to CFUG's. To assess CFUG participation in REDD+ and what it might be like for them to participate in an eventual national REDD+ program I worked with CFUGs participating in RCMFN.

The RCMFN project operates in three of Nepal's seventy-five districts. In each of these districts they identified one watershed to work within. All of the CFUGs within these three watersheds participate in the project. Two of the districts, Gorkha and Dolakha were located in the middle hills (1000 – 4000 m), and the third, Chitwan, was located in the lowlands (< 1000 m). From my preliminary interviews with NGO and government personnel and Kanel (2006), I learned that community forestry in the Terai and middle hills is very different so I decided to conduct work in the lowland site, Chitwan, and one of the middle hill locations (Fig. 2). In the Terai there is much higher abundance of high value timber and CFUG handover has been more limited (Gautum et al. 2004). I chose only one of the middle hill locations because of time and logistics. RCMFN staff recommended I study Dolakha over Gorkha because of accessibility and access to technical support. In Chitwan district, RCMFN operates in the Kayar Khola watershed and all sixteen CFUGs participate (Fig 3). In Dolakha district, RCMFN staff work in Charnawati watershed and all fifty eight CFUGs participate (Fig 4). A description who I interviewed at those CFUGs is in the sections on CFUG level analysis.

Figure 2. Map of Nepal showing two study areas.

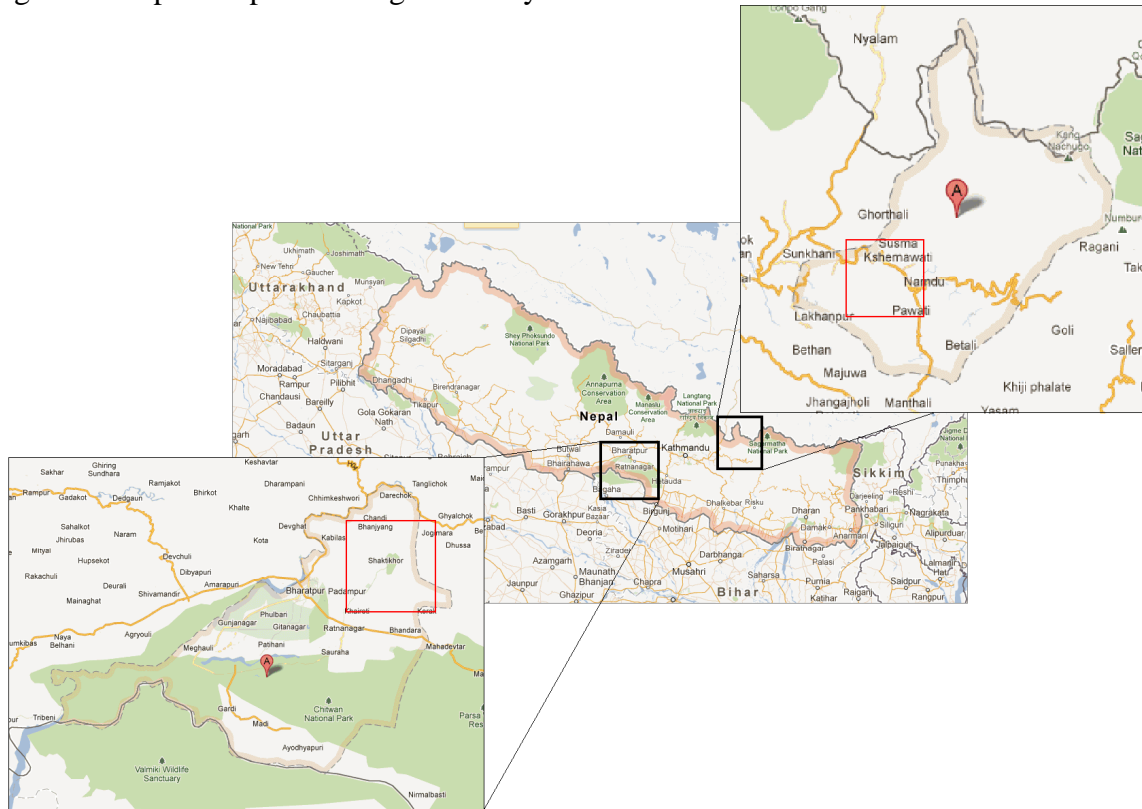


Figure 3. Kayar Khola watershed in Chitwan district, Nepal (ICIMOD et al. 2011).

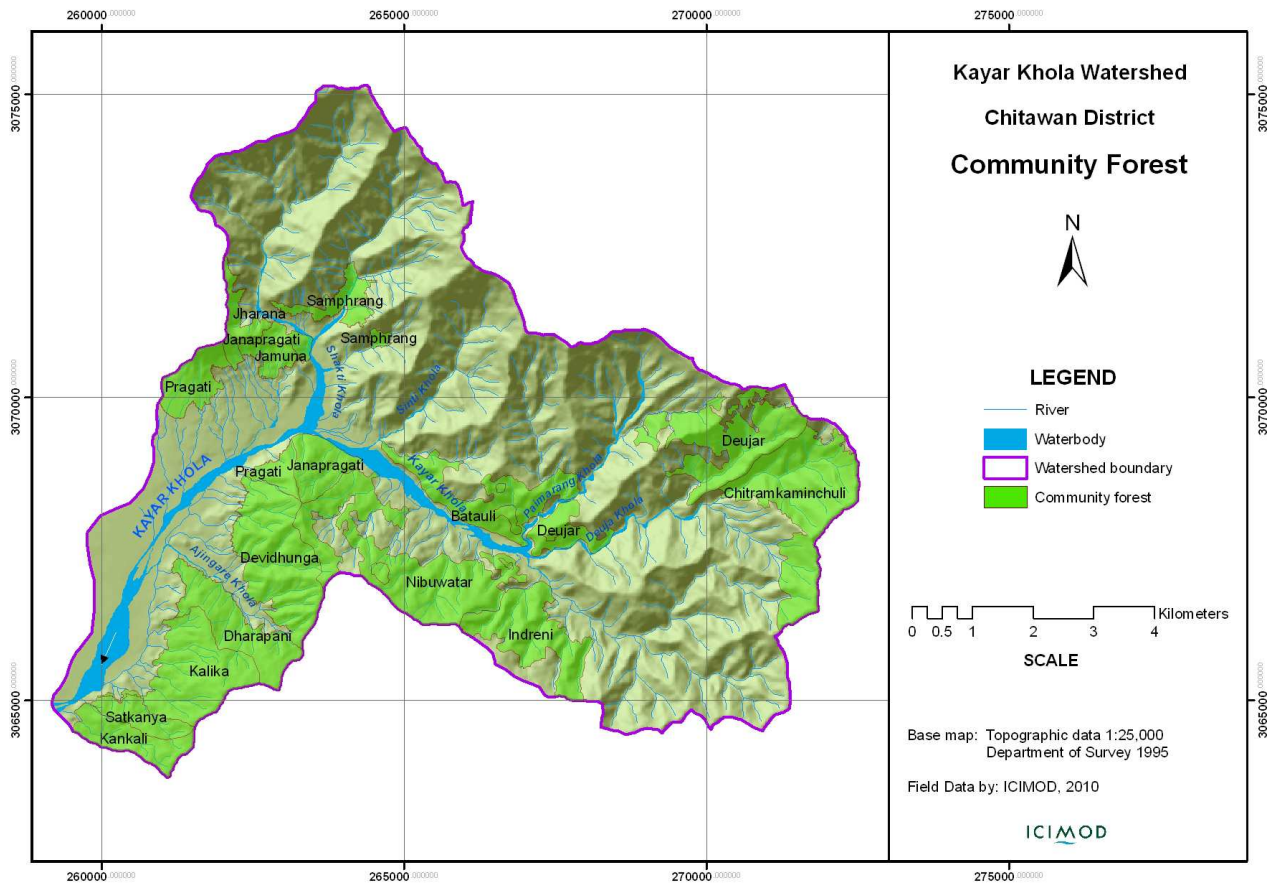
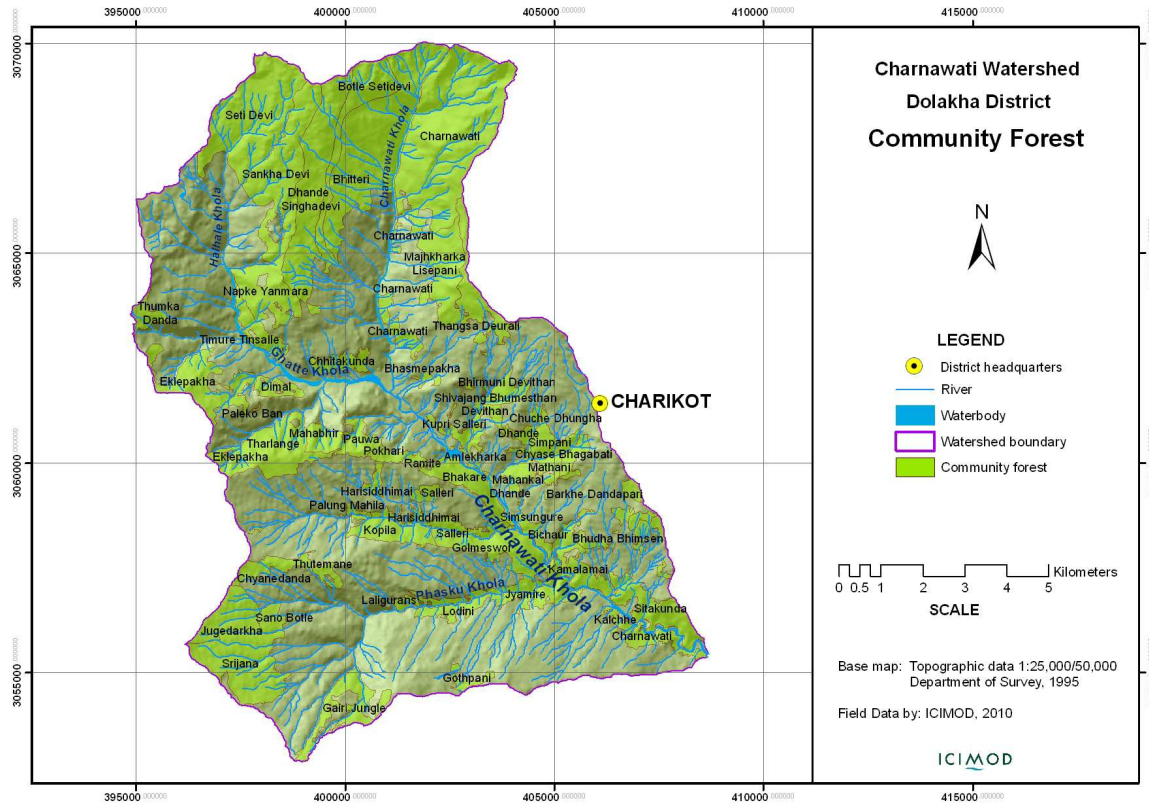


Figure 4. Charnawati watershed in Dolakha district, Nepal (ICIMOD et al. 2011).



Study Site Context:

Kayar Khola watershed, Chitwan district (sixteen CFUGs) is located in the Central Development Region of Nepal and is a large low valley that opens onto the flat plains or Terai (Fig 2). Its altitude ranges from 245 m-1944 m and covers 8,002 ha, with 2,381 under CFUG management. The sixteen CFUGs are composed of 3,935 households with an estimated population of 22,090. The average CFUG income in Chitwan district was 2.6 million NPR (\$ 32,500) (Nepal DoF CFUG summary statistics). Kayar Khola watershed is situated about one hour east of Baratpur and Narangard municipalities. Baratpur is Chitwan district’s headquarters and Narangard is the largest city in the district; the latter is located on the main highway that connects the lowlands of Nepal to Kathmandu which is a 4-5 hour drive from this lowland urban center. Members of the CFUG that are located in the southern half of the watershed have relatively easy access to markets and educational opportunities including the university level. Narangard is known for having some of the best universities in Nepal and is a major transportation hub. However, some of the CFUGs in this district are a day’s walk from the

nearest road and lack easy access to markets or education beyond grammar school. The landscape is more homogeneous than that in Charniwati and is fragmented into large agricultural blocks in the valleys and forest blocks in the surrounding hills. Most members can obtain all the forest resources they need from their CFUG. The CFUGs are predominately naturally regenerated forests with large quantities of highly valuable hardwood timber.

Charnawati watershed, Dolakha district (fifty eight participating CFUGs) is located in the Central Development Region of Nepal, (Fig 4) and unlike Chitwan, is predominately hilly. Its altitude ranges from 835 m-3549 m and covers 14,037 ha, 5,996 of which are under CFUG management. The fifty eight CFUGs are composed of 10,270 households with a total population of 48,504. The average CFUG income in Dolakha district was thirty thousand NPR (\$375) (Nepal DoF CFUG summary statistics). Charniwati watershed is situated adjacent to Charikot municipality which is Dolakha's district headquarters. Charikot is the largest city in the district and sits on the main highway to Kathmandu which is 4-5 hours drive. Similar to Chitwan, members of CFUGs that are close to Charikot, or the main highway, have relatively easy access to markets and educational opportunities including the university level. However, some of the CFUGs are a day's walk from the nearest road and lack easy access to market or education beyond grammar school. The landscape is heterogeneous with many small CFUGs intermixed with farmland. Some of the larger CFUGs provide their members with all the forest resources they need but many of the smaller CFUGs supply their users with only a fraction of what is required. Consequently in these areas of the watershed, users are often members of multiple CFUGs and usually have differing rights within these users groups depending on what they have access to in the other CFUG in which they are members. The CFUGs in Charnawati are also predominately pine plantations which is considered a problem because they lack the diversity of plant species that is valued for the variety of resources provided beyond timber and fuelwood. These CFUGs also lack valuable hardwood timber.

Preliminary Interviews

I began in Kathmandu by interviewing staff of NGOs and members of Nepal's government who were working on carbon payments in community forests, (Fig 1), Step 1. I chose to start here because I was new to working in Nepal and needed to obtain a basic

understanding of the existing carbon payment and community forestry programs in the country and the context within which they were operating.

I selected the NGOs and government organizations to interview using the referral sampling method which started with a list of organizations and individuals working on carbon payments and community forestry in Nepal that was provided by two key informants: Dr. Keshav Kanel, former Director of Forestry, who worked in community forestry for many years and Dr. Narayan Shrestha, founder of FECOFUN (Federation of Community Forest Users Nepal), the largest and most influential CFUG organization in Nepal. FECOFUN represents CFUGs at the national level and provides technical support at the local level; it represents over 14,000 of Nepal's 16,000 CFUGs. When an individual was recommended by my key informants, or someone they had recommended, I arranged an interview with that person. When an organization was recommended, I contacted that organization by telephone and explained I was interested in community forestry and carbon payments and asked who would be the best person to talk to about that topic at that organization.

The government and NGO members I interviewed all spoke English so I was able to conduct interviews without a translator. None of the interviews were recorded due to reticence on the part of interviewees to being recorded. I took detailed notes during the interviews. I concluded these interviews when all new referrals were of previously identified organizations or individuals. Including my two informants, I interviewed fifteen individuals from eight Non-governmental Organizations and the government who were working on CFUG participation in carbon payment programs.

Each interview involved a semi-structured questionnaire using largely open ended questions because I was just beginning my research and did not want to limit my interviews by my lack of knowledge on the subject. Furthermore, because the interviews began at a very simple level, this approach allowed coverage of the basics surrounding community forestry and carbon policy in Nepal. This method worked well because it confirmed that the basic theory I learned from my background research was relevant to what was currently practiced in Nepal. It also allowed me to learn a great deal from Nepalis who had been working in community forestry since its inception in Nepal. Interviews were conducted for one to two hours. The goal of the interviews with NGO members was to gain an understanding of each organization's activities in relation to carbon payments and community forestry; beyond gaining this background, the

interviews were open to whatever subjects the NGO or government member wanted to talk about on this topic. For example, issues of government control over CFUGs and CFUG good governance came up frequently.

From these interviews, I confirmed that the RCMFN project was the only fully functional carbon payment project in Nepal. This project is funded by the Norwegian Development Corporation (NORAD). The project is implemented by three NGOs: International Centre for Integrated Mountain Development (ICIMOD), the Asia Network for Sustainable Agriculture and Bioresources (ANSAB) and FECOFUN. The RCMFN project is a pilot project intended to help Nepal prepare to participate in REDD+ (RCMFN 2013). The main offices for all three organizations are located in Kathmandu.

RCMFN NGO Interviews

These interviews were with members of the NGOs in charge of implementing the RCMFN project (Fig 1), step 2A and 4A. I interviewed the person in charge of implementing the RCMFN project at each of the three NGOs (ANSAB, ICIMOD, and FECOFUN) responsible for RCMFN implementation. I chose these individuals because they were considered by the head of their respective organizations as the most knowledgeable person about their organization's participation in RCMFN. The NGO members I interviewed all spoke English so I was able to interact without a translator. None of the interviews were recorded due to reticence on the part of interviewees to being recorded. I took detailed notes during the interviews. I interviewed one person from each organization or a total of three.

Initial RCMFN Interviews, (Fig 1), Step 2A:

The initial interviews lasted about one hour and I used a guided questionnaire. The goal of the interviews was to gain a more detailed understanding of the RCMFN project than I was able to gain from project documentation so I could effectively conduct interviews with CFUGs that were participation in RCMFN.

Closing RCMFN NGO Interviews, (Fig 1), Step 4A:

The final interviews lasted 1-2 hours and again I used guided questionnaires. The goal of the interviews was to determine: 1) how the NGO initiates involvement with the CFUGs with

which it works and what is the initial selection criteria?; 2) do NGOs have an educational component for their partner CFUGs (e.g., climate change, carbon sequestration, carbon markets)? 3) how much does the NGO invest (e.g. time, money) in each CFUG with which they work? 4) how is the carbon assessment conducted and is it participatory? 5) why did NGOs choose the carbon standard and carbon market with which they work?; and 6) what mechanisms do NGOs use to receive input from the CFUGs with which they work?

REDD Cell Interviews

Also in my preliminary interviews I identified the REDD Forestry and Climate Change CELL (REDD Cell) is the group within Nepal's Department of Forests (DoF) working on implementation of the United Nations Reducing Emissions from Deforestation and Forest Degradation, including Conservation and Sustainable Management of Forest and Enhancement of Forest Carbon Stocks (REDD+) program in Nepal (Fig 1), step 2A and 4A. Participation in the REDD+ program is the government's primary exploration into carbon payment policy. The REDD Cell offices are within the DoF office complex in Kathmandu.

The interviews I conducted were with members of the government who worked in The REDD Forestry and Climate Change Cell (REDD Cell). I interviewed the two individuals in charge of implementing the government REDD+ program. These individuals were considered by the director of the REDD Cell as the most knowledgeable people about government REDD+ activities. The government members I interviewed all spoke English so I was able to conduct them without a translator. None of the interviews were recorded due to reticence on the part of interviewees to being recorded. I took detailed notes during the interviews.

Initial REDD Cell Interviews, (Fig 1), Step 2B:

The initial interviews lasted about one hour and I used a guided questionnaires. The goal of the interviews was to gain a more detailed understanding of the government REDD Cell than I was able to obtain from program documentation so I could more effectively conduct interviews with RCMFN participant CFUGs who will hopefully be able to participate in a National REDD+ program.

Closing REDD Cell Interviews, (Fig 1), Step 4B:

The final interviews lasted one to two hours and I again used guided questionnaires. The goal of the interviews was to determine: 1) what is the governments interpretation of CFUG eligibility to participate in carbon payments 2) what is the government's position on carbon ownership 3) what is the time line for REDD+ implementation and the start of the performance phase of REDD+? 4) what are the mechanisms under consideration for measurement and verification?

Community Forest User Group Interviews and Focus Group Sessions in Kayar Khola and Charnawati

I then shifted my research to two of the RCMFN project sites. My goal for this part of the study was to understand how the specifics of the RCMFN project operate at the CFUG level, (Fig 1), step 3A and 3B. First I interviewed CFUG executives and then conducted focus group interviews with CFUG members. Analysis at this level seemed appropriate because the literature on REDD+ in community forestry in Nepal is dominated by analysis of theoretical opportunities and constraints and is heavily focused on practitioner implementation (Dahal & Banskota 2009; Bushley & Khatri 2011). Furthermore Bleaney et al. (2009) identified forest users as the people who will feel the biggest impact from REDD+ participation in Nepal.

I initiated this research by interviewing CFUG executives (Fig 1), Step 3A. My key informants and RCMFN staff whom I interviewed recommended that CFUG presidents were a good place to start because they would be most knowledgeable about the RCMFN project. Furthermore, most presidents self identified as the most knowledgeable person about RCMFN in the CFUG. There were several cases where the president identified the vice president or secretary as the most knowledgeable person about REDD+. CFUG members uniformly reported presidents or CFUG executives as the most knowledgeable people in the CFUG about REDD+. These interviews were predominately held with CFUG presidents but because CFUG vice presidents or secretaries were sometimes included, I refer to them as executive interviews.

After the executive interviews, I conducted CFUG member focus groups (Fig 1), Step 3B. Lack of research on CFUG member perceptions and the fact that members are likely to be most affected by REDD+ participation were the main motivations for conducting focus group interviews with members. Furthermore, everyone I interviewed in Kathmandu, many of whom

had worked in community forestry since its inception, reported that if I wanted to understand community forestry participation in carbon payment programs, I needed to talk to CFUG members. I chose focus groups over individual interviews with CFUG members because CFUG executives noted that CFUG members often have limited knowledge about CFUG operations and RCMFN participation. I felt focus groups would provide better information because CFUG members would have the opportunity to discuss the topics with each other that I provided.

Table 1. Number of Executive interviews and focus groups in Chitwan and Dolakha districts.

	Kayar Khola watershed, Chitwan District, 16 participating CFUGs	Charnawati watershed, Dolakha District, 58 participating CFUGs
CFUG Executive Interviews	Interviews were conducted with 16 of 16 CFUGs (100%).	Interviews were conducted with 10 of 58 CFUG (17%).
CFUG Members Focus Groups	Two focus groups were conducted at four CFUGs for a total of 8 focus groups with an average of 12 people; 96 total participants.	Two focus groups were conducted at four CFUGs for a total of 8 focus groups with an average of 9 people; 72 total participants.

CFUG Executives, (Fig 1), Step 3A:

My goal for the CFUG executive interviews was to determine: 1) the objective involvement of each CFUG in the program including what was required of each CFUG to participate (e.g. change in management, time investment and carbon measurement); and 2) their perception of the benefits of CFUG participation in a carbon credit program; 3) the estimated cost of CFUG participation in a carbon credit program; 4) the necessary inputs from outside

sources (e.g. need for NGO support); and 5) the ability of the CFUG to continue to participate in the carbon credit program without outside help.

Using an interpreter, the interviews with CFUG executives were conducted in Nepali. These interviews were recorded and transcribed verbatim. For these interviews I used a list of questions to ensure consistency among the interviews; follow up probes were employed for clarity. CFUG presidents requested to conduct the interviews at their office except when there was no CFUG office. In those few cases, the presidents requested to be interviewed at their homes. In some interviews the presidents requested the presence of the CFUG vice president or secretary because they considered them to be the most knowledgeable person about the CFUG operations and RCMFN participation. During these interviews, secretaries or vice presidents contributed 25-75% of answers. In others, the secretary or vice president was present at the office and mostly listened and only occasionally provided technical details requested by the president. I believe inclusion of vice presidents and secretaries improved the quality of these interviews because they helped fill in gaps in what the president knew. I did not find a difference in perspective about community forestry or REDD+ in Community Managed Forests in Nepal (RCMFN) participation between interviews with or without these additional participants. This led me to conclude that concern raised by interviewing slightly different groups of people for the executive interviews was outweighed by including people who were most knowledgeable about the program. Thirty five people participated in the executive interviews.

I was able to interview all sixteen CFUG presidents in Kayar Khola and ten of the fifty eight presidents in Charniwati. I used a random number generator and a numbered list of the fifty eight CFUGs in Charniwati to randomly select those CFUGs. I scheduled twelve interviews but I was not able to contact one of the presidents and another one was always too busy to be interviewed. I was limited to twelve interviews due to time constraints. I felt that the CFUG executives whom I was able to interview were representative of the CFUGs in Charniwati watershed. They came from CFUGs of various size and wealth but most were from smaller and less wealthy groups. In Charniwati there were four remote CFUGs in the watershed; three were not in my random sample and I could not contact the fourth executive.

CFUG Focus Group Interviews (Fig 1), Step 3B:

After completing CFUG executive interviews, I conducted focus group interviews with CFUG members in both study sites. Focus groups were organized with CFUG members because I wanted to learn about their perspectives regarding community forestry and RCMFN project participation. I used focus groups to gain insight into user group perceptions of existing community forest management and their expectation of changes in community forest practices under RCMFN. The objectives of the focus group interviews was to determine: 1) perceived benefit versus cost of CFUG participation in a carbon credit program; 2) how CFUG members are involved in deciding if the CFUG will participate in the carbon credit program; 3) what motivates CFUG members to support participation in the carbon credit program; and 4) how and to whom will carbon payments be made? I asked participants to discuss these four themes and followed up with probes used to clarify and encourage further conversation such as: “are there other benefits from RCMFN participation in addition to money?” and “how do members influence specific financial investments such as spending on poverty alleviation?” The focus group discussions were held in Nepali with the assistance of a translator; they were recorded and later transcribed.

I conducted focus group interviews in four CFUGs within each study site. I decided to divide two focus groups by gender within each of those CFUGs for a total of eight focus groups in each study site. The purpose of this action was not to assess differences based on gender but simply to encourage women to feel more comfortable in expressing themselves (Morgan & Kruger 1993, Kitzing 1995). Furthermore, gender differences in CFUG participation, as well as female roles in Nepal, are well documented (Nightingale 2002). About halfway through the focus groups in both sites, after completing four to five, I began to hear mostly the same answers. By the time I completed all interviews I was no longer hearing anything new in relation to my core questions about community forestry and RCMFN participation. For this reason I felt that I had conducted an adequate number of focus group sessions.

The CFUGs where the focus groups were conducted were chosen randomly from the CFUGs in my study. I selected the male and female participate in the focus groups in the following way. In both Kayar Khola and Charnawati, I used CFUG member lists to select the participants. These lists included a male and female head of household. I took a random sample, using a random number generator, of 15 men and 15 women to form my two focus groups. The

actual attendance of the focus groups was seven to fifteen people. A total of approximately one hundred and eighty people in Kayar Kholā and one hundred people in Charnawati participated in the focus groups.

Data Analysis:

I typed up all of my interviews with NGO and Government personnel. My interpreter transcribed all of the CFUG executive and focus group interviews from Nepali to English. After transcription, I entered each into NVivo. NVivo constructs an electronic catalog of sections of text that the user codes to a particular theme. For example, a theme on fire wood harvesting can be created and all references to this topic in the transcripts can be coded with that theme. After this step is completed, the user can quickly find all references to fire wood harvesting within all of the transcripts.

Open coding was used to develop themes based on patterns in behavior and opinions and through existing theory about CFUG participation in carbon payment programs (Corbin & Strauss 2008). I initially coded the transcripts based on themes related to CFUG participation in carbon markets that I identified from the literature and during my research. For example, lack of CFUG technical capacity was identified in the literature as a constraint on CFUG participation. When I discovered references to this topic in the transcripts, I marked them with the appropriate code.

Theme development involved careful comparison among interviews noting similarities and differences in opinion and behavior within and across levels (CFUG members and executives, and NGO and Government members). I focused on issues related to CFUG carbon credit participation as well as broader issues within community forestry that affect carbon payment participation. As I coded more transcripts, new themes emerged and some older ones shifted or were combined. For example, I was not initially aware that users and executives were so concerned about government or NGO corruption related to carbon payments. Once I identified this issue as important, I returned to transcripts I had already coded and added this new theme. Once I had coded all of the transcripts, I began to recognize relationships between levels and how they interacted. For example, I was able to identify that uncertainty about the future of global REDD+ policy affected government and NGO actors and that this in turn affected CFUG executives and members.

Limitations of My Methodology:

Use of semi-structured interviews and small sample size led to lack of comparability between CFUG presidents and focus groups and limits my ability to make comparisons across CFUGs within the districts. Although these concerns are significant, CFUGs in these two districts are operating under the same national guidelines as the rest of Nepal and the challenges in community forestry that (Kanel 2006) notes also arose during my interviews and focus groups in these two districts. For example: lack of silvicultural capacity, concerns over informed user participation, and challenges balancing resource use and sustainable management. This observation suggests that while there will be differences among districts, the general issues that I identified will provide a starting point for understanding community forest participation in REDD+.

Caste and gender were not at the forefront of my analysis and this is a limitation of my study. However this was my first research in Nepal and I felt it was important to limit my focus to make my study more manageable and I did take steps to include these groups into my sample.

At the CFUG level, in each CFUG where I conducted focus group interviews I conducted one with female members and one with male members. This meant that my overall data set from my focus group interviews contained both men and women's perspectives about CFUG participation in REDD+ based programs.

In terms of caste, one of the main factors for choosing Kayar Khola and Charniwati watersheds was that they were considered to be diverse, both in ethnicity and caste. Again, I did not specifically analyze my data to assess differences between these groups but their diverse opinions were included in the overall sample.

Finally, RCMFN is a pilot project and the Nepal government and other institutions are attempting to devise and implement a national carbon payment plan. Results from my study should be used as a source to inform this process but findings are more limited in their ability to inform similar programs in other countries.

CHAPTER 4. RESULTS

In this chapter I present the results concerning opportunities and constraints for community forest user groups to participate in and benefit from REDD+ participation. These findings are based on the perspectives of the study's three main groups: (1) government staff (REDD Cell and other), (2) RCMFN and other NGO staff, and (3) CFUG executives and members. Before I present the results it is important to acknowledge that CFUG executive and member perspectives are based on their direct experience with the REDD+ in Community Managed Forests in Nepal project (RCMFN); they have limited knowledge about REDD+ policy and initiatives, within Nepal and internationally. Government REDD Cell personnel RCMFN staff (as well as other NGO and government staff) have some knowledge about REDD+ policy and initiatives in Nepal and internationally but have limited direct knowledge of policy implications for CFUGs.

I present the results in three sections. The first focuses on how global carbon standards and the ongoing negotiations surrounding them offer opportunities and constraints for community forest user group (CFUG) participation in programs based on REDD+. The second discusses how each of the different actors -- CFUGs, NGOs and Nepali government employees - view their roles within the development and operation of REDD+ programs in Nepal. The third reviews the capacity of CFUGs to participate in and manage tasks required by REDD+ in an effective and equitable manner.

Section 1 begins with a discussion of the constraints international REDD+ policy places on CFUG participation in REDD+ based programs. The primary results relate to how the structure and requirements of these policies affect REDD+ implementers in Nepal and in turn affect CFUGs participation in these programs. CFUG ability to participate in these programs is negatively impacted by uncertainty about REDD and RCMFN's future, as well as meeting international requirements that CFUGs work directly with REDD+ related offices in the Nepali government.

Section two presents the challenges for NGO and government partners to serve as linkages between CFUGs and global carbon markets. These challenges include conflict between the DoF and CFUGs over carbon ownership, lack of clarity about management authority, limited education and poor communication about REDD+ and RCMFN to both CFUG executives and members.

Section three summarizes key constraints for CFUG participation: lack of CFUG knowledge about carbon measurements and the unknown costs of participation. It then moves to review four opportunities for participating in REDD+: CFUG willingness to invest in training, direct benefits from participation, increased CFUG member awareness of ecosystem services and opportunities for improved CFUG governance.

Opportunities and Constraints that Global Carbon Standards and the Ongoing Negotiations Surrounding Them Offer CFUG Participation in Programs Based on REDD+

Results were derived from my analysis of interviews with RCMFN, REDD Cell members, other NGO and government members and CFUG based programs. Constraints involve: 1) uncertainty about the REDD+ program and the future of REDD+, and 2) requirements that CFUGs participate with the government. These issues are presented in greater detail below.

Uncertainty about REDD+ and REDD+'s Future:

Internationally, REDD+ policy is still under development and Nepal is in the first stages of establishing a national REDD+ implementation framework. Both of these factors create great uncertainty for NGOs, the Nepali government and executives and members of CFUGs participating in the RCMFN project; this left many players unsure how the program will operate and if it will be beneficial for CFUGs.

Lack of clear REDD+ technical protocols hampers RCMFN and REDD Cell member efforts to develop and test carbon measurement methodologies. Despite this uncertainty, ground-based schemes that rely on CFUG members to measure the forest instead of outside experts from Kathmandu are being tested by the RCMFN project. RCMFN and REDD Cell staff are concerned that any ground based measurement scheme will be impractical to implement throughout all of Nepal. The main alternative under discussion is a combination of remote sensing and ground based measurements. A government REDD Cell member commented as follows on technical protocol development:

“Different organizations are also researching the use of GIS and remote sensing solutions.”

REDD cell personnel

While several methodologies are under investigation, there is little consensus among RCMFN and REDD Cell staff as well other NGOs in Nepal on which will work best as each approach has its own shortcomings.

Another RCMFN and REDD Cell staff uncertainty, the cost of measurement and marketability of small community forests, has led those studying carbon payment implementation to propose bundling CFUGs into larger blocks. The criteria for determining profitable size of a community forest is dependent on several factors including current management practices, carbon sequestration rate and access to technical facilitation. An RCMFN staffer explains this issue as follows:

“The small forest faces this problem-- the problem of the carbon being worth less than the cost of measurement. Small CFUGs can’t independently participate. This is a big problem. Larger CFUGs can participate. This situation is one of the primary reasons why bundling is being suggested.”

RCMFN staff

To address concerns about profitability of small community forests, the RCMFN program bundled CFUGs together to create economies of scale. Each pilot site consisted of an entire watershed. One bundle is located in Gorkha where 31 community forests are grouped to encompass 1,888 ha. Similarly, 58 CF in Dolakha, consisting of 5,996 ha were grouped as were 16 community forests in Chitwan that total 2,382 ha. This effort at establishing a “bundling scale” under the RCMFN project serves as a test to create an appropriate scale for a monitoring/marketing system in community forests.

The greatest uncertainty raised by government officers and senior NGO staff was that CFUGs might not be eligible to participate in REDD+ because they are already increasing carbon sequestration under their current management. REDD+ makes payments based on how much additional carbon a forest sequesters as a result of changes in management. Based on these criteria, senior forestry experts in Kathmandu felt that even if CFUGs can improve management potential, payments may be too small to make REDD+ participation viable.

Nepal's REDD+ cell staff stressed that this lack of clarity on how international REDD+ programs will deal with CFUGs that are already increasing forest biomass is a serious impediment to REDD+ implementation. This point was explained to me in the following way:

“The issue is that community forests already manage their forests well and REDD and REDD+ reward improved management or avoided deforestation. The problem being there is little most CFUGs can do to dramatically improve management. Most CFUGs did that 10-20 years ago.”

REDD cell personnel

Furthermore these well managed community forests are ineligible for avoided-deforestation payments because CFUG executives and members in both study sites already consider sustainable management ideal for maximizing current forest benefits.

Another constraint to REDD+ implementation is the reluctance of those involved with REDD+ in the government, NGOs and CFUG executives to accept the requirements that carbon measurements be verified by international versus Nepali experts. They all believe that outside verifiers are too expensive for Nepal to effectively participate in REDD+. This requirement is also widely opposed by the government and NGO personnel I interviewed on the principle that Nepal has been dominated for too long by foreign experts who receive high salaries that drain off funds from international development projects. This belief was explained to me in the following way:

“Third party and or other country verification is too expensive. Also Nepal wants its own third party verifiers. Nepal wants its own third party verifiers both for reasons of cost and reasons of principle.”

Government REDD Cell personnel

The government and NGO personnel who opposed outside verifiers felt that Nepal should insist on Nepali verifiers but also noted that it might not be accepted by international REDD+ policy implementers at the UNFCCC.

The Red Cell completed a draft REDD+ implementation plan in 2012. However, members of the Red Cell felt that because of REDD+'s complex requirements, Nepal will not be ready to fully participate in REDD+ until about 2020.

They attribute this delay to the technical complexities of establishing Nepal's baseline carbon level and the need to identify an effective system for measuring, verification, and payment distribution. A REDD Cell member stated:

“Nepal will not be ready to participate in the performance based phase by 2020. This is due to the fact that so many studies are needed to get the data ready to be able to participate (i.e. baseline carbon data, leakage data, and a verification mechanism).”

REDD Cell personnel

Due to the complexities and long time line associated with establishing Nepal's carbon baseline, creating an effective system for carbon measuring, monitoring, and payment distribution, and the relative insignificance of Nepal's forests compared to those in Brazil or Indonesia, REDD+ is viewed skeptically even by staff of the DoF and community forestry NGOs, who are trying to promote CFUG participation. This belief was explained to me in the following way:

“REDD+ in Nepal is a dream because countries like Brazil and Indonesia are so much larger; it makes Nepal irrelevant.”

NGO staffer

Despite RCMFN and REDD Cell concerns about CFUG eligibility in carbon payment programs, these uncertainties have not been communicated to CFUG executives and members who are unaware of these issues.

Another important uncertainty was the widespread feeling by CFUG members that REDD+ is just another outside development project that will soon be gone.

“There were many projects implemented in this area before REDD+ but all couldn't remain for long, which reduces the trust into whatever projects come for the CFUG.”

CFUG president

REDD+ is viewed with ambivalence by CFUG members in both study sites because so many projects have come and gone. Following is evidence of the sense that many development

projects exist only briefly: when I was discussing the RCMFN project with CFUG members they often mistakenly called it by another project's name or they confused the details of RCMFN with those of another project.

Furthermore, CFUG executives and members in both study sites expressed concern over the longevity of the RCMFN project. They felt that if the program only lasted a few years it would not be profitable to participate. This belief was explained to me in the following way:

“The RCMFN program runs through the end of 2013 and there is no idea of what will come after the RCMFN program.”

RCMFN staff

“We would be interested in participating if we had to pay the full cost of measurement but only if the REDD+ program will last a long time. The people at this CFUG are concerned that the program is about to come to an end.”

CFUG president

Despite these uncertainties, CFUG executives from both Chitwan and Dolakha and, members of the government and the NGO REDD+ community believe RCMFN and future REDD+ programs are low risk for participation. A CFUG executive said:

“It's not only because of REDD+ that we conserve the forest. We are now aware about the advantages of using limited resources. If there was no REDD+ then also we would have conserved our forest. It's the benefit for us as well as our future generations.”

CFUG focus group

Even if the program fails to deliver payments, the forest will still be there and theoretically be in better condition than at present because of conservation practices REDD+ participation encourages. CFUG members will have also gained more skills and be refocused on the importance of forest conservation. A CFUG member stated that:

“You can make Alaska New York, but you can't make New York Alaska. If carbon trading doesn't work then you are left with the forest, a great resource.”

DoF staff

The key points to take away from this section are that the slowness of development of international REDD+ policy and concerns about CFUG eligibility create uncertainty that

negatively affects REDD+ implementation in Nepal. However, despite this uncertainty REDD+ is seen as low risk by the government, NGO and CFUGs because it promotes forest conservation.

CFUG Unease about Requirement to Work with the Government:

Currently, CFUGs in my two study sites do not work with the government. However, RCMFN was designed to be a temporary project with the goal of instructing the development of Nepal's national REDD+ program and CFUGs that wish to continue to receive REDD+ payments after its completion will have to join Nepal's national REDD+ program. Nepal's national program will be undertaken with the support of the UN-REDD Program, the World Bank's Forest Carbon Partnership Facility (FCPF) and the Forest Inventory Program (FIP). All these programs work directly with national governments. This means that CFUGs will be required to work directly with their National government to receive carbon payments.

When I asked CFUG executives and members in my two study sites about potentially working with the DoF to participating in REDD+ they viewed this as problematic because the government lacks stability, technical capacity for REDD+ implementation and concerns about corruption.

Lack of government stability has been an issue in Nepal for a long time. Most recently, since the collapse of the constitutional assembly in August 2012, the government is, at best, a quasi-legal governing body. At the time of my interviews, national elections were scheduled for November 2013 and CFUG executives and members were not confident that the election will re-establish a functioning government.

One of the consequences of long term governmental instability in Nepal is that many of its departments, including the Department of Forests (DoF) lacks the financial and technical resources to implement what they are legally required to do. The DoF currently cannot even meet the mandates of the 1993 Forestry Act or those identified under a proposed national REDD+ payment program.

Another consequence of long term governmental instability and lack of financial resources for government departments is the pervasive nature of corruption within Nepal's government. Interviews with CFUG executives and members in both study sites indicate there is a strong desire to work directly with international carbon programs. The reason CFUG

executives gave is that they want to avoid “middle men”, “the government”, and “Nepali NGOs.” They are fearful that these agents in their own country will take “a portion of the money, leaving the CFUG with less” (CFUG president). Another CFUG president summarized this issue as follows:

“We want to have direct dialog with the organization that gives the money for carbon. We don’t like the idea of money going first to the government and then to us (government as intermediary) because of corruption/ middle men. There are many holes for the money to go; we will get little money.”

CFUG president

An NGO staffer confirmed this sentiment.

“CFUGs don’t want the carbon money to go through the government. They think the money will not just be reduced by graft and administrative fees but that it will not arrive at all. “

NGO staff

The reason CFUGs prefer to work directly with international donors is that they believe international organizations are more likely to ensure they receive their fair share of any carbon payments that may be made. Unfortunately, working directly with international carbon programs is currently against international REDD+ policy.

CFUGs are uneasy about working with the government because DoF staff have argued that the DoF deserves a portion of the carbon payments to cover the technical and administrative costs of implementing and supervising a national REDD+ program. A member of the government REDD Cell stated that:

“The global model for REDD+, e.g. The World Bank and United Nations-REDD+ models, is to negotiate directly with the government. The DoF wants to claim some of the money because they want money and also because of the cost of facilitation.”

REDD Cell personnel

Funding from the World Bank’s Forest Carbon Partnership Facility (FCPF) is intended to pay for REDD+ preparedness efforts by the Nepal government and help develop capacity within the DoF were needed. Members of the DoF and staff of CFUG NGO’s also see FCPF funding

and efforts to prepare Nepal's forestry sector for REDD+ as a chance to address "second generation issues" within community forestry that also affect carbon payment distribution. These issues include the need for increased administrative and silvicultural capacity at the DoF and CFUG level, distribution of benefits to communities without access to or ability to start a CFUG, improvement of CFUG governance, and equitable resource distribution. However, no plan has been developed to combine REDD+ preparedness with a strategy to address these issues outside of building technical capacity related to REDD+ participation within the DoF.

The key points to take away from this section are that CFUGs are uneasy about working with the government because of governmental instability and lack of government technical capacity to implement REDD+. Furthermore lack of government technical capacity is the only one of these issues that is being addressed at this time.

Section summary:

Uncertainty about carbon assessment methodology and program longevity decreases CFUGs willingness to participate in the RCFMN pilot project or a future national REDD+ program. Also, requirements that CFUGs have to work directly with the government to participate in national REDD+ program make participation more challenging.

View of Each Actor's (CFUGs, NGOs, Nepali Government Employees) Role Within the Development and Operation of REDD+ Programs in Nepal

Issues concerning governance, conflict and carbon ownership, as well as CFUG need for a linking organization between CFUGs and international programs, creates challenges for the implementation of a national REDD+ program.

Governance, Conflict and Carbon Ownership in Nepal:

CFUGs and the DoF are legal partners in community forest management and the DoF role as REDD+ administrator in Nepal is likely to deepen this relationship. As noted above, the government legally owns the forest but CFUGs have management authority, albeit authority that requires supervision and permission by the DoF such as for community forest management plans and practices. On the ground, there is often a contentious relationship between CFUGs and the DoF. CFUG participation in a national REDD+ program is affected by this situation. RCFMN, as

a pilot project run by an NGO, does not face these challenges; however, the CFUGs that participate in RCMFN will eventually join the national program. Two areas in which these organizations have conflicting views are the overall objective of community forestry and proposed changes to the law governing community forestry.

Role of CFUGs in Nepal:

CFUGs and the DoF have differing views on what the role of CFUGs is and how their revenue should be spent. The dominant view among members of the DoF whom I interviewed is that the primary objective of community forestry is improvement of the forests. CFUG executives and members feel that community forests should benefit the users and their revenue should be invested in community development. The DoF believes that CFUGs should not operate as community development organizations and this was explained to me in the following way:

“CFUGs should not invest money into community development projects, this is not their purpose. They should only invest money into forest development and improvement.”

DoF staff

In contrast, CFUG executives and members reported that returns from community forest activities should be invested in community development. For example, a CFUG president stated that:

“The CFUG is the organization that helps invest in the development of the community including roads, health posts, ambulances, irrigation canals, goat farms, and other programs.”

CFUG president

Furthermore, a CFUG focus group concluded that:

“This CF has constructed roads, temples, schools, bridges. It has helped in providing “old allowance”, allowance given to the disabled and widows, scholarships, bio-gas construction, goat farming, poverty elimination and many more things.”

CFUG focus group

To CFUG executives and members, community development and improvement of local well being are primary objectives of CFUG.

This conflict may increase with the implementation of a government run REDD+ program. These funds will be controlled by the DoF and this agency is likely to require that they be invested in forest management where as CFUGs have expressed interest in using these funds for expanding community development. Although debate over CFUG objectives is a major source of conflict between CFUGs and the DoF, an even more contentious issue is the DoF's efforts to increase its legal authority and taxation of CFUGs.

Forestry law change:

In 2011, after several high profile cases of deforestation and corruption within CFUGs, a commission was formed to investigate and propose changes in CFUG governance. In winter 2012, several amendments to the 1993 Forestry Act were proposed by government legislators. Not all of the details around these proposals were made public and the law's passage was stalled by collapse of the government in June 2012. The future of the proposed Forestry Act is unknown.

The issues that the proposed amendments attempt to address are corruption and benefit distribution at the CFUG level. Proponents of the Act state that the DoF needs to have increased oversight over CFUGs to prevent corruption in the form of illegal timber harvest. The changes would increase oversight authority of the DoF and decrease the decision making autonomy of CFUGs. The other issue associated with the proposed changes to the Forestry Act is distribution of benefits from CFUGs to others who cannot become a member of a CFUG or establish a CFUG. To address this issue, the DoF would increase taxation on CFUGs and distribute that money to areas that do not have access to forests.

While the exact effect and motivation for these legal changes can be debated, the view of CFUG executives I studied is that these changes are an attempt by the DoF to take control over and benefit from CFUG hard earned resources. A CFUG president summarized CF sentiment as follows:

“If the Department of Forests takes back control of our CFUG, I will go to the forest and cut it down because those are our trees that we have put the work into protecting and we will not let them take the benefit of our work.”

CFUG president

Conflict over efforts by the DoF to increase taxation and control over CFUGs further contributes to mistrust between CFUGs and the DoF and has led some members of CFUGs to view these as government attempts to re-appropriate community forest resources. Lack of trust between these groups and concerns over resource re-appropriation creates challenges for DoF and CFUG cooperation in addressing issues related to national REDD+ preparedness.

Carbon ownership:

Efforts by the DoF to control CFUG decision making and increase taxation on CFUGs has left executives and members fearful about maintaining long term control over community forests and this issue has implications for REDD+ implementation in Nepal. For example, in the debate over carbon ownership, the DoF is proposing that soil carbon is owned by the Nepali government and above ground forest carbon is owned by the CFUGs. The following quote illustrates this issue:

“Legally the trees are owned by the CFUG. Thus the tree carbon is owned by the CFUG. Legally the soil is owned by the government. Thus the soil carbon is owned by the government.”

REDD Cell personnel

When the government REDD Cell personnel articulate their positions on carbon ownership, they express both a desire to gain access to financial resources and the need to share in some of the carbon payments in exchange for perceived future costs for operating a national carbon payment program. This was stated as follows:

“This issue [who owns the carbon] is under discussion. CFUGs believe they should get all the carbon money because the forests are theirs and their good management of those forests has put the carbon in the soil. The government wants both the money for the moneys sake but also from a bargaining perspective. The government is investing a lot into preparedness and will act as a facilitator and wants a share of the funds for the effort of facilitation.”

“Who owns the carbon is under debate by people in the DoF. The DoF wants to claim some of the money because they want money and also because of the cost of facilitation.”

REDD Cell personnel

The debate over carbon ownership is occurring at the government and NGO level. However, CFUG executives and member views on efforts by the DoF to gain access to carbon money and control of the carbon program are likely to be influenced by past DoF efforts to control CFUG decision making and resources as further attempts to do the same.

Feelings on the part of CFUG members and executives that the government cannot be trusted will make negotiations over what portion of carbon payments the DoF takes to run a national REDD+ program more challenging.

The key points to take away from this section are that CFUG executives and members do not trust the DoF because of past efforts to control CFUGs and their financial resources. This lack of trust means that when the DoF comes to them to negotiate about REDD+ policy they are not confident that the DoF has their interests in mind. In fact many executives and members feel the opposite. Thus CFUGs are likely to view any DoF proposal for REDD+ implementation that does not hand over all carbon payments to CFUGs with serious skepticism.

Executive and User Engagement and Understanding of REDD+ and RCMFN:

Some of the participating CFUG initially rejected the RCMFN project due to concerns about executive overreach and forest resource availability. In addition RCMFN implementation has been further hampered by challenges with dispersing information about the program.

Executive and user engagement:

The REDD+ in Community Managed Forests Nepal (RCMFN) project's CFUG engagement process started by holding meetings with all of the CFUG executives in the selected watersheds. First the executives had the project explained to them, they were told the project would have no costs and the CFUGs will receive financial payments and training in administrative as well as silvicultural techniques. Second these executives, in turn, explained to their members the RCMFN project as it was described to them. In the Kayar Khola watershed, there was no resistance to participation, however in Charnawati, about half of the CFUGs initially rejected the RCMFN project.

In Charnawati, CFUG executives met at a nearby municipality, Charikot, and were given an explanation of the program by RCMFN staff. They subsequently returned to the CFUG membership to gain approval for participation in the program through a formal vote. The

program was rejected by CFUG members on the basis of the following two reasons. First CFUG members felt that their executives had already agreed to participate in the program without consulting them. The second may be due to concerns about resource reduction related to RCMFN participation. While CFUG members in Kayar Khola report getting enough resources from the forest for their needs (e.g. fodder, fuelwood, and timber) in Charnawati, most of the CFUG members reported that they cannot always acquire the resources they need from their community forest. In Charnawati, member households join multiple CFUGs to better access wood product needs. Even with membership in multiple CFUGs, some individuals still report a lack of resources for their households and stated they had to turn to outside sources such as the market or private land to meet their forest product needs.

After the program was rejected in Charnawati, RCMFN project staff made presentations to CFUGs about program participation and what it would involve. After these special sessions, all resistant CFUGs in the watershed agreed to participate in the RCMFN project.

Understanding of REDD+ and RCMFN:

Lack of awareness of CFUG operations is another issue with member engagement. A problem reported by most CFUG executives across both watersheds is that household members who attended a CFUG meeting did not share what transpired at the meeting with the other household members. Furthermore executives reported that even those who did attend meetings were often unaware of what was going on. For example:

“No, most of the CFUG members don’t know about [RCMFN]. We have been conducting the regular meetings, seminars, for informing about [RCMFN] but the members seem to be not serious on that matter. They listen very carefully while in seminar but if the same people were asked about [RCMFN] then they cannot answer the questions.”

CFUG president

CFUG members in both study sites also expressed that they were often distracted by concerns at home and found it difficult to focus on what was going on in meetings. All but one or two focus group participants from each focus group in both study sites reported that they often did not know the activities and issues in the CFUG beyond those associated with fodder and fuelwood harvesting regulations. For all of these reasons, most CFUG members in both study sites are

ambivalent and poorly informed about the RCMFN project. The following quotes are examples of lack of understanding and knowledge of the RCMFN project as expressed by CFUG members:

“We have just heard about the name [of the RCMFN project] from the president and other staff in the meetings; we do not know about its activities. It may be smoke or dust.”
CFUG focus group

“We have heard about [RCMFN]. But we don’t know the details about it. To know about REDD+ clearly we must consult the president.”
CFUG focus group

One to two participants in each focus group reported that they were very involved in the CFUG. These include executive members, council members, and people who said they aspire to one of those positions and they regularly attend CFUG meetings. They have a limited understanding of the RCMFN project and typically know about one or more of the following benefits of the carbon payment program: payments are made to the CFUG for protecting the forest, payments are made because the forest traps gasses produced in developing countries, payment funds come from developed countries, the forest is measured and from those numbers the amount of carbon is calculated. However, the following quote demonstrates that even involved individuals have a limited understanding of the RCMFN project:

“Not only the members [don’t know about RCMFN], even the top level executives are also not well informed about the [RCMFN] program.”
CFUG president

A pattern I found in my research is that only one or two people in each CFUG where I conducted interviews, usually the chairperson or the secretary, had an in depth understanding of the RCMFN project. These individuals could describe in detail the process of CFUG engagement, carbon measurement, payment allocation, why payments are made, and the basic facts about REDD+ operations at the national and international level. However, even knowledgeable CFUG executives do not know the source of RCMFN or future funding, and they have no understanding of the international guidelines surrounding REDD+.

I was initially unsure if this lack of awareness was problematic or if only a few knowledgeable people were required in each CF to make the project run well. CFUG executives and members I interviewed said it was important for members to know how the CFUG operates. Members need to understand CFUG harvesting guidelines and social programs to properly participate in these programs. It is also important to know about these programs and general CFUG operations so members can effectively participate in the debate about CFUG operations. A CFUG executive made this point by saying:

“It is very important for the CFUG members to understand how the REDD+ program works. Because if all the CFUG members protect the forest then it is possible to protect the forest and that’s why everyone needs to know about the REDD+ program.”

CFUG President

“It’s important that they know because if all CFUG members know the REDD+ program they won’t go to the CFUG to cut the trees and grass and the animals. It is important to understand not to cut the trees illegally.”

CFUG President

Furthermore CFUG members report that informed participation is necessary for proper participation in the RCMFN project:

“We can know many things about the forest and forest management activities. It is important to know about the harvesting regulations. The meetings are conducted to protect the forest and formulate different plans and policies for the benefit of the forest and the community. We can put our ideas and voices in the meeting. This can be useful to solve many problems that the people are facing currently.”

CFUG focus group

If CFUG members do not understand the benefits of the RCMFN program and why it is important to reduce resource use and enhance protection of the forest, then they will not participate.

The key point to take away from this section is the importance of informing and engaging all CFUG members. When members were not informed and engaged concerning project participation they rejected the RCMFN project. Once the CFUG has agreed to participate, reliance by RCMFN on existing CFUG modes of information dispersal was inadequate to inform

most CFUG members about the project. Finally CFUG members and executives considered member knowledge about the RCMFN project or future REDD+ projects key to their success.

Section summary:

International rules requiring CFUGs to participate with the government overlook the often contentious relationship between CFUGs and the DoF. Disputes over the role of CFUGs in community development and proposals to increase DoF oversight into CFUGs have created mistrust between these organizations. I suggest that this mistrust makes it more challenging for the government to fulfill its role as carbon market facilitator and for the government and user groups to come to a consensus over carbon ownership. Unease among CFUG executives and members about government participation is exacerbated by lack of information about the RCMFN project and REDD+ in general. CFUG executives and members in both watersheds see informed participation as critical for the success of the RCMFN project.

Capacity of CFUGs to Participate in and Manage Tasks Required by REDD+ in an Effective and Equitable Manner

Two issues that create obstacles for CFUG participation in REDD+ are lack of technical skills needed for forest measurement and the costs and challenges related to CFUG participation in REDD+. Opportunities they will receive from participation include: CFUG willingness to invest in technical training, benefits CFUGs receive from participating in RCMFN /REDD+ and awareness of concepts of ecosystem services and CFUG good governance.

Forest Measurement and Carbon Calculation:

The CFUGs in this study lacked many of the skills and resources to complete current DoF administrative and silvicultural requirements required for participating in Nepal's community forestry program. Thus I argue they are far from prepared to undertake additional measurements that will be required as part of REDD+. Some of the factors CFUG executives and members identified as constraining CFUG capacity were lack of financial resources, poor educational infrastructure, and outmigration.

Lack of financial resources:

CFUG executives and members in my two study sites reported that when their CFUGs were first founded, many did not have the financial resources to pay for CFUG operations such as inventorying community forests or preparing accounting books and management plans. They relied completely on volunteer labor and did not have funds for community forest guards or a physical office, let alone an office administrator or basic office supplies. This lack of resources made it difficult to properly operate CFUGs. In the study's two watersheds, CFUG infrastructure has gradually improved. CFUGs have increasingly gained access to income from user fees, a variety of income generating activities, and in some places timber sales, to pay for these basic services. However, even before the implementation of the RCMFN project not all CFUGs had commercial quality timber to sell. Given the limited amount of income received from only user fees, they did not have sufficient income to hire labor, but this has changed with carbon funds. The following quotation from an annual CFUG meeting documents the importance of the increase in CFUG income:

“Moreover, it even made us financially able to give salary to guards. Before, we had to depend upon trees to collect the money but now the presence of REDD+ increased our financial ability.”

CFUG president

Educational infrastructure and outmigration:

Many places, especially in rural Nepal where community forests exist lack quality schools, some CFUGs do not have access to formally educated members with requisite skills for administrative positions. For example, in both the Charnawati and Kayar Khola study sites, some of the CFUGs were in more remote areas and had no access to schools or only grammar schools. In one of the CFUGs in Kayar Kkhola, the president stated there were only about a dozen literate individuals out of approximately seventy-nine households in the CFUG.

Migration to foreign countries and to cities for work had also depleted many CFUGs in my study area of working age people and formally educated individuals. The president of one of the smaller CFUGs in Charnawati reported that at present there were no working aged male residents living in the area full-time. She said they all worked outside the village. The most formally educated people available to assume administrative tasks in a CFUG were female high

school graduates who were unmarried. Because these individuals lacked prior office management experience and were needed by their families for household chores, an older man and woman helped to undertake the administrative tasks of the CFUG and participated in the executive interview. The woman was a former secretary and he was a former president.

A shortage of formally educated individuals for similar positions within CFUGs was most common in communities without any road access. However road accessibility was one of the criteria for choosing the RCMFN study sites so participating CFUGs were ones with relative accessibility compared to many parts of Nepal. Furthermore, Charnawati watershed was adjacent to the district headquarters, Charikot, and the Kayer Khola watershed was an hour and a half from Chitwan district headquarters, Narayangardh. This city is also well known for several good universities. There are many locations in Nepal that are much farther away from cities that have similar economic and educational opportunities that can keep educated individuals close to the home district.

Current CFUG capacity:

Under the Community Forestry Act, CFUGs are required to complete and submit annual reports to the district forest office and produce five year operational plans; however, more than half of CFUG executives in my two study sites reported that their CFUG did not produce any annual reports before joining the RCMFN project. They said they lacked financial resources and administrative skills to complete these reports. For the past two years the RCMFN project has paid all the CFUGs in the project to complete their yearly reports. Current CFUG regulations also require a more in-depth, five year operational plan that includes forest analysis based on silvicultural assessments. For these, CFUGs need District Forest Office assistance. Reporting under REDD+ is likely to be similar to these five year reports, but the analysis required to calculate carbon sequestration is more specialized than the analysis in the five year plan and CFUG presidents worry that their user groups lack these needed skills to complete them.

Importantly, there is no baseline for understanding forest inventory and management operations at present or for tracking conditions under REDD+. The quote below demonstrates how dependent CFUGs are on NGOs for outside assistance:

“We cannot do anything [in the RCMFN project] without the help of the NGO. If we have to do it without their help then we do not have the knowledge of the equipment and its use.”

CFUG president

The RCMFN project’s training is limited to 2-3 members in each CFUG and the training only covers the basic components of forest measurement. CFUGs can choose whom to send to participate in training. The RCMFN training goal does not include a sample design for measuring forest resources and RCMFN does not provide equipment to conduct forest measurement surveys or to conduct soil and leaf litter carbon analysis. It is important to note that it is impractical for most CFUGs to learn sampling design, conduct soil carbon analysis and data analysis due to the need for specialized equipment and knowledge. All CFUG presidents I interviewed in Chanawati and Kayar Khola stated that they currently lack the ability to measure carbon without outside assistance but all expressed confidence they would be able to do so with more training. This impression was reported to me the following way:

“At a nearby school, 2-3 people learned about measurement at REDD+ plots in an adjacent CFUG. They learned about the tree, leaf litter, grass, and even mud measurement. That’s it. We don’t know how to calculate the carbon. If they organize training, we will participate.”

CFUG president

The regional REDD+ coordinator in Kayar Khola suggested that one or possibly two CFUGs would have people capable of conducting forest measurements independently by the end of 2013. It is reasonable to assume that CFUGs can learn the skills necessary to conduct forest measurement themselves, however, data and soil sample analysis will require specialized expertise and equipment that cannot practically be obtained by each CFUG.

The key points to take away from this section are that CFUGs are not prepared to conduct even the most basic components of carbon measurement. Lack of financial resources, poor

educational infrastructure and outmigration are some of the identified challenges to CFUG capacity.

Financial Costs and Challenges Related to Community Forest User Group Participation in RCMFN:

CFUG executives and members noted minimal cost to RCMFN participation, however, lacked the necessary information to assess program profitability. Furthermore CFUG executives and members have not assessed the potential costs of reduced resource use in exchange for carbon payments.

Cost of participation:

CFUG executives and members did not anticipate any direct costs, financial or otherwise, to participating in the RCMFN project. When asked about time required to participate in a carbon marketing system, they did raise concerns about the time requirements for additional office work; they also noted that forest measurement and regional RCMFN planning meetings took substantial amounts of time. However CFUG executives and members stated they considered these time requirements to be an acceptable part of investing in CFUG improvement. Concerns over time requirements were conveyed to me in this way:

“Time needed to participate is the problem. There are other parts [of participating in REDD+] that require work but you have to work to improve your situation so that’s not a complaint but the time required [to participate in REDD+] we don’t like--time for office work, forest measurement and REDD+ [regional] meetings.”

CFUG president

While most CFUG presidents noted that time requirements were a burden and that there was additional work related to participation, several members made the extra point that work was required to make improvements and that participation was worth the investment.

CFUG member assessment of program profitability:

CFUG executives and members in both watersheds do not have the information on cost of measurements, analysis and certification or the potential price paid per ton of carbon. As a consequence they have no way to judge if the RCMFN project is economically feasible for them. RCMFN’s objective is to study the process of carbon payment implementation in their pilot

projects with a focus on equitable payment dispersal within CFUGs; they designed them to be without a cost for CFUGs.

As a pilot project, RCMFN is designed to have no financial cost to participants; a few people will get paid and trained to help implement the project, and financial benefits will accrue to the CFUG (i.e., to their general fund). CFUG executives and members reported that they were unaware of the cost of implementing a project modeled after the RCMFN project. They understand that RCMFN is paying for this pilot project implementation.

Decreased resource use:

The RCMFN project encourages CFUGs to use fewer forest resources (e.g. fodder, fuelwood; timber) to increase carbon storage in their community forest and in turn receive larger carbon payments. At CFUG meetings, executives and RCMFN staff place significant emphasis on the importance of forest conservation, resource protection and reduced resource use. The following quote supports this statement:

“From the training we learn that we have to save our forest at any cost. We have learned the idea [from RCMFN] to save the forest and its importance.”

CFUG president

“We can harvest the same amount as before but we have been asked to only cut branches for fuelwood and not to do illegal cutting. Problems with using fewer resources depend on necessity; it is wise to use fewer resources from the forest and get more benefit from the forest however sometimes we need more resources and can't use less.”

CFUG focus group

Interviews with CFUG executives and members from both sites suggest that reduction in fuel wood, fodder and timber use are not occurring and may not be feasible for CFUG members. More than half the CFUG executives and members reported using the same amounts of forest resources as they did before joining the RCMFN program. Some executives reported that members were reducing resource use from the community forest but when further questioned they noted that members had not reduced overall resource use; they had merely shifted the location (i.e. leakage) from where they obtained resources.

For example, CFUG members in both study sites who reported harvesting fewer resources from the community forests such as fuelwood fodder and timber stated they had shifted where they

harvested some of their forests resources to places outside the community forest such as private land or government forests but had not reduced overall use.

Furthermore, although CFUG members from both sites with the ability to shift resource extraction to other forest areas and reported doing so, CFUG members, especially poor or low cast individuals without access to private land or other forests stated they were unable to shift where they harvest resources. Executives stated that members of these two groups often do not attend CFUG meetings so they lack an understanding of the RCMFN program and the potential trade-offs that exist between resource use and financial benefits from REDD+ participation. Low caste people (e.g. *dalits*) may also be unwilling or socially unable to voice their opinions in the CFUG meetings. In some locations in Nepal, this behavior is still socially prohibited.

The key points to take away from this section are that CFUG executives and members see RCMFN as having few significant costs. However they do not have enough knowledge of how REDD+ works to assess post RCMFN participation costs, or potential program profitability. Furthermore the cost of reduced resource use in exchange for carbon sequestration payments has yet to be assessed and is likely to affect poor and low cast members most.

Community Forest User Group Willingness to Invest in Technical Training:

Some CFUG executives from both sites express a strong desire to participate in REDD+ programs without NGO or government involvement and this interest is accompanied by a willingness to learn the skills necessary to do so. CFUG executives reported that they want their CFUGs to conduct as much of the carbon measurement and analysis process themselves as possible, using a minimum number of outside experts. They have a goal of maintaining as much self-sufficiency and autonomy as possible while participating in REDD+ programs. Most CFUG executives repeatedly emphasized their desire for the CFUG to operate on its own and not be dependent on outsiders such as the DoF and international donors. This view was expressed the following way:

“Yes we are interested [in measuring the forest ourselves] because this is our CFUG. If we know how to do it, why call other people. We want to learn about measurement including carbon measurement, we want to have direct dialog with the organization that gives the carbon. If they taught we could learn but it would be difficult to get the instruments (GPS/ Compass), It would be difficult because of the cost.”

CFUG president

While CFUGs can gain more knowledge about REDD+ programs and more skills related to forest measurement that will allow them to participate in a more independent fashion there are some aspects of the process such as soil carbon analysis that require specialized training and equipment that are not practical for every CFUG to possess.

The prior condition and experience of community forests must be appreciated to understand constraints and opportunities related to REDD+. With respect to their desire to invest in training and achieve self sufficiency, CFUGs are influenced by their historical experiences where, after nationalization of forest resources residents did not have control over their local forest resources. With the advent of modern community forestry, the shift from no control to control and independent management is a central component of how CFUG staff describe the reason they embraced community forests and self management is the goal for the organization. This desire for independence explains the CFUG quest to acquire the technical capacity to conduct carbon measurement and analysis. This view was expressed as follows:

“Before, if we needed the resource from the forest we had to go to the DFO but now we manage the forests and can go to the forest ourselves.”

CFUG president.

The RCMFN program trains CFUG members to facilitate developing more expertise in the forest measurement component of the project. RCMFN’s training goal was to have each CFUG capable of measuring their own forest but this was not achieved under the initial three year life of the project and CFUG members were never provided the tools to conduct the surveys (e.g. GPS unit, measuring tape, compass and sextant). It is unclear why RCMFN did not provide the tools and more training, but the desire for both was often expressed by CFUG executives. The project was extended for an additional two years so it is possible that the goal of technical self sufficiency will be met by that time. Teaching how to develop sample design and conduct data analysis is not a component of the project. For example, soil and organic carbon samples are taken in the field, but not analyzed locally. Instead they are sent to laboratories in Kathmandu for analysis.

Three CFUG presidents, two from Kayar Khola and one from Charniwati, expressed a willingness to send members of their CFUG to Kathmandu and to pay for their training out of

community forest funds if necessary. They are uncertain about the cost to train someone to learn the skills necessary to conduct the measurements themselves but they estimate it would be cost effective if the program continued for a number of years. This was explained the following way:

“I don’t think that it would be too costly for us if we have to do the measuring by ourselves. We will use the local resources and the manpower from the local community. And, we would even pay at the local price.”

CFUG president

While most executives in both study sites did not share this view and stated that without the support of the RCMFN program they would not be able to participate because they lacked the requisite skills and knowledge, there is evidence that if one CFUG in an area was able to acquire skills for independent measurement, the idea could spread. CFUG executives and users describe that they learned about many of the practices, programs and even the idea to create a CFUG from observing and learning about what other adjacent communities were doing. CFUG members described how they learned about community forestry in the following way:

“The forest started to decrease rapidly, that’s why we started the community forest. We saw other community forests being established in other areas. Many people stated talking about the community forest and its benefits. We all were motivated by that.”

CFUG focus group

While CFUG executives report self-sufficiency as very important, some executives from both study sites recognize a potential need for an intermediary organization for the sale of carbon, even if they can accomplish all the carbon measurement and analysis independently. However, they report that if they use an intermediary, they need to learn enough about the process to feel they are in a position to assess if that organization is being an honest broker. The CFUG executives report that if there was an organization they believed was transparent, they would consider partnering with them to sell carbon.

Even an organization such as FECOFUN, which is ostensibly a federation of about 14,000 of the approximately 18,000 CFUGs in Nepal, is not considered completely trustworthy by many CFUG executives. A CFUG expressed this view by saying:

“FECOFUN is OK but we have some doubt because we don’t know ourselves. We want to calculate ourselves so we know we are getting the money we deserve. We think direct dialog with the REDD+ program would be best. We think it might be OK to have an intermediary organization to work with because it would reduce overhead cost and it might be possible to have a transparent organization we could trust and we might need assistance to engage with the organization. But we would like to try and do it ourselves.”

CFUG president

The CFUG executives from both study sites that expressed interest in learning how to participate on their own or continuing to participate in REDD+ with the assistance of another partner organization after RCMFN stated that they were unsure how to market carbon. When asked how they would proceed they said they would contact FECOFUN for help.

CFUG executives and members from both watersheds stated a range of views on their willingness to invest in the technical training required to participate in REDD+. Some CFUG executives were willing to make all the investments themselves if necessary while others were only interested in participating in the training RCMFN offered. Despite these differences executives almost universally expressed a desire to gain as many skills as they could related to REDD+ and to have the CFUG conduct as much of the carbon measurement and analysis as possible.

The key points to take away from this section are that CFUGs want to learn as much as possible about REDD+ and gain as many skills related to REDD+ participation so they can maintain as much independence as possible while participating in REDD+ programs. However, CFUGs do recognize the need for an outside facilitating organization to assist with participation.

Benefits CFUGs Receive from Participating in the REDD+ RCMFN Program:

I report the perceived financial and non-financial benefits that CFUG executives and members hope to obtain from participating in RCMFN.

Financial benefits:

CFUG executives in both watersheds are interested in increasing revenue to pay for basic CFUG operations and community projects and recognize REDD+ as a potential new source of income. In contrast, CFUG members only noted the need for additional income to support local community development programs and would like to expand social benefits with the introduction of REDD+.

CFUG executives in both study sites report that one of the main advantages of REDD+ is that it allows the CFUG to generate income from the forest without harvesting any resources. Executives noted that before RCMFN, CFUGs had to harvest resources from the forest, primarily timber to generate extra income. This was seen as potentially problematic because it affected the quality and abundance of other resources such as timber, fodder and ecosystem services (e.g. clean water; erosion control; fresh air). However, carbon payments are not equal to the value of timber and even one large tree of a high value species is worth more than almost all participating CFUGs received from the RCMFN program.

CFUG executives and members repeatedly noted the value of a well stocked forest with large trees for household access to fire wood and fodder and ecosystem services. Executives said that it was important but difficult to balance the benefits of extra income generation from timber harvesting with the associated costs of reductions in fodder, fuelwood and ecosystem service quality. Carbon payments do not force communities to make these trade-offs. However, again, at present they do not offer the same financial payoff. Several communities receive over two million Nepali Rupees (NPR) (\$25,000) from timber sales while the highest any CFUG received from carbon payments was 430,000 NPR (\$5,375). (RCMFN 2013)

The Kayar Khola REDD+ project coordinator for RCMFN reported that before the RCMFN project came to the area, CFUG members felt that generating income and conserving the forest were incompatible activities and that now CFUGs know it is possible to generate income from conservation. An RCMFN staffer stated this in the following way:

“[RCMFN] gave them the idea that money can be made from preserving the forest. Before REDD+, people thought they had to exploit the forest to get money. This is really big, before people thought management was a two sided coin--exploit and get money or not exploit get no money.”

RCMFN staff

Finally some of the CFUG executives in both watersheds reported that they would consider REDD+ participation financially beneficial even if the CFUG only broke even as long as a significant amount of the money spent on implementation went to pay CFUG members for measurement and administrative costs.

Non-financial benefits for conservation:

CFUG executives and RCMFN staff recognize non-monetary benefits to carbon payment participation as well. These include increased CFUG member awareness in both sites regarding improved fuel wood and fodder harvesting practices, encouraging the use of fewer forest resources. Executives see these activities as leading to an improvement in forest condition. CFUG executives from both sites report that CFUG members are now harvesting more carefully when they collect fuelwood and fodder and that they try to limit the amount they harvest to only what they need. This point was expressed the following way:

“CFUG members go to the forest for the leaf litter and the fodder. They do not cut roughly. They use the scientific method to cut. (Staged thinning of saplings and of branches) Where there are dense trees or forest, they can use forest products from there.”
CFUG president

CFUG executives in both sites believe that following these forest harvesting methods will lead to an improvement in forest health in the form of a denser well-stocked forest with improved environmental conditions and functions contributing to ecosystem services from the forest such as clean water, more water for irrigation, erosion control, and increased animal habitat in addition to climate change mitigation.

“We get environmental balance from improving the forest. We need environmental balance to combat loss of species (birds), changes in rain fall and changes in temperature. The monsoon is late and now there is no snow in winter with some rain.”
CFUG president

CFUG executives and members also recognize improving human and CFUG capacity as additional benefits. In almost every interview I conducted in both watersheds, CFUG executives and members expressed a need for improved administrative and silvicultural capacity. However,

the area of capacity they identify as the most in need for attention is community development planning. Most CFUGs have at least some funds to spend on community development and would like advice on how to best utilize that money.

The key points to take away from this section are that CFUG executives and members see the financial payments from REDD+ participation as the main benefit of participation. Executives also felt that the ability to generate income from the forest without harvesting resources is a unique benefit of REDD+. Finally executive and members users also note improved fodder and fuelwood harvesting practices, and administrative and silvicultural capacity as non-monetary benefits of participation.

Ecosystem Services and Forest Conservation:

REDD+ is an ecosystem service payment program that provides payments in exchange for conservation of forests. CFUG executive and member understanding of these ideas and willingness to participate in them will be essential to the success of REDD+ programs in community forestry.

Awareness of ecosystem services:

While REDD+ is new and not always fully understood by CFUG executives and members in both watersheds, they have a broad awareness of the value of more traditional ecosystem services such as: erosion control, clean air and water, cool air and sustained water throughout the year. CFUG members report that forest resources for household use and ecosystem services were viewed as more valuable than the monetary value of selling timber even before the advent of the RCMFN project. There is a keen sense of the importance of long-term forest health. CFUG executives and members almost uniformly report that services such as clean water and air were the most valuable products they received from the forests. This point was expressed in following way:

“It [the forest] provides us fresh air, oxygen, and pure drinking water, increasing the source of water. When we started the CF we did not get enough water daily.”

CFUG focus group

“Fresh air and the fresh water I think is the most valuable thing we can get from the forest.”

CFUG president

Basic household resources such as fodder and fuelwood were also considered resources that CFUG members could not live without but not as fundamentally important to life as clean water and air.

Forest conservation:

CFUG members in both study sites have shown a willingness to invest in forest conservation in exchange for future benefits. This was most apparent during the early stages of establishing community forests when restrictions were placed on resource harvesting to help forests regenerate. Currently, most CFUG members report that they obtain more resources from the forest now than when they started better managing the forest. CFUG members initially shifted resource use to private land so that the decreased extraction from community forests would not cause a shortfall of household fuelwood or fodder. A few CFUG members reported that overall extraction of forest resources was higher before community forests were established, but that much of the biomass harvested earlier was taken by people living outside the communities that manage community forests. As such, the condition of forest was declining. These individuals all perceived the situation was better now with the advent of community forests which includes clear rules and enforcement for forest use as well as for providing some inputs into social programs by the CFUG. This was expressed the following way:

“In the initial starting time there was no good forest but now it is good. We planted ...trees and we thinned the forest. There was no good forest but we thinned where it was dense. Also a rotational watching system was implemented. The watchers were members from each household. We also stopped the grazing. This was not a problem because we would go to the forest to cut the fodder in a discriminating way, not cutting the small trees. In the beginning we still took from the CFUG but we took more wisely, only taking the dead and dying tree. We used the fuelwood and fodder from our private land, and dead and dying trees from the forest and from the thinning. That is how they kept it from being a problem. We get more resources from the forest now. We get more [drinking and irrigation water] and because of the increase of the forest condition the water has increased. We get more of [Timber, fodder, and fuelwood]. “

CFUG focus group

In both Charnawati and Kayar Khola, livestock grazing was prohibited in all of the community forests. This decision was made because under their grazing regimes the animals foraged on shrubs and small trees and prevented forest regeneration. CFUG members in both study sites said this restriction was not a burden because now members obtain fodder from the forest and feed it to their animals in their stalls under what is called “stall-based cut and carry” livestock management. CFUG members I interviewed report that obtaining fodder is more work than allowing cattle to graze in the forest, but they perceive that the benefit of a healthy forest is far greater than the cost of the extra work. This may represent a gender bias however in that fodder harvest is often done by women, ultimately increasing their daily work load; hence, the burden is not felt or reported by men interviewed in this study.

In all the study sites, CFUG executives and members reported forests recovered more rapidly than they had anticipated with the onset of community forest management. In some locations, forests were re-opened for use within two years. CFUG members and executives have shown that they both value and understand ecosystem services and resource conservation.

The key points to take away from this section are that CFUG executives and members recognize and value the ecosystem services they receive from the forest and are willing to invest in forest conservation to improve the ecosystem services they receive from the forest. Ecosystem service awareness and valuation, and willingness to invest in forest conservation are key components of REDD+ and awareness of these concepts by CFUG executives and members should make understanding REDD+ easier. Furthermore this suggests that CFUG executives and members values are aligned to a certain degree with REDD+'s goals and this should further facilitate CFUG participation.

CFUGs as a Mechanism to Distribute REDD+ Payments:

Members of CFUG user groups in both the study's two key watersheds believe that CFUGs are a potentially effective mechanism to distribute REDD+ payments. Almost all respondents felt the decision making process to be responsive in both places. The general feeling was that user groups practiced good governance and were receptive to the needs of CFUG

members suggesting that user groups are good institutions to distribute REDD+ funds. This view was expressed in the following way:

“All the community members are asked in the annual meeting about the decision whether to invest in certain activities or not. On the basis of the priority and necessity the investment is made. In the meeting we can express our ideas and views properly.”

CFUG focus group

“When we have a certain desire for the investment of the money, at first the committee investigates about that necessity and tries to see if the money is sufficient for that investment or not and then only the committee calls the meeting for the further discussion. If our desires are more feasible, and for the benefit of the whole community, the committee tries to fulfill our needs and wants by making the investment in that area.”

CFUG focus group

Furthermore, low income-generating community forests such as those in the Charniwati study site have relatively fixed budgets due to their limited financial resources; however, there is broad consensus on how funds should be invested. In Kayar Khola where CFUGs have much larger budgets there is more flexibility on how money should be spent and consequently more discussion about potential investments. Usually there was enough money to invest in all the areas that the community identified as priorities.

The key point to take away from this section is that CFUG members believe CFUGs generally practice good governance and can be an effective mechanism to distribute REDD+ payments.

Section summary:

Lack of CFUG capacity to implement carbon measurement necessitates expensive outside expertise which both potentially reduces carbon payment profits and undermines CFUG autonomy and self-sufficiency. However, CFUG executives and members in both of the study’s focal watersheds reported that they believe they are capable of learning how to conduct forest measurements and are willing to invest limited community forest funds in the requisite training. The CFUGs in the study said they want to participate in carbon payment programs because they recognize potential CFUG financial benefits as well as those for improving the organization’s operational capacity and forest extraction methods. CFUG member awareness of forests for

ecosystem services provides a helpful framework for them to conceptualize carbon sequestration and the benefits they would receive on the ground as well as from healthy forests. Finally, member perceptions of CFUG good governance suggest they believe the CFUG is an appropriate mechanism for payment distribution.

CHAPTER 5. DISCUSSION AND CONCLUSIONS

This chapter returns to the main question posed in the beginning of the study and uses the results to begin answering it. The main question is: What are the opportunities and constraints for community forest user groups to benefit from REDD+ participation? To examine these opportunities and constraints the study specifically evaluated: 1) how global carbon standards and the ongoing negotiations surrounding them offer opportunities and constraints for community forest user group participation in programs based on REDD+; 2) how each of the different actors -- CFUGs, NGOs and Nepali government employees -- view their roles within the development and operation of REDD+ programs in Nepal, and 3) the capacity of CFUGs to participate in and manage tasks required by REDD+ in an effective and equitable manner. The chapter is divided into five parts: the first three parts respond to these three dimensions by summarizing and interpreting key results, linking them back to the literature, and where appropriate, offering recommendations. Part four places the first three parts into their global context. Part five concludes the thesis by posing some remaining questions and offering suggestions on how the results may be useful to community forestry in Nepal and elsewhere in the world.

Part 1: Opportunities and Constraints that Global Carbon Standards and the Ongoing Negotiations Surrounding Them Offer CFUG Participation in Programs Based on REDD+ Uncertainty about REDD+ and REDD+'s Future:

My research found that lack of consensus in international negotiations over REDD+'s institutional mechanisms and that Nepal is still establishing its own REDD+ implementation framework has left the DoF, NGOs, and CFUG executives and members unsure of how REDD+ will operate.

Members of the government REDD+ cell and the NGO community who work on carbon payment participation are apprehensive about CFUG eligibility to receive carbon payments. They are concerned that CFUGs may not be eligible to participate in carbon payments because forests are already well managed and minimal opportunity exists for increases in carbon sequestration. Dahal and Banskota (2009) and Bushley and Khatri (2011) also report that CFUGs may not be eligible to participate in carbon payments because forests are already sustainably managed and there will be minimal incentive to carbon financiers to pay CFUGs. These authors

and the people I interviewed interpreted existing REDD+ documents as not supporting payments for already restored forests, but these conclusions ignore the stated role of countries to participate in forming REDD+ policies and implementation guidelines.

The RCMFN project is encouraging CFUGs to increase sequestration rates through changes in forest management and resource use. CFUGs would be eligible to receive carbon payments for additional sequestration that accrues from these changes but the ability of well managed CFUGs to increase sequestration is in question.

CFUG executives and members are unaware of this apprehension associated with eligibility. They simply want to increase carbon sequestration rates to receive payments. Unfortunately, because CFUGs already implemented forest restoration several years ago, many community forests have little scope for further increase in carbon sequestration. Further reduction in resource use is difficult to accomplish. Currently, CFUGs have placed more emphasis on existing management strategies (e.g. forest thinning, replanting, fire line maintenance) but have not introduced new practices to increase forest carbon. CFUG members and executives reported they had not decreased resource use because they need all the resources they are currently using to meet their daily requirements. In several interviews, CFUG executives and members reported that resource use in their community forests was reduced however this was only possible because they had shifted use to other areas (i.e. leakage), thus negating any overall carbon sequestration. Bleaney et al. (2009) note that sequestration resulting from change in management would be eligible for carbon payments but did not address if CFUGs are capable of reducing resource extraction or implementing new management techniques without impinging member resource needs.

Challenges to decrease resource use and to make further management changes strongly suggest that CFUG efforts to increase sequestration may be very limited. These findings lead me to conclude that under current interpretations of REDD+ policy, CFUGs will have difficulty increasing sequestration rates and thus receive minimal or no payments. To address this issue, the DoF should increase efforts to lobby for a change in REDD+ rules to allow past improvements in forest management to be eligible for carbon payments. This means that Nepal could set its carbon baseline at a date just prior to the onset of community forestry. If this negotiation is successful, Nepal's community forests will be eligible for carbon payments without needing to make any changes in current forest management. Nepal is not the only nation

that would benefit from this strategy and it is realistic to argue that Nepal can work with other countries to lobby for this rule change. The international financiers are concerned that making payments based on past improvements in management is not the best use of the limited pool of REDD+ financing but that is not a worry for Nepal. Nepal should try to gain as much benefit out of the program as they can possibly achieve.

I also discovered CFUG executive and member uncertainty around how a national REDD+ program will operate and when it will go into effect has left them cautious about investing in REDD+ preparedness. CFUGs believe they can increase the payments they are receiving from the RCMFN project by improving forest management and resource conservation; however, they are aware it is only funded through the end of 2013. Furthermore because users have observed many previous short term development projects they are wary of investing time into learning about what they perceive to be another new program with an unknown future.

In support of my findings, Alvarado & Wertz-Kanounnikoff (2007), Angelsen (2008), FoEI (2008) and Densham et al. (2009) report that details on how different aspects of REDD+ will operate have not been finalized. They specifically identified the following as important unknowns: CFUG eligibility, carbon baseline calculations, measurement and verification of carbon stocks, and techniques to conduct monitoring and verification. Bleaney et al. (2009) add to this observation by stating that this uncertainty has left DoF and NGO staff unsure of how to move forward with REDD+ implementation or if the investments will be worthwhile. CFUG executive and member concerns are not addressed in the literature but they are similar to those expressed by the DoF and NGO members.

The DoF is also concerned that resolving the issues around implementation and executing their solutions will take another ten years. This situation creates apprehension that the REDD+ program may never come to fruition in Nepal. In support of my findings, Angelsen et al. (2012) and Hansen et al. (2009) report that resolving complexities with REDD+ implementation will be difficult and time consuming.

While uncertainty about the regulations around carbon measurement and verification are causing apprehension in Nepal and slowing implementation, this situation should also be viewed as an opportunity for Nepal to advocate for rules that will work best in Nepal. The DoF, NGOs and CFUGs should take this time to investigate strategies that allow CFUGs to participate in REDD+ that take into account challenges specific to CFUG and Nepal. Then the DoF should

advocate for these rules. It might even be advantageous to argue for special REDD+ rules for CFUGs that recognize their unique advantages: democratic structures that allow for payments directly to forest users, diverse forest management strategies that will prevent forests from being exclusively managed for carbon, poverty alleviation programs and ability to deliver ecosystem services to CFUG members.

Despite concerns, CFUG executives and members, and DoF staff recognize that REDD+ participation is low risk because it promotes forest conservation. Stakeholders stated that, even in the worst case scenario (i.e. REDD+ provides no payments), community forest user groups will still be left with healthy forests. This perceived lack of risk, combined with outside funding (e.g. FCPF; other international agencies) to develop national REDD+ policies and conduct training, has led these groups to continue to push ahead with preparedness. My study is the first to identify that CFUG executives and members perceive REDD+ involvement to be low risk because it will not negatively affect forest condition.

While CFUGs are not aware of all the concerns raised above, they recognize many of them and are still interested in participating. This suggests that if CFUGs are properly informed about REDD+, including potential concerns, they will still be interested in participating because of the need for increased income and technical ability they believe they can get from participating in REDD+.

CFUG Requirement to Work with the Government:

The UN-REDD Program and the FCPF mandate that REDD+ funding will be channeled through national governments (UN-REDD Program 2010; FCPF 2010). My interview results determined that CFUG members and executives desire to work directly with international carbon financiers to avoid the appropriation of carbon funds by the government. They are also concerned that misuse of funds will occur if national NGOs act as facilitators. Corruption and instability in the Nepali government, due in part to the civil war in the mid-2000s as well as current failures to draft a new constitution, have made CFUGs wary of working with the government. Despite widespread opposition among CFUG executives and members to the concept of financial intermediaries, they do recognize the need for assistance to facilitate the sale of carbon. Executives and members find the idea of outside help acceptable if transparency and accountability can be insured. Furthermore I documented that DoF staff believe that despite

opposition to the government's role in REDD+, it is unlikely to change because it guarantees the DoF control over the program and its funding.

My findings regarding CFUG distrust of government control are supported by Peskett et al. (2010) who report that the international requirement that REDD+ payments be funneled through the government is problematic for program participation. These authors emphasize that this issue exists because many developing countries have weak institutional capacity and poor records of good governance. CFUGs are opposed to government control of the REDD+ funds for two reasons: 1) the government will keep most or all of the money and 2) the DoF will hold more power over CFUGs through access to this money. The DoF argues that it needs to keep some of the carbon payments to finance program implementation. CFUGs and their supporting NGOs need to negotiate with the DoF to set the percentage of the money they take for program administration as low as possible. Furthermore they need to advocate for rules that give CFUGs control over how they can use the money.

In addition to concerns with REDD+ facilitation, I learned that CFUG executives also consider requirements for professional accounting standards and the use of bank accounts to be restrictive. These regulations create barriers to some CFUGs, particularly those that do not carry a bank account, have access to a bank or pay for professional accounting. However CFUG executives also expressed a strong desire to build CFUG capacity and the requirements to meet financial standards necessary to participate in REDD+ may persuade CFUGs to address these issues. Lack of professional accounting and poor record keeping within CFUGs are not directly addressed in discussions of REDD+ participation but Kanel (2006) reports that it is a current challenge for CFUGs.

The FCPF states that its funding is intended to help build capacity in the governments of participant nations (FCPF 2010). In Nepal this funding is being channeled through the DoF. I found that some DoF and NGO members discussed the potential FCPF funding has to address longstanding issues within community forestry as well as those directly related to REDD+ participation but there is no official plan to encourage this approach. Long standing issues within community forestry, such as lack of technical capacity at the DoF and CFUG level, and need for improved governance and equitable resource distribution are problematic, but if some are addressed for the sake of carbon market participation, community forestry will likely improve more broadly in Nepal. In support of my results, Dahal and Banskota (2009) also recognize the

potential for REDD+ funding to help alleviate systemic issues in community forestry but they do not specifically address how this would be accomplished.

To address these challenges The DoF, NGOs and CFUGs should work together to determine which investments need to be made in the DoF and CFUG to prepare them to be able to participate in REDD+ and how these investments can also benefit other aspects of community forestry.

Part 2: View of Each Actor's (CFUGs, NGOs, Nepali Government Employees) Role within the Development and Operation of REDD+ Programs in Nepal

DoF and CFUG Conflict:

My research documented that despite establishment of community forestry on the basis of promoting improvements in forests and the wellbeing of local communities, conflict is occurring among the DoF, CFUGs and their supporting NGOs over which objective shall take priority. Not surprisingly, the DoF is mostly concerned with forest conditions. CFUGs, on the other hand, value the condition of the forest and the financial resources it provides that can help improve social and economic conditions. The connection between people and forests is the founding concern in community forestry in Nepal and around the world. However, this relationship remains tenuous for many forestry departments. Furthermore if the DoF continues to seek a larger share of revenue from CFUGs, another new policy directive of community forestry in Nepal and elsewhere, they will undermine the attractiveness of REDD+ and community forestry to local people. This is because CFUGs are concerned that the DoF will increase taxation and oversight over community forest management. My research found that such proposals are being discussed and introduced as recently as 2012. These efforts, however, are strongly opposed by CFUGs and national level community forestry NGOs.

The conflict between DoF and CFUGs on CFUG participation in REDD+ are very important limitations to REDD+. DoF effort to control REDD+ financing and to increase management over community forests creates mistrust between CFUGs and the DoF, and hinders solution to issues that directly and indirectly affect REDD+ participation such as carbon ownership and modernization of the laws governing community forestry. Studies by Thoms (2008) and Kanel (2006) also discuss the conflict between community forestry groups and the forestry department. Paudel et al. (2012), and Dahal and Banskota (2009) also documented DoF

efforts to increase CFUG taxation and oversight. This conflict led me to conclude that CFUGs should be wary of the DoF controlling REDD+ funding because the DoF may attempt to put extra restrictions on how the REDD+ money can be used and they may try to acquire more of the REDD+ money than needed to implement the program. Furthermore, these concerns show there is a lack of trust on the part of the DoF in CFUGs. The DoF does not trust that CFUGs will invest its money in ways that will be best for the forest. They are concerned they will invest all of their money in community projects and not in forest conservation. From my interviews I found this to be untrue. CFUG executives and members expressed that they wanted to maximize the benefits they could obtain from the forest but not at the cost of damaging the forest because then it would no longer meet their needs. If the DoF does not let CFUGs operate independently then they will never be able to do so, and it is unlikely that they will be able to participate independently in REDD+. The DoF certainly has a role to play as an advisory and oversight organization but their authority over CFUGs should be limited to this. However, understanding REDD+ in light of the history of community forestry in Nepal suggests the DoF is not likely to relinquish its control, especially if the program were to become a large source of income.

CFUG Executive and User Engagement and Understanding of REDD+ and RCMFN:

Another set of issues which restricted CFUGs acceptance of the RCMFN project had to do with lack of RCMFN engagement with the full CFUG membership. This limitation was particularly problematic in Charniwati because RCMFN initially engaged only with CFUG leaders and relied exclusively on them to introduce the RCMFN project. CFUG members, as a result, lacked understanding of the overall project and were not willing to invest in it. This suggests the importance of engaging all CFUG members when introducing new programs and that good communication by the government and NGOs supporting REDD+ implementation could be essential. Furthermore RCMFN's reliance on informal networks and methods for distribution of information and announcements at CFUG meetings is not adequate to produce fully informed participation. I found that half of CFUG members had never heard of REDD+ or RCMFN and that most of those that had, only knew a few basic details about them. My observation that lack of users awareness is a major issue that will hinder implementation of REDD+ is also emphasized by Bleaney et al. (2009) and Purnomo et al. (2012) who note that properly informed stakeholders were a necessary prerequisite to participation in REDD+.

Part 3: Capacity of CFUGs to Participate in and Manage Tasks Required by REDD+ in an Effective and Equitable Manner

Forest Measurement and Carbon Calculation:

My interviews revealed that CFUGs in my two study sites lack the technical skills to conduct forest measurement and the knowledge on how to calculate carbon sequestration rates even after two years of training. They want to develop these skills to be in control and fully participating in REDD+. CFUG executives also feel that they will eventually be able to measure the forest independently with additional training. Furthermore, CFUGs lack the equipment necessary to conduct forest measurements and are also concerned about equipment cost. Broader structural issues in society such as lack of skilled or educated labor due to poor educational infrastructure and outmigration were also identified by CFUG executives as partially responsible for low capacity of CFUGs. Seddon et al. (2002) and Kanel (2006) also report on the insufficient technical knowledge of CFUGs as a hindrance to REDD+ implementation. Earlier studies by Kanel (2006), Dahal and Banskota (2009) and Bushley and Khatri (2011) support my conclusion that most CFUGs do not have the skills or analytical capacity required to measure the forest and calculate carbon sequestration rates. In the future a more rigorous educational component or robust facilitation by NGOs is needed to train users to measure the forest. Despite these challenges of lack of CFUG capacity, access to skilled labor and equipment, I concluded that CFUG executives had a strong desire to invest in the necessary training required for participation in carbon payment programs.

Community Forest User Group Willingness to Invest in Training:

I discovered that CFUG executives and users see their CFUG as an independent governance organization that is continually struggling to maintain its independence from the DoF. Due to their desire for operational autonomy, CFUGs seek to conduct as much of the forest measurement and analysis as possible independently from the government and NGOs. CFUGs are also willing to invest their own resources in conducting the necessary training. The national REDD+ program should capitalize on the strong desire by CFUGs to have greater control in conducting the program. Muñoz-Pina et al. (2008) and Hufty & Haakenstad (2011) also emphasize that lack of local level involvement may exacerbate program constraints.

Furthermore, cost of REDD+ implementation is a concern and a national REDD+ program should make the most of CFUG desire to use local labor to reduce the cost of carbon measurement and verification. An added benefit is that those expenses would be paid to community members as opposed to outside experts. Even if program implementation is costly, that money will still become a source of income for local community members. I was not able to find any mention in the literature of CFUG interest in conducting their own independent carbon measurement and analyses, however, Dahal & Banskota (2009) confirm CFUG perceptions that the use of local labor is a good way to reduce overhead costs of REDD+ participation.

It is important to note that even after two years of participation in the RCMFN project, no CFUG interviewed reported that they could measure the forest independently. However there was still a desire on the part of CFUGs to learn more and a feeling that they could eventually participate independently. It is concerning that even after this long time period, CFUGs cannot even conduct forest measurements. While some CFUGs lack formally educated individuals, many do not, so lack of educated individuals cannot be the only issue. Furthermore in the thousands of members of all the CFUGs participating in RCMFN, there are clearly many individuals with the motivation and ability to master the skills required to conduct forest measurements in two years. The only reasonable conclusion is that the training program developed by RCMFN requires improvement.

Costs Related to Community Forest User Group Participation in REDD+:

CFUG executives and members are unsure about the future profitability of REDD+ participation because they do not know the cost of equipment, measurement, and analysis. CFUG participation in the RCMFN project, which is an approximation of an envisioned national REDD+ program, is designed to have no financial cost to users and was not intended to test the cost effectiveness of its methodology for REDD+ participation. Due to this limitation, CFUG executives and members do not have the necessary information to assess actual costs of involvement

One of the premises of the RCMFN project is that CFUG members can reduce resource use, and that carbon sequestration will increase as a result of resource reduction. I found that some CFUG members do not have access to alternative sources of forest products outside their community forest and that most members have, at best, a poor understanding of the RCMFN

project. CFUG member ability to assess the cost of shifting or reducing resource use in exchange for financial payments is likely limited without a full understanding of the RCMFN project. Limited management changes and lack of resource use reduction suggest that payments may be minimal and unable to offset participation costs. Most importantly, if RCMFN or any REDD+ effort means CFUG lose their community forest as a source of meeting household forest product needs, they are not likely to enlist local support in their programs.

Bleaney et al. (2009) complement my results by emphasizing how uncertainty around how REDD+ will operate at the national level and concerns about the cost of participation for CFUGs is a key but unresolved issue due to the preliminary stages of REDD+ development in Nepal. Furthermore Graham (2012) notes that REDD+ may threaten access by local people to forest resources and Kanel and Kandel (2004) raises concerns about overly protectionist CFUG management needlessly limiting member access to forest resources.

A future national REDD+ program will need to ensure that the costs of program participation are determined before it is introduced to CFUGs and that CFUGs are fully informed about what participation in REDD+ involves so they can make fully informed decisions about whether participation will benefit their CFUG.

Benefits Community Forest User Groups Receive from Participating in REDD+ and RCMFN:

CFUG executives and members reported that income generation such as training and capacity building to be benefits of participation in carbon payment programs. My results support the work of Huftey & Haakenstad (2011), Peskett et al. (2010) and Dahal & Banskota (2009) who all confirmed that these were potential benefits from participating in REDD+.

In contrast to Peskett et al. (2010) and Dahal & Banskota (2009) whose work lacked specificity about potential non-monetary benefits, I discovered that CFUG executives had very explicit ideas about the nature of these benefits. Executives saw the re-focusing of member attention on the importance of good forest management as a significant benefit; they reported that members were harvesting more carefully and that many of them had increased awareness of the importance of conservative resource use. Furthermore, increased silvicultural capacity from improved forest measurement as well as acquisition of new management skills and techniques were also identified as benefits from participation in REDD+.

A future national REDD+ program should try to ensure that the skills that CFUGs gain associated with REDD+ participation are also applicable to other areas of community forestry. This may mean expanding some of the training to cover subjects that are related to general CFUGs needs but not directly related to REDD+. This will insure that CFUG get even more benefit out of participation and that REDD+ can also help other areas of community forestry.

Furthermore, as others have shown (Peskett et al. 2010, Dahal & Banskota 2009), local forestry groups value the potential to earn extra income from forest conservation. REDD+ potentially enables them to conserve their forest without having to face the negative trade offs related to timber extraction. For REDD+ to be successful CFUGs need to recognize a benefit from participation. One of the primary benefits found in my study is the ability of carbon payments to fund social welfare programs. DoF restriction on allocation of CFUG income for social welfare should be noted as a potential disincentive for CFUG participation and a compromise reached. It suggests again the problem of DoF not willing to lessen control of community forestry user groups.

Awareness of Ecosystem Services:

CFUG executives and users identified several ecosystem services, such as clean air and water, as the most important non-monetary benefits they receive from the forest. They reported that it is good to protect the forest because a healthy forest produces quality ecosystem services and that it was worth using fewer resources, to a certain degree, to improve these services. Furthermore, generating income from the forest, without degrading the services it provides, is recognized as a benefit of the RCMFN project. Huftey and Haakenstad (2011) also reported improvement in ecosystem services as a co-benefit of REDD+, however they did not discuss whether REDD+ participants will see this as a significant benefit. The ability to generate income without degrading the forest should be a primary selling point of REDD+ participation. Furthermore benefits from forest conservation in the form of ecosystem service improvement should also be used to recruit CFUGs into a national REDD+ project.

Good CFUG Governance:

I found that CFUG executives and members in both of the case study watersheds are concerned that some or all of REDD+ payments will be siphoned off by the DoF before they

have access to them. Fritzen (2007) and Huftey and Haakenstad (2011) also questioned whether REDD+ payments will reach the local communities that depend on the forest and are most affected by management changes related to REDD+. While they were concerned about REDD+ payments reaching the community level they felt that if they did, they would be used appropriately. CFUG members identified mechanisms in place within their CFUG to decide how their income is used in a manner responsive to their needs and the broader community; they also noted that historically their user group funds have been fairly dispersed. While CFUG members approved of this general process they noted that attendance at CFUG meeting and knowledge about CFUG activities, actions and decisions was necessary to monitor how financial resources were used.

In contrast, Cotula (2009), (Thoms 2008) and Dahal & Banskota (2009) documented elite capture of resources and finances in CFUGs in Nepal and identify REDD+ funding as another potential source for corruption. The disparity between member perceptions of good governance and the literature may originate from the often hidden nature of elite capture. Thoms (2008) notes that social welfare programs or timber subsidies that are open to any member of the CFUG but require substantial capital on the part of the participant can only be take advantage of by wealthy CFUG members.

Part 4: Nepal's Experience with REDD+ Relative to Other Nations

To assess Nepal's experience with REDD+ relative to the global context I examined Lawlor et al. (2013) analysis of over forty one REDD+ projects across twenty two countries; eight projects were in Asia, fourteen in Africa and nineteen in South and Central America. These projects were chosen because they were certified by the Climate, Community, and Biodiversity (CCB) Alliance. The CCB is a partnership of NGOs that promotes land management activities to mitigate climate change and improve local people's lives. REDD+ projects that are certified by the CCB are required to report on local peoples participation and benefits from these projects in a systematic way. This allowed the researchers to conduct comparative analysis between and among projects. Their findings in relation to community benefits from REDD+, and engagement and education about REDD+ and project design generally support my findings and other existing research, (Bushley and Khatri 2011) that education and engagement of local people are lacking in REDD+ project and that there are still questions surrounding the overall benefit of REDD+

projects. In contrast their findings on tenure security contradict my results and other existing research (Dahal & Banskota 2009) that mostly raise concerns about potential negative effects REDD+ may have on tenure security.

In contrast to the concerns I identified about tenure security, Lawlor et al. (2013) review of REDD+ projects found that they had not weakened tenure security; in some cases, they strengthened it. Lawlor and colleagues were able to discern a project's effect on tenure in forty of the forty one projects in the study. In addition there was evidence for improvement in tenure security in twelve of those projects. Furthermore they found that improvements mostly occurred in places that had weak existing tenure rights. The main factor they used to gauge tenure strength was whether the government maintained ownership of the land. This study would have likely classified Nepali community forests as having weak tenure despite some of the inherent advantages Nepal has relative to other community forestry systems in Asia, such as strong political support and well established legal framework. This seems to bode well for Nepal, however the exact factors that led to this improved tenure condition were not discussed.

Similar to what I found in Nepal, Lawlor et al. (2013) reported that while many of the projects stated they educated people about REDD+ and involved them in the process of project development, there was little evidence that most local people had an adequate understanding of the different programs. This is similar to what has happened in Nepal; although the REDD+ and the RCMFN project have been explained to CFUG executives and members, only a few individuals understand how REDD+ and RCMFN work.

Awono et al. (2013) and Sunderlin and Sills (2012) noted that due to uncertainty about international REDD+ policy and carbon markets, REDD+ projects often delayed fully informing participants about REDD+ or did not share project plans to avoid raising expectations too high for participants. This situation is also similar to that found in Nepal where the uncertainty around REDD+ had not been conveyed to any CFUG executives or member I interviewed. Lawlor et al. (2013), Awono et al. (2013) and Sunderlin and Sills (2012) do not address whether the projects they analyzed made participants aware of all of the uncertainties around REDD+ but this is unlikely given that the biggest reasons that international REDD+ policy and REDD+ projects can be so challenging to understand is due to issues related to uncertainty. Reticence of RCMFN and other REDD+ based project staff at addressing these issues is understandable however it leaves local people uninformed about issues that could cause them problems in the future. Furthermore

failure to share information makes the implicit assumptions that project staff members are capable of understanding these complexities but local people are not. From my research I found that CFUG executives were willing to take risks and make investments to improve their community forest and the user group. Local people should be fully informed about these uncertainties and many will still be willing to participate in these types of programs despite these concerns.

For many of the projects in Lawlor et al. (2013) review it is too early to assess whether they have produced material benefits. There was evidence in half of the projects for some direct benefits in the form of income, jobs or in-kind contributions for local populations. However advantages were deemed only modest. These results were similar to those that I found in Nepal. All of the CFUGs participating in RCMFN had received benefits in the form of cash payments and jobs but they were still unsure if the gains of participating in REDD+ would ultimately outweigh the costs. Lawlor et al. (2013) conclusions seem to shed some doubt on the hopes of NGOs, government and CFUGs to significantly increase CFUG income from REDD+ payments. However, even modest financial benefits were considered attractive by CFUG executives. Overall, Lawlor's review of this diverse group of projects is encouraging for the future of REDD in Nepal.

REDD+ is new to Nepal and a national REDD+ implementation strategy is still under development. However strong lessons are beginning to emerge that are both similar and different to what is occurring globally. There is no evidence that REDD+ participation will improve tenure security for community forests in Nepal in comparison to what has been reported in other locations outside the country where participation in REDD+ programs has strengthened local people's land rights. In contrast, Nepal's experience with educating and engaging local people seems to mirror what is occurring in other countries but significant doubt exists as to how well informed and engaged most people have become. Like in Nepal, evidence from elsewhere demonstrates local people are receiving material advantages from REDD+ participation however their range of benefits is wider and the ultimate gains communities will receive is still uncertain.

Part 5: Conclusions

Climate change appears to be the greatest challenge of this century. REDD+ programs provide payments in exchange for increased forest conservation with the goal of reducing carbon

emissions from forest destruction and degradation. REDD+ recognizes that durable conservation gains cannot be met at the expense of local forest users, many of whom depend on forest resources for their daily survival. This is both a progressive goal and also a necessity.

REDD+ theoretically takes the needs of local people into consideration but former programs, similar to REDD+, that have been designed at the international level, have had great difficulty delivering on this ideal. REDD+ states that nations have the flexibility to tailor national implementation strategies to local conditions however there is pressure to conform to international standards that are easily comparable among nations. Furthermore, national level implementers in Nepal, who have also noted the importance of local participation in program design, have held most planning meetings in Kathmandu and made minimal efforts to engage CFUGs in rural regions of Nepal.

Forest user engagement in REDD+ design is crucial because these programs are being implemented in diverse locations with their own unique histories, peoples and ecological conditions. The structural institutions around community forestry provide many advantages for REDD+ implementation in Nepal; however, these structures bring their own challenges such as the fact that the government retains ownership over CFUG lands and has the final say over forest management. Government control over REDD+ program design and payments will likely exacerbate these challenges considering the centralized nature of REDD+ administration and the need for technical forestry knowledge to conduct carbon monitoring and verification. The potential value of REDD+ payments is further cause for concern given previous DoF attempts at forest resource re-appropriation.

As tenuous as Nepal's CFUG rights are, user groups still have more legal security than many forest users around the world. Furthermore, about one third of the Nepalese are members of CFUGs giving them significant political clout. For these reasons, Nepal is an ideal test bed for REDD+. However, even with these advantages, REDD+ presents significant challenges for CFUGs. In places where tenure rights are less secure and forest dependent people have reduced political power, REDD+ may represent more of a threat than an opportunity, especially if potential carbon payments prove to be lucrative.

Lack of DoF effort to engage CFUGs about REDD+ suggests that CFUGs need to lead that process themselves. To influence international REDD+ structures and guidelines and to influence how REDD+ should be implemented in Nepal, FECOFUN and CFUG presidents

participating in RCMFN need to work together to create a list of recommendations for these organizations. Nepali CFUGs and FECOFUN should push for measurement and verification structures that are centered around CFUGs and involve the development of skills required to conduct these activities at the CFUG level. FECOFUN and CFUG presidents should then meet with REDD Cell personnel to advocate the REDD Cell to take these suggestions into account when developing its national REDD+ program. They should also encourage the government to advocate for these ideas at future COP-20 meetings. It is also important that FECOFUN and some of the CFUG presidents travel to the next COP meeting, COP-20. FECOFUN should work with other national and international organizations that promote local forest user rights. The CFUG president's role should be to provide first hand testimonials in support of their recommendations.

It is crucial for this engagement to take place because many CFUGs will be ineligible to receive payments if carbon payment eligibility is not expanded. Many community forests in Nepal have invested decades of hard work into building up and maintaining healthy forests and the emphasis that developed nations have placed on turning REDD+ into the most efficient economic mechanism possible is likely to leave many of these users groups out of the process. From some economists perspectives, it is inefficient to pay "good behaving" CFUGs to do what they are already doing. However, this view is not equitable as it rewards those that have practiced "bad behavior." Furthermore it does not acknowledge the benefits that these CFUGs have provided in the past. For example, a community forest that has been sequestering carbon for 10-20 years has been providing a valuable global service through climate mitigation and they deserve to benefit from REDD+ programs and payments more than locations that have not practiced good conservation. It is also inequitable to limit CFUGs to the funds they can receive for carbon payments because they have already made good decisions about forest management. While there are sound economic reasons for focusing on forests that can produce the most gains in relation to carbon sequestration and decreases in CO₂ emissions, they fail to deliver on moral grounds and do not recognize the need to protect existing gains in forest conservation.

Success of community forestry in Nepal is often credited to the fact that, while incomplete, it did devolve forest management to local people; these individuals took ownership of forest management once they had these rights and relatively quickly saw tangible benefits

from this change. This history suggests that if local people are given control over participation in REDD+, and receive benefits from participation, the program will succeed.

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